Jolimark

User's Manual

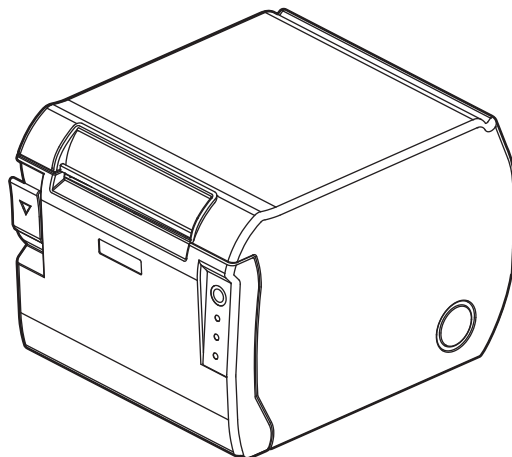## TP830 Series

Thermal Receipt Printer

Declare

About Trademark

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* Jolimark is a registered trademark of Kong Yue Electronics & Information Industry (XIN HUI) LTD.

* EPSON and ESC/POS registered trademarks of Seiko Epson Corporation.

* Windows is a registered trademark of Microsoft Corporation.

Important Safety Instructions

Read all of these instructions carefully and thoroughly and save them for later reference. The unauthorized operation would lead to malfunction or accident. Manufacturers have no responsibilities for the problems which are led by unauthorized operations.

1. Follow all warnings and instructions in the manual as well as marked on the product.

2. Don't touch the thermal print head with your hand at any moment to avoid the thermal head damaged.

3. Be careful the manual cutter when you are installing the paper.

4. Unplug this product from the power outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.

5. Please don't use the printer near water.

6. Slots and opening on the cabinet and the back or bottom are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, do not block or cover these openings. The openings should never be blocked by placing the product on a bed, sofa, rug or other similar surface. This product should not be placed in a built-in installation unless proper ventilation is provided.

7. Make sure the printer is put on a stable surface and the surrounding is wide enough for paper load and eject.

8. Be sure to use the specified power source. Connection to an improper power source may cause fire or shock.

9. The device should far away from the interference received, for example radio or TV interference.

10. Do not locate this product where the cord will be walked on. When the cord or the plug is mangled, please stop using and get a new one replaced. Make sure the old one is far away from the printer, so it can avoid someone who does not know the inside story getting damaged.

11. This product should never be placed near or over a radiator or heat origin, and should avoid of direct sunshine.

12. Never push objects of any kind into this product though cabinet slots as they may touch dangerous voltage dots or short out parts.

13. Don't remove the printer's out-cover and repair the printer. When needed, call or take it to the professional.

14. Make sure the power is off before connecting or unplugging the power cord and the cables.

15. To ensure safety, please unplug this product prior to leave it unused for an extended period. The wall outlet you plan to connect to should be nearby and unobstructed.

16. Unplug this product from the power outlet and leave servicing to qualified service personnel under the following conditions:

    A. When the power cord or plug is damaged or frayed.

    B. If liquid has been spilled into the product.

    C. If the product has been exposed to rain or water.

    D. If the product does not operate normally when the operating instructions are followed.

    E. If the product has been dropped or the cabinet has been damaged.

    F. If the product exhibits a distinct change in performance, it indicates a need for service.

> **Caution: The contents of this manual are subject to change without notice.**

> ***All the parts of the printer can be recycled. When it is abandoned, we can call it back freely. Please contact us when you abandon it.**

> **Note: In order to ensure the printer life, strictly prohibit printing full line and full black exceeding 2 CM.**

Table of Contents

Chapter 1 Overview

1.1 Features

TP830 printer is a high-speed mini thermal printer. It is a high-quality, high-reliability and low-noise POS printer without ribbon. It's small, easily-operated and can be widely used in ECR, PC-POS and BANK POS for printing a variety of receipts.

1.2 Product Model Description

In order to fulfill different requirements and operating circumstance, manufacturer develops TP830 series products which are high-speed thermal mini-printers.

According to different data ports (interfaces), TP830 series can be classified into different models: TP830, TP830U, TP830US, TP830UE, TP830UB and TP830UW.

TP830 series printers are equipped with auto cutter, so that customer could select full cut or partial cut.

Interface:

TP830 series products are configured with cash drawer interface, you can choose one of the following data interfaces when purchasing this product:

- Parallel interface (TP830)
- USB interface (TP830U)
- USB interface + Serial interface (TP830US)
- USB interface + Ethernet interface (TP830UE)
- USB interface + Bluetooth (TP830UB)
- USB interface + Wi-Fi (TP830UW)

> **Note: Please contact the local dealer to change the interface if needed with added expense.**
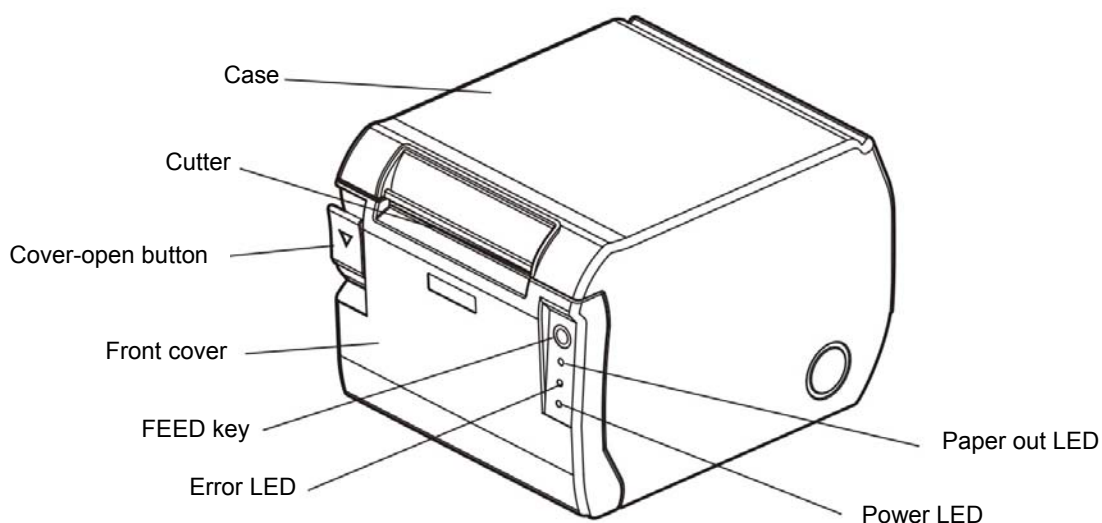
1.3 Main Parts of the Printer

Figure 1-1 Main parts of the printer
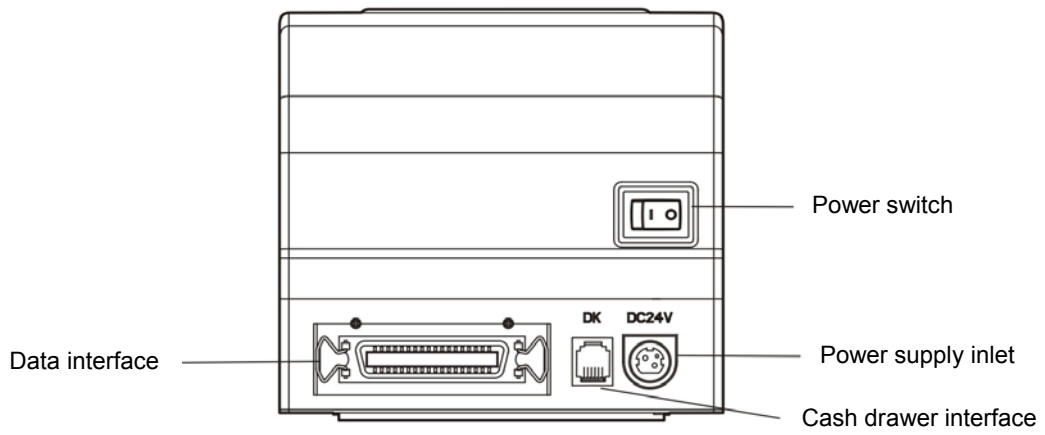
Figure 1-2 Interfaces on the back of the printer

Note: Please take the specific interface as standard.

Chapter 2 Installing the Printer

2.1 Unpacking and Checking

Check the following items in the package, if any of these items is missing, please contact your dealer.

Printer	Power cord	Interface cable (Optional)
AC adapter	Roll paper guide (Optional)	Driver CD (Including *User's Manual* and Driver)
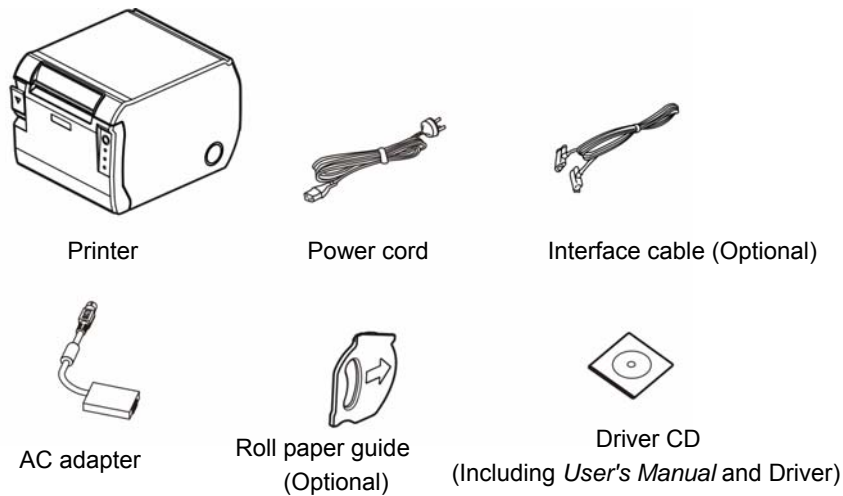
Figure 2-1 Packing list

> **Note: 1. Models with Bluetooth and Wi-Fi are not equipped with interface cable.**
>
> **2. Roll paper guide is equipped according to the necessity of the customers.**

2.2 Removing the Protective Materials

1. Open the packing box, take out the printer.

2. Save all the original packing materials so that they can be used when transporting the printer in the future.

2.3 Connecting to Your Computer or Other Equipment

The printer is configured with a cash drawer interface and one data interface (you can select Parallel interface, USB interface, USB interface + Serial interface, USB interface + Ethernet interface, USB interface + Bluetooth or USB interface + Wi-Fi). (Please take the specific interface as standard) Connect the printer to your computer with the correct cable.

> **Note: Before connecting the cash drawer cable, parallel interface cable or serial interface cable, make sure that the power of the printer is turned off. Only after tightening the cable may you turn on the printer. Or else the printer may be damaged.**

2.3.1 Connecting the Cash Drawer Cable

Turn off the printer and plug one end of the cash drawer cable into the cash drawer interface of the printer and the other end to the cash drawer, as shown in Figure 2-2.
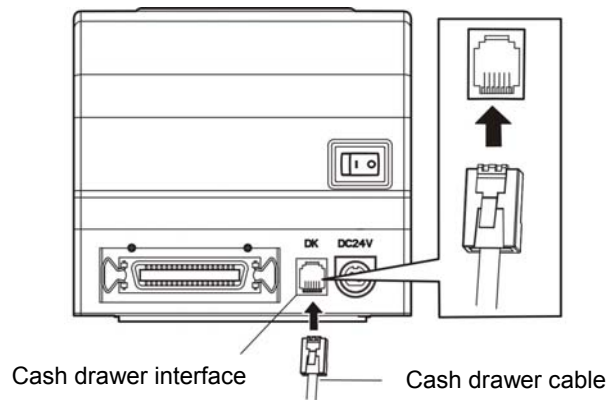
Figure 2-2 Connecting the cash drawer cable

> **Caution: Please use the appropriate cash drawer. Manufacturer will not honor warranty when using unauthorized cash drawer.**

2.3.2 Connecting the Parallel Interface Cable

1. Make sure the computer and the printer are both turned off, plug the parallel cable to the parallel interface of the printer, Squeeze the wire clips on both sides and make the cable fixed. As shown in Figure 2-3.
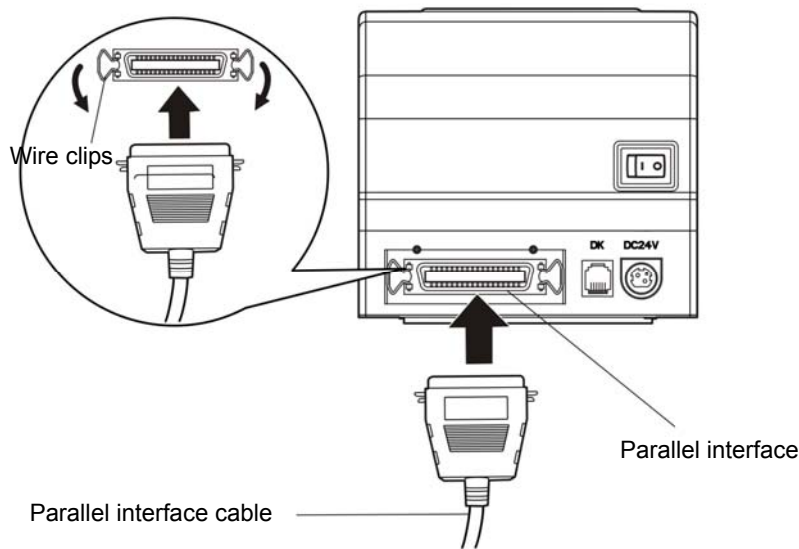
Figure 2-3 Connecting the parallel interface cable

2. Plug the other end of the cable to the computer. Tighten the screws on both sides and make the cable fixed.

2.3.3 Connecting the USB Interface Cable

1. Plug the USB cable A end (flat shape) into the computer's USB interface.

2. Plug the USB cable B end (square shape) into the printer's USB interface as shown in Figure 2-4.

> **Note: Please don't impact the plug after connecting USB interface cable.**
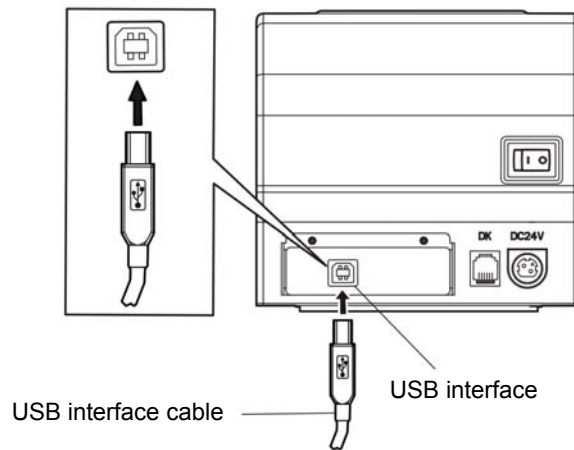
Figure 2-4 Connecting the USB interface cable

2.3.4 Connecting the Serial Interface Cable

1. Make sure the computer and the printer are both turned off, plug the serial cable to the serial interface of the printer. Tighten the screws on both sides and make the cable fixed. As shown in Figure 2-5.
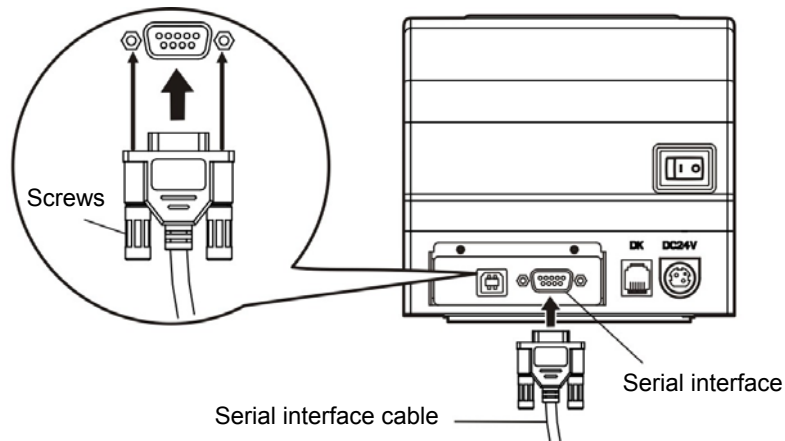
Figure 2-5 Connecting the serial interface cable

2. Plug the other end of the cable to the computer's serial interface. Tighten the screws on both sides and make the cable fixed

2.3.5 Connecting the Ethernet Interface Cable

1. Plug the crystal end of the Ethernet cable (RJ-45) into the printer's Ethernet interface and the other end to the LAN. (As shown in Figure 2-6)
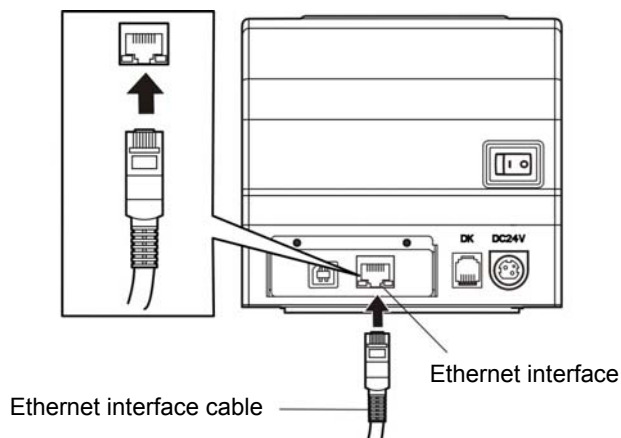
Figure 2-6 Connecting the Ethernet interface cable

Note: Please refer to the *user's manual* for detailed instructions of network settings.

2.4 Connecting the Power Cord

1. Make sure the printer is turned off. (The pressed down side on the switch with "O" mark denotes the printer is off)

2. Make sure the voltage of the electrical outlet matches that of the printer.

3. Plug the AC adapter to the printer's power supply inlet.

4. Plug one end of power cord into the AC adapter, and then plug the other end of the power cord into the grounded electrical outlet.
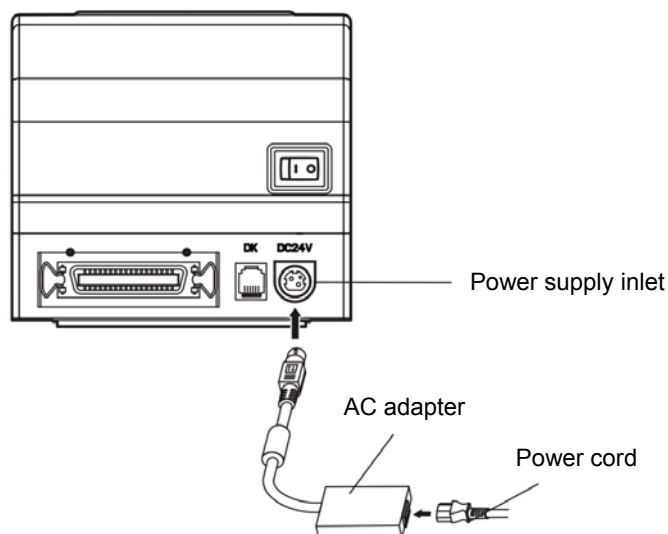
Figure 2-7 Connecting the power cord

Warning: 1. If the rated voltage doesn't match the outlet voltage, contact your dealer for assistance. Do not plug in the power cord.

2. Please use the electrical outlet connecting the ground properly.

3. Please use original AC adapter only. Manufacturer will not honor warranty when using unauthorized AC adapter.

2.5 Installing the Printer Driver and Selecting the Cutter

You should setup the printer driver in Windows before using the TP830 printer.

Please use the cable to connect computer with printer, then turn on the computer and the printer, put the driver CD into the CD-ROM. Install driver by the following ways:

Auto-install way

Double click the file "Setup.exe" in the driver disc, install driver by the following guide.

