User's Manual

TP820 Series

Thermal Receipt Printer

Declare

About Trademark

Corporation names and product names are the registered trademarks or commodity names of the corporation.

＊ **EPSON is a registered trademark of Seiko Epson Corporation.**

＊ **ESC/ POS is a registered trademark of Seiko Epson Corporation.**

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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 misoperations.

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. Do not place this product on an unstable cart, stand or table. The product may fall, causing serious damage to you or the product.

7. 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.

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

9. 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 damage.

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

11. Do not use in locations subject to high humidity or dust levels. Excessive humidity and dust may cause equipment damage or fire.

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. If water or other liquid spills into this equipment, unplug the power cord immediately, and then contact your dealer or a service center for advice.

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

16. This device complies with Part 15 of the FCC Rules.

    Operation is subject to the following two conditions:

    (1) This device may not cause harmful interference.

    (2) This device must accept any interference received, including interference that may cause undesired operation.

    The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

17. Unplug this product from the wall outlet and refer 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 spilt 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.

Warning: In order to ensure the printer life, strictly prohibit printing full line full black exceeding 2 CM.

Notice: 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.

Table of Contents

Chapter 1 Overview

1.1 Features

TP820 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, operated easily 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 TP820 series products which are high-speed thermal mini-printers.

According to different data ports (interfaces), TP820 series can be classified into different models: TP820, TP820U, TP820US, TP820UE, TP820UB and TP820UW.

TP820 series printer is equipped with an auto cutter which has two options for the consumer to select: partial cutter can only cut the paper with one point left while full cutter cuts the paper fully.

Interface:

TP820 series products are configured with a cash drawer interface, you can choose one of the following data interfaces when purchasing this product:

Model	Interface
TP820	Parallel interface
TP820U	USB interface
TP820US	USB interface + Serial interface
TP820UE	USB interface + Ethernet interface
TP820UB	USB interface + Bluetooth
TP820UW	USB interface + Wi-Fi

Note: Please contact the local dealer to change the interface with added expense if needed.

1.3 Main Parts of the Printer
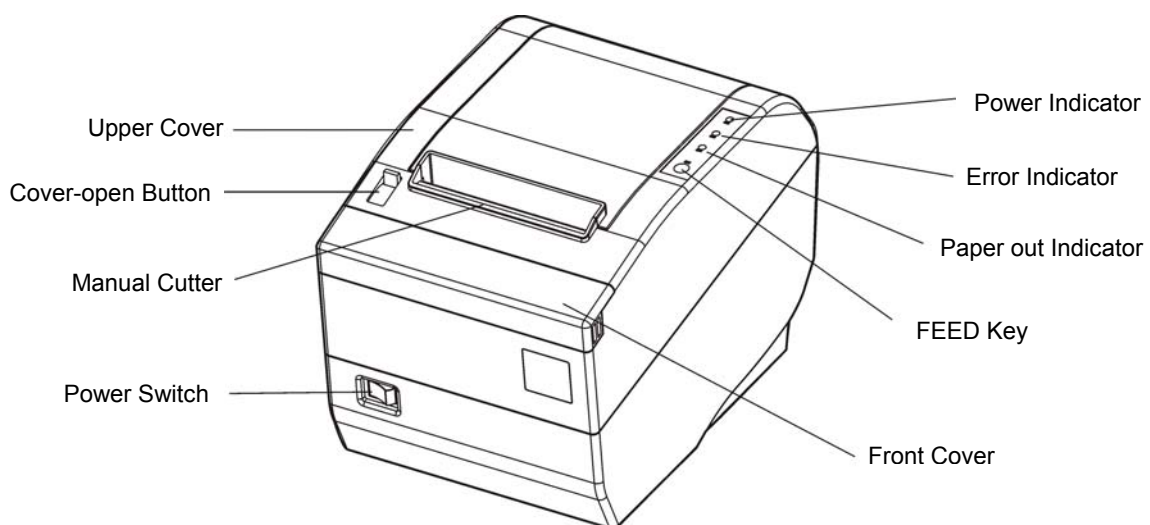
Figure 1-1 Main parts of the printer

Data Interface   Cash Drawer Interface   Power Supply Inlet
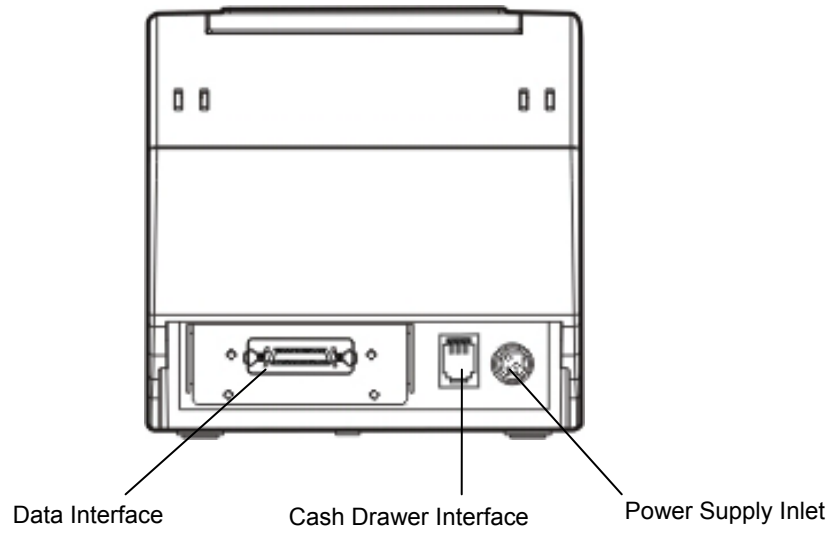
Figure 1-2 Back interfaces of the printer

Note: According to the specific interface standards

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 |

Driver CD
(Including *User's Manual* and Driver) AC Adapter Facility User's Guide
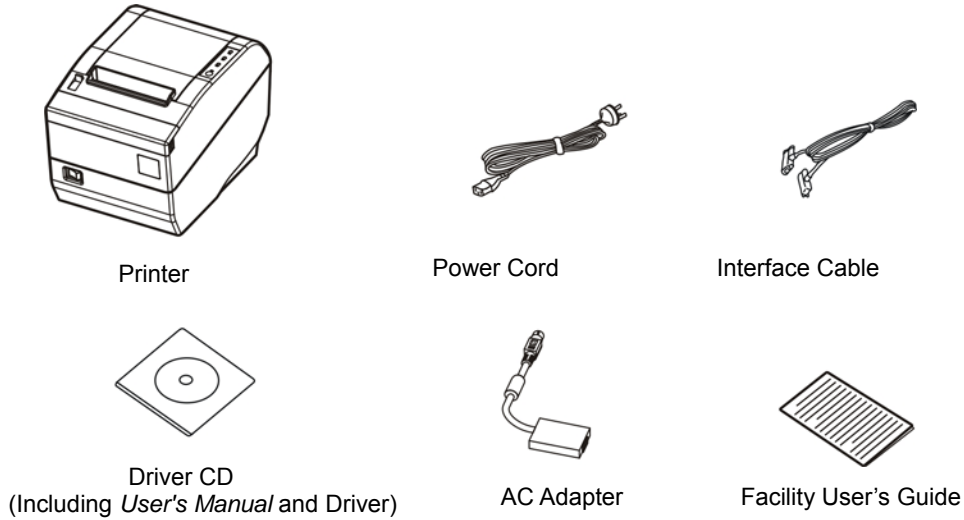
Figure 2-1 Packing list

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.

2.3 Connecting to Your Computer or Other Equipment

The printer is configured with a cash drawer interface and one data interface (Parallel interface, USB interface, Serial + USB interface, Ethernet + USB interface, USB interface + Bluetooth or USB interface + Wi-Fi). (According to specific interface standards) Connect the printer to your computer with the correct cable.

Note: Before connecting or disconnecting the cash drawer cable, parallel cable or serial cable, make sure that the power of the printer is turned off. Also make sure the power cable plug is disconnected from the AC outlet. Or else it may damage the printer.

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 connects to cash drawer, as shown in Figure 2-2.

Cash Drawer Interface
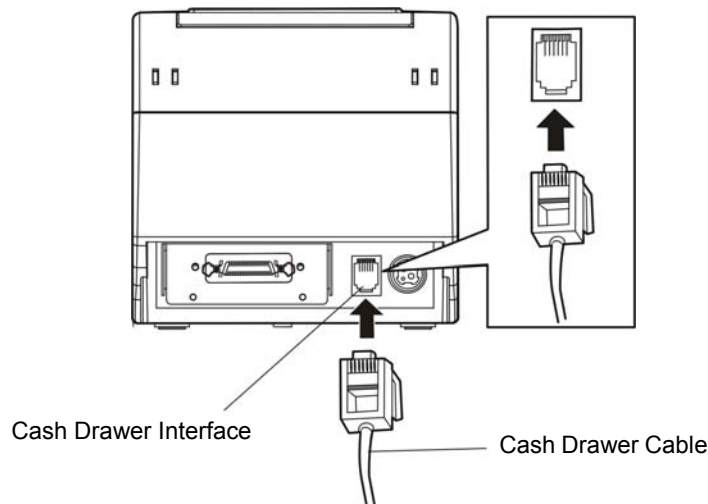
Cash Drawer Cable

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 Cable

1. Make sure the computer and the printer are both turned off, connect the parallel cable to the connector of the printer, and then fasten the wire clips as shown in Figure 2-3.
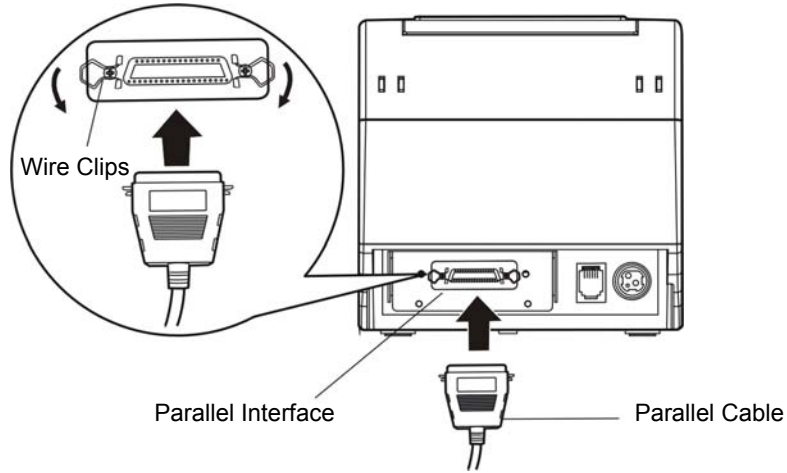
Figure 2-3 Connecting the parallel cable

2. Connect the other end of the cable to the computer. Tighten the screws.

2.3.3 Connecting the USB 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 cable.
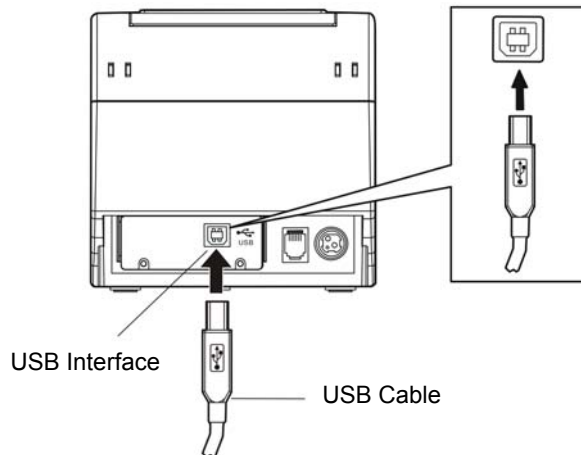
Figure 2-4 Connecting the USB cable

2.3.4 Connecting the Serial Cable

1. Make sure the computer and the printer are both turned off, connect the serial cable to the connector of the printer. Tighten the screws as shown in Figure 2-5.
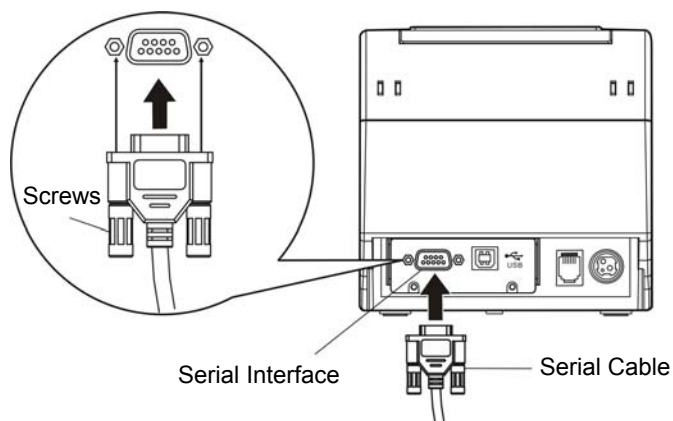
Figure 2-5 Connecting the serial cable