Note: Auto-install way needs the operation systems of Windows 2000 and above and the operation systems of Window 98/ME and below are not supported.

Hand operated installing way

Note: The hand-operated installing ways of serial interface and parallel interface are the same.

The installing steps of parallel interface for Windows 2000/XP/Vista are as follows:

1 Click "Start" → "Settings" → "Select Printers".

2. Click "Add Printer", then a window of "Add Printer Wizard" pops up, click "Next", then please read the select guide carefully, such as, select "Local printer" in the "Local or Network Printer" window, then click "Next".

3. A window of "Select a Printer Port" pops up, select "LPT1: (Recommended Printer Port)", (If you need to use other ports, please select the respective port), click "Next".

4. A window of "Install Printer Software" pops up, click "Have Disk...", click "Next".

5. A window of "Install From Disk" pops up. Please according to the operating system environment, you should select the path as follow: CD-ROM → "Drivers" → "WIN2000 (XP-Vista-Win7)", click "Open", then click "OK" to return to the window of "Install Printer Software", click "Next".

6. Follow the guide click "Next" gradually till the installation is finished.

The installing steps of parallel interface for Windows 7 are as follows:

1. Click "Start" → "Device and Printers".

2. Click "Add Printer", then it pops up a window of "Add Printer Wizard", select "Local printer" in the "Local or Network Printer" window, then click "Next".

3. A window of "Select a Printer Port" pops up, select "LPT1: (Recommended Printer Port)", (If you need to use other ports, please select the respective port), click "Next".

4. A window of "Install Printer Software" pops up, click "Have Disk...", click "Next".

5. A window of "Install From Disk" pops up. Please select the path as follow: CD-ROM → "Drivers" → "WIN2000 (XP-Vista-Win7)", click "Open", then click "OK" to return to the window of "Install Printer Software", click "Next".

6. Follow the guide click "Next" gradually till the installation is finished.

The USB interface installing steps for Windows 2000/XP/Vista/Win7 are as follows:

The following steps are used Windows XP as an example. There are slight differences among different operating systems.

1. Connect the printer to computer with the USB cable and turn on both of them. "New found" will display on the monitor, then the window of "Found New Hardware" pops up—"Welcome to the new hardware wizard".

2. Select "Install from a list or specific location", click "Next".

3. A window of "Please choose your search and installation options" pops up, choose "Don't search, I will choose the driver to install (D)", click "Next".

4. A window of "Add Printer Wizard" pops up, click "Have Disk".

5. A window of "Install From Disk" pops up. Please according to the operating system environment, you should select the path as follow: CD-ROM → "Drivers" → "WIN2000 (XP-Vista-Win7)", click "Open", then click "OK" to return to the window of "Add Printer Wizard", click "Next".

6. Follow the guide click "Next" gradually till the installation is finished.

Please setup the driver following the setup description in the CD going along with the printer. What's more, you can use the TM-T88II, TM-T88III serials driver from EPSON.

If you want to cut the paper after printing, please select the "Full cut" or "Partial cut" in the Paper/Quality page after clicking the "Printing Preferences" button which lies in the "General" page of the driver properties. Referring figure is shown below.

> **Note: If paper cut effect is the same whichever you select "full cut" or "partial cut" in the driver properties, this means the cutter (the printer equipped with) can only carry out one cut-method (full cut or partial cut).**
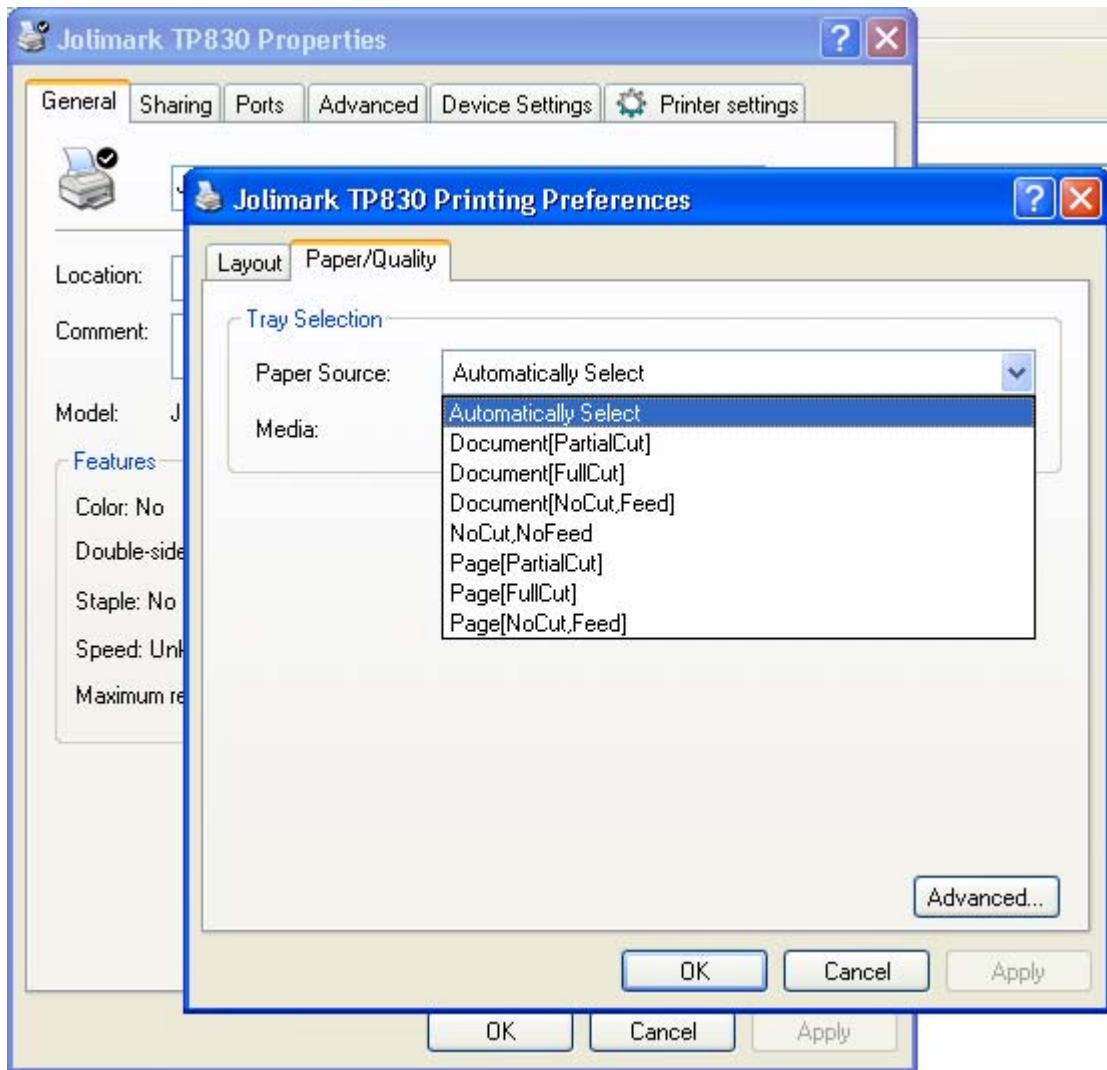
2.6 Installing the Bluetooth Interface Driver

Note: Select to install this driver according to the chosen model.

1. Choose the appropriate Bluetooth adapter, the operation system is Window XP or above which is with Bluetooth adapter driver.
2. Turn on the printer, search Bluetooth devices in Window XP system, and click "Add".
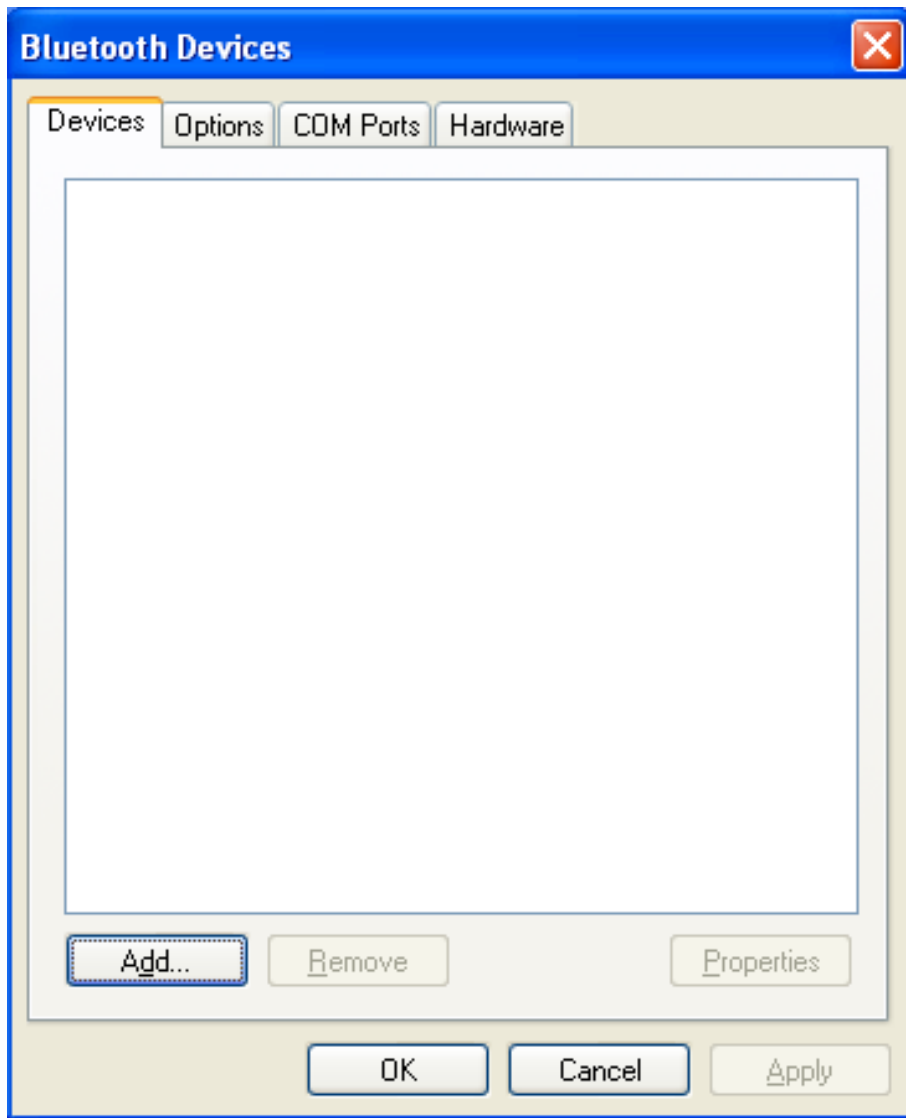
3. Tick off the option of "My device is set up and ready to be found." Click "Next" to continue.

4. Select the "TP830", and then click "Next".
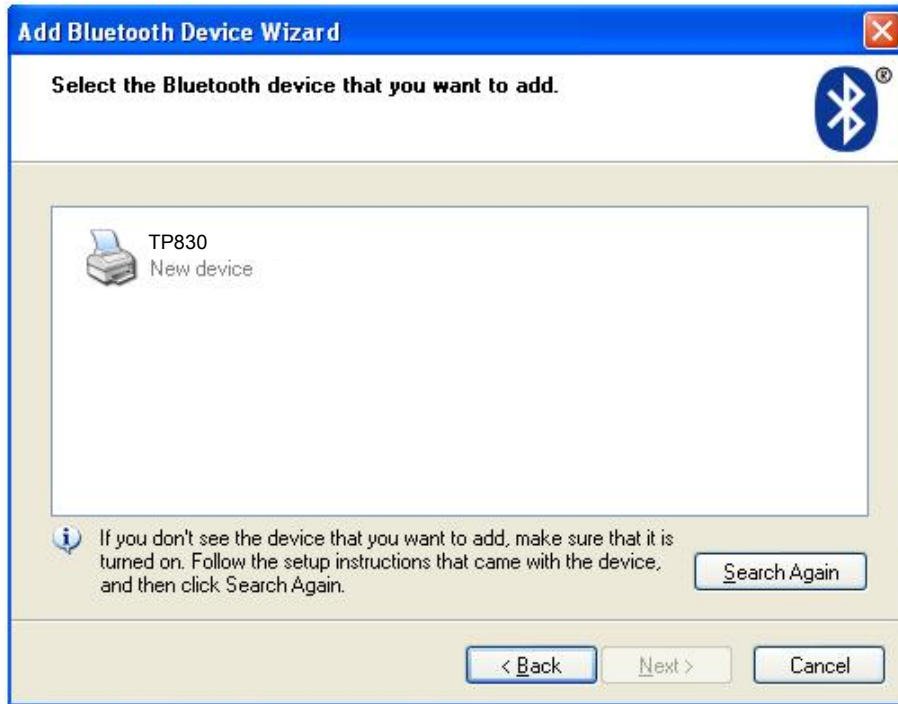
5. Tick off the option of "Let me choose my own passkey" and enter "1234" as shown, then click "Next".
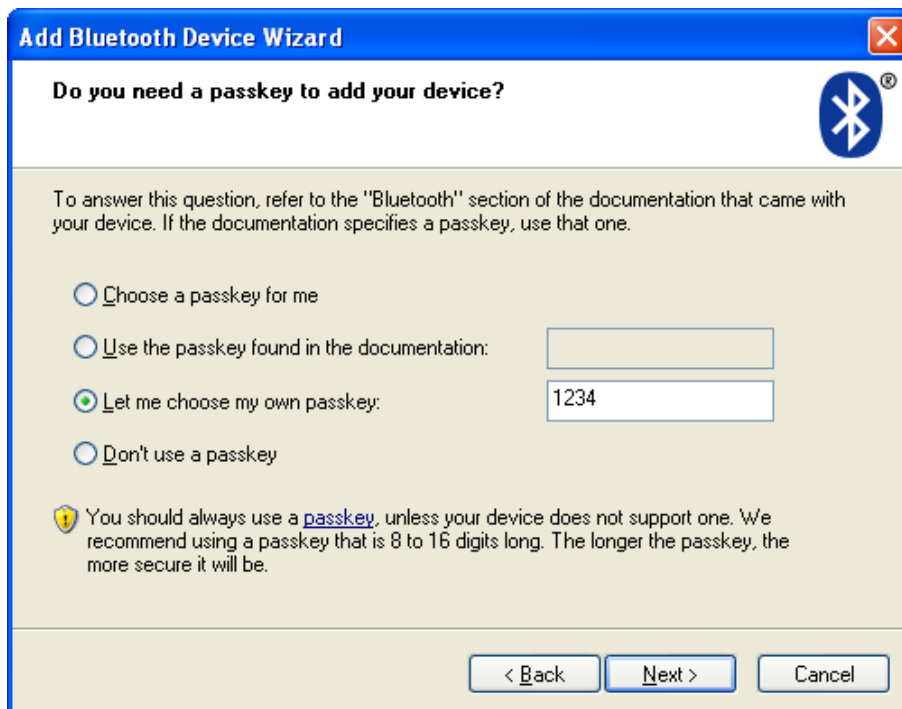
6. Record the Outgoing COM port and click "Finish", then reboot the computer.

7. Set the printer driver print port as the outgoing port and the installation is finished.

> **Note: Every Bluetooth device has its own address. Please reinstall it when replacing the Bluetooth device.**

2.7 Ethernet Settings

Please use Jolimark network setting software NetFinder to set the IP address for Jolimark Ethernet interface network printers. NetFinder Software (NetFinder.exe) can be found in the CD or downloaded from www.jolimark.com

> **Caution: The network printing function needs the operation systems of Windows2000 and above and the operation systems of Window 98/ME and below are not supported.**

2.7.1 Connecting the Printer

Power on the printer, connect with the Ethernet interface cable which has been connected to LAN, and look into the information of Ethernet LED to ensure the printer has entered the normal connection.

Orange LED	Green LED	Description
On	Blink	Online
Off	Off	Offline

2.7.2 Setting IP Address

1. Running NetFinder Software

Double click NetFinder.exe in the PC which connects the printer in the same LAN. The figure of the software is shown as follows:
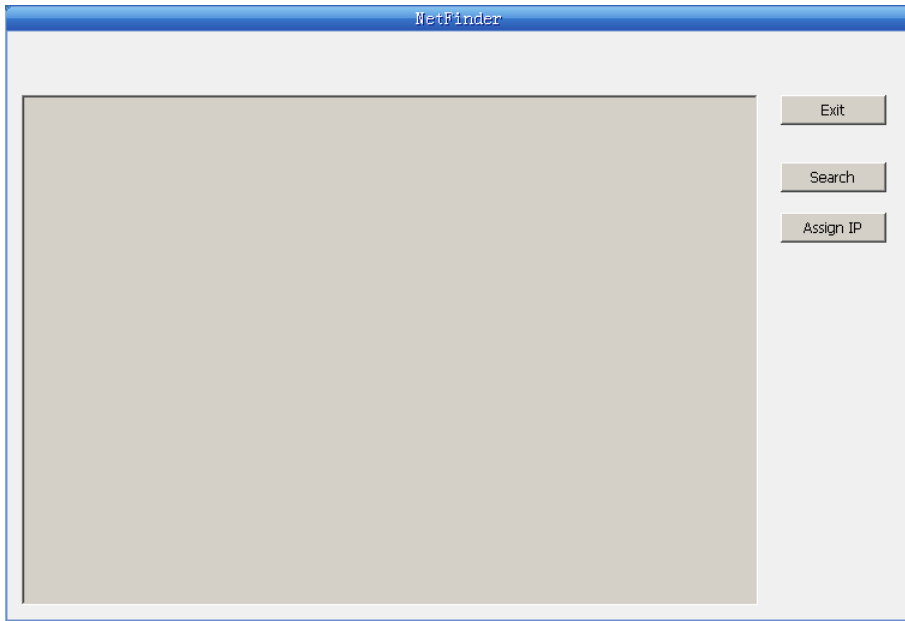
Button description:
Exit — Exit from the software
Search — Search printers in the same LAN
Assign IP — Modify the IP address and other settings for the specified printer.

2. Searching the Printer

Click "Search" button in the main interface, the dialogue box appearing will begin searching automatically and displays the status, listing a printer in the main interface if found. The time is counting down in the progress bar (10s in total) and the search will finish as soon as the time is over. If you need to go on searching, press "Search" button again.
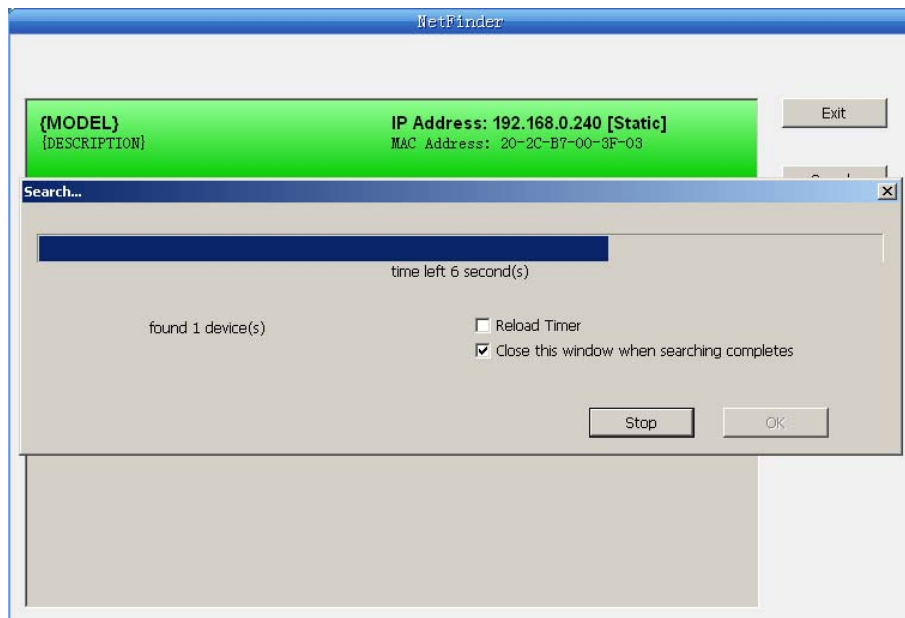
If the printer connects correctly, the IP address can be found in a search period.