2. Connect the other end of the cable to the computer's serial interface and tighten the screws.

2.3.5 Connecting the Ethernet Cable

1. Plug the crystal end of the Ethernet cable (RJ-45) into the printer's Ethernet interface as shown in Figure 2-6.

2. Plug the other end of the Ethernet cable into the LAN's entrance.
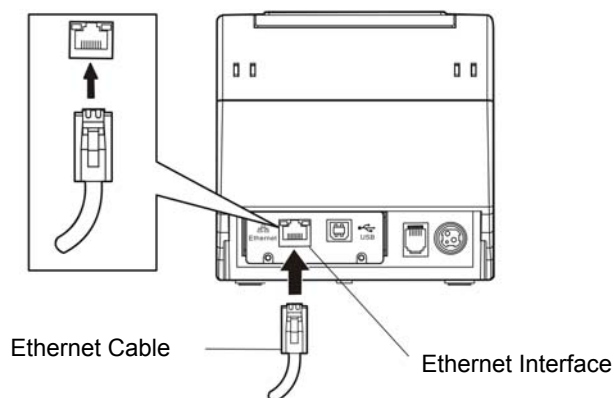
Figure 2-6 Connecting the Ethernet cable

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

2.4 Connecting the Power Cord

1. Make sure the printer is turned off. (O mark on the power switch is pressed down)

2. Make sure the voltage of the electrical outlet matches that of the AC adapter.

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 of power cord into the grounded electrical outlet.

Note: 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.
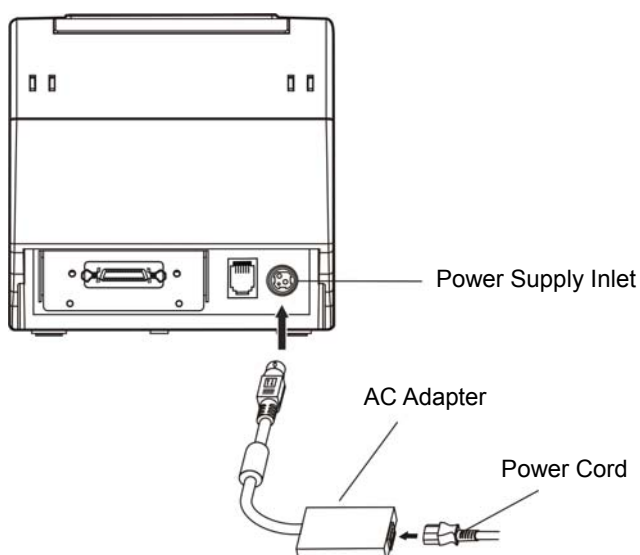
Figure 2-7 Connecting the AC adapter

2.5 Installing the Print Driver and Selecting the Cutter

You should setup the printer driver in Windows before using the TP820 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 direct.

Note: Auto-install way needs the operating system of Windows 2000 or above.

Hand operated installing way

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

1) 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 it pops up a window of "Add Printer Wizard", 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 a usable port. Such as, select "LPT1: (Recommended Printer 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 → "Driver" → "WIN2000 (XP-Vista-Win7)", click "Open", then click "OK" to return to the window of "Install Printer Software", select the respective model, click "Next".

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

2) 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", 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 a usable port. Such as, select "LPT1: (Recommended Printer 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, such as Windows XP operating system, you should select the path as follow: CD-ROM → "Driver" →"WIN2000 (XP-Vista-Win7)", click "Open", then click "OK" to return to the window of "Install Printer Software", select the respective model, 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 example. There are slight differences among different operating systems.

1. Connect the printer to computer with an USB cable and turn on the printer.

2. After the computer find out new hardware and finish searching, pop up a window of "Found New Hardware Wizard", choose "Install from a list or specific location (Advanced)", click "Next".

3. A window of "Found New Hardware Wizard" — "Please choose your search and installation options" pops up, choose "Don't search, I will choose the driver to install", click "Next".

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

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 → "Driver" → "WIN2000 (XP-Vista-Win7)", click "Open", then click "OK" to return to the window of "Add Printer Wizard", select the respective model, click "Next".

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

The installing steps for Windows 98 are as follows:

(1) The installing steps with a parallel cable or a serial cable:

   1. Click "Start" → "Settings" → "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 "Click the manufacturer and model of your printer" pops up, click "Have Disk...", please click "Browse", select the path as follow: CD-ROM → "Driver" → "WIN98 (WINME)", then click "OK".

   4. A window of "Install From Disk" pops up, click "OK, return to a window of "Add Printer", then click "Next".

   5. A window of "Printer port" pops up, select "Available ports", such as, select "LPT1: Printer Port", click "Next", and then show the printer's name. If the system is not installed by other printer driver process, the printer is treated as default printer by the application process of Window98 environment, click "Next". Otherwise according to prompt, choose the printer is default: "Yes", click "Next", choose "Yes-(recommended)", click "Finish". A window of "Printer test page completed" pops up, click "Yes".

   6. The printer driver process is installed successfully.

 (2) The installing steps with an USB cable:

   Note: 1. As the system of Windows 98/ME doesn't have integrated USB driver control, please install USB driver before using USB interface printing. Then install USB printer driver.

   2. If it has installed the USB driver, please install the USB printer driver directly as the following steps.

 USB driver installing steps:

   1. Connect an USB cable and turn on the printer.

   2. After the computer find out new hardware and finish searching, a window of "Add New Hardware

Wizard" pops up, click "Next".

3. A window of "Add New Hardware Wizard" — "Windows operation" pops up, choose "Search the best driver for the device (recommended)", click "Next".

4. A window of "Search for new drivers" pops up, check "Specify a location", click "Browse", select the path as follows: CD → ROM → "Driver"-"[WIN98 (WINME) \ USBdriver]", then click "OK".

5. Return to a window of "Search for new drivers", click "Next"; a window of "Windows driver file search for the device" pops up, click "Next".

6. After the system finishing installing the file automatically, a window of "USB Print Supported" pops up, click "Finish".

7. The printer USB driver process is installed successfully.

USB printer driver installing steps:

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

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

3. A window of "Click the manufacturer and model of your printer" pops up, click "Have Disk...", please click "Browse", select the path as follow: CD-ROM → "Driver" → "WIN98 (WINME)", and then click "OK".

4. A window of "Install From Disk" pops up, click "OK", return to a window of "Add Printer", then click "Next".

5. A window of "Printer port" pops up, select "Available ports", select "JMUSB", click "Next", and then show the printer's name. If the system is not installed by other printer driver process, the printer is treated as default printer by the application process of Window98 environment, click "Next". Otherwise according to prompt, choose the printer is default: "Yes", click "Next" choose "Yes-(recommended)", click "Finish". A window of "Printer test page completed" pops up, click "Yes".

6. The printer driver process is installed successfully.

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.

It is noted that if paper cut effect is the same whichever you select "full cut" or "partial cut" in the driver properties, which means that the cutter (the printer equipped with) can only carry out one kind of cut-methods.
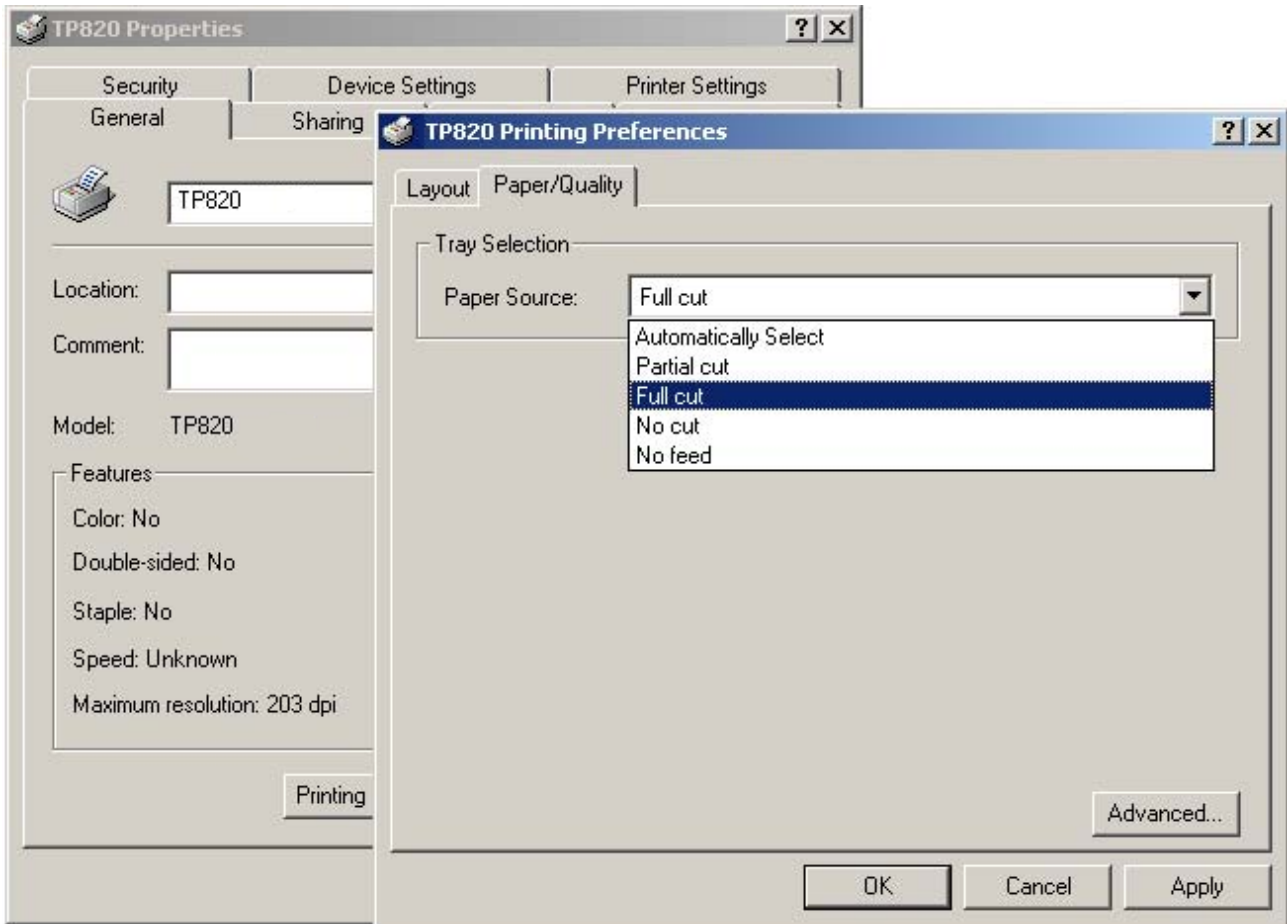
2.6 Installing Bluetooth Interface Driver

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 with Bluetooth adapter driver.