If the printer still can not be found out when the network connection is correct in the same network. Please check whether the network fire wall on the PC is open or not. If there is fire wall, please close it temporarily; open it again after finishing searching and setting the printer completely.

3. Setting Printer's IP Address

The printer's information is listed in the main interface, the left side of which is the model and description and the right are the IP address and MAC address. What's more, the assign mode (dynamic/static) is noted behind the IP address.
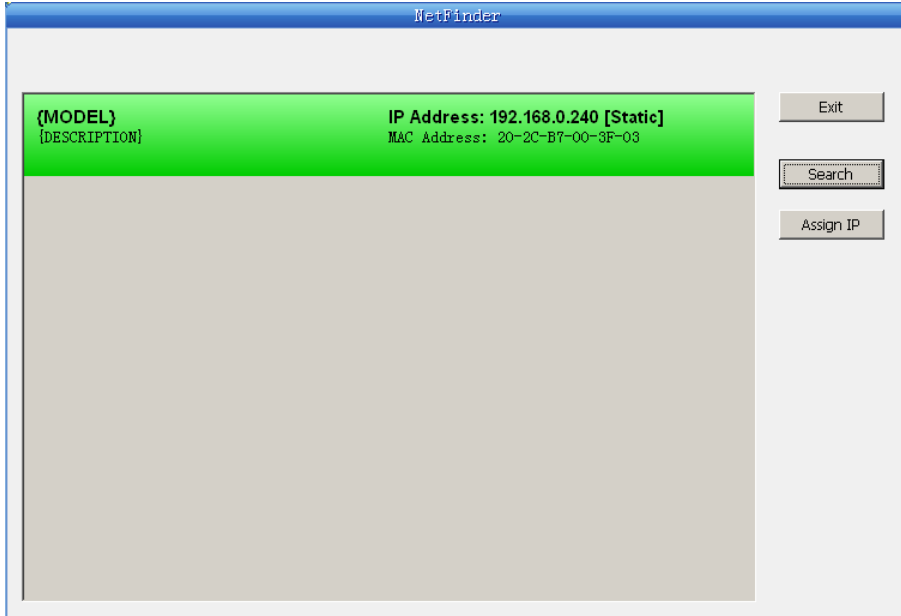
1) Correlative description for IP address settings

In order to search and set printer's IP address conveniently for the first time, the factory default setting is DHCP mode which assigns IP address dynamically. If there is no DHCP server in the connected LAN and printer is set to DHCP mode as well, then it will use the internal pre-set address (IP: 10.0.0.1, Subnet Mask: 255.255.255.0) automatically.

It is suggested that printer's IP set to static in actual usage, which can cut down the time when initializing the Ethernet interface as the printer is turned on and prevent IP conflicts (The dynamic address used in printer may conflict with another one). The network segment part of the IP address and Subnet Mask must be the same as those of PC connecting with a printer. For example, the address of working PC is 192.168.0.1/255.255.255.0 (IP/Subnet Mask), then which of printer should be set to 192.168.0.x/255.255.255.0（x=2~254 and should avoid the IP in used. It is not restricted for NetFinder to search printers in the same network but different segment parts (can not stride gateway). Relative glossary of IP address may refer to corresponding information.

2) Setting printer's IP address

Select the printer information to be modified (black frame appears), click "Assign IP" button. Set the IP in the dialogue box appearing.

Check the "Use DHCP" if needed to assign dynamic address, the settings above will be disabled automatically. Please make sure there is a DHCP server in the network, or the printer can not receive an effective IP address.

When to specify static address, uncheck "Use DHCP" and fill in "IP address", "Subnet Mask" and "Default Gateway". If there is no gateway in the network, fill 255.255.255.255 in the "Default gateway". "IP address" and "Subnet Mask" should obey the assigning rules of local LAN (Ethernet), please enquire the administrator of networks which the printer connects to for more details.

Click "OK" to send address setting information to the specified printer. Click "Cancel" if you abandon the modification.

Click "Search" in the main interface again to update printer information after modifying the printer's IP address.

3) Record printer's IP address

Record the printer's IP address, which will be used in the section "Newly-install printer network driver" or "Upgrade-install printer network driver (setting driver's network port)".

2.8 Wi-Fi Setting

Please use Jolimark network setting software WiFiConfig to set the IP address for Jolimark Wi-Fi interface network printers. Software WiFiConfig (WiFiConfig. exe) can be found in the CD or downloaded from www.jolimark.com.

Caution: The network printing function needs the operation systems of Windows2000 and above, the operation systems of Windows98/ME and below are not supported.


2.8.1 Connecting the Printer, Using WiFiConfig Software

Connect the printer and computer with the USB cable and turn on the power both of them. Make sure the printer is in the operating state; double click WiFiConfig.exe in the WiFiConfig software of the CD list. The figure of the software is shown as follows:
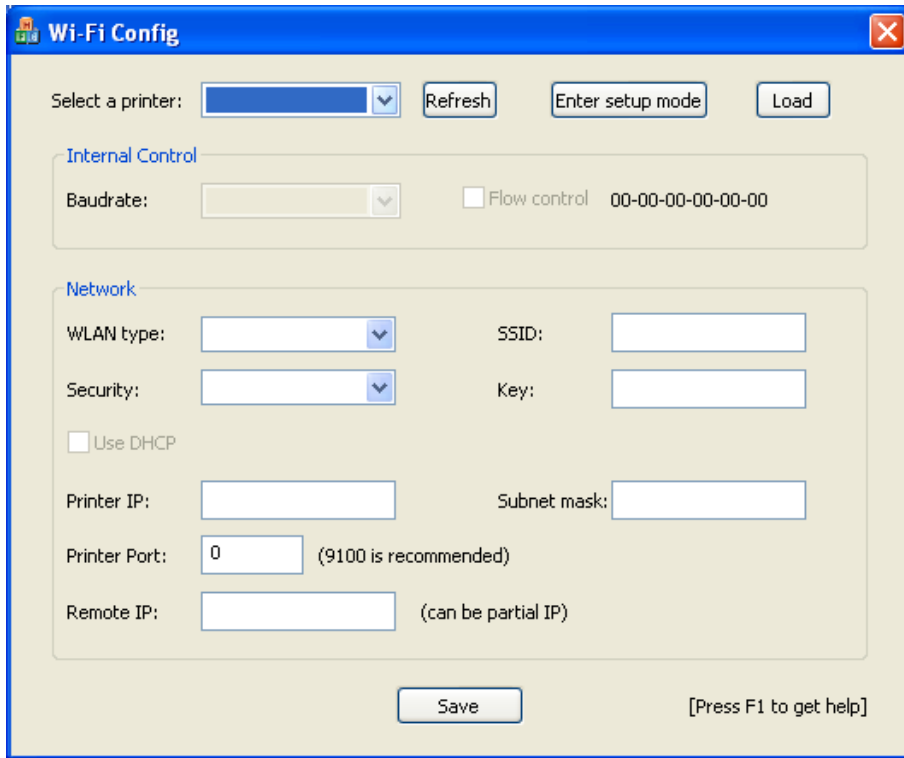
Figure 1

2.8.2 Detailed Settings

1. Select a printer: click "Refresh", then select the corresponding connected printer model in the "Select a printer".

2. Click "Enter setup mode", then a figure of software as figure 2 pops up. The printer and computer is connected successfully when the dialogue box "Connection is successful" appears. Click "OK".

Note: When the dialogue box "Connection is not successful" pops up, you need to check if the printer is turned on or the printer and computer is connected well with the USB cable.
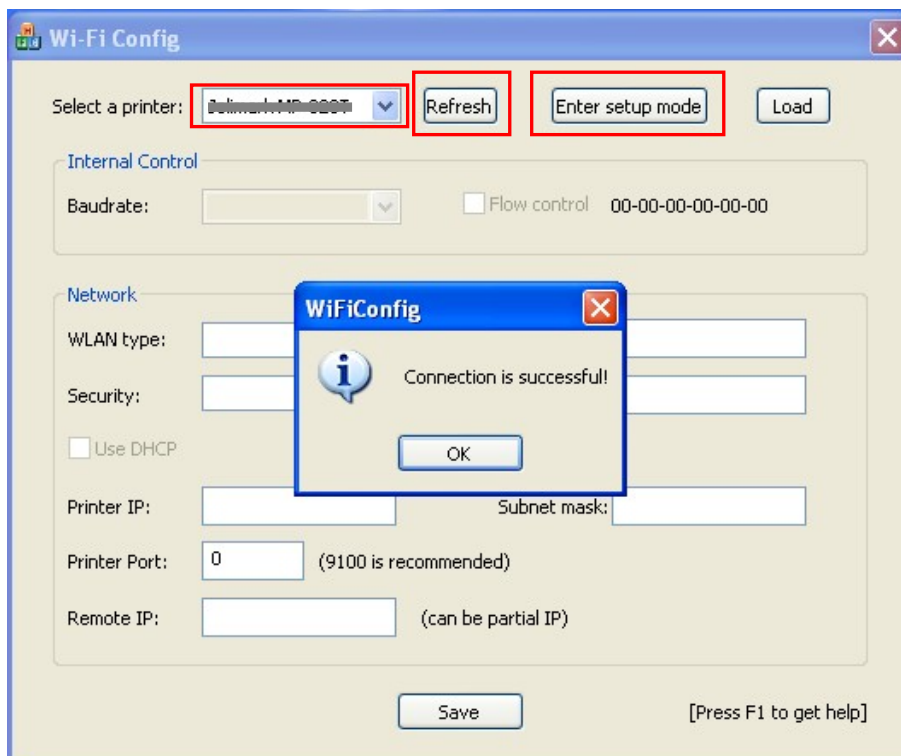
Figure 2

3. Click "Load", the computer will load the information of the printer and display it on the WiFiConfig software. Click "OK" in the dialogue box "Loading is complete" that pops up. (As figure 3 shown)
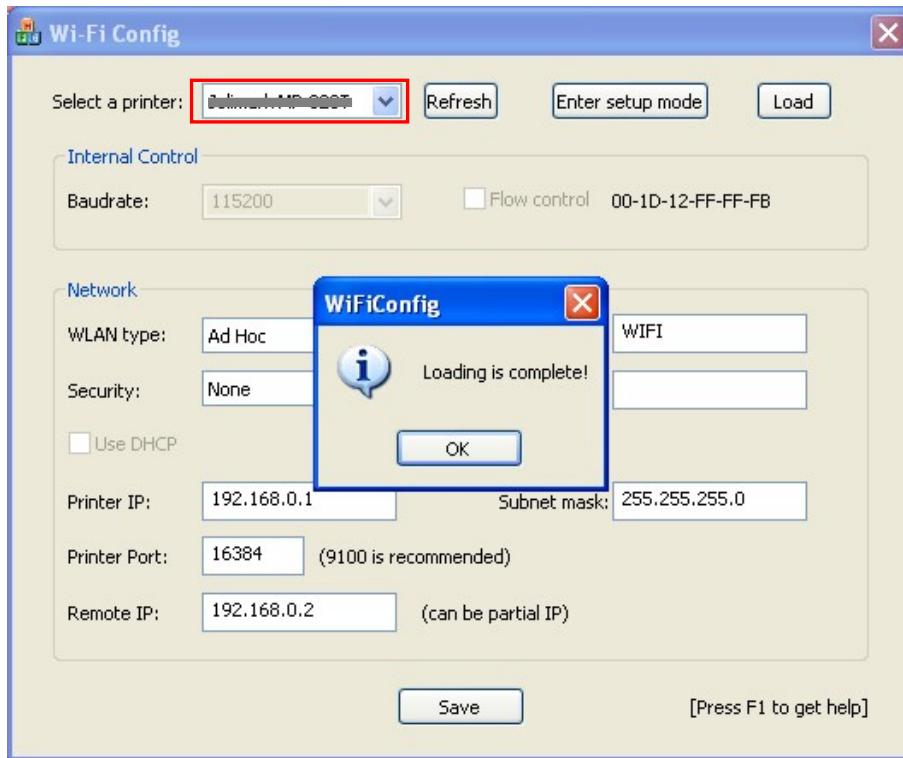
Figure 3

4. The loaded information is just the setting information of the currently connected printer. For normal use, you need to reset the parameters according to the wireless networks you are using.
   The detailed settings and description are as follows:

> **Note: Please make sure the wireless network card has been connected to the related router or hotspot before the following operation.**

The WLAN type can be divided into three types: Infrastructure, Ad Hoc and Off. (As figure 4 shown)

Infrastructure: Select infra. This is the common WLAN type which connects the networks through hotspot or router.

Ad Hoc: Select ad-hoc which ueses printer as the hotspot and communicates with the printer directly through wireless network card.

Off: Shut down the Wi-Fi interface of the printer. Printer will not print in the Wi-Fi mode after selecting this item.
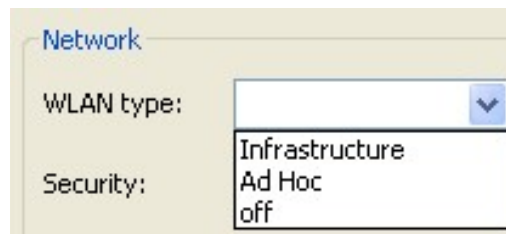
Figure 4

SSID

When "WLAN type" is selected to "Ad Hoc", use the loaded SSID directly (Default setting is WIFI).

When "WLAN type" is selected to "Infrastructure", network name should be the same with the name of hotspot or router.

> **Note: The longest network name is 32 characters. Make sure there is no space between characters and distinguish the capital and small letter.**

You can find out SSID by the following way:

Right click "My Network Places", and then click "Properties" to find the "Local Area Connection 2" you are using. Double click it and the window of "Local Area Connection 2 Status" pops up. You can find the corresponding SSID network name in it. (As shown in figure 5)

> **Note: Local Area Connection 2 here is just used as an example, and the specific network name should accord with the currently used wireless network.**

Double click Local Area Connection 2

SSID
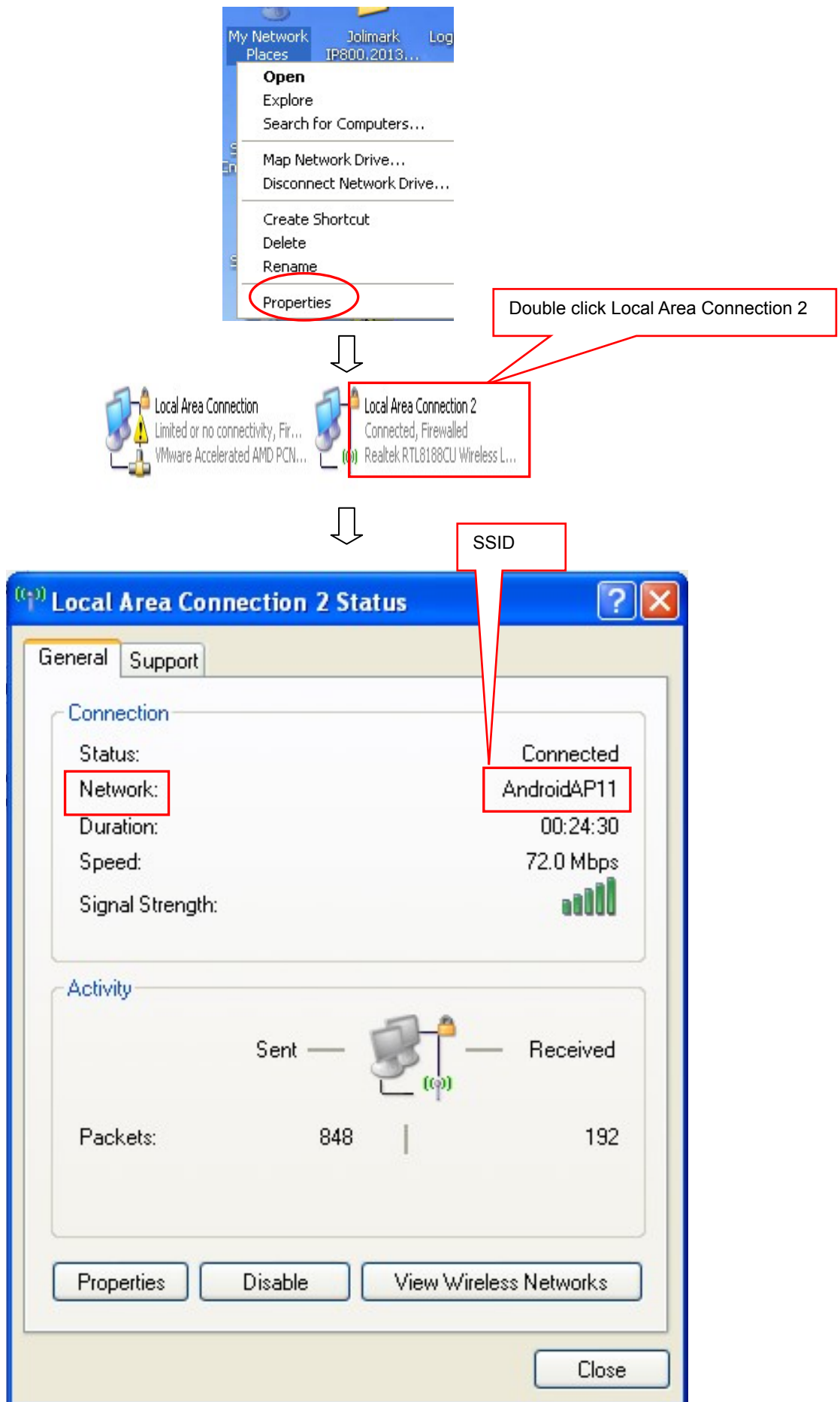
Figure 5

Security   Select the security of the wireless network data.

Acquire the security as the following way (Take the operation system WIN XP with selecting "Infrastructure" in the "WLAN type" as an example):

(1) Click "Properties" in the window of "Local Area Connection 2 Status". (Get reference in figure 6)
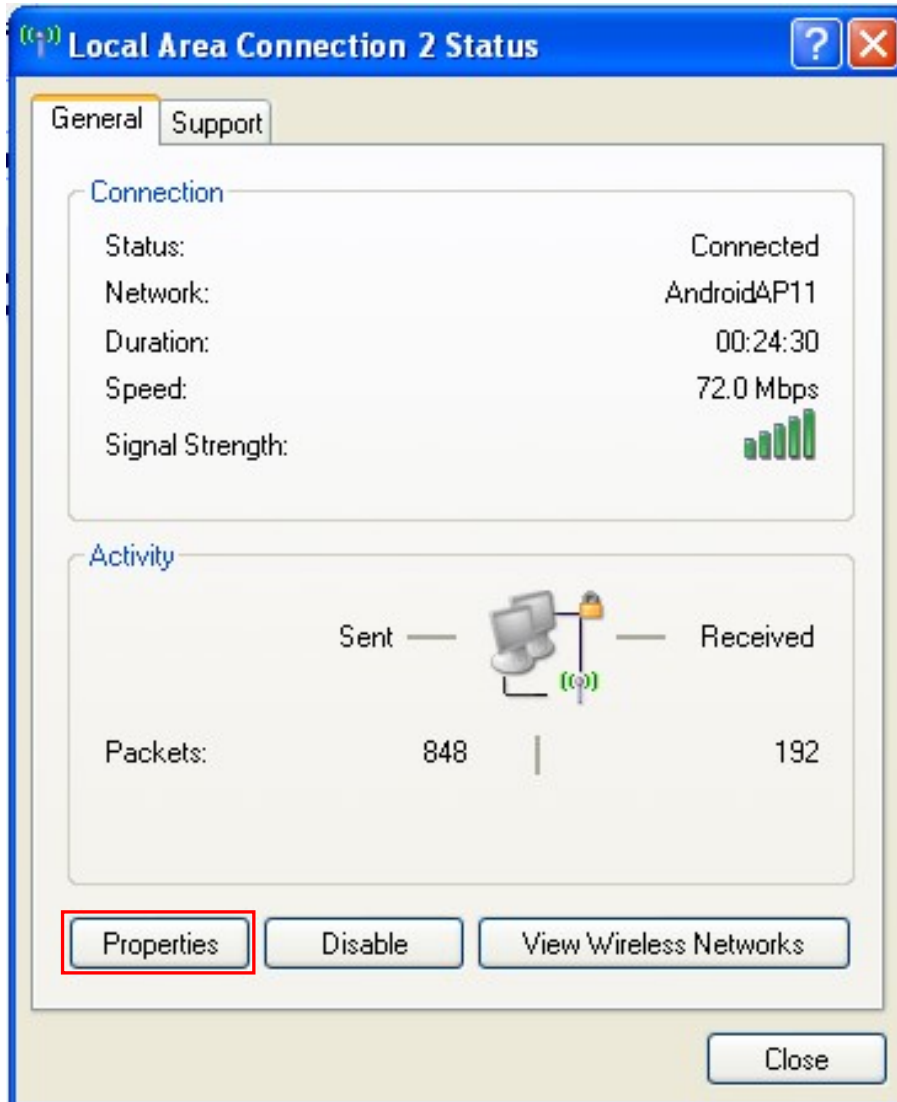
Figure 6

(2) When the window of "Local Area Connection 2 Properties" pops up, click "Wireless Networks" in the upper side of the window. (As shown in figure 7)
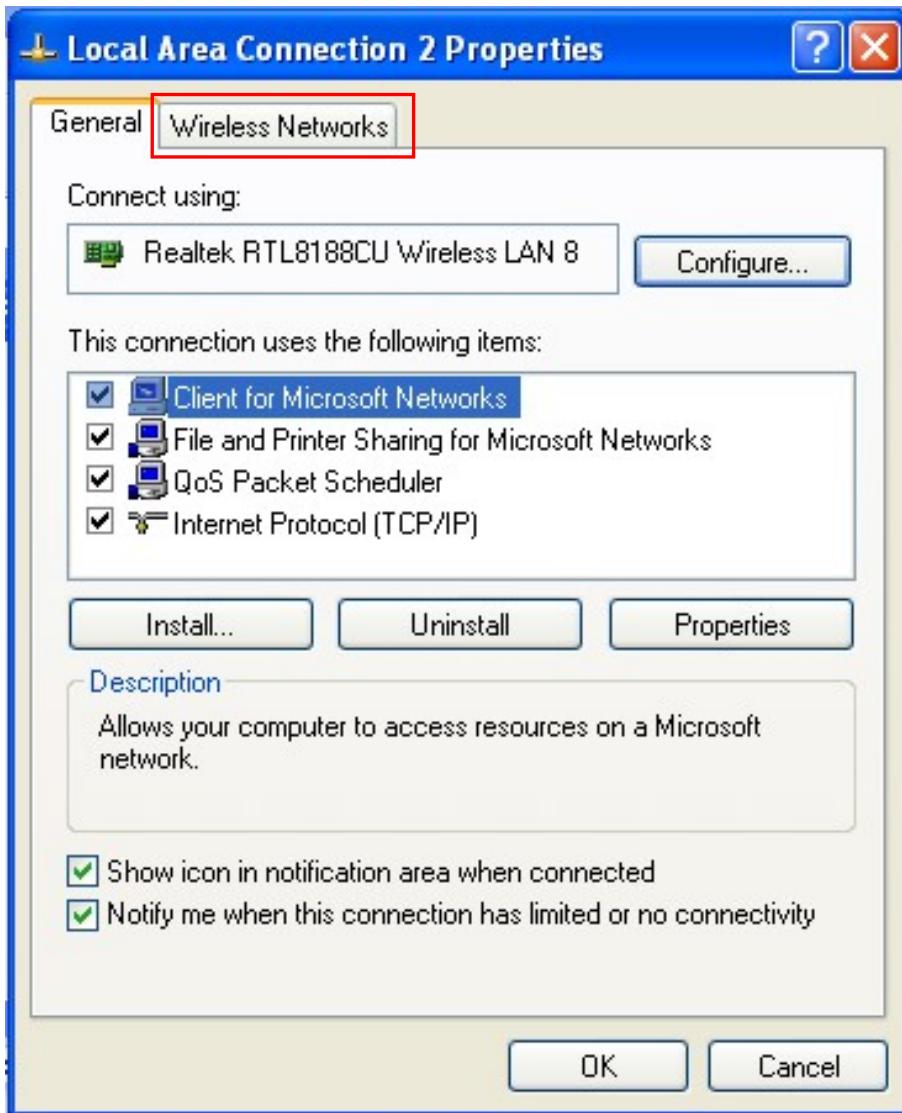
Figure 7

(3) Select the current wireless network name in the item of "Preferred networks" and then click "Properties". (As shown in figure 8)
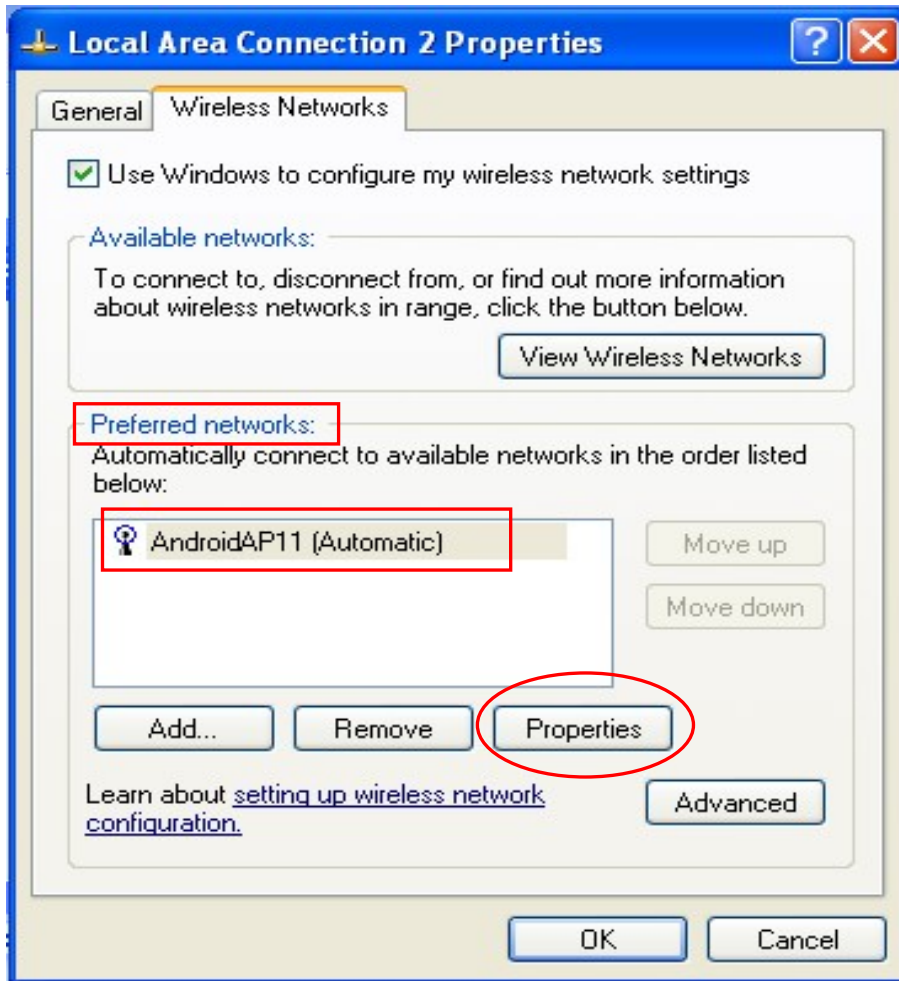
Figure 8

(4) When the window of "Properties" pops up, find the security in the item of "Wireless network key". (As shown in figure 9)
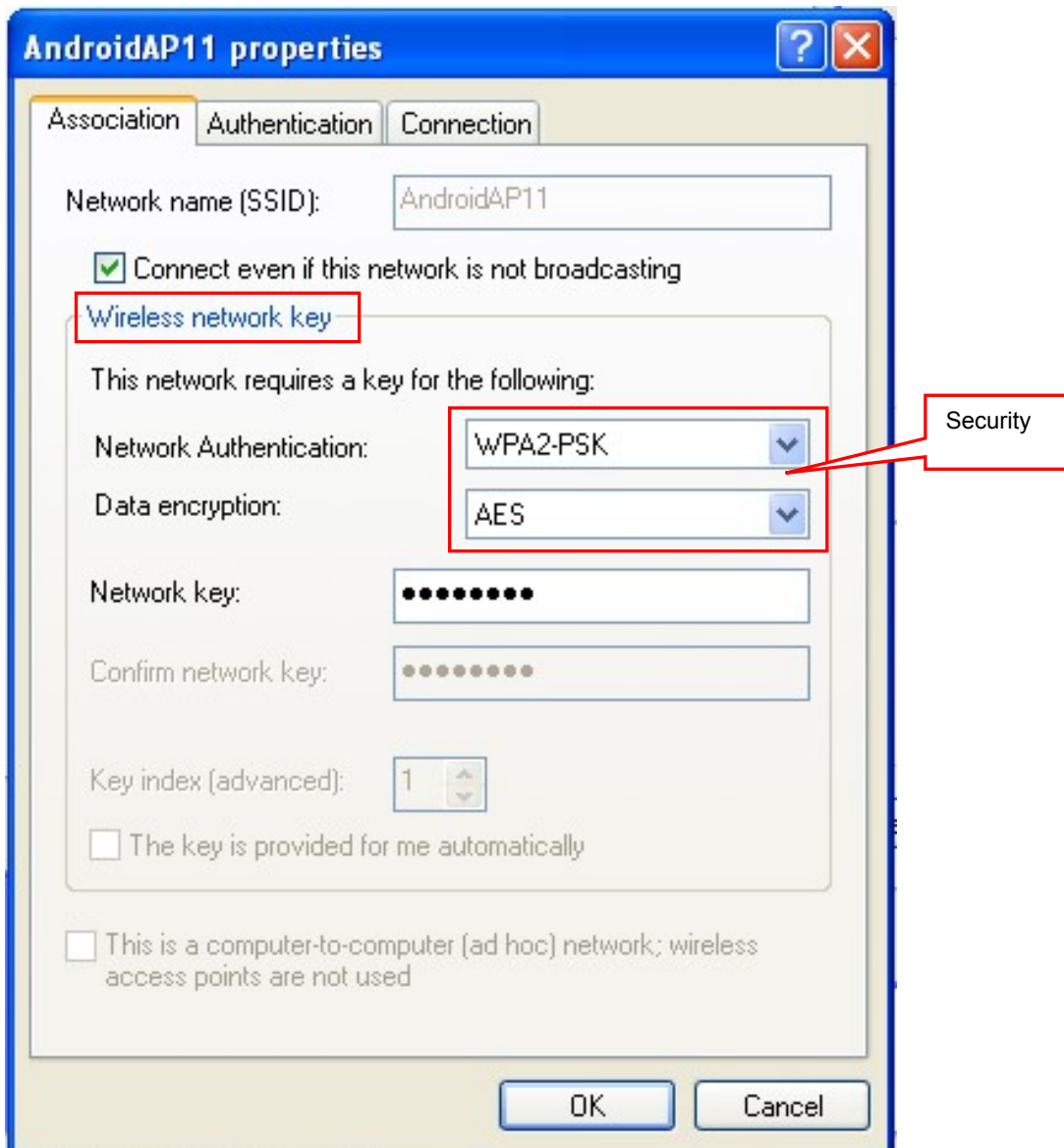
Figure 9

Key　　　Fill in the corresponding key of the wireless network. When "Security" is selected to "None", you do not need to fill in the key.

Printer IP　Set the IP address of the printer Wi-Fi interface in the same segment with the wireless networks.

The way to find and modify the wireless network segment is as follows: (Take the operation system WIN XP with selecting "Infrastructure" in the "WLAN type" as an example)

(1) Click "Support" in the window of "Local Area Connection 2 Status". (Get reference in figure 5)

Click "Support"
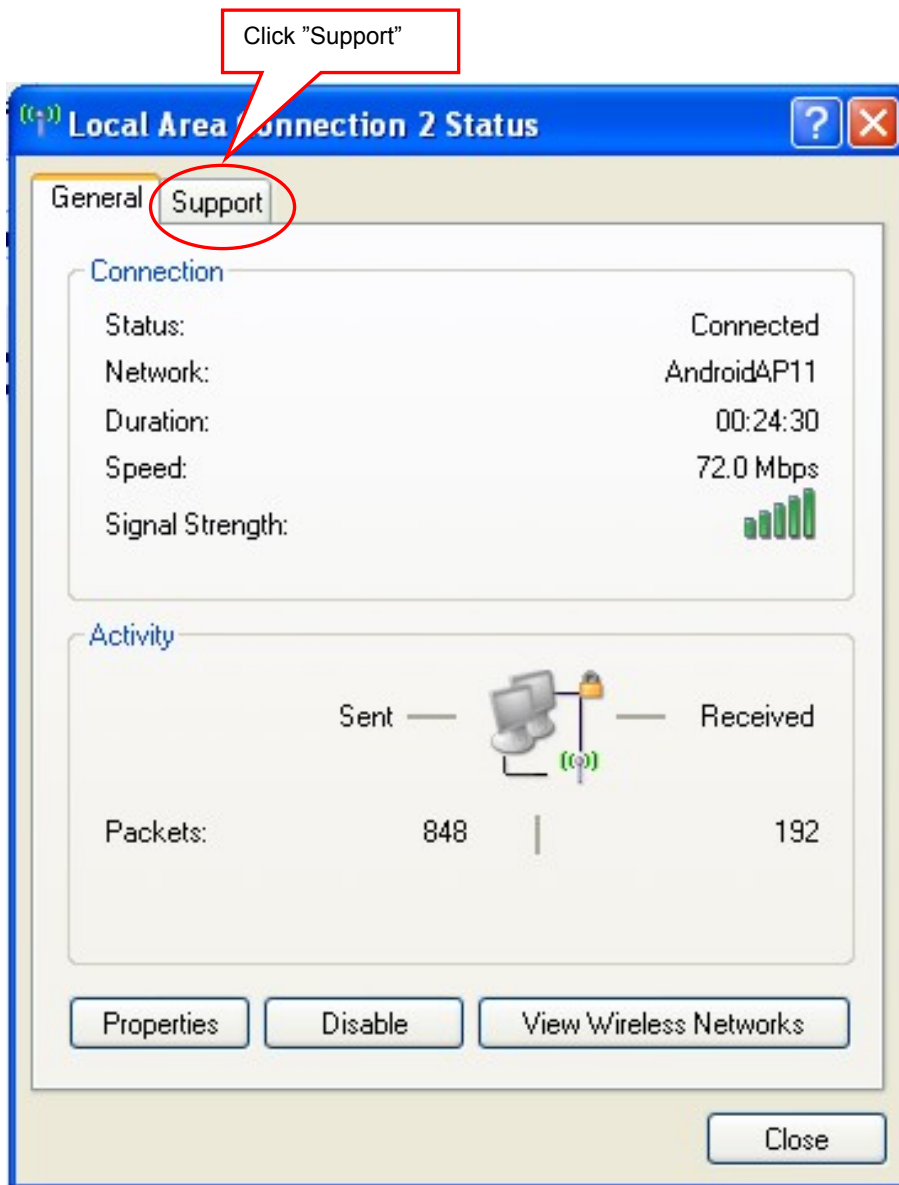
Figure 10

(2) Figure 11 displays the IP address information of the current wireless networks. Please find out the corresponding wireless network segment according to this IP address and set the printer IP with different IP address in the same segment.

In Figure 11, the IP Address is 192.168.43.120 and the segment is 192.168.43. Please do not fill in this IP Address in the item of "Printer IP" directly.

In the item of "Printer IP", you should fill in: 192.168.43.x (1<x<254)，here x≠120.

Note: The printer IP should not conflict with other network devices.
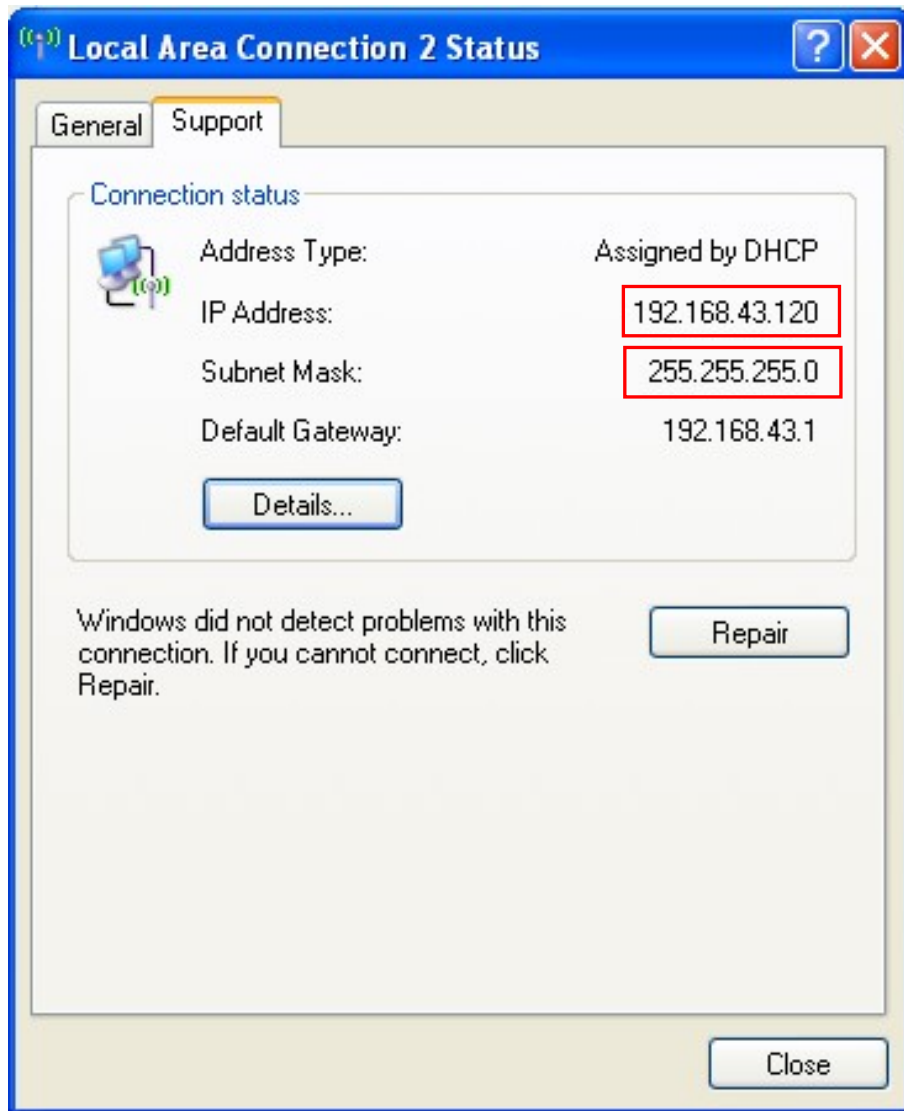
Figure 11

Subnet Mask   Set the subnet mask of the printer Wi-Fi interface. It is suggested that the subnet mask should be the same with the wireless networks. (Check the subnet mask in figure 11)

Printer Port   Set the port number of the printer Wi-Fi interface. 9100 is recommended.