2. Turn on the printer, search Bluetooth device in Window XP system, and click "Add".
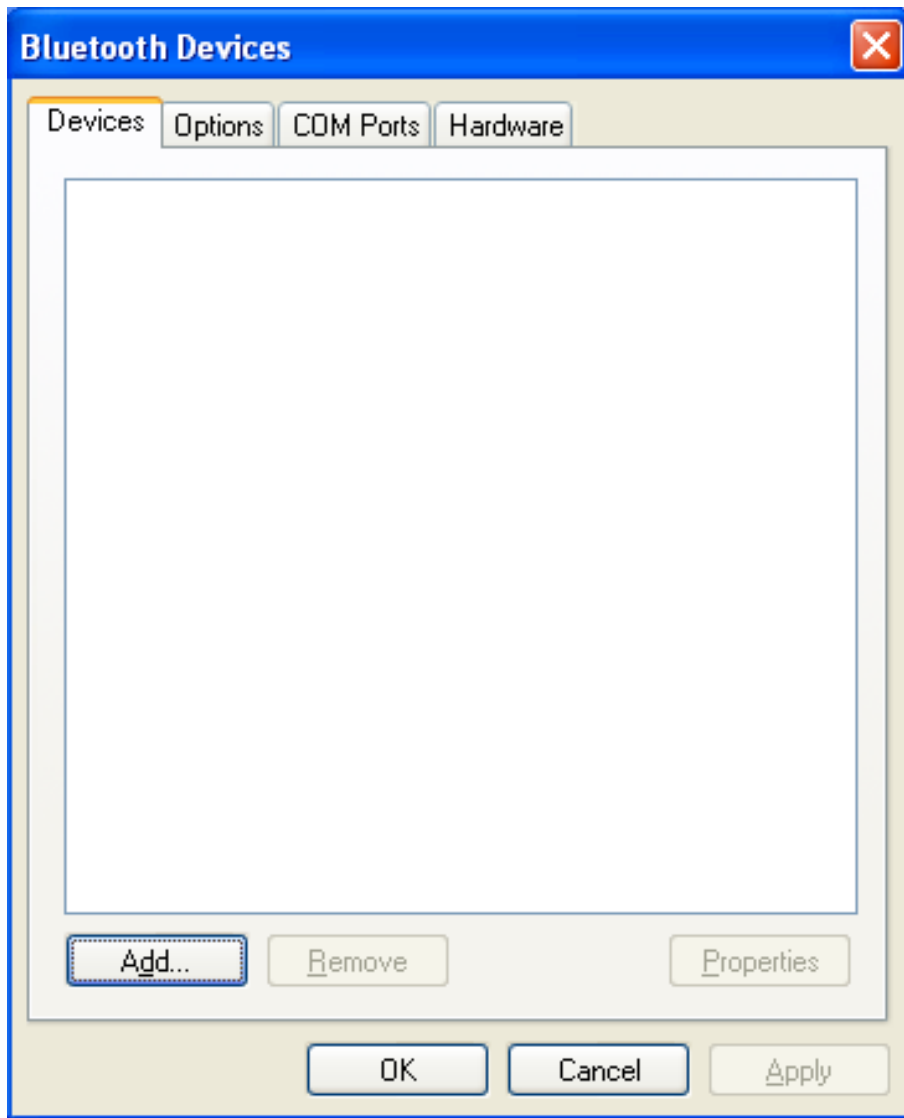
3. Tick off the option of "My device is set up and ready to be found." Click "Next" to continue.

4. Select the "TP820", and then click "Next".

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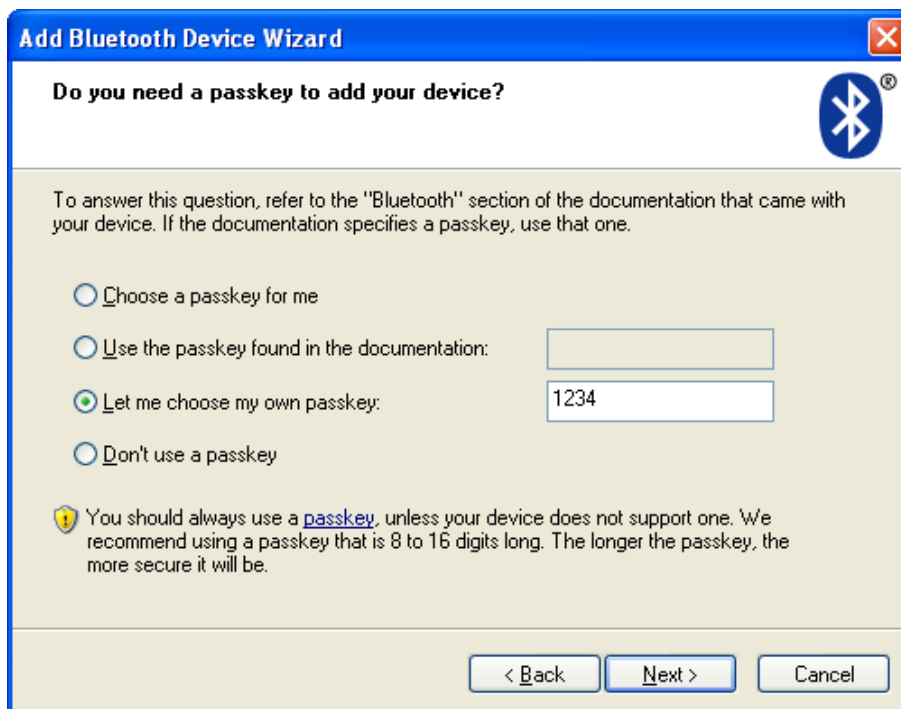
6. Record the Outgoing COM port and click "Finish", then reboot the computer.

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

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

2.7 Ethernet Settings

Please use TP820 network setting software NetFinder to set the IP address for TP820 Ethernet interface network printers, which can be found in the CD.

Caution: The network printing function needs the operation system of Windows2000 or above.

2.7.1 Connecting Printer

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

Yellow LED	Green LED	Description
ON	Blink	Connecting to network
OFF	OFF	Not connecting to network

2.7.2 Setting IP Address

1. Run 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:
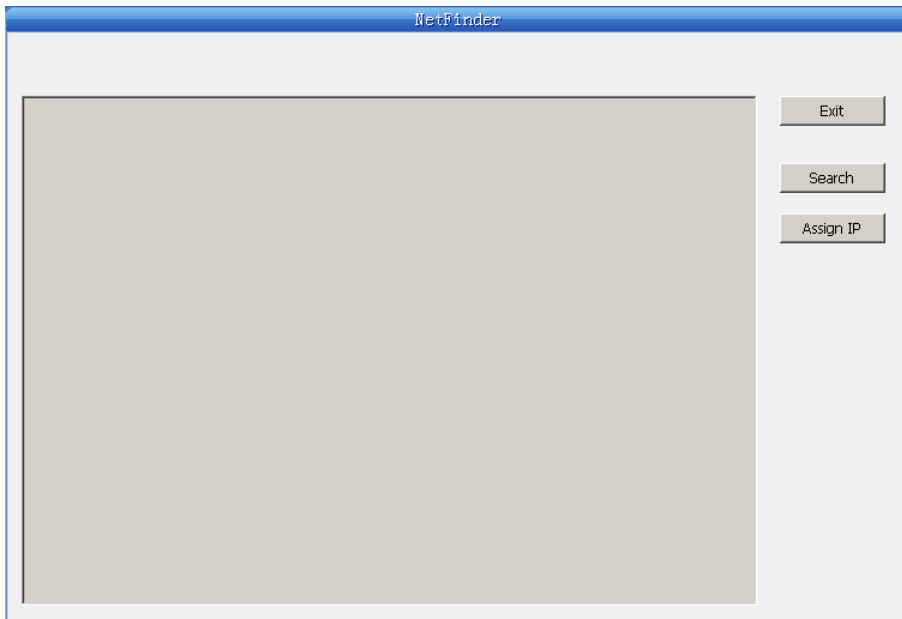
Button description:
Exit — Exit from the software
Search — Search printers in the same LAN
Assign IP — Modify the IP address and other settings for the specified printer.

2. Search printer

Click "Search" button in the main interface, the dialog box appearing will begin searching automatically and show appearance, 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. When going on searching, press "search" button again.
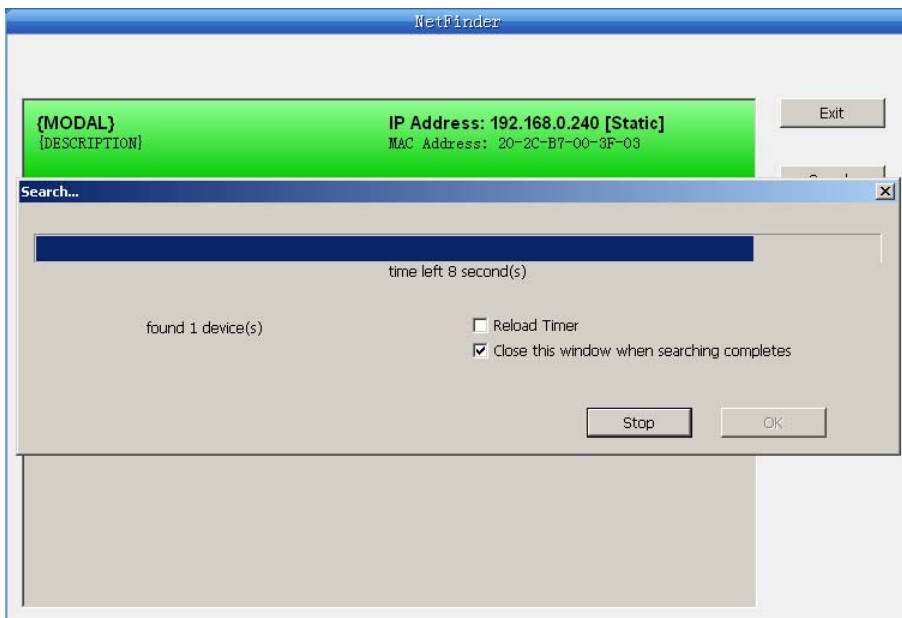
If the printer still can not be found out when the network connection is correct in the same network, Please check whether the network fire wall on the PC open or not. If there is fire wall, please close it temporarily, open again after finishing searching and setting a printer completely.

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.
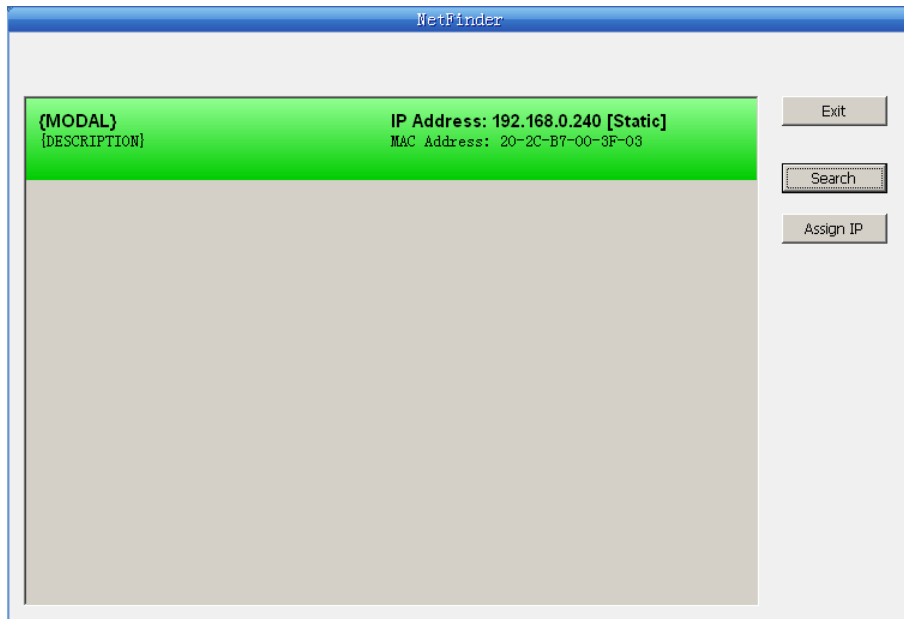
1) Correlative description for IP address settings

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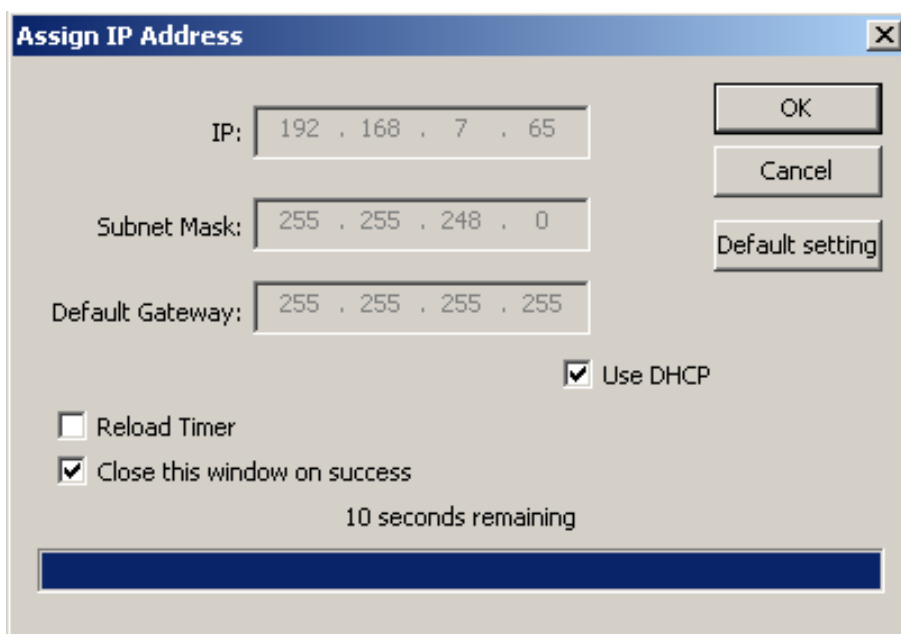
Check the "Use DHCP" if need to assign dynamic address, the settings above will be disabled automatically. Please make sure there is a DHCP server in the network, or the printer can not receive an effective IP address.