Remote IP   Allow printer to receive the printing data sent by the target IP (or IP segment).

Fill in the corresponding segment according to the wireless network IP address you find out in figure 11.

5. Click "Save" to save the set parameters and then restart the printer.

2.8.3 Checking Wi-Fi Parameters

After setting Wi-Fi network parameters, you should check the parameters to ensure the Wi-Fi network connection is proper.

1. Through "ping" command to check if the printer connects to network or not.

2. When "WLAN type" is select to "Infrastructure", you could look into the Wi-Fi indicator lights to judge the connection status.

LEDs Description

Light Network WLAN type	Infrastructure	Ad Hoc	OFF
Connect	ON	ON	BLINK
Disconnect	BLINK	ON	BLINK

2.9 Installing Printer Network Driver

The ways of installing network driver are classified into Newly-install way and Upgrade-install way according to whether the PC is installed the printer driver or not.

If the printer driver hasn't been installed on the PC, adopt newly-install way whose steps are shown in "Newly-install printer network driver".

If the printer driver has been installed on the PC, adopt Upgrade-install way whose steps are shown in "Upgrade-install printer network driver".

1. Newly-install printer network driver

1) Click "Start" → "Settings" → "Select Printers".

2) Click "Add printer", then a window of "Add Printer Wizard" pops up, click "Next".

3) A window of "Add Printer Wizard" pops up, select "Local printer" in the "Local or Network Printer" window, and then click "Next".

4) A window of "Select the Printer port" pops up, select "Create a new port", and then select "Standard TCP/IP Port" in the port and click "Next".
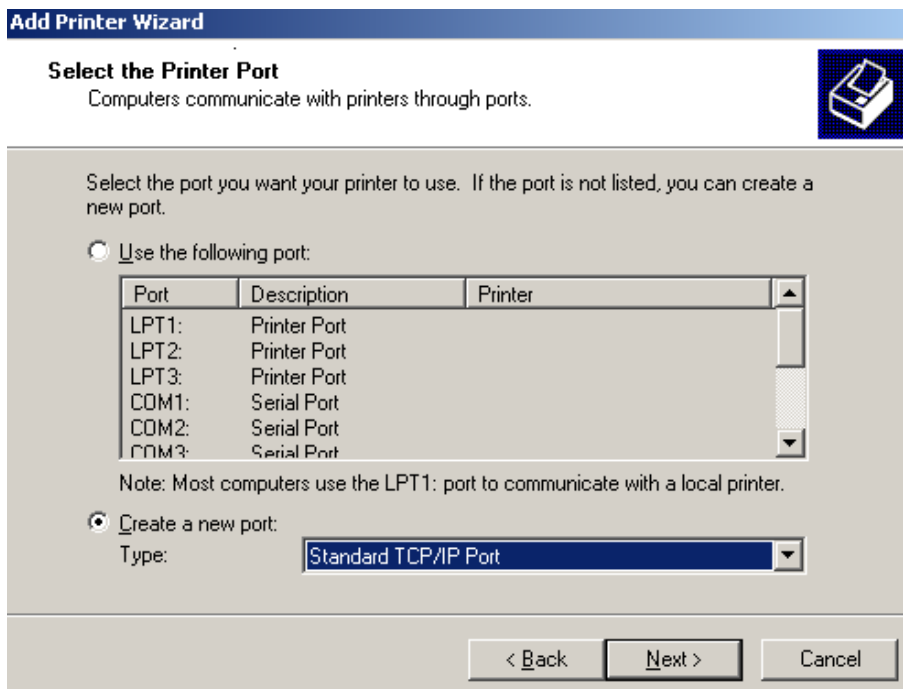
5) A window of "Add standard TCP/IP Printer Port Wizard" pops up, click "Next".

6) A window of "Add Port" pops up, enter the IP address reported by the "Setting printer's IP address" in the "Printer Name or IP Address" column. Take IP address "192.168.0.240" for example as the figure shown below. "Port Name" is created automatically after finishing filling in IP address.

7) A window of "Additional Port Information Required" pops up, select "Custom" in the "Device Type", then click "Settings".

8) A window of "Port Settings" pops up. Affirm that "Port name" and "Printer name or IP address" are correct, "Protocol" is "RAW" and "Port Number" is "9100", click "OK".

9) Return to "Additional Port Information Required", click "Next".

10) A window of "Completing the Add Standard TCP/IP Printer Port Wizard" pops up, click "Finish".

11) In the selection of "Install Printer Software", click "Have Disk", and then click "Next".

12) A window of "Install From Disk" pops up. Please according to the operating system environment, such as Windows 2000/XP/Vista/Win7 operating system you should select the path as follows: CD-ROM → "Drivers" → "WIN2000 (XP-Vista-Win7)", click "Open", then click "OK" to return to the window of "Install Printer Software", click "Next".

13) Follow the guide click "Next" gradually till the installation is finished. At this time, printer network driver is installed completely.

2. Upgrade-install printer network driver (setting driver's network port)

If PC has installed the printer's driver, set driver's network port to carry out network printing. The concrete steps are shown below:

1) Click "Start" → "Settings" → "Select Printers".

2) Right click TP830 driver, click "Properties" on the window popping up.

3) A window of "Properties" pops up, click "Ports" and "Add Ports".
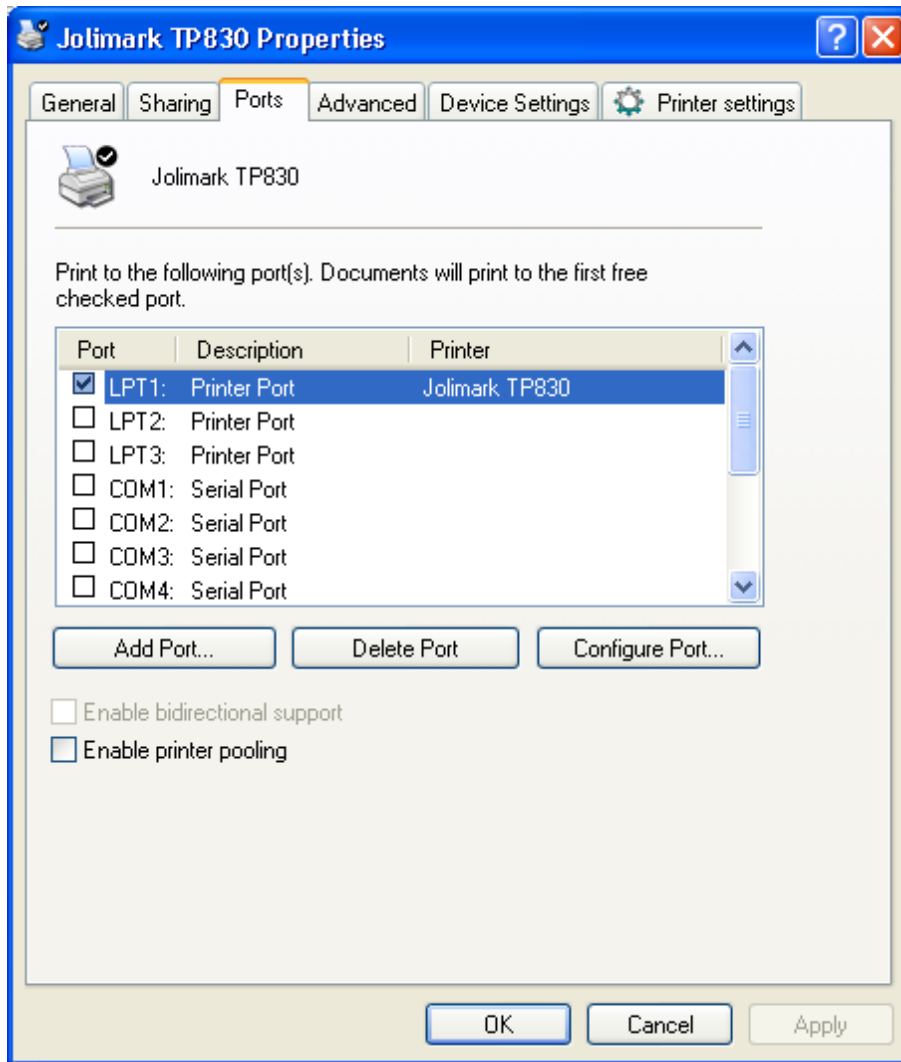
4) A window of "Printer ports" pops up, select "Standard TCP/IP Port", click "New port".
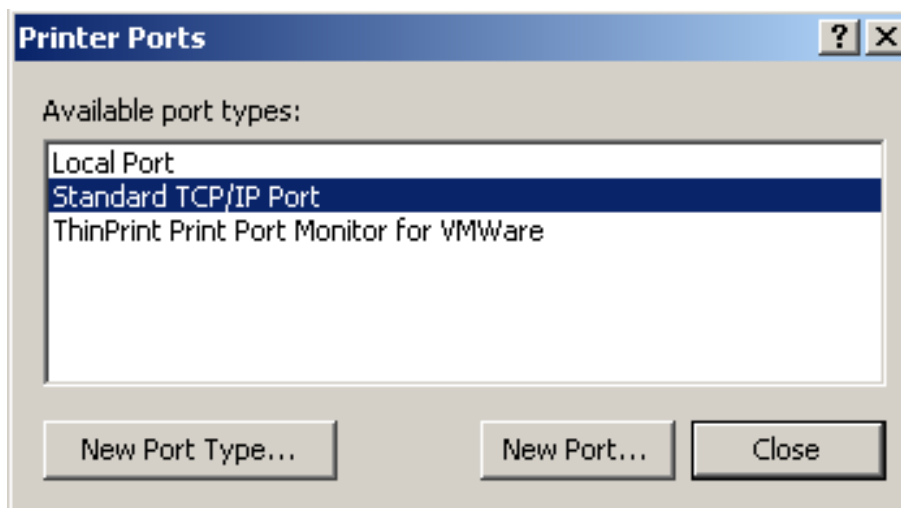
5) A window of "Add Standard TCP/IP Printer Port Wizard" pops up, click "Next".

6) A window of "Add port" pops up, import the IP address reported by the "Setting printer's IP address" in the "Printer name or IP address" column. Take IP address "192.168.0.240" for example. "Port name" is created automatically after finishing filling in IP address. Click "Next".
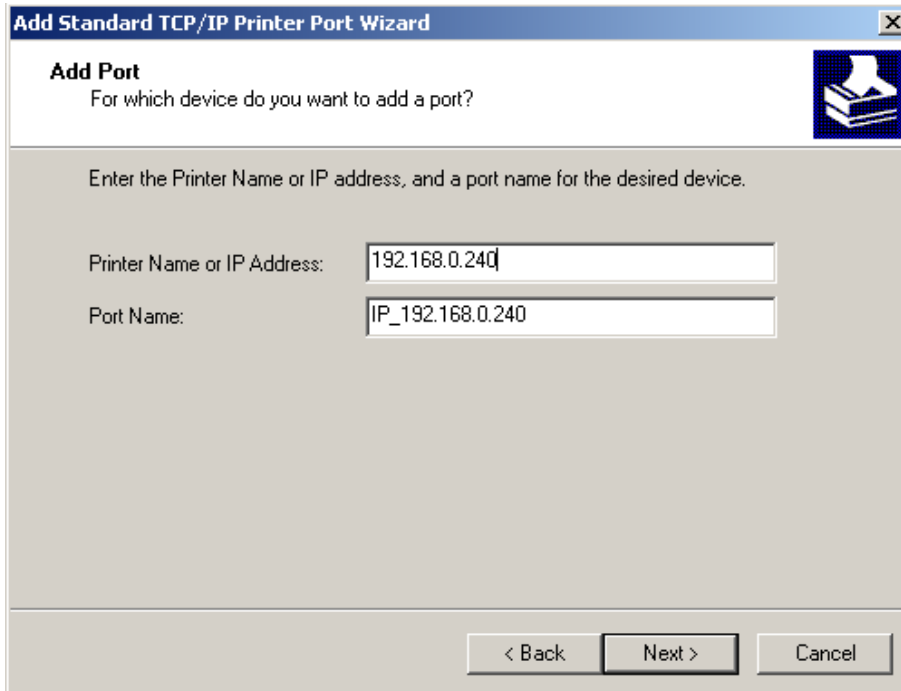
7) A window of "Additional Port Information Required" pops up, select "Custom" in the "Device Type", then click "settings".
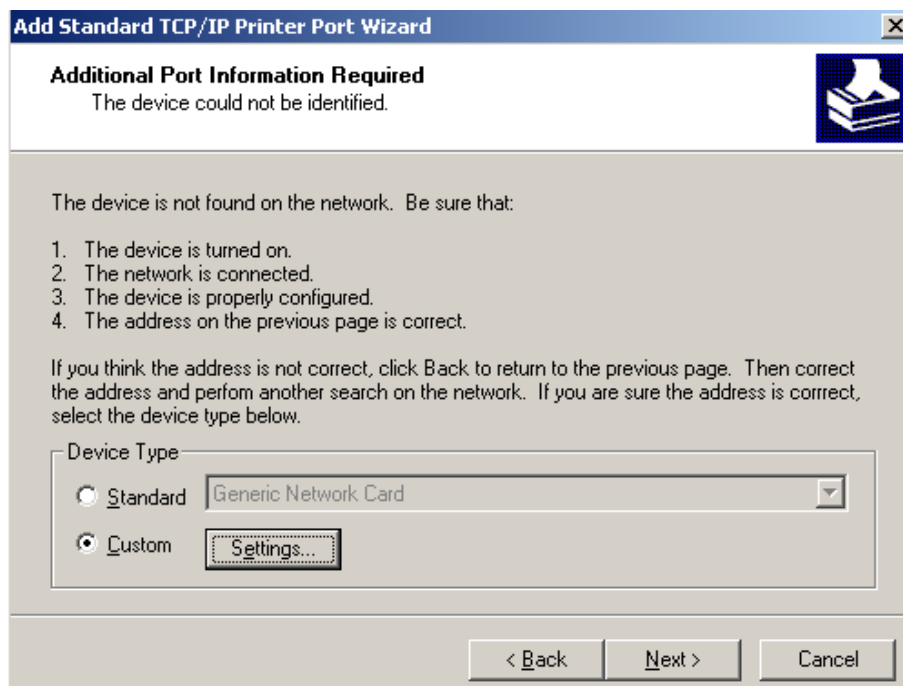
8) A window of "Port Settings" pops up. Affirm that "Port name" and "Printer name or IP address" are correct, "Protocol" is "RAW" and "Port Number" is "9100", click "OK".
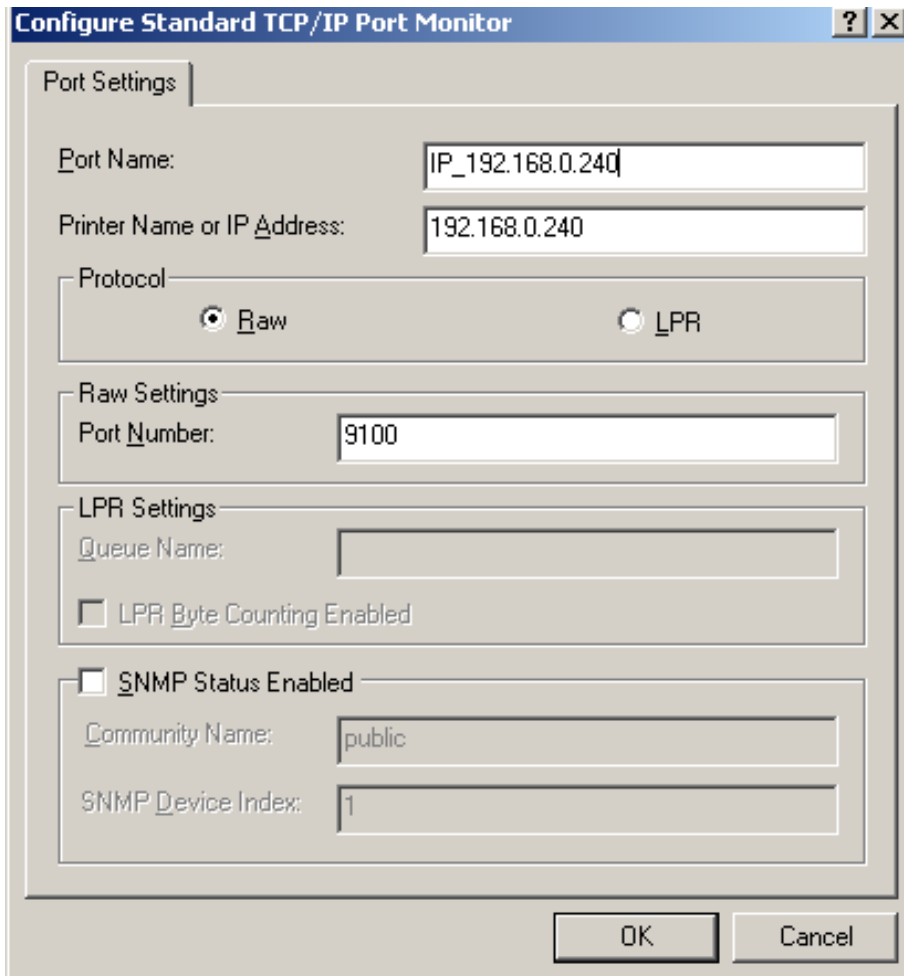
9) Return to "Additional Port Information Required", click "Next".

10) A window of "Completing the Add Standard TCP/IP Printer Port Wizard" pops up, click "Finish".