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. The printer takes response after "Close this window on success" is checked, and then this dialog is closed automatically. Select "Reload Timer" then the software will wait for the printer's response. Generally, printer will take response in a circle time if network connection is correct.

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) Report printer's IP address

Report 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 TP820 network setting software WiFiConfig to set the IP address for TP820 Wi-Fi interface network printers, which can be found in the CD.

Caution: The network printing function needs the operation system of Windows2000 or above.

> **Caution: Wi-Fi interface transfers data through wireless network. The wireless signal may be affected by the surrounding environment, please ensure the signal around printer location is well enough.**

2.8.1 Connect to the Printer, Run the WiFiConfig Software

Connect the printer and the computer with the USB interface cable, and then turn on both the printer and the computer, make sure the printer is in normal working condition, double click WiFiConfig.exe in the driver CD. The software interface is as follows:
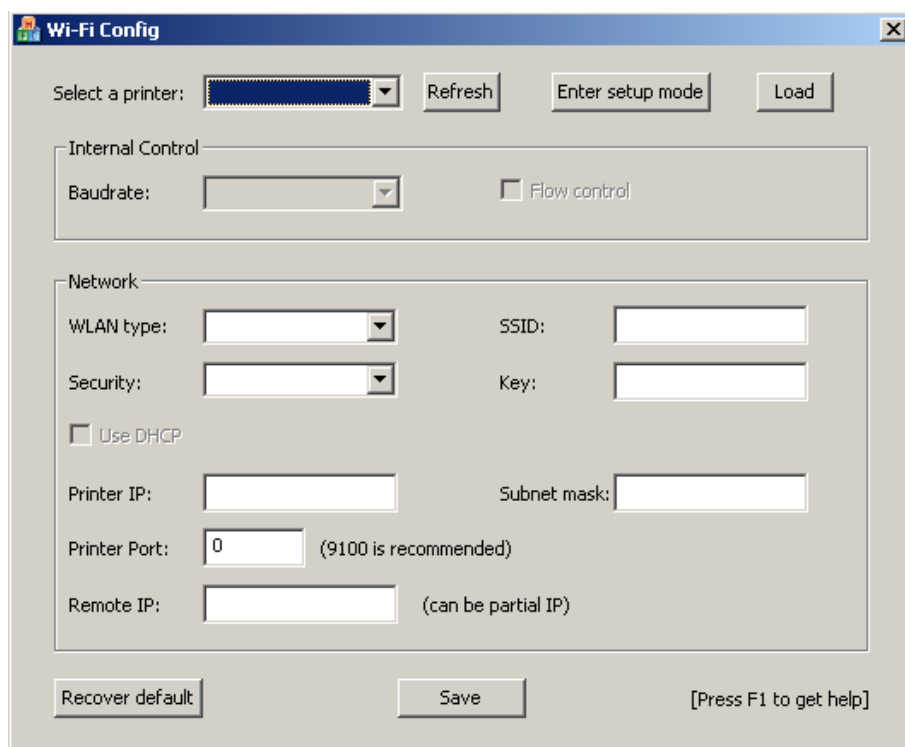
Explanation

Item	Explanation	Note
Select a printer	Select the printer model in the list.	
Refresh	Refresh the printer model.	
Enter setup mode	Enter setup mode. **Note: If the printer has entered setup mode, please don't click "Enter setup mode" again.**	
Load	Load the current Wi-Fi parameter.	
Baudrate	Set the serial baudrate. This parameter setting usually does not need to change.	
WLAN type	Select the WLAN type with AP, dispense with AP or OFF. With AP: Select infra, through router to connect network; Dispense with AP: Select ad-hoc, wireless network card can communicate with printer directly; OFF: Select the printer Wi-Fi interface off.	
SSID	Network name. The longest network name is 32 characters and there is no space between characters. When WLAN type with AP, the network name is the same with the router's network name; When WLAN type dispenses with AP, the network name is the same with the wireless network card's network name.	
Security	Select the security mode.	
Key	Enter the corresponding key. When "Security" is selected to "None", do not need to enter key.	
Use DHCP	Select to use dynamic IP assignment or not. **Note: Dynamic IP assignment is uncertainty, it is easy lead to unsuccessful communication because of IP mismatching,**	

	so we don't suggest using dynamic assignment.	
Printer IP	IP address of printer Wi-Fi interface. **Note: This IP address should not conflict with other network devices.** If "Use DHCP" has been selected, then this IP is invalid.	
Subnet mask	The subnet mask of printer Wi-Fi interface.	
Printer Port	The printer port of printer Wi-Fi interface. It is suggested using 9100.	
Remote IP	The PC IP is which communicates with printer or a segment of the LAN. When filling in IP, such as "192.168.0.1", PC is communicate with printer respectively; When filling in segment, such as "192.168.0", the PCs in this segment all can communicate with the printer.	
Recover default	Recover the default setting. After recover the default setting, you should set the Wi-Fi parameters again.	
Save	Save the setting parameter. After saving, please reboot the printer.	
Press F1 to get help	Press F1 to get the help information.	

2.8.2 Set Wi-Fi Parameters

Note: 1. You should use the USB interface cable to connect the printer and computer before configuring Wi-Fi parameters, and run the WiFiConfig software.

2. Configuring Wi-Fi parameters should in the setup mode (besides recover the default setting).

3. You should make sure the printer is in normal working condition before running the WiFiConfig software.

The detail parameter configuration instruction and cautions please refer to the Help of WiFiConfig.exe. Press F1 to pop up the Help instruction when running that software.

1. Connect the printer and the computer with a USB cable, and then turn on both the printer and the computer, run the WiFiConfig software.

2. Check if the corresponding printer model is in the list of Select a printer, if no, please click "Refresh", select the corresponding printer model after it appears.

3. Click "Enter setup mode", it would pop up a Success dialog box when it enters the mode successfully.

   After entering setup mode, printer could not receive print data, and you should restart the printer before printing.

4. Click "Load", the printer would load the current Wi-Fi setting.

5. Sets the network communication parameters.

   Please set the corresponding network communication parameters according to the actual network circumstances. The detailed information please enquire the network administer.

   WLAN type: Select the network mode. Through hotspot, connect the network with router mode, select "With AP"; Wireless network card communicates with the printer directly, select "Dispense with AP"; Do not need the Wi-Fi printing function, select "OFF".

   SSID: SSID is the corresponding network name. When "WLAN type" is selected to "With AP", network name and the router network name should be the same; when "WLAN type" is selected to "Dispense with AP", network name and the wireless network card name should be the same.

   Security: Select the security mode of the selected network.

   Key: Enter the key of the selected network. When "Security" is selected to "None", you do not need

to enter key.

6. Set the printer IP parameters.

Please set the corresponding printer IP parameters according to the actual network circumstances. The detail information please enquire the network administer.

Note: Dynamic assign IP is uncertainty, it is easy lead to unsuccessful communication because of IP mismatching, so we don't suggest using dynamic assignment.

IP address and subnet mask should obey the assignment rule of the local LAN.

Use DHCP: Select to use dynamic IP assignment or not. When select "Use DHCP", the IP parameters would be invalid. Please ensure there it DHCP server in the network firstly, or else the printer would not achieve the valid IP address. Do not select "Use DHCP", you should specify static address.

Printer IP: The IP address of printer Wi-Fi interface.

Subnet mask: The subnet mask of printer Wi-Fi interface.

Printer Port: The printer port of the printer Wi-Fi interface. It is suggested using 9100.

Record the printer IP address and port number, the IP address and port number will use in the Newly-install way or Upgrade-install way in next chapter.

7. Setting remote IP parameters.

The PC IP is which communicates with printer or a segment of the LAN.

When filling in IP, such as "192.168.0.1", PC is communicate with printer respectively; when filling in segment, such as "192.168.0", the PCs in this segment all can communicate with the printer.

8. After finish setting, click "Save" to save the setting 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 properly.

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

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

Indicator Lights Description

Light Network Communication	With AP	Dispense with AP	OFF
Connect	ON	ON	BLINK
Disconnect	BLINK	ON	BLINK

2.8.4 Recover the Default Setting

When the malfunctions of the Wi-Fi parameters lead to the printer unable to connect with the network, you could recover the default setting to set the parameters again.

Note: Printer does not need to enter setup mode when recovering the default setting. If the printer has entered into setup mode, please restart the printer before recovering the default setting.

1. Connect the printer and the computer with a USB cable, and then turn on both the printer and the computer and run the WiFiConfig software.

2. Check if the corresponding printer model is in the list of Select a printer, if no, please click "Refresh", select the corresponding printer model after it appears.

3. Click "Recover default", wait several seconds and a dialog box would pop up to denote the recovery is successful or not.

4. After finishing recovering, please restart the printer and set the Wi-Fi parameters again.

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 installs 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", then please read the select guide carefully. Such as, select "Local or Network Printer", then click "next".

3) A window of "Select the Printer port" pops up, select a port you want your printer to use. For example, select "Create a new port", select "Standard TCP/IP Port" in the port, click "next".

4) A window of "Add standard TCP/IP Printer Port Wizard", click "Next".
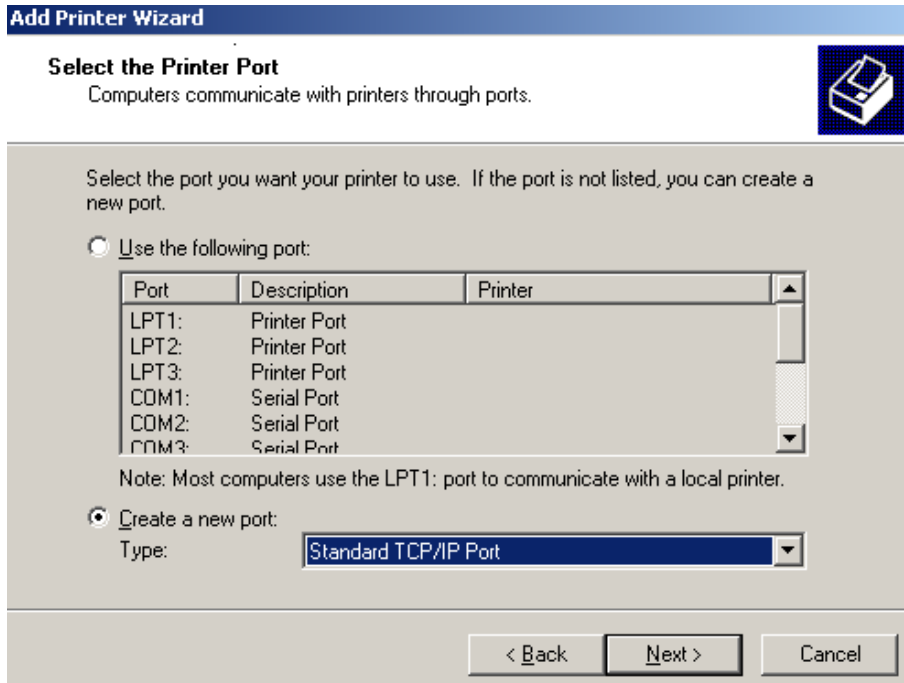
5) A window of "Add Port" pops up, enter the IP address reported by the "Setting printer's IP address" in the "Printer Name or IP Address" column. Take IP address "192.168.0.240" for example. "Port Name" is created automatically after finishing filling in IP address.
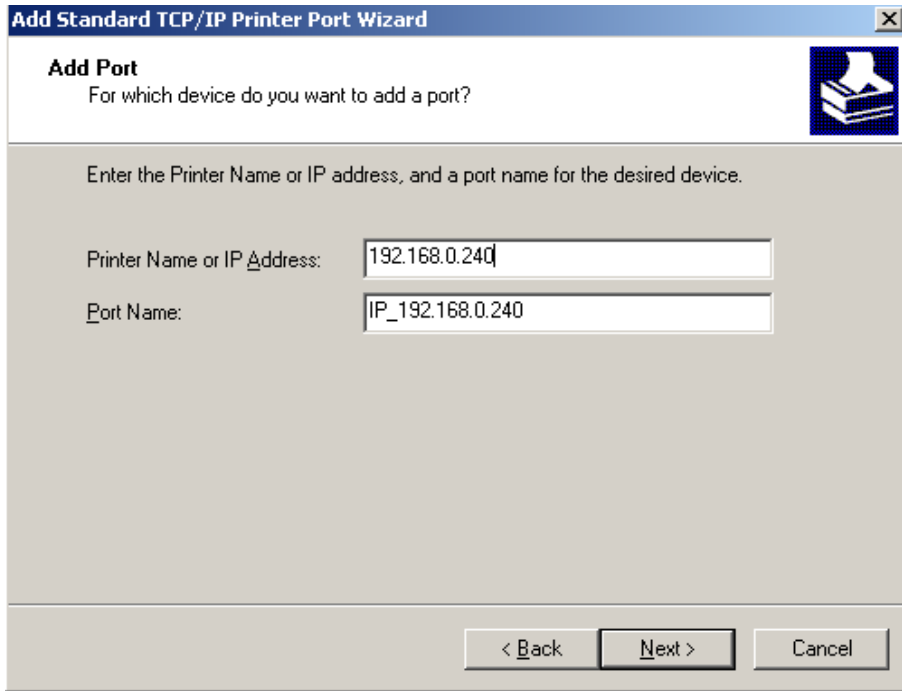
6) A window of "Additional Port Information Required" pops up, select "Custom" in the "Device Type", then click "Settings".