11) Return to "Printer Ports", click "Close".
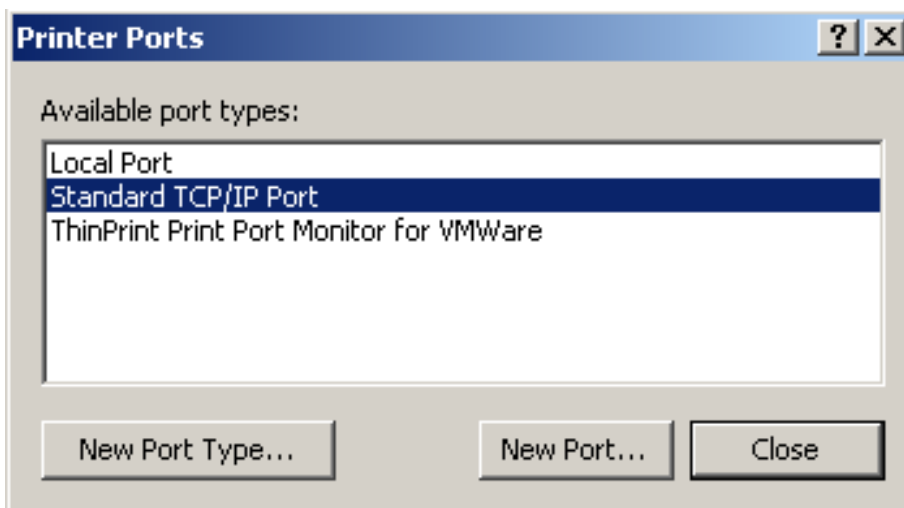
12) Return to "Properties", make sure the network port is selected, click "Apply", and then click "Close". Thus, printer's network port setting is finished.
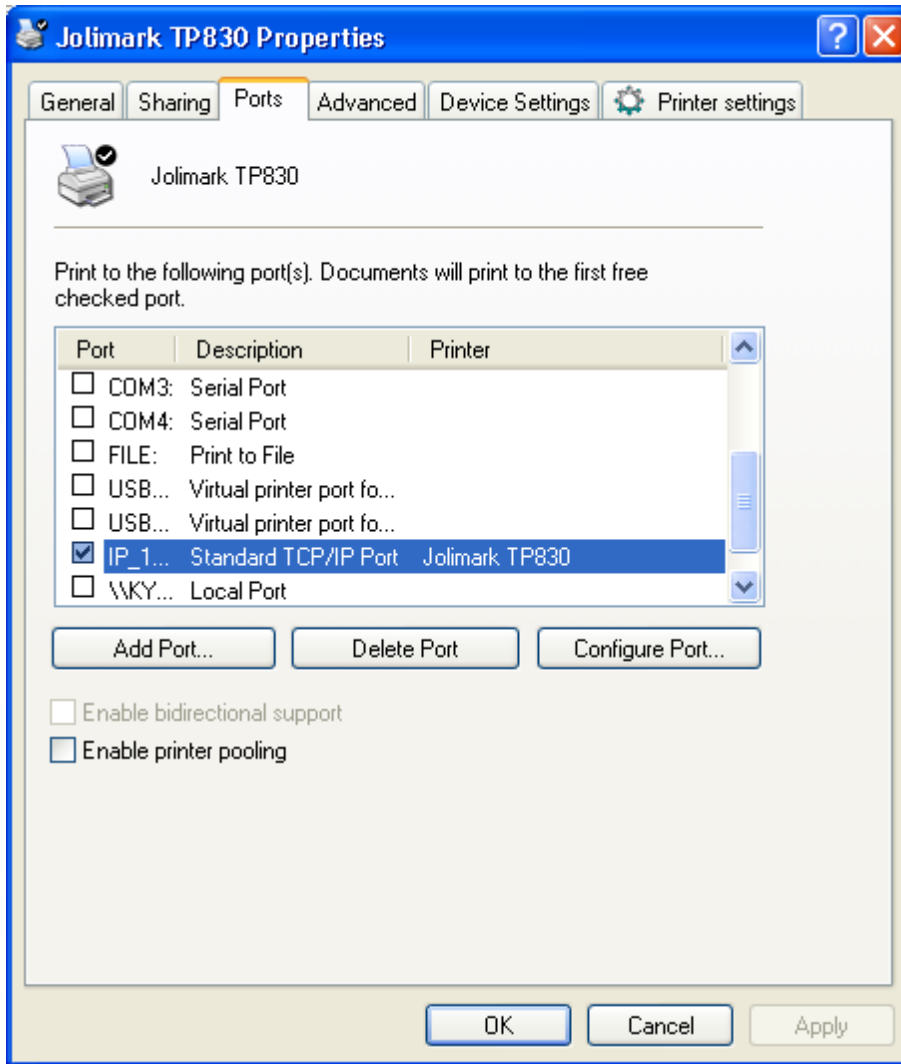
Chapter 3 Control Panel

3.1 Control Panel

There are three LEDs and one key on the control panel. (As Figure 3-1.shown)

Figure 3-1 Control panel

3.1.1 LED

LED	Description
POWER (Green)	Denotes whether the printer's power supply is connected or not. The LED is on when the power is connected.
ERROR (Red)	Denotes printer's status. The LED is on when the malfunction appears.
PAPER OUT (Red)	Denotes printer's paper status. The LED is on when paper out or is about to end.

Note: Refer to "Error message on the control panel" for detailed information about LED malfunctions in this *user's manual*.

3.1.2 Function Key

Key	Description
【FEED】	【FEED】controls paper feeding, you can enable or disable the key function with a command. When enabled, the paper will be fed continuously if you hold on pressing it, or stop if you loosen it.

3.2 Self Test

Self-test printing lets you know if the printer is working properly. If the printer printouts the self-test content normally, it denotes that there is nothing wrong with the printer except for the interface which connects to the computer. Otherwise, the printer should be repaired.

The printer will print out self-test information such as the software version and interface etc.

Hold on pressing the **FEED** key and turn on the power switch while the printer cover is closed, the **ERROR** LED blinks once with two beeps (if beeper is installed in the printer). Loosen the key, then the printer prints out the self-test information.

3.3 Hex Dump Printing

This function allows you to check whether the connection between the printer and the computer or the terminal device works properly or not. The method is that hold on pressing the **FEED** button while turns on the printer, the **ERROR** LED blinks twice with two beeps, then loosen the button. Turn off the printer and restart it to exit this print mode.

3.4 Restoring Factory Default Setting

The function is to clear the settings stored in the printer and to restore the factory default settings for correlative parameters.

The method is that hold on pressing the **FEED** button while turns on the printer, the **ERROR** LED blinks five times with five beeps, then loosen the button, at this time, the function takes effect and turn off the printer.

3.5 Online-aptitude Parameter Settings

TP830 supports the function of parameter settings, which can be set in the PC with the driver installed in.

The concrete setting steps are shown as follows:

1. Make sure that the computer and the printer are connected with the USB cable and both the computer and the printer are turned on, the printer should be in normal working condition as well.

2. Under the operating system of WIN 2000/WIN XP/VISTA/WIN 7, click "Start" → "Settings" → "Printers", and open the window of "Printers".

   Under the operating system of Windows 8, click "Desktop" in the main panel firstly, and then double click "Control panel" after entering the window of "Desktop", click "Hardware and Sound" to find "Devices and printers", at last, open the window of "Devices and printers".

3. Right click "TP830" in the window of "Printers", and then select "Properties".

4. Click "Printer settings" in the "Properties" page and open the window of "Printer settings".
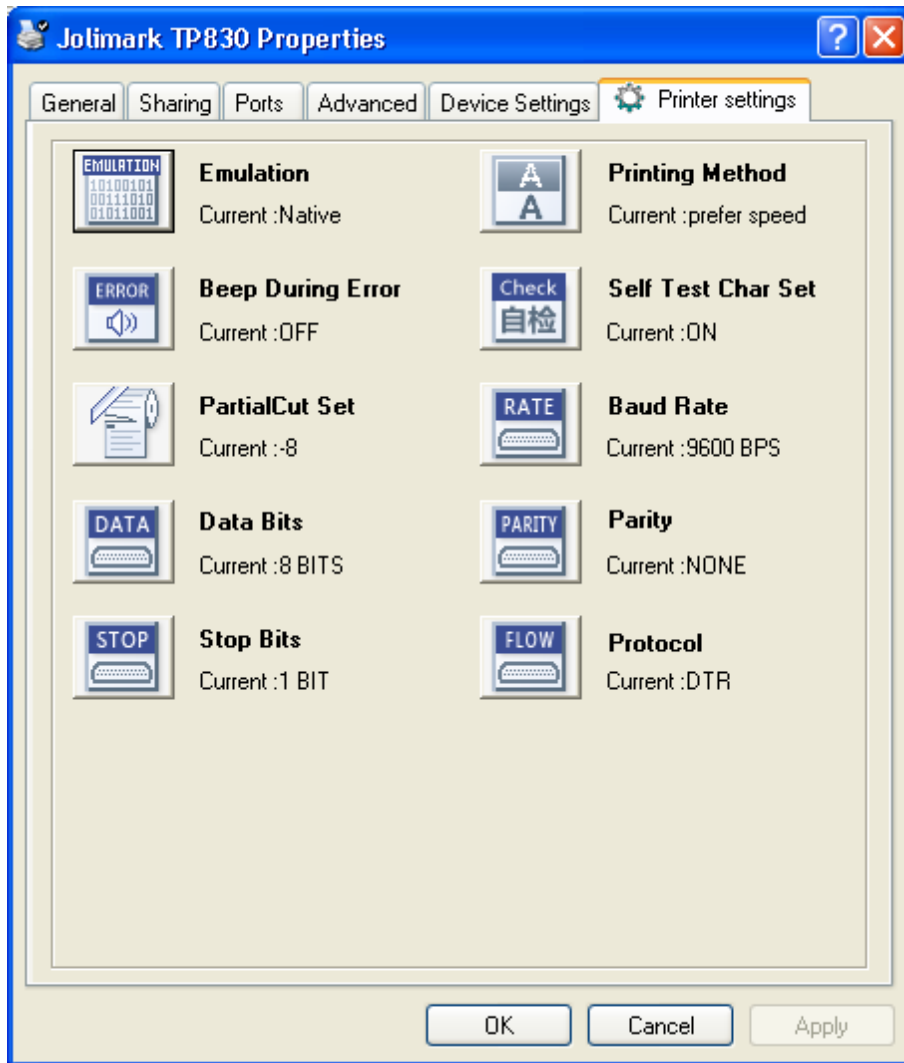
5. In the window of "Parameter settings", each item on the left of the menu setup is the parameter icon. The items on the upper right are the parameters and the items on the bottom right are the current settings. The computer will load the printer's current setting automatically when you open the parameter setting window. The current setting will be blank if the printer is offline or the printer port is set incorrectly. Then you need to set the printer to online mode or set the printer port correctly.

6. To set parameter, first click the parameter icon, then open the parameter setting window. There are Parameter items, Description and control buttons in the window. Select the corresponding parameter and click "Set"; the printer will change the setting at the time it receives the command. Click "Cancel" to return to the upper window and click "Default" can display the default settings of this menu items.
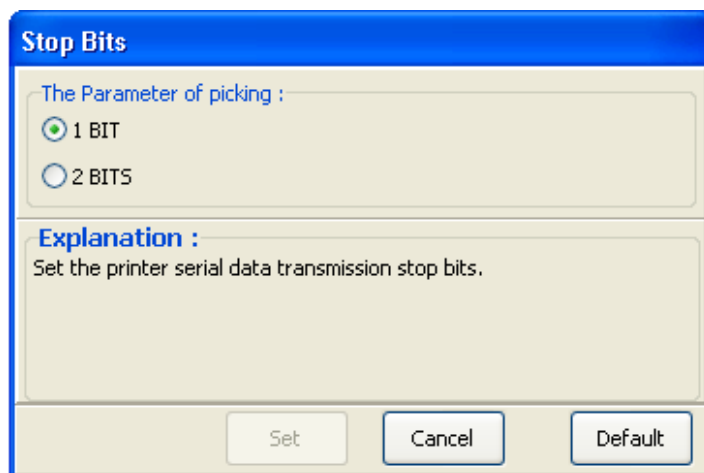
7. If you want to set several paramters, please refer to the previous point and set the parameter one by one.

8. When the setting is finished, click "Set" to exit the window of "Properties".

9. Restart the printer and the new settings take effect.

Chapter 4 Installing the Roll Paper

The printer can use the paper with the width of 79.5±0.5mm, 69.5±0.5mm and 57.5±0.5mm conveniently. How to deal with the paper will be explained in details in this chapter.

4.1 Thermal Paper Installing Steps

> **Caution: 1. Don't touch the thermal print head after printing to avoid getting hurt.**
> **2. Don't pull the paper out directly with your hand.**

1. Press the cover-open button to open the front cover. If you want to use 57.5/69.5mm paper to print, you must install the roll paper guide firstly.
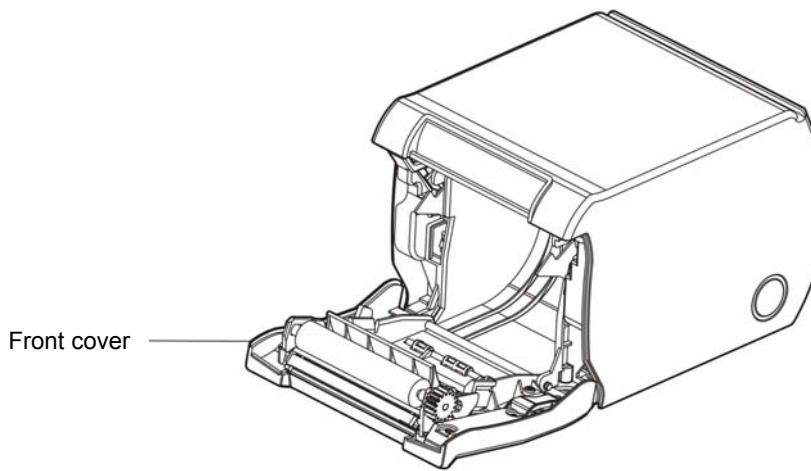
Front cover

Figure 4-1 Opening the front cover

Roll paper guide
(Optional)
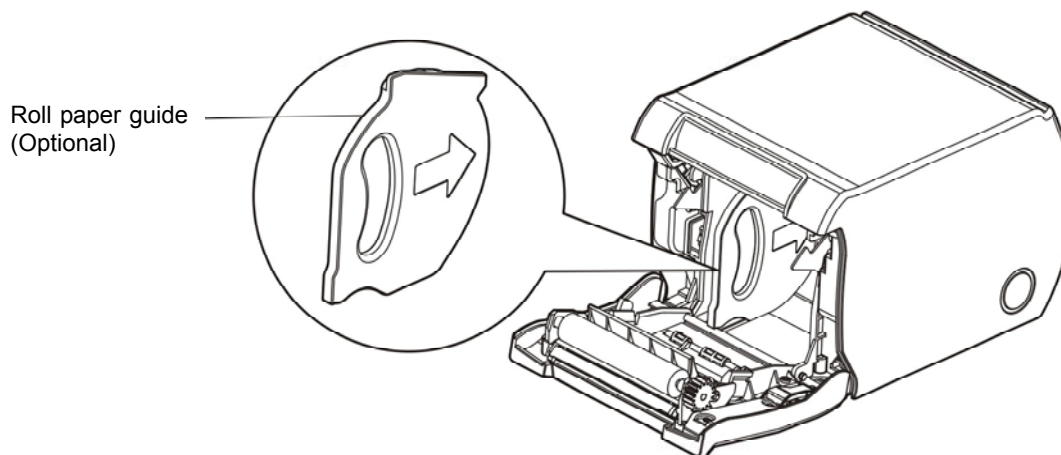
Figure 4-2 Installing the roll paper guide (Optional)

2. Load the roll paper into the paper holder.

Correct   Error
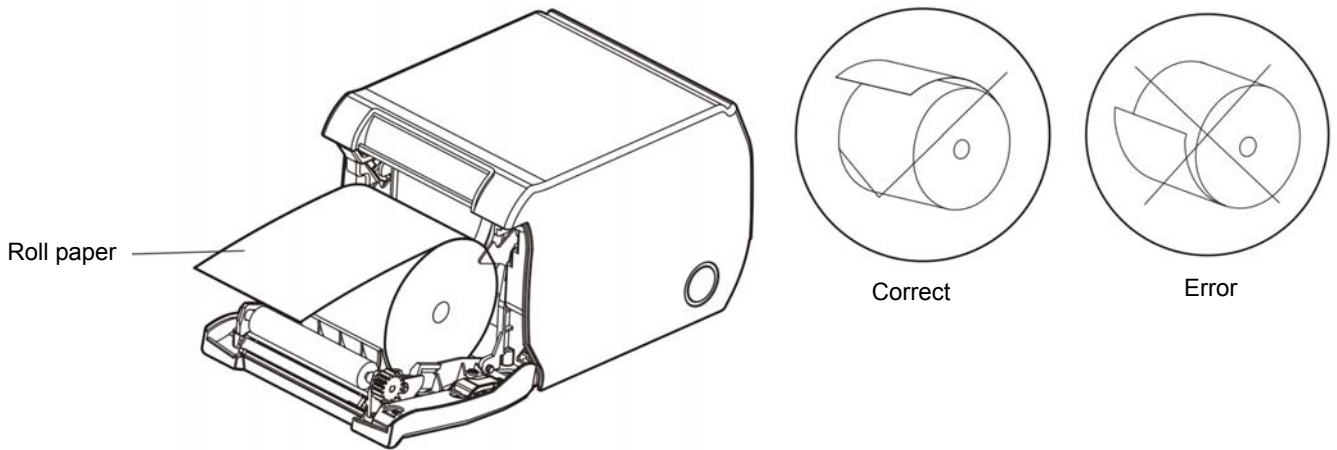
Figure 4-3 The direction of loading paper

Note: **Paper head should be placed down and pulled towards the paper-input slot, but not the opposite.**

3. Pull out a small amount of paper and put it as the figure shown, then close the front cover.
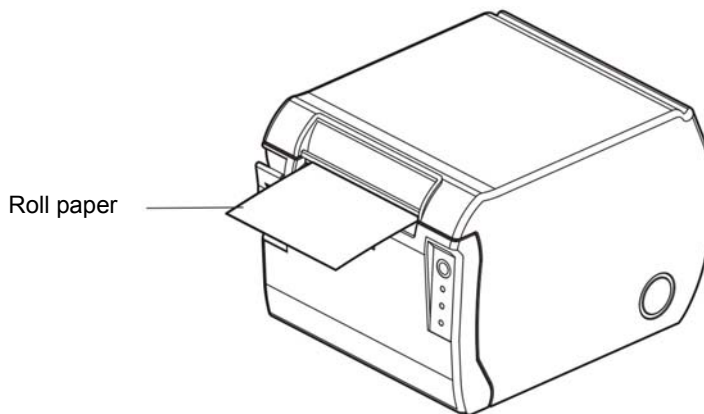
Figure 4-4 Pull out the paper

Note: **After finishing installing the paper, if PAPER OUT LED and ERROR LED are still on, or the printer makes strange noise when feeding paper, please open the cover and re-close it tightly.**

Chapter 5 Specification

5.1 General Specification

Item	Description	
Printing method	Thermal line printing	
Paper feed mode	Unidirectional with friction feed	
Paper eject direction	Eject from front	
Dot density	640 dots/line (203×203 DPI)	
Printing width	Max:80 mm, 640 dots	
Print speed	Max: 300 mm/s	
Paper feed speed	Max: 300 mm/s	
Line space	3.75 mm	
Print head life	150 KM, 1×10^8 pulse	Note: The instructions are all under the laboratorial measurements with specified paper.
Cutter life	1.5 million cut	
Paper thickness	0.065 ~ 0.14 mm	
Paper specification	Thermal roll paper model	TF50KS-E (Japan paper co.ltd)
		AF50KS-E (JUJO THERMAL)
	Width: 79.5 ±0.5 mm; 69.5 ±0.5 mm; 57.5 ±0.5 mm	
	Weight: 53 ~ 80 g/m^2	
	Maximum diameter: Φ83 mm	
	Paper thickness: 0.065 ~ 0.14 mm	
	Note: The inner diameter of paper shaft is Φ12 mm and the outer diameter of paper shaft is Φ18 mm.	
Character set	ASCII: 13 international character sets	
Interface	This printer can be equipped with the following interfaces: Parallel interface: Centronics USB interface: 2.0 Full-Speed USB interface (2.0 Full-Speed) + Serial interface [RS-232C (DB9)] USB interface (2.0 Full-Speed) + Ethernet interface (10/100Base-T) USB interface (2.0 Full-Speed) + Bluetooth (2.0/2.1 + EDR) USB interface (2.0 Full-Speed) + Wi-Fi (802.11b/g/n) Note: 1. Only one of the data interfaces is supplied when leaving the factory. 2. Please take the specific interface as standard.	
Cash drawer interface	RJ-11, 24V(DC)/1A	
Special function	Automatic cutter, Online parameter settings, Online software upgrade	
Input buffer	4 MB	
Control command	ESC/POS Emulation	
	Character printing command: Support ANK characters, user-define characters and enlarge Chinese characters 1~8 times printing, can adjust character line spacing	

	Dot image printing command: Support different densities dot images and downloading image printing, can save NV bitmap without electricity (Can save LOGO for long)		
	Bar code	Linear bar code: UPC-A, UPC-E, EAN-13, EAN-8, CODE39, CODE128, ITF-25, CODABAR	
		Two-dimension code: PDF417, QR CODE	
Power Supply (AC adapter)	IN	Voltage: 100 ~ 240 V(AC)	
		Frequency: 50Hz/60Hz	
	OUT	Voltage: 24 V(DC)	
		Current: 2.5 A	
Environmental conditions	Operating environment	Temperature: 5 ~ 35℃	
		Humidity: 25 ~ 80%RH (No condensation)	
	Storage environment	Temperature: -40 ~ 55℃	
		Humidity: ≤93%RH (40℃, no condensation)	
Weight	Approx.1.45 kg		
Noise	＜38 dB (A) (ISO7779 standard)		
Physical dimensions	142 mm (width) × 195 mm (depth) × 132 mm (height)		
Power consumption	① Operating: 40 W; ② Standby: Approximately 3.5 W **Note: Only when the product is unconnected with outer power supply, can it achieve zero energy consumption state.**		
Code page	76 kinds		
Control panel	1 key and 3 LEDs		
Paper type	Thermal roll paper		

Note: All the technical instructions in this user's manual are the laboratorial measurements which achieved under national standard store and work environment (room temperature), the measuring paper accords with the specification in this user's manual.