7) 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".

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

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

10) In the selection of "Manufacturers/Printers", click "Have Disk", and then click "Next".

11) 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 → "Driver" → "WIN2000 (XP-Vista-Win7)", click "Open", then click "OK" to return to the window of "Install Printer Software", select the respective model, click "Next".

12) Follow the direct click "next" gradually till the installation is finish. 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 TP820 driver, click "Properties" on the window popping up.

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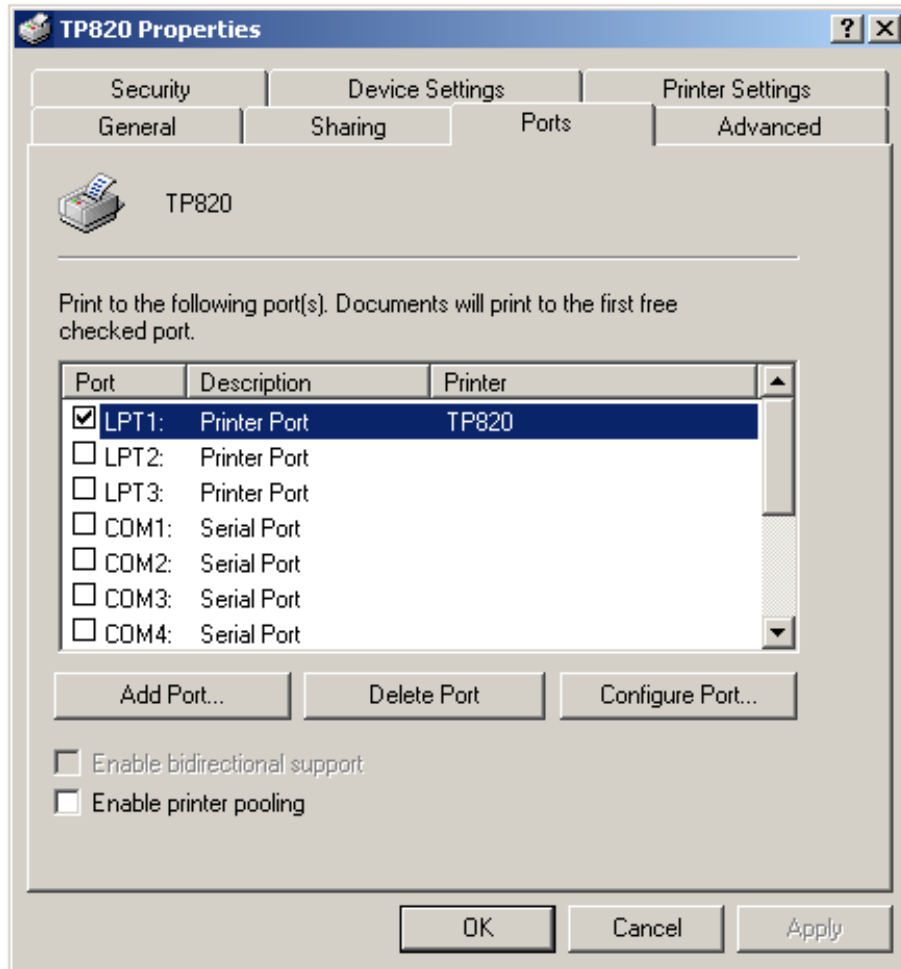
4) A window of "Printer port" pops up, select "Standard TCP/IP Port", click "New port".
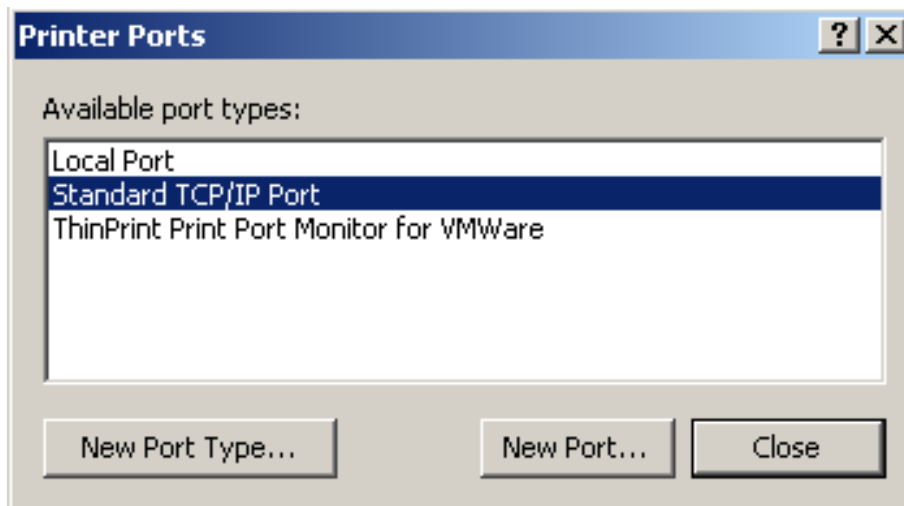
5) A window of "Add Standard TCP/IP Printer Port Wizard" pops up, click "Next".

6) A window of "Add a 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".
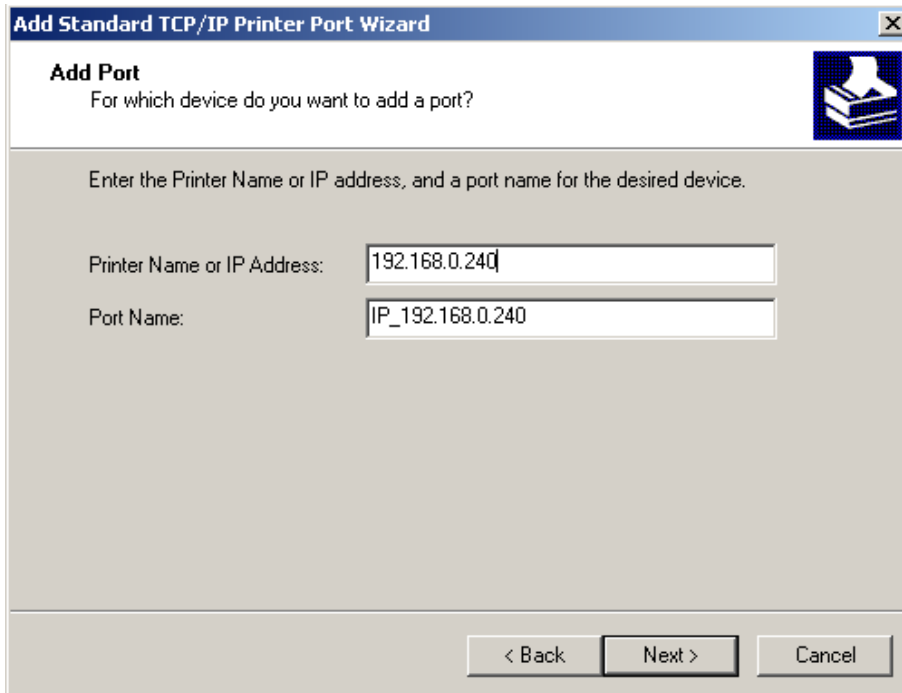
7) A window of "Additional Port Information Required" pops up, select "Custom" in the "Device Type", then click "settings".
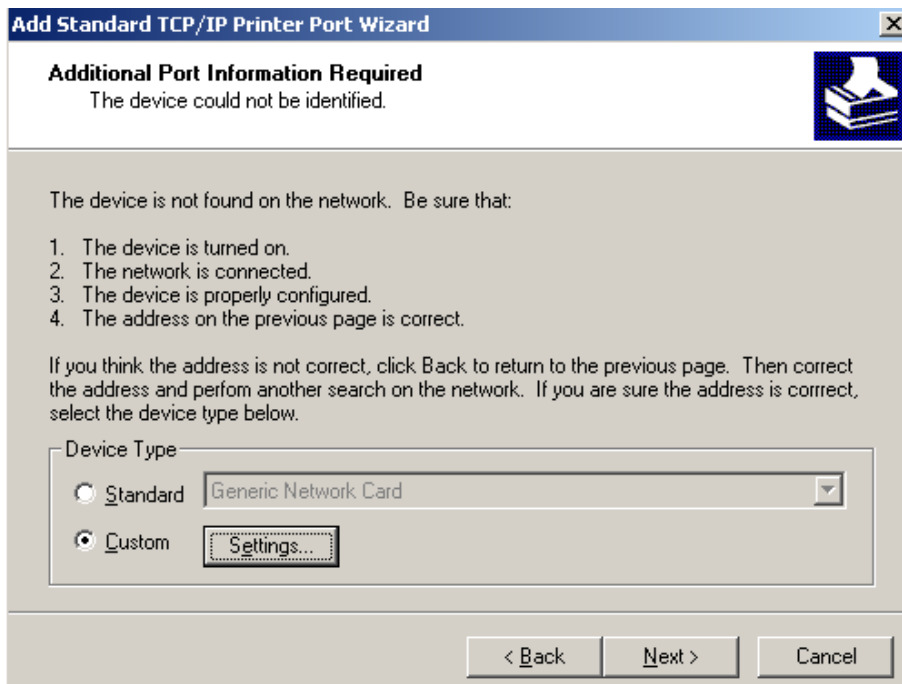
8) A window of "Port Settings" pops up. Affirm that "Port name" and "Printer name or IP address" are correct, "Protocol" is "RAW" and "Port Number" is "9100", click "OK".
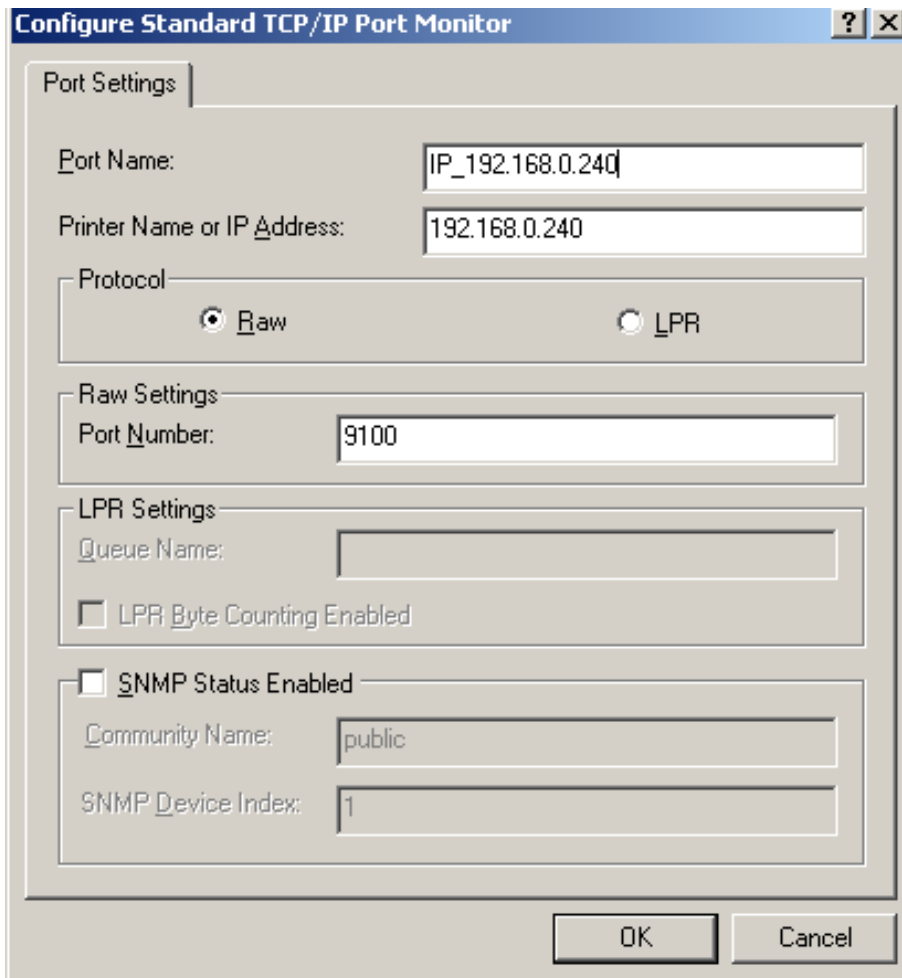
9) Return to "Additional Port Information Required", click "Next".

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

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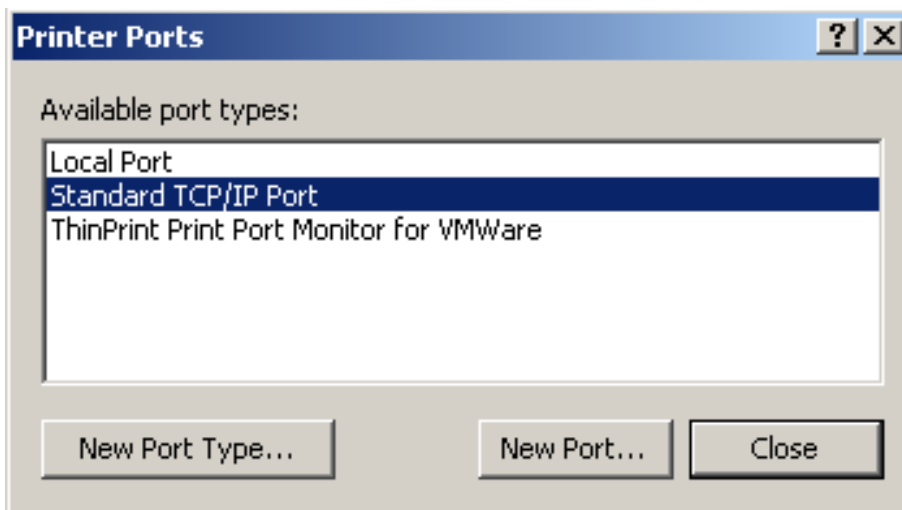
12) Return to "Properties", make sure the network port is selected, click "Apply", and then click "Close". Thus, printer's network port setting is finished.
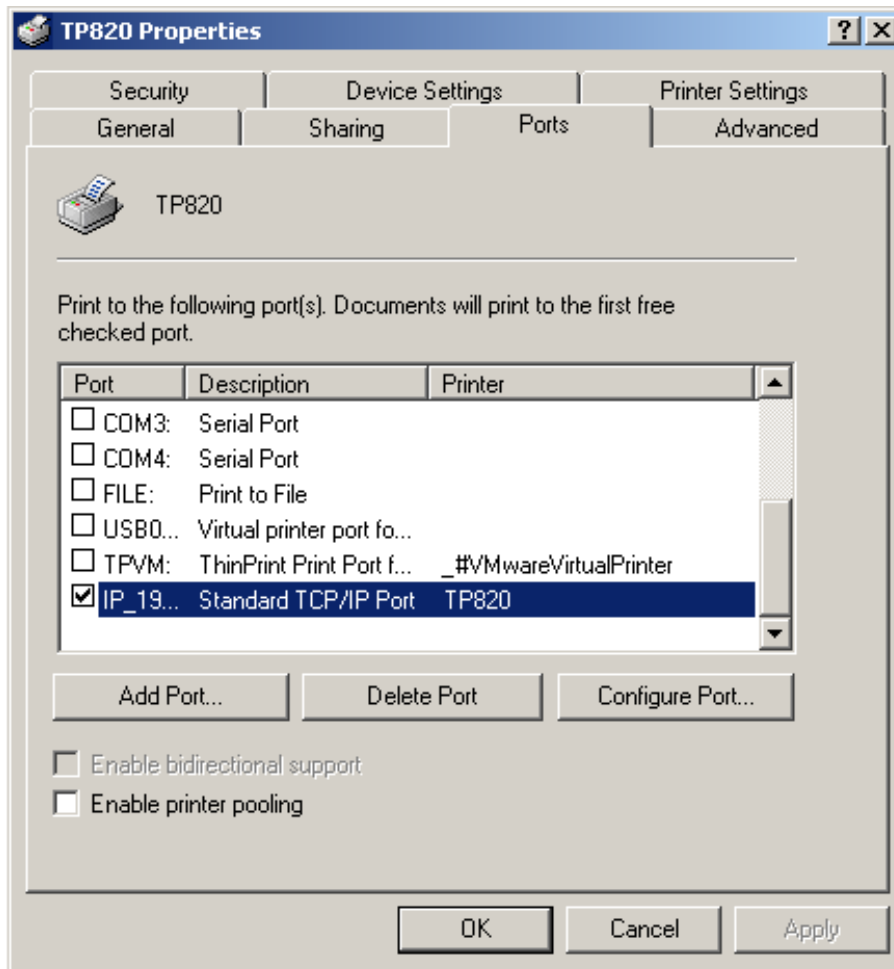
Chapter 3 Control Panel

3.1 Control Panel

There are three indicator lights and one key on the control panel shown as Figure 3-1.

Figure 3-1 Control panel

3.1.1 Indicator light

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

Refer to chapter 6.2 Error message on the control panel for detailed information about indicator light malfunctions.

3.1.2 Key

Key	Function
【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 press and hold on it, or stop if you loosen it.

3.2 Self-Printing

Self-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 connecting to the computer. Otherwise, the printer should be repaired.

Hold down the **FEED** key and turn on the power switch while the printer cover is closed, the **ERROR** indicator blinks once with two beeps (if beeper is installed in the printer), loosen the key, then the printer will print out self-test information such as the software version, update date and interface etc.

3.3 Hex Dump Printing

This function allows you to check whether the connection between the printer and the computer or terminal device works properly or not.

The method is that holding down **FEED** key while turning on the printer, the **ERROR** indicator blinks once with two beeps. Go on holding the button for about one second, and then loosen it after the **ERROR** indicator light blinks once again with a beep. Turn off the printer when you want to exit this print mode.

3.4 Restoring Factory Printer Settings

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

The method is that holding down **FEED** key while turning on the printer, the **ERROR** indicator blinks once with beeping twice at the same time. Do not loosen the button until the **ERROR** indicator blinks once with beeping once in about one second. Keep on pressing until **ERROR** indicator blinks one more time with a beep in about one second. At this time, turn off the printer and the function takes effect.

3.5 Setting Slip Stitch

Slip Stitch Cap

Slip Stitch

When Pulling Out

When Plugging Into
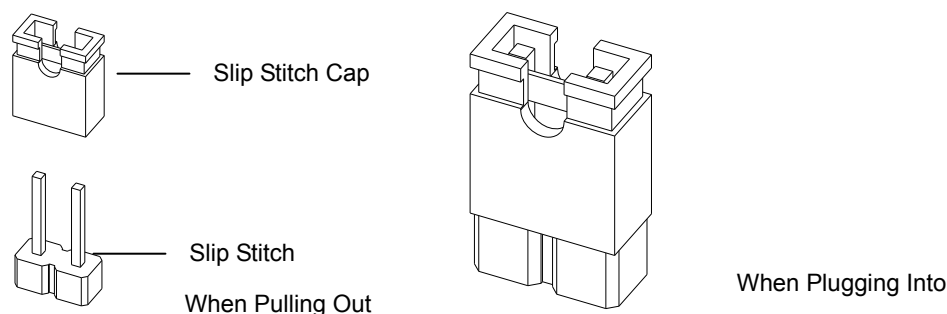
Figure 3-2 Setting slip stitch

If needed, Slip Stitch is used to upgrade printer firmware or it should be closed in normal working condition. When to upgrade, pull out the Slip Stitch Cap after the printer is turned off, and then holding down **FEED** key while turning on the printer again, the **ERROR** and **PAPER OUT** indicators blinking once at the same time, which denotes that the printer enters into the online-upgrade mode. Loosen the key and then use the computer software equipped with the printer to upgrade. Turn off the printer after finishing upgrading, plug Slip Stitch Cap and then the printer can be working normally.

Note: Do not change the Slip Stitch without any permission of the factory, or the printer can not work.

3.6 Online-aptitude Parameter Settings

TP820 supports the function of online-aptitude parameter settings, which can be set in the PC with the driver installed in. The parameter settings of serial interface can be modified in the driver's property page. (As the figure shown below)

The concrete setting steps are shown as follows:

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

2. Click "Start" → "Settings" → "Printers".

3. Right click "TP820", select "Properties".

4. Click "Printer settings" in the property page.
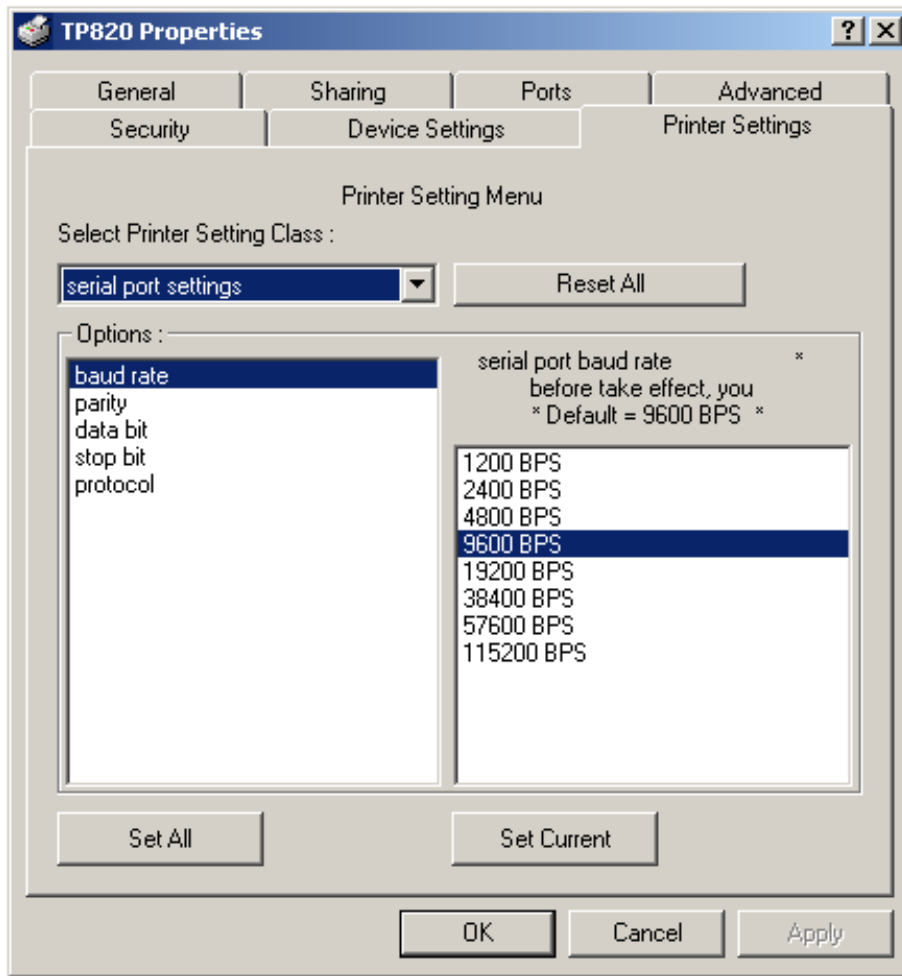
5. Check whether the selected port in the "Ports" is matched with the port which connecting to the printer in practical. Return to "Printer Settings" page layout, the list in the left are the items you want to set and the right are the item's parameters. If you only want to change one item, click "Set Current", or if you want to change multiple items, click "Set All" after having set all items. The settings are saved with the printer beeping once.