Caution: In order to ensure the use life of printer, strictly prohibit printing full line and full black exceeding 2 CM.

5.2 Interface Specification

The printer is configured with one cash drawer interface and one data interface (you can select Parallel interface, USB interface, USB interface + Serial interface, USB interface + Ethernet interface, USB interface + Bluetooth or USB interface + Wi-Fi). Connect the computer with the suitable cable.

5.2.1 Cash Drawer Interface

The cash drawer interface is RJ-11 interface, shown as below.
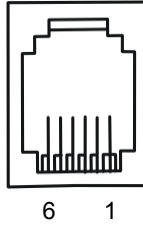
Figure 5-1 Cash drawer interface

Table A-1: Cash drawer connector Pin assignments

Pin Number	Signal	Direction
1	Frame GND	---
2	Cash Drawer drive signal	OUT
3	Cash Drawer Open/closed signal	IN
4	24V (DC)	OUT
5	Cash Drawer drive signal	OUT
6	Cash Drawer Open/closed signal ground	---
Drive current≤24V/1A		

Table A-1: Cash drawer connector Pin assignments

> **Note: Please use the cash drawer meets the specification mentioned above. Manufacturer will not honor warranty when using unauthorized cash drawer.**

5.2.2 Parallel Interface

TP830 printer's parallel interface is compatible with Centronics protocol, supporting BUSY/ACK handshaking protocol and the interface connector is the 36 PIN Centronics type..
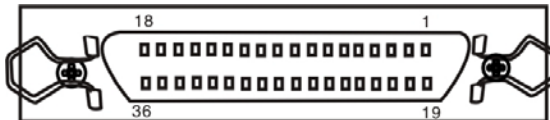
Figure 5-2 Parallel interface

Table A-2 Pin function of parallel interface connector

Table A-2: 36 PIN parallel interface Pin assignments

Pin number	Signal	Direction	Description
1	/STB	IN	Trigger in low level, load the data in rising edge
2	DATA1	IN	
3	DATA2	IN	These signals respectively represent the parallel data
4	DATA3	IN	from the first bit to the eighth. "1" means high level,
5	DATA4	IN	while "0" in logic means low level.
6	DATA5	IN	

7 8 9	DATA6 DATA7 DATA8	IN IN IN	
10	/ACK	OUT	Acknowledge pulse, Low level means that printer is ready to receive data.
11	BUSY	OUT	High level means printer is too busy to receive data.
12	PE	OUT	High level means that paper is out.
13	SEL	OUT	High level with the pull-up resistor
32	/ERR	OUT	Low level means the printer is in error state.
14, 15, 17, 18, 34, 36	NC	---	NC
16, 19 ~ 30, 33	GND	---	GND, "0" level in logic

Table A-2 36 PIN parallel interface Pin assignments

> **Note: ① "IN" means input to the printer, "OUT" means output from the printer.**
> **② The logical level of signal is TTL level.**

Relative pin specification is shown as Figure 5-3.
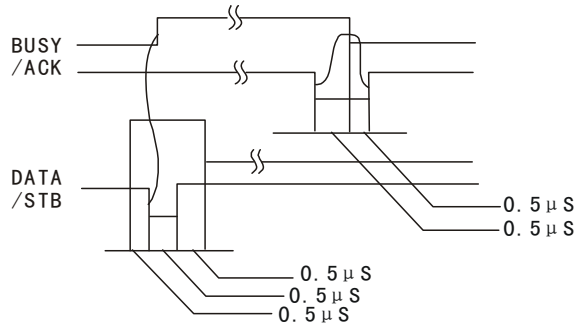
Figure 5-3 Pin specification of parallel interface

5.2.3 USB Interface

USB interface is the 2.0 Full-Speed version.
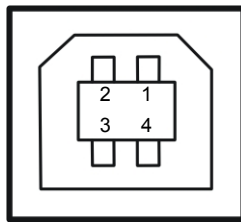
Figure 5-4 USB interface

Contact number	Signal name	Color
1	VBUS	Red
2	D-	White
3	D+	Green
4	GND	Black

5.2.4 Serial Interface

TP830 printer's serial interface is compatible with RS-232C protocol, supporting RTS/CTS and XON/XOFF handshaking protocol. Its connector is a DB-9 type connector and each pin's assignments are shown as Figure 5-5.
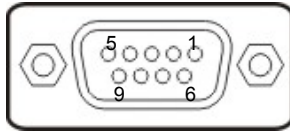
Figure 5-5 Pin number of serial interface

Table A-3: Pin assignments of serial interface

Pin number	Signal	From	Description
2	RXD	Host	Receive data from Host
3	TXD	Printer	Sent control code X-ON/X-OFF and data to the Host
8	CTS	Printer	"MARK" state means printer is too busy to receive data; "SPACE" means printer is ready to receive data.
5	GND	—	Signal GND
4	DTR	Printer	Data terminal is ready.

> **Note: ① "From" means the source where signal comes out.**
> **② The logical level of signal is EIA level.**

The default settings of baud rate and data configuration in serial connecting way are 9600bps, 8 data bits, parity check disabled and 1 stop bit.

TP830 printer's serial interface can be connected with the standard RS-232C connector. When connecting with a PC, the connecting picture is shown as Figure 5-6. While connecting with an IBM PC or a compatible PC, you can connect the cable as shown in Figure 5-7.

The connecton of the serial interface:

Printer 9 PIN connector   Host 9 PIN connector
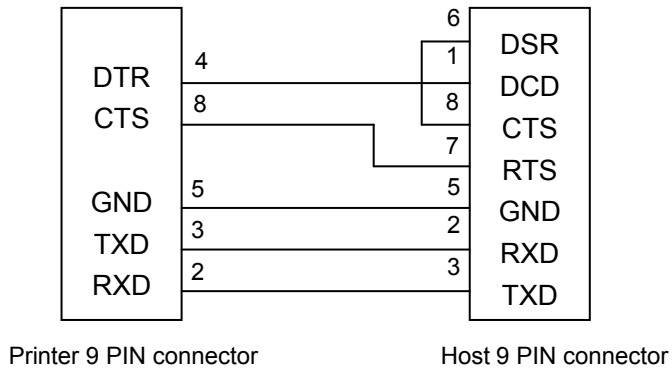
Figure 5-6 The connection figure of host 9 PIN and printer

Printer 9 PIN connector   Host 25 PIN connector
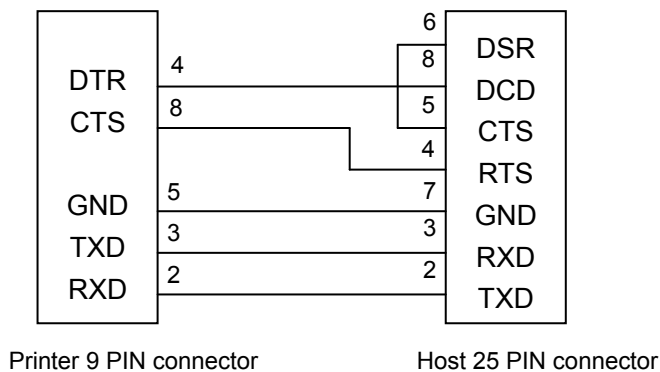
Figure 5-7 The connection figure of host 25 PIN and printer

5.2.5 Ethernet Interface

Ethernet interface of 10/100 Base-T can be connected to 10/100M.
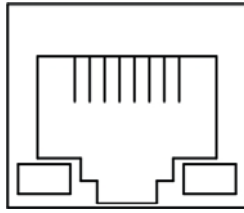
Figure 5-8 Ethernet interface

5.2.6 Power Supply Inlet

The TP830 printer connects with a 24V±10% and 2.5A AC adapter. The power supply inlet is shown as Figure 5-9.
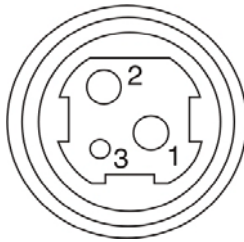
Figure 5-9 Power supply inlet

Chapter 6 Maintenance

6.1 Cleaning the Printer

- **Cleaning periodically and the cleaning tool**

  Periodical cleaning: every 3 months or every 300 working hours once

  Cleaning tool: dry cloth (please use soft cloth to clean metal parts)

- **Cleaning the spare parts**

  Clean the oily spare parts of the printer with dry cloth.

- **Cleaning the paper feed path**

  Wipe off the wasted paper and clean the dirt and dust.

- **Cleaning the photoelectric sensor part**

  As the paper sensor is a correlation photoelectric sensor. You should clean the parts periodically. Clean the shield of the sensor every three months.

> Note: 1. Turn off the printer and pull out the power cord before cleaning.
>
> 2. Print head and the surrounding part may be high temperature after using. Please avoid cleaning it at the moment.
>
> 3. Don't use hard cloth or combustible solvent to clean the printer.

6.2 Error Message on the Control Panel

When the malfunction occurs, the printer will be off-line and give an alarm through LEDs as shown below:

ERROR LED	PAPER OUT LED	Description	Solution
Blink fast	Off	Auto cutter error	Restart the printer and the auto-cutter will return to the home position automatically. If the problem is still unsolved, please contact the Customer Service Center for maintenance.
On	Off	Front cover is open	Close the front cover
On	On	Paper out	Load paper again
Blink	Off	Print head overheated	Work automatically after cooling

6.3 Contact the Technical Service Center

If the printer is malfunctioned and you cannot solve the problem through the operation shown in 6.2, the components of the printer are damaged during using or you need to buy some consumables, please contact the authorized technical service centre.

Chapter 7 Control Commands

7.1 General

The commands TP830 supplied are based on ESC/POS.

The format described is as follows:

Command	Function
Format: ASCII: Indicates the ASCII equivalents	
Decimal: Indicates the decimal equivalents	
Hex: Written in hexadecimal code	

Description: The function and using instruction of that command

Example: Some examples will be listed for easier understanding

7.2 Explanation of terms

BEL			Beep
Format:	ASCII:	BEL	
	Decimal:	7	
	Hex:	O7	

Description:

Beep once in the unit of 50 milliseconds

HT			Horizontal tab
Format:	ASCII:	HT	
	Decimal:	9	
	Hex:	O9	

Description:

Move the print position to the next horizontal tab position

LF			Print and line feed
Format:	ASCII:	LF	
	Decimal:	10	
	Hex:	OA	

Description:

Print the data in the input buffer and feed one line. If the line input buffer is empty, then it only feeds one line without printing.

FF			Print and Feed to the next black mark position
Format:	ASCII:	FF	
	Decimal:	12	
	Hex:	OC	

Description:

Print the data in the print buffer and feeds paper to the next black mark position when black mark takes effect.

DLE EOT n				Status transmission
Format:	ASCII:	DLE	EOT	n
	Decimal:	16	4	n
	Hex:	10	04	n

Description:

Transmit the selected printer status according to the specified parameter n in serial interface, 1≤n≤4; this

command is still valid even in error or off-line status.

n=1: Transmit print status

n=2: Transmit off-line status

n=3: Transmit error status

n=4: Transmit paper sensor status

ESC BEL n1 n2						Beep for appointment
Format:	ASCII:	ESC	BEL	n1	n2	n3
	Decimal:	27	7	n1	n2	n3
	Hex:	1B	07	n1	n2	n3

Description:

N1 specifies the length of beeping time, n2 specifies the length of intermission time and n3 is the beeping times. The unit of n1 and n2 is 100 milliseconds.

ESC SP				Set right-side character space
Format:	ASCII:	ESC	SP	n
	Decimal:	27	32	n
	Hex:	1B	20	n

Description:

Set the right-side space of the character to n*(horizontal or vertical minimal unit) n=0~255.

Horizontal or vertical minimal unit is specified by GS P command.

ESC !				Set character print mode
Format:	ASCII:	ESC	!	n
	Decimal:	27	33	n
	Hex:	1B	21	n

Description:

Select the print mode using n as follows. n=0~255

Bit	Value	Function
0	0	Character A
	1	Character B
1，2	-- -- --	Not defined
3	0	Emphasize mode not selected
	1	Emphasize mode selected
4	0	Double-height not selected
	1	Double-height selected
5	0	Double-width not selected
	1	Double-width selected
6	-- -- --	Not defined
7	0	Underline mode not selected
	1	Underline mode selected

ESC $					Set absolute print position
Format:	ASCII:	ESC	$	nL	nH
	Decimal:	27	36	nL	nH
	Hex:	1B	24	nL	nH

Description:

Set the distance from the beginning of the line to the position at which subsequent characters are to be printed. The distance is (nL+nH*256)* (horizontal or vertical minimal unit). nL, nH=0~255.

Horizontal or vertical minimal unit are specified by GS P command.

ESC　%   Select/cancel user-defined characters set

Format:	ASCII:	ESC	%	n
	Decimal:	27	37	n
	Hex:	1B	25	n

Description:

n=1, Select the user-defined characters; n=0, Select inter characters.

Default: n=0

ESC　&   Define user-defined characters

Format:	ASCII:	ESC	&	y	c1	c2	[x1 d1..d(y*x1)]	[xk d1..d(y*xk)]
	Decimal:	27	38	y	c1	c2	[x1 d1..d(y*x1)]	[xk d1..d(y*xk)]
	Hex:	1B	26	y	c1	c2	[x1 d1..d(y*x1)]	[xk d1..d(y*xk)]

Description:

Define the user-defined Characters from c1 to c2.

$y=3$; $32 \leq c1 \leq c2 \leq 126$;

$0 \leq x \leq 12$; [Character A 12*24], $0 \leq x \leq 9$; [Character B 8*16];

$d=0 \sim 255$; $k=c2-c1+1$;

y specifies the number of bytes in the vertical direction, x specifies the number of dots in the horizontal direction, d specifies the user-defined data.

ESC *   Select bit-image mode

Format:	ASCII:	ESC	*	m	n1	n2	d1..dk
	Decimal:	27	42	m	n1	n2	d1..dk
	Hex:	1B	2A	m	n1	n2	d1..dk

Description:

Select the image mode with m; n1 and n2 specify the number of dots. The image data d1…dk

$m=0, 1, 32, 33$; $n1=0 \sim 255$; $n2=0 \sim 3$; $d=0 \sim 255$.

$k=n1+256 \times n2$ (m=0, 1)

$k= (n1+256 \times n2) \times 3$ (m=32, 33)

The number of dots in horizontal direction is $n1+256 \times n2$.

If the number of dots exceed the max dot number in a line (shown as below), the excess data is ignored.

M is used to select the dot image way.

M	Mode	Vertical		Horizontal	
		Number of dots	Dot density	Dot density	Number of dots (Max)
0	8-dot single-density	8	68 DPI	101 DPI	288
1	8-dot double-density	8	68 DPI	203 DPI	576
32	24-dot single-density	24	203 DPI	101 DPI	288
33	8-dot double-density	24	203 DPI	203 DPI	576

ESC	–				Turn underline mode on/off

Format:	ASCII:	ESC	-	n
	Decimal:	27	45	n
	Hex:	1B	2D	n

Description:

n=0, 48   Turn underline mode off.

n=1, 49   one-dot thick underline mode on

n=2, 50   two-dot thick underline mode on

ESC	2				Set the line space

Format:	ASCII:	ESC	2
	Decimal:	27	50
	Hex:	1B	32

Description:

Set the line space to 3.75mm.

ESC	3			Set the user-defined line space

Format:	ASCII:	ESC	3	n
	Decimal:	27	51	n
	Hex:	1B	33	n

Description:

Set the line space to n* n=0~255.

The line space of TP830 printer is the n* horizontal minimal unit.

The vertical or horizontal minimal unit is specified by GS P Command.

ESC	=				Select peripheral device

Format:	ASCII:	ESC	=	n
	Decimal:	27	61	n
	Hex:	1B	3D	n

Description:

The Last bit of n is 0, printer disable.

The Last bit of n is 1, printer enable.

ESC	?				Cancel user-defined character

Format:	ASCII:	ESC	?	n
	Decimal:	27	63	n
	Hex:	1B	3F	n

Description:

Cancel the character specified by n. n=32~126.

ESC	@			Initialize the printer

Format:	ASCII:	ESC	@
	Decimal:	27	64
	Hex:	1B	40

Description:

Initialize the printer to the state when the printer was turned on.

ESC D					Set horizontal tab position

Format:	ASCII:	ESC	D	n1……nk NUL
	Decimal:	27	68	n1……nk NUL
	Hex:	1B	44	n1……nk NUL

Description:

Set the horizontal tab position to the column specified by nk from the beginning of the line.

n=0~255; k=0~32;

ESC E				Turn emphasized mode on/off

Format:	ASCII:	ESC	E	n
	Decimal:	27	69	n
	Hex:	1B	45	n

Description:

When the last bit of the n is 0, the emphasized mode is turned off.

When the last bit of the n is 1, the emphasized mode is turned on.

ESC J				Print and feed paper

Format:	ASCII:	ESC	J	n
	Decimal:	27	74	n
	Hex:	1B	4A	n

Description:

Print the data in input buffer and feed the paper n* vertical minimal unit inches.

Horizontal or vertical minimal unit is specified by GS P command n=0~255

ESC M				Select character font

Format:	ASCI:	ESC	M	n
	Decimal:	27	77	n
	Hex:	1B	4D	n

Description:

n=0, 48; Character A (12*24) is selected;

n=1, 49; Character B (8*16) is selected.

ESC R				Select the international character set

Format:	ASCII:	ESC	R	n
	Decimal:	27	82	n
	Hex:	1B	52	n

Description:

Select the international character set according to the value of n as shown below.

0: USA	1: France	2: Germany	3: U.K	4: Denmark I	5: Sweden	6: Italy
7: Spain I	8: Japan	9: Norway	10: Denmark II	11: Spain II	12: Latin America	13: Korea

ESC V				Turn 90°clockwise rotation mode on/off

Format:	ASCII:	ESC	V	n
	Decimal:	27	86	n
	Hex:	1B	56	n

Description:

n=0, 48 Turn off 90°clockwise rotation mode.

n=1, 49 Turn on 90°clockwise rotation mode.

No underline effect in 90°clockwise rotation characters in underline mode.

ESC \   Set relative print position

Format:	ASCII:	ESC	\	nL	nH
	Decimal:	27	92	nL	nH
	Hex:	1B	5C	nL	nH

Description:

Set the print position at (nL+nH*256)* (horizontal or vertical minimal unit) inches from current position;

nL, nH=0~255. Horizontal or vertical minimal unit is specified by GS P command.

ESC a n   Select justification

Format:	ASCII:	ESC	a	n
	Decimal:	27	97	n
	Hex:	1B	61	n

Description:

n=0, 48: Left justification; n=1, 49: centering; n=2, 50; right justification.