   Note: The parameter settings shown in the "Printer Settings" are not the current parameter of the printer.

6. After finishing settings, click "OK", exit the "Properties" window.

7. Reboot the printer.

Chapter 4 Installing and Replacing the Roll Paper

The printer can install the paper conveniently, which should be 80mm wide. How to deal with the paper will be explained in details in this chapter.

4.1 Paper Installation Steps

Note: 1. Don't touch the thermal print head after printing to avoid being burned.

2. Don't pull the paper moving directly with your hand.

1. Push the cover-open lever, open the upper cover.
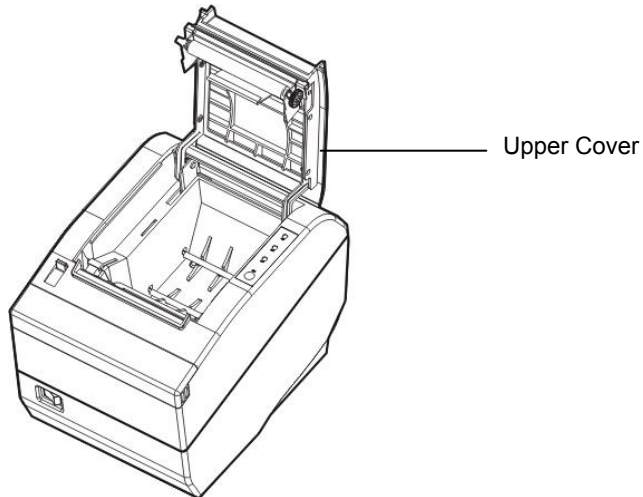
Upper Cover

Figure 4-1 Open the upper cover

2. Insert the roll paper as shown below.

Roll Paper

Correct

Error
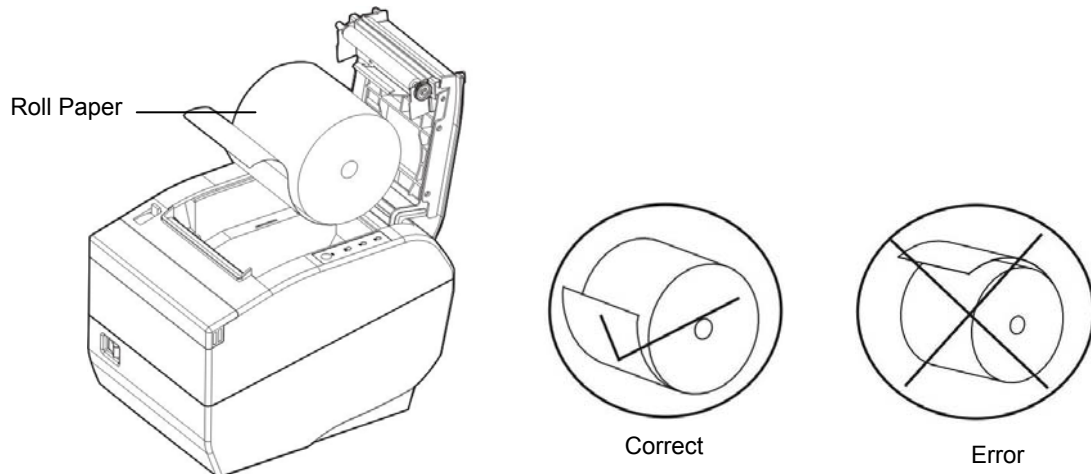
Figure 4-2 Insert the roll paper

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 as shown in Figure 4-3.
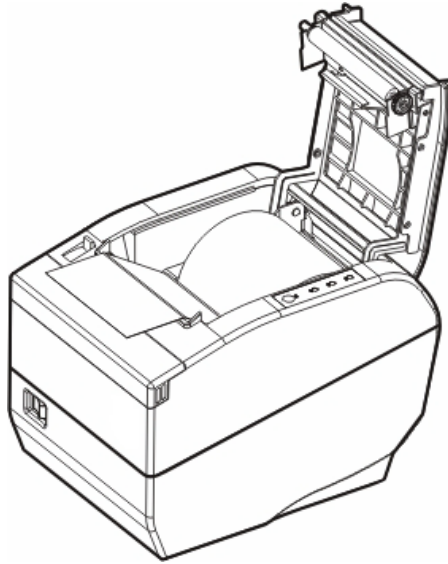
Figure 4-3 Pull out the paper

4. Put the paper as shown below, and then close the upper cover.

Figure 4-4 Close the upper cover

NOTE: After finishing installing the paper, if PAPER OUT indicator light and ERROR indicator light 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	Direct thermal printing	
Printing direction	Line printing	
Dot density	576 dots/line (203×203DPI)	
Paper width	72 mm	
Printing speed	220mm/s	
Paper specification	Thermal roll paper model	TF50KS-E (Japan paper co.ltd)
		AF50KS-E (JUJO THERMAL)
	Width: 79.5 ± 0.5 mm	
	Weight: 53 ~ 80 g/m^2	
	Maximum diameter: Φ80 mm	
	Paper thickness: 0.065 ~ 0.15mm	
	***Suggestion**	**Inner diameter of paper shaft: Φ12 mm**
		Outer diameter of paper shaft: Φ18 mm
Character set	ASCII: 13 international character sets	
Line spacing	1/6 inch, or programmable in 1/203 inch increments	
Interface	Cash drawer interface and data interface (Parallel interface, USB interface, USB interface + Serial interface, USB interface + Ethernet interface, USB interface + Bluetooth and USB interface + Wi-Fi) Cash drawer interface: RJ-11, DC24V/1A Parallel interface: Centronics USB interface: 2.0 Full-Speed USB interface + Serial interface: 2.0 Full-Speed, RS-232C (DB9) USB interface + Ethernet interface: 2.0 Full-Speed, 10/100Base-T USB interface + Bluetooth: 2.0 Full-Speed, 2.0/2.1 + EDR USB interface + Wi-Fi: 2.0 Full-Speed, 802.11b/g/n **Note: Only one of the data interfaces is supplied when leaving the factory. (According to the specific interface standards.)**	
Special function	Automatic cutter, Online parameter settings, Online software upgrade	
Buffer memory	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	IN	Input voltage: 100 ~ 240V AC
		Frequency: 50Hz/60Hz
	OUT	Output voltage: 24V DC
		Current: 2.5 A

Environmental conditions	Operating environment	Temperature: 5 ~ 40℃
		Humidity: 20%RH ~ 80%RH (No condensation)
	Storage environment	Temperature: -40 ~ 55℃
		Humidity: ≤93%RH (40℃, No condensation)
Weight	Approx. 2Kg	
Noise	＜38 dB (A) (ISO7779 standard)	
Physical dimensions	145 mm (Width) × 200 mm (Depth) × 145 mm (Height)	
Power	① Operation: 40 W; ② Max.: 180 W; ③ Standby: 3.2 W. **Note: Only when the product doesn't connect any power supply, can it consume zero energy.**	
Code page	0: PC437, 1: PC932, 2: PC850, 3: PC860 (Portuguese), 4: PC863 (Canadian), 5: PC865 (Nordic), 10: Iran, 15: Iranll, 16: PC1252, 17: PC866, 18: PC852, 19: PC858, 20: Thai (KU42), 21: Thai (TIS11), 22: PC1256 (Arabic), 26: Thai (TIS18), 27: Vietnam, 28: PC864 (Arabic), 29: PC737 (Greek), 32: PC1253 (Greek), 60: PC855 (Cyrillic), 61: PC857 (Turkish), 62: Hebrew, 70: Thai, 74: PC3840 (Russian), 79: PC1254 (Turkish), 255: Thai	
Control panel	The control panel consists of one key and three indicator lights.	
Paper type	Thermal roll paper	
Wireless disturb	Grade B	

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

5.2 Interface Specifications

The printer is configured with one cash drawer interface and one data interface (Parallel interface, USB interface, USB interface + Serial interface, USB interface + Ethernet interface, USB interface + Bluetooth or USB interface + Wi-Fi).

5.2.1 Cash Drawer Interface

The cash drawer interface of the printer uses the RJ-11 connector, which is shown below.
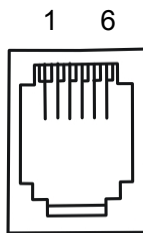
Figure 5-1 Cash drawer connector

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	24VDC	OUT
5	Cash Drawer drive signal	OUT
6	Cash Drawer Open/closed signal ground	---
Drive current≤24V/1A		

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

TP820 printer's parallel interface is compatible with CENIRONICS protocol, supporting BUSY/ACK handshaking protocol.

The connector is a 36-PIN connector, whose pins are indicated as below.
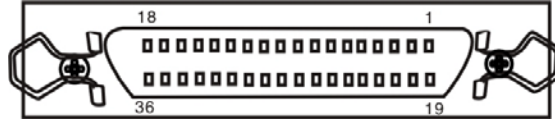
Figure 5-2 Parallel interface

Table A-2: Connector Pin Assignments

Pin number	Signal	Direction	Description
1	/STB	IN	Trigger in low level, read the data in rising edge
2	DATA1	IN	These signals are respective represent the parallel data from the first bit to the eight. "1" means high level, while "0" means low level.
3	DATA2	IN	
4	DATA3	IN	
5	DATA4	IN	
6	DATA5	IN	
7	DATA6	IN	
8	DATA7	IN	
9	DATA8	IN	
10	/ACK	OUT	Acknowledge signal, Low level means that printer is ready for receiving 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

Note: ① "IN" means input to the printer, "OUT" means output from printer.

② The signal logical level is TTL level.

Relative signal is shown as Figure 5-3.
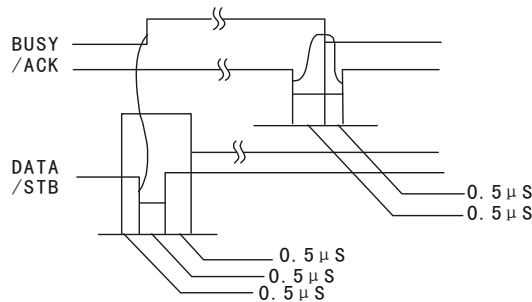
Figure 5-3 Timing signal in parallel interface

5.2.3 USB Interface

USB interface is 2.0 Full-Speed version.

Contact Number	Signal Name	Typical Wiring Assignment
1	VBUS	Red
2	D-	White
3	D+	Green
4	GND	Black
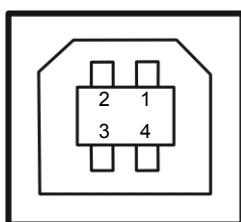
Figure 5-4 USB interface

5.2.4 Serial Interface

TP820 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 definitions are shown as Figure 5-5.
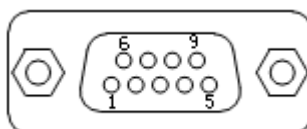
Figure 5-5 Sequence numbers of Serial connector

Table A-3 Pin assignments of the 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 for receiving data.
5	GND	—	Signal GND
4	DTR	Printer	Signal terminal is ready

Note: ① "From" means the source where signal comes out.

② Signal level is EIA level.

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

TP820 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.