ESC c 3   Select paper out sensor

Format:	ASCII:	ESC	c	3	n
	Decimal:	27	99	51	n
	Hex:	1B	63	33	n

Description:

n=xxxxxxx1B, xxxxxx1xB, xxxxxx11B, Paper near end sensor takes effect.

n=xxxxx1xxB, xxxx1xxxB, xxxx11xxB, Paper out sensor takes effect.

ESC c 4   Select paper sensor to stop printing

Format:	ASCII:	ESC	c	4	n
	Decimal:	27	99	52	n
	Hex:	1B	63	34	n

Description:

n=xxxxxxx1B, xxxxxx1xB, xxxxxx11B; Paper near end, printer stops printing.

n=xxxxx1xxB, xxxx1xxxB, xxxx11xxB; Paper out, printer stops printing.

ESC c 5   Enable/disable panel key

Format:	ASCII:	ESC	c	5	n
	Decimal:	27	99	53	n
	Hex:	1B	63	35	n

Description:

When the last bit of n is 0, enable **FEED** key to take effect.

When the last bit of n is 1, disable **FEED** key to take effect.

ESC d   Print and feed n lines

Format:	ASCII:	ESC	c	n
	Decimal:	27	100	n
	Hex:	1B	64	n

Description:

Print the data in input buffer and feed n lines, n= 0~255.

ESC p m t1 t2	Generate pulse

Format:	ASCII:	ESC	p	m	t1	t2
	Decimal:	27	112	m	t1	t2
	Hex:	1B	70	m	t1	t2

Description:

Printer output pulse, whose width specified by t1 and t2. On time is t1*2ms, low ist2*2ms.

m=0, 48, 1, 49.

ESC t	Select code page

Format:	ASCII:	ESC	t	n
	Decimal:	27	116	n
	Hex:	1B	74	n

Description:

n=0 PC437	n=1 PC932(katakana)	n=2 PC850	n=3 PC860(Portuguese)
n=4 PC863(Canadian)	n=5 PC865(Nordic)	n=6 (West Europe)	n=7 (Greek)
n=8 (Hebrew)	n=9 (East Europe)	n=10 Iran	n=15 IranII
n=16 PC1252	n=17 PC866	n=18 PC852	n=19 PC858
n=20 Thai(KU42)	n=21 Thai(TIS11)	n=22 PC1256(Arabic)	n=23 (PT151,1251)
n=24 PC747	n=25 (WPC1257)	n=26 Thai(TIS18)	n=27 Vietnam
n=28 PC864(Arabic)	n=29 PC737(Greek)	n=30 (Uigur)	n=31 (Hebrew)
n=32 PC1253(Greek)	n=33 PC775(Baltic)	n=50 PC437(Std.Europe)	n=51 (Katakana)
n=52 PC437(Std.Europe)	n=53 PC858(Multilingual)	n=54 PC852(Latin-2)	n=55 PC860(Portuguese)
n=56 PC861(Icelandic)	n=57 PC863(Canadian)	n=58 PC865(Nordic)	n=59 PC866(Russian)
n=60 PC855(Cyrillic)	n=61 PC857(Turkish)	n=62 Hebrew	n=63 PC864(Arabic)
n=64 PC737(Greek)	n=65 PC851(Greek)	n=66 PC869(Greek)	n=67 PC928(Greek)
n=68 PC772(Lithuanian)	n=69 PC774(Lithuanian)	n=70 Thai	n=71 WPC1252(Latin-1)
n=72 WPC1250(Latin-2)	n=73 WPC1251(Cyrillic)	n=74 PC3840(Russian)	n=75 PC3841(Gost)
n=76 PC3843(Polish)	n=77 PC3844(CS2)	n=78 PC3845(Hungarian)	n=79 PC1254(Turkish)
n=80 PC3847(Brazil-ABNT)	n=81 PC3847(Brazil-ABNT)	n=82 PC1001(Arabic)	n=83 PC2001(Lithuan-KBL)
n=84 PC3001(Estonian-1)	n=85 PC3002(Estonian-2)	n=86 PC3011(Latvian-1)	n=87 PC3012(Latvian-2)
n=88 PC3021(Bulgarian)	n=89 PC3041(Maltese)	n=100 PC3846(Turkish)	n=101 WPC1255(Israel)
n=102 PC857(Tukey)	n=103 PC855(Bulgarian)	n=104 (Latvian)	n=255 Thai

ESC {	Turn on/off upside-down printing mode

Format:	ASCII:	ESC	{	n
	Decimal:	27	123	n
	Hex:	1B	7B	n

Description:

When the last bit of n is 0, upside-down printing mode is turn off.

When the last bit of n is 1, upside-down printing mode is turn on.

FS !	Select Chinese character mode

Format:	ASCII:	FS	!	n
	Decimal:	28	33	n
	Hex:	1C	21	n

Description:

Bit	Off/On	Hex	Decimal	Function
0	-	-	-	Not defined
1	-	-	-	Not defined
2	Off	00	0	Double-width is not selected

		On	04	4	Double-width is selected
3	Off	00	0	Double-height is not selected
		On	08	8	Double-height is selected
4		-	-	-	Not defined
5		-	-	-	Not defined
6		-	-	-	Not defined
7	Off	00	0	Underline is not selected
		On	80	128	Underline is selected

FS   &   Set Chinese mode

Format: ASCI: FS   &
              Decimal: 28   38
                  Hex: 1C   26

Description:

Enter the Chinese mode.

FS   -   Turn Chinese character underlined mode on /off

Format: ASCII: FS   -   n
              Decimal: 28   45   n
                  Hex: 1C   2D   n

Description:

n=0, 48 turn off the Chinese character underline mode.

n=1, 49 turn one dot the thick underline of Chinese character mode on.

n=2, 50 turn two dots the thick underline of Chinese character mode on.

Underline mode is ignored if 90°clockwise rotation is turned on at the same time.

FS   .   Cancel Chinese mode

Format: ASCII: FS   .
              Decimal: 28   46
                  Hex: 1C   2E

Description:

In this mode No Chinese character is printed.

FS   2   User-defined Chinese characters

Format: ASCII: FS   2   c1   c2   d1……d72
              Decimal: 28   50   c1   c2   d1……d72
                  Hex: 1C   32   c1   c2   d1……d72

Description:

c1=fe; a1≤c2≤fe; 0≤d≤255; c1 specified the first byte of the character code, c2 specified the second byte of the character code. Data dk defined from up to down 3 bytes one column and from left to right 24 columns.

FS   S   Set Chinese character space

Format: ASCII: FS   S   n1   n2
              Decimal: 28   83   n1   n2
                  Hex: 1C   53   n1   n2

Description:

0≤n1≤255, 0≤n2≤255 Set the character left-side space to n1* horizontal motion unit, right-side space to n2* horizontal motion unit.

FS W				Turn quadruple-size mode on/off for Chinese character
Format:	ASCII:	FS	W	n
	Decimal:	28	87	n
	Hex:	1C	57	n

Description:

0≤n≤255

When the last bit of n is 0, turn off the quadruple-size mode.

When the last bit of n is 1, turn on the quadruple-size mode.

FS p n m					Print NV bit image
Format:	ASCII:	FS	p	n	m
	Decimal:	28	112	n	m
	Hex:	1C	70	n	m

Description:

1≤n≤64   m=0, 1, 2, 3, 48, 49, 50, 51 Prints the NV bit image n using the mode specified by m.

m= 0, 48 Normal mode; m=1, 49 Double width mode;

m= 2, 50 Double height mode; m=3, 51 Quadruple mode.

FS q n						Define the NV bit image
Format:	ASCII:	FS	q	n	[xL xH yL yH d1 d2 …dk] 1…	[xL xH yL yH d1 d2 …dk
	Decimal:	28	113	n	[xL xH yL yH d1 d2 …dk] 1…	[xL xH yL yH d1 d2 …dk]
	Hex:	1C	70	n	[xL xH yL yH d1 d2 …dk] 1…	[xL xH yL yH d1 d2 …dk]

Description:

1≤n≤64; xH=0; 0≤xL≤72; yH=0; 0≤yL≤30

k= (xL+xH*256)*(yL+yH*256)*8

The command can define 64 bit images at the same time. All NV images preciously defined are canceled when new bit image defined. When this command processing, ERROR LED will be on for a period of time, then the PAPER OUT LED and ERROR LED will be both on and the printer resets. No other data or commands follow this command, or it may cause data lost or printing mess. The NV image data will be stored in the printer even which is powered off, and will not lose till this command reprocessed. Excessive use of this function may cause the NV memory damaged. As a guideline, the command should not be processed more than 10 times per day. The whole command including the bit image data should be less than 128K bytes (1M bits).

xL,xL specifies bytes in the horizontal direction for the NV bit image you defined and the limited width is 72 bytes and 576 dots.

yL,yH specifies bytes in the vertical direction for the NV bit image you defined with the height of 30 bytes and 240 dots..

d specifies the definition data for the NV bit image(column format).

GS BEL n1 n2						Beep for appointment
Format:	ASCII:	GS	BEL	n1	n2	n3
	Decimal:	29	7	n1	n2	n3
	Hex:	1D	07	n1	n2	n3

Description:

N1 specifies the beeping times, n2 specifies the length of beeping time and n3 specifies the length of intermission time. The unit of n1, n2 is 0.1 second.

GS !   Select Character size

Format:	ASCII:	GS	!	n
	Decimal:	29	33	n
	Hex:	1D	21	n

Description:

n=0~7, 16~23, 32~39, 48~55, 64~71, 80~87, 96~103,112~119;

Selects the character height (vertical number of times normal font size) using bits0 to bits3 and selects the character width (horizontal number of times normal size) using bits4 to bits7.

GS *   Define downloaded bit image

Format:	ASCII:	GS	*	n1	n2	d1…dk
	Decimal:	29	42	n1	n2	d1…dk
	Hex:	1D	2A	n1	n2	d1…dk

Description:

Define the downloaded bit image in the downloaded graphic area.

n1=1~48. n2=1~255. n1×n2<1200, k=n1×n2×8.

d specifies the bit image data. n1×8 dots in the horizontal direction and n2×8 dots in the vertical direction.

The downloaded bit image is available till printer is powered off or reset.

The format of bit image is shown below.
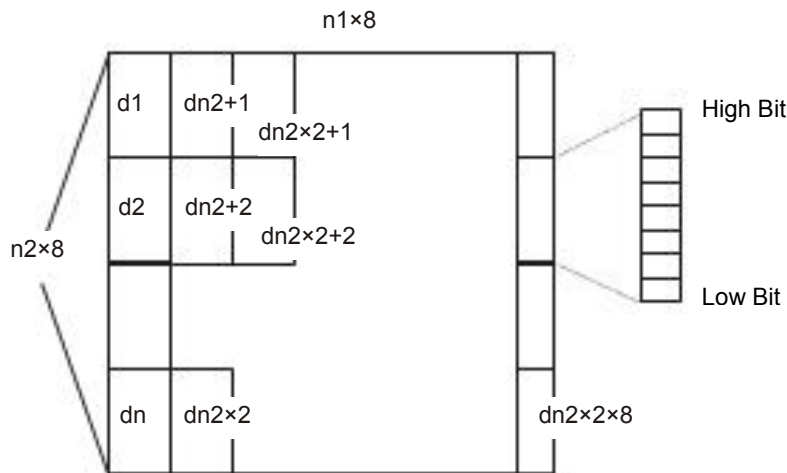
GS /   Print downloaded bit image

Format:	ASCII:	GS	/	n
	Decimal:	29	47	n
	Hex:	1D	2F	n

Description:

Print the downloaded bit image using the mode specified by n. n=0, 1, 2, 3, 48, 49, 50, 51.

The bit image defined by GS * command. n specifies the mode as follows:

N	Mode	Density in vertical	Density in horizontal
0, 48	Normal	203 DPI	203 DPI
1, 49	Double-width	203 DPI	101 DPI
2, 50	Double-height	101 DPI	203 DPI
3, 51	Quadruple	101 DPI	101 DPI

GS   B   Turn white/black reverse mode on/off

Format:	ASCII:	GS	B	n
	Decimal:	29	66	n
	Hex:	1D	42	n

Description:

When the last bit of n is 0, turn the white/black reverse mode off.

When the last bit of n is 1, turn the white/black reverse mode on.

GS   H   Select print position of HRI character

Format:	ASCII:	GS	H	n
	Decimal:	29	72	n
	Hex:	1D	48	n

Description:

Select the print position of Human Readable Interpretation (HRI) when printing a bar code, using n as follows: n=0, 48: NO HRI printing. n=1, 49: above the barcode. n=2, 50: below the barcode. n=3, 51: Both above and below.

GS   L   Set left margin

Format:	ASCII:	GS	L	nL	nH
	Decimal:	29	76	nL	nH
	Hex:	1D	4C	nL	nH

Description:

Set the left margin to (nL+nH*256)*(horizontal or vertical minimal unit); nL, nH=0~255.

Horizontal or vertical minimal unit is specified by GS P command.

GS   P   Set horizontal or vertical minimal unit

Format:	ASCII:	GS	P	x	y
	Decimal:	29	80	x	y
	Hex:	1D	50	x	y

Description:

Set the horizontal and vertical unit to 1/x inch and 1/y inch.

When x or y=0, the default horizontal or vertical setting 1/203 inches is selected.

GS   V   Select cut mode and cut paper

Format:	ASCII:	GS	V	m	(n)
	Decimal:	29	86	m	(n)
	Hex:	1D	56	m	(n)

Description:

(The command can only realize full cut or partial cut according to the cutter type.)

m=0, 48; No n parameter, Executes a full cut.

m=1, 49; No n parameter, Executes a partial cut (with one point left in the middle).

m=6, n=0~255; Feed paper to n*(horizontal or vertical minimal unit) and executes a full cut.

m=66, n=0~255; Feed paper to n*(horizontal or vertical minimal unit) and executes a partial cut.

GS   W   Set print area width

Format:	ASCII:	GS	W	nL	nH
	Decimal:	29	87	nL	nH
	Hex:	1D	57	nL	nH

Description:

Set the print area width to (nL+nH*256)* (horizontal or vertical minimal unit), nL, nH=0~255.

Horizontal or vertical minimal units are specified by GS P.

| GS   f | | | | | | | Select the HRI character font |

Format: ASCII: GS   h   n
         Decimal: 29   102   n
         Hex: 1D   66   n

Description:

Select the HRI character when printing a bar code, using n as follows:

n=0, 48; Selects character A (12*24)

n=1, 49; Selects character B (8*16)

| GS   h | | | | | | | Set bar code height |

Format: ASCII: GS   h   n
         Decimal: 29   104   n
         Hex: 1D   68   n

Description:

Set the height of the bar code to n dots.

n=0~255.

| GS   k | | | | | | | Print bar code |

Format: ASCII: GS   k   m   d1..dk   NUL
         Decimal: 29   107   m   d1..dk   0
         Hex: 1D   6B   m   d1..dk   00

    *   ASCII: GS   k   m   n   d1..dn
         Decimal: 29   107   m   n   d1..dn
         Hex: 1D   6B   m   n   d1..dn

*when m>64

m	Bar code type	Amount of data	The range of k	Character	Character code
0	UPC-A	Fixed	11≤k≤12	0 9	48≤d≤57
1	UPC-E	Fixed	11≤k≤12	0 9	48≤d≤57
2	EAN13	Fixed	12≤k≤13	0 9	48≤d≤57
3	EAN8	Fixed	7≤k≤8	0 9	48≤d≤57
4	CODE39	Can be changed	1≤k	0 9,A Z, SP, $, %, +, -, ., / * (start, stop)	48≤d≤57, 65≤d≤90, d=32, 36, 37, 43, 45, 46, 47. d=42 (start, stop)
5	ITF	Can be changed	1≤K (even)	0 9	48≤d≤57
6	CODABAR	Can be changed	1 ≤ k	0 9, A D, $, +, -, ., /, :	48≤d≤57, 65≤d≤68, 36, 43, 45, 46, 47, 58
*65	UPC-A	Fixed	11≤n≤12	0 9	48≤d≤57
*66	UPC-E	Fixed	11≤n≤12	0 9	48≤d≤57
*67	EAN13	Fixed	12≤n≤13	0 9	48≤d≤57
*68	EAN8	Fixed	7≤n≤8	0 9	48≤d≤57

*69	CODE39	Can be changed	1≤n<255	0 9,A Z, SP, $, %, +, -, ., / * (start, stop)	48≤d≤57, 65≤d≤90 d=32, 36, 37, 43, 45, 46, 47. d=42 (start, stop)
*70	ITF	Can be changed	1≤n≤255 (even)	0 9	48≤d≤57
*71	CODABAR	Can be changed	1≤n≤255	0 9, A D, $, +, -,., /, :	48≤d≤57, 65≤d≤68, 36, 43, 45, 46, 47, 58
*73	CODE128	Can be changed	2≤n<255	NUL SP (7FH)	0≤d≤127

GS v 0   Print raster bit image

Format: ASCII: GS   v   0   m   xL   xH   yL   yH   d1…dk
            Decimal: 29   118   48   m   xL   xH   yL   yH   d1…dk
            Hex: 1D   76   30   m   xL   xH   yL   yH   d1…dk

Description:

Print a raster bit image using the mode specified by m as follows.

m=0, 48: normal; m=1, 49: double width; m=2, 50: double height; m=3, 51: quadruple.

XL, xH, yL, yH=0~255.

XL, xH specifies (xL+xH*256) bytes in horizontal direction for the bit image.

YL, yH specifies (yL+yH*256) dots in vertical direction for the image.

k= (xL+xH*256)*(yL+yH*256) indicates the number of bit image data.

GS w   Set barcode width

Format: ASCII: GS   w   n
            Decimal: 29   119   n
            Hex: 1D   77   n

Description:

Set the horizontal size of barcode.

2≤n≤6.

Appendix Command List

Here lists the commands supported in the printer in alphabetical order.

Control command	Description
BEL	Beep once
HT	Horizontal tab
LF	Print and line feed
FF	Print and Feed paper to the next black mark position
DLE EOT	Real-time status transmission
ESC BEL	Beep for appointment
ESC SP	Set right-side character space
ESC !	Set print mode
ESC $	Set absolute print position
ESC %	Select/cancel user-defined character set
ESC &	Define user-defined characters
ESC *	Select bit-image mode
ESC –	Turn underline mode on/off
ESC 2	Select default line space
ESC 3	Set line space
ESC =	Select peripheral device
ESC ?	Cancel user-defined character
ESC @	Initialize printer
ESC D	Set horizontal tab position
ESC E	Turn emphasized mode on/off
ESC J	Print and feed paper
ESC M	Select character font
ESC R	Select the international character set
ESC V	Turn 90°clockwise rotation mode on/off
ESC \	Set relative print position
ESC a	Select justification
ESC c 3	Select paper end sensor
ESC c 4	Select paper sensor to stop printing
ESC c 5	Enable/disable panel key
ESC d	Print and feed n lines
ESC p	Generate pulse
ESC t	Select code page
ESC {	Turn on/off upside-down printing mode
FS !	Select Chinese character mode
FS &	Set Chinese mode
FS -	Turn Chinese character underline on /off

FS .	Cancel Chinese mode
FS 2	User-defined Chinese characters
FS S	Set Chinese character space
FS W	Turn quadruple-size mode on/off for Chinese character
FS p n m	Print NV bit image
FS q n	Define the NV bit image
GS BEL	Beep for appointment
GS !	Select Character size
GS *	Define downloaded bit image
GS /	Print downloaded bit image
GS B	Turn white/black reverse mode on/off
GS H	Select print position of HRI character
GS L	Set left margin
GS P	Set horizontal or vertical minimal unit
GS V	Select cut mode and cut paper
GS W	Set print area width
GS f	Select the HRI character font
GS h	Set bar code height
GS k	Print bar code
GS v 0	Print raster bit image
GS w	Set bar code width