Printer 9-Pin connector   Host 9-Pin connector
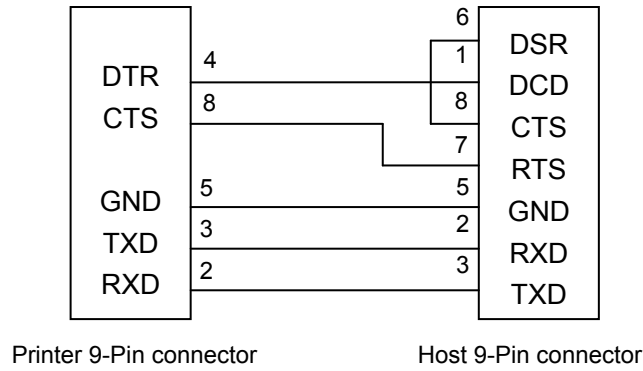
Figure 5-6TP820 connecting with 9-Pin PC

Printer 9PIN connector   Host 25PIN connector
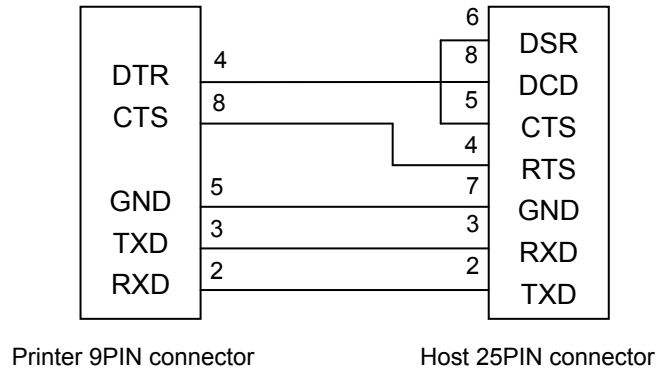
Figure 5-7 TP820 connecting with 25-Pin PC

5.2.5 Ethernet Interface

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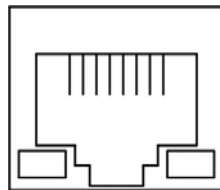
Figure 5-8 Ethernet interface

5.2.6 Power Supply Inlet

The TP820 printer connects with a 24V±10% and 2.5A AC adapter. The power supply inlet is shown as Figure 5-9.
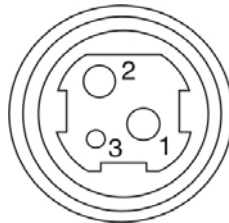
Figure 5-9 Power supply inlet

Chapter6 Troubleshooting and Maintenance

6.1 Maintenance

To prolong the printer's life, make sure that the printer is well away from heaters and other sources of extreme heat, and the surrounding area is clean, dry, and free of dust.

Cleaning paper holder and thermal print head periodically is the main task of maintaining the printer. We will talk with this problem in this section. It is noted that make sure to turn off the printer before maintenance.

Printer Cleaning:

Dirt and dust do the most damage to the printer. Clean the paper in the printer and accumulated dirt in the thermal head despite the outer case of the printer prevents greater part of dust from invading.

Clean Printer Case:

Remove the dirt on the printer case with clean, soft cloth, and take out the paper pieces with a nipper.

> **Attention: Be careful not to scratch the printer parts when cleaning.**

Clean the printer periodically according to the prescription as follows.

Periodically cleaning: Once every 6 months or 300 working hours

Cleaning tool: Dry cloth (Soft cloth if metal parts)

6.2 Error Message on the Control Panel

When the malfunction occurs, the printer will be off-line and give an alarm through indicator lights. You can make out different malfunctions through the Table A-4 shown below.

Table A-4: Error message on the control panel

Error indicator	PAPER OUT indicator	Malfunction	Solution
BLINK FAST	OFF	Auto cutter error	Reposit the auto cutter
ON	OFF	Upper cover is open	Close the cover tightly
OFF	BLINK	Paper is about to end	Load the paper again
ON	ON	Paper out	Load the paper again
BLINK	OFF	Print head overheated	Recover automatically after cooling down

6.3 Auto-Cutter Jammed or Error

When the auto-cutter is jammed by paper, please open the upper cover of the printer and take out the jammed paper. If the upper cover can not be opened, as well as the auto-cutter still can not return to the normal position after the printer is restarted, please pull out the front cover which locates above the auto-cutter to expose the auto-cutter. Then turn the gear in the arrow direction. If the gear can't be moved in the arrow direction, don't force it, please turn it in the reverse direction until the auto-cutter returns to the normal position. As shown in Figure 6-1.

If cutter jams, turn the gear in the arrow direction. If the gear can't be moved any further, turn it in the reverse direction until the cutter returns to the normal position.

Upper cover
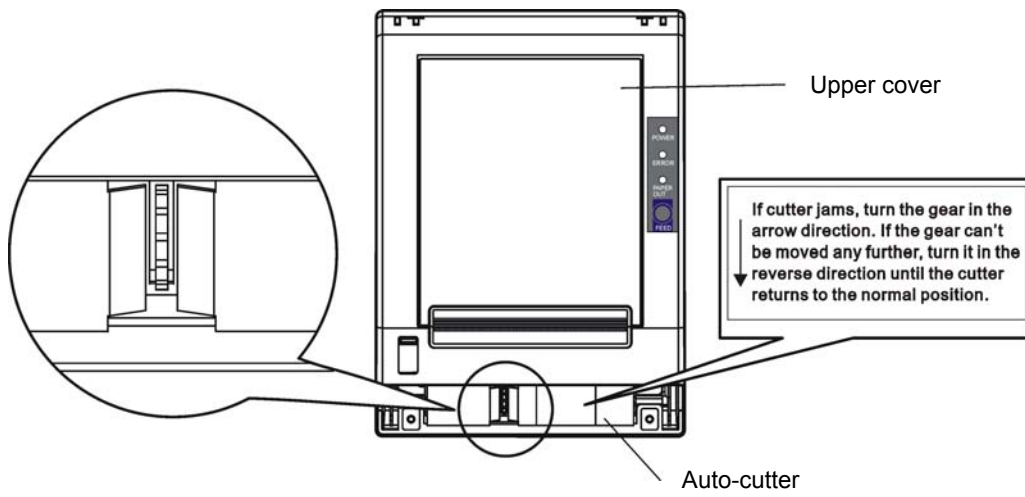
Auto-cutter

Figure 6-1 Adjust the auto-cutter by hand

Chapter 7 Control Commands

7.1 General

The commands TP820 supplies are based on ESC/POS.
The format described as following:

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 are listed for easier understanding.

7.2 Explanation of Terms

BEL	Beeper
Format: ASCII: BEL	
Decimal: 7	
Hex: 07	

Description:

Active the printer buzzer

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 print buffer and feed one line based on the current line spacing.

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

Description:

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

DLE EOT n	Real-time 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 instruction is still valid even thought 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 roll 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 spacing

Format:	ASCII:	ESC	SP	n
	Decimal:	27	32	n
	Hex:	1B	20	n

Description:

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

Horizontal or vertical motion unit is specified by GS P command

ESC ！				Set 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 define
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-height selected
6	-- -- --	Not define
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 motion unit). Nl, nH=0～255.

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

ESC %   Selected/cancel user-define characters set

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

Description:

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

Default: n=0

ESC &   Define user-define 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-define 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=0~255; 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-define 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=0～255; n2=0～3; d=0～255.

k=n1+256×n2 (m=0, 1)

k= (n1+256×n2) × 3 (m=32, 33)

The number of dots in horizontal direction is n1+256×n2.

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

m	Mode	Vertical direction		Horizontal direction	
		Number of dots	Dot density	Dot density	Number of dots (max)
0	8-dot single-density	8	68DPI	101DPI	288
1	8-dot	8	68DPI	203DPI	576

	double-density				
32	24-dot single-density	24	203DPI	101DPI	288
33	24-dot double-density	24	203DPI	203DPI	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 default line spacing

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

Description:

Set the line spacing to 1/6 inch.

ESC 3   Set line spacing as n/203 inch

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

Description:

Set the line spacing to n*(vertical or horizontal motion unit) n=0～255.

The line spacing of TP820 printer is the n* vertical minimum unit.

The vertical or horizontal motion units are 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-define 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 printer

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

Description:

Initialize the printer to the state when the printer was turn 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 (LSB) of the n is 0, the emphasized mode is turned off.

When LSB 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 print buffer and feed the paper n*(horizontal or vertical motion unit) inches.

n=0～255; Horizontal or vertical motion unit are specified by GS P command.

ESC M				Select character font

Format:	ASCII:	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 the value of n as shown in the follow.

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 90°clockwise rotation for underline 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 motion unit) inches from current position;

nL, nH=0～255. Horizontal or vertical motion 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 end 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 end 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 stop printing.

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

ESC c 5					Enable/disable panel button
Format:	ASCII:	ESC	c	5	n
	Decimal:	27	99	53	n
	Hex:	1B	63	35	n

Description:

When the LSB of n is 0, enable button.

When the LSB of n is 1, disable button.

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 print 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:

Select a code page through n as follows:

n=0 PC437	n=1 PC932	n=2 PC850	n=3 PC860(Portuguese)
n=4 PC863(Canadian)	n=5 PC865(Nordic)	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=26 Thai(TIS18)
n=27 Vietnam	n=28 PC864(Arabic)	n=29 PC737(Greek)	n=32 PC1253(Greek)
n=60PC855(Cyrillic)	n=61 PC857(Turkish)	n=62 Hebrew	n=70 Thai
n=74 PC3840(Russian)	n=79 PC1254(Turkish)	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 LSB of n is 0, upside-down printing mode is turn off.

When the LSB 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 define
1	-	-	-	Not define
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 define
5	-	-	-	Not define
6	-	-	-	Not define
7	Off	00	0	Underline is selected
	On	80	128	Underline is not selected

Select the Chinese character mode according n as follows:

FS &   Set Chinese language mode

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

Description:

In this mode, the code between 0x81 and 0xff are printed as Chinese character.

FS -   Turn Chinese character underline 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 language mode

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

Description:

In this mode No Chinese character printed.

FS 2   Define user-define 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 spacing
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 spacing to n1*(horizontal or vertical motion unit), right-side spacing to n2*(horizontal or vertical motion unit).

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

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 LSB of n is 0, turn off the quadruple-size mode.

When the LSB 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	71	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 indicator will be on for a period time, then the PAPER OUT indicator and ERROR indicator will be both on and the printer resets. No more other data or commands followed this command, or 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 less than 128K bytes (1M bits).

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

yL,yH specifies (yL+yH*256) bytes in the vertical direction for the NV bit image you defined.

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.
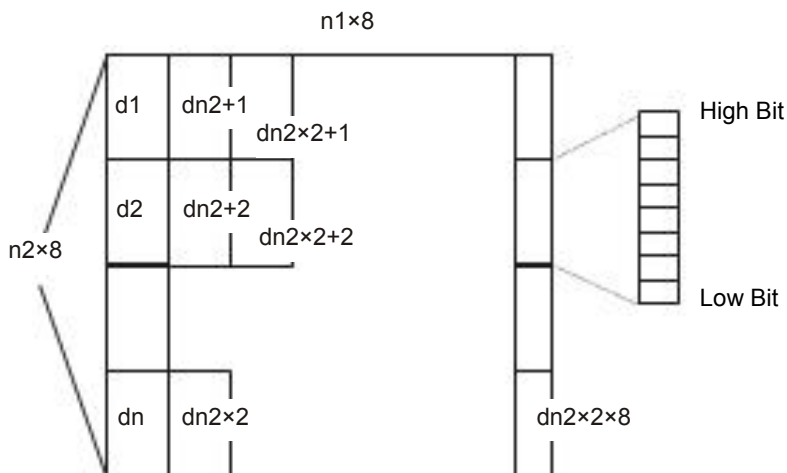
GS /			Print downloaded bit image

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 LSB of n is 0, turn the white/black reverse mode off.

When the LSB 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 motion unit); nL, nH=0～255.

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

GS P   Set horizontal or vertical motion 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 unit 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:

(There is only one cut mode can be selected if the cutter can only realize one cut 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 motion unit) and executes a full cut.

m=66, n=0~255; Feed paper to n*(horizontal or vertical motion 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 motion unit), nL, nH=0～255.

Horizontal or vertical motion units are specified by GS P.

GS f				Select the HRI character font

Format:	ASCII:	GS	f	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, $, %, +, -, ., / *(stat, stop)	48≤d≤57, 48≤d≤57, d=32, 36, 37, 43, 45, 46, 47. d=42 (stat, stop)
*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, $, %, +, -, ., / *(star, stop)	48≤d≤57, 48≤d≤57, d=32, 36, 37, 43, 45, 46, 47. d=42 (stat character)
*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 Commands List

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

Control commands	Functions
BEL	Beeper
HT	Horizontal tab
LF	Print and line feed
FF	Print and Feed paper to next black mark position
DLE EOT	Real-time status transmission
ESC BEL	Beep for appointment
ESC SP	Set right-side character spacing
ESC !	Set print mode
ESC $	Set absolute print position
ESC %	Select/cancel user-defined character set
ESC &	Define user-define characters
ESC *	Select bit-image mode
ESC –	Turn underline mode on/off
ESC 2	Select default line spacing
ESC 3	Set line spacing
ESC =	Select peripheral device
ESC ?	Cancel user-define 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 button
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 language mode

FS -	Turn Chinese character underline on /off
FS .	Cancel Chinese language mode
FS 2	Define user-define Chinese characters
FS S	Set Chinese character spacing
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 motion 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