



## User Guide     DT-210/230 Thermal Receipt Printer



## **Important Safety Instructions (English)**

Read the following instructions thoroughly before starting up your printer.

- The device and mains-socket must all times be easily accessible.
- Never carry out maintenance or repair work yourself. Always contact a qualified service technician.
- Keep this user guide in a place which is easily accessible at all times.
- Place the printer on a solid and even base so that it cannot fall.
- Never place the printer in the vicinity of inflammable gas or explosive substances.
- Ensure the printer is connected to a socket with the correct voltage.
- Always disconnect the printer from the power before opening the device to perform maintenance work or remedy errors.
- Do not expose the printer to high temperatures, direct sunlight or dust.
- Keep all liquids away from the printer.
- Protect the printer from shock, impact and vibration.
- Make sure that both the printer and the computer are switched off before connecting the data cable.
- The print head will become very hot during printing; avoid contact with the print head after printing has finished.
- Do not perform any operation or action in any way other than those provided in this manual. When in doubt, contact your dealer or your customer support.

## **Wichtige Sicherheitshinweise (German)**

Lesen Sie bitte diese Sicherheitshinweise durch, bevor Sie den Drucker in Betrieb nehmen.

- Das Gerät und die Netzsteckdose müssen jeder Zeit leicht zugänglich sein.
- Führen Sie Wartungsarbeiten und Reparaturen keinesfalls selbst aus, sondern verständigen Sie immer einen qualifizierten Servicetechniker.
- Bewahren Sie diese Dokumentation an einem jederzeit zugänglichen Ort auf.
- Den Drucker auf stabilem und ebenem Untergrund so aufstellen, dass er nicht zu Boden fallen kann.
- Stellen Sie den Drucker keinesfalls in der Nähe von leicht entzündlichen Gasen oder explosiven Stoffen auf.
- Den Drucker nur an eine Steckdose mit der richtigen Spannung anschließen.
- Wenn Sie den Drucker vom Netz trennen wollen, den Drucker ausschalten und immer den Netzstecker an der Steckdose ziehen.
- Den Drucker weder hohen Temperaturen noch direktem Sonnenlicht und Staub aussetzen.
- Keine Flüssigkeiten mit dem Drucker in Berührung bringen.
- Den Drucker keinen Erschütterungen, Stößen oder Vibrationen aussetzen.
- Sicherstellen, dass der Drucker und der Computer ausgeschaltet sind, bevor das Datenkabel angeschlossen wird.
- Der Druckkopf wird während des Druckens heiß. Vor dem Berühren deshalb einige Zeit abkühlen lassen.
- Weichen Sie bei der Bedienung des Druckers nicht von den Anweisungen in der Dokumentation ab. Bei Unklarheiten wenden Sie sich bitte an Ihren Händler oder Ihren Kundendienst.

## Consignes importantes de sécurité (French)

Lire attentivement les instructions suivantes avant de mettre l'imprimante en service.

- Le dispositif et la prise principale doivent toujours être accessibles facilement.
- Ne jamais effectuer soi-même les travaux d'entretien et de réparations. Contacter toujours un réparateur qualifié.
- Placer l'imprimante sur un support stable de façon à ce qu'elle ne puisse pas tomber.
- Ne jamais placer l'imprimante à proximité de sources de gaz aisément inflammables ou de substances explosives.
- Ne connecter l'imprimante à une prise que lorsque la tension est correcte.
- Pour déconnecter l'imprimante de l'alimentation principale, mettre l'imprimante hors tension et toujours débrancher le connecteur secteur de la prise murale.
- Ne pas exposer l'imprimante à des températures élevées, à la lumière directe du soleil ou à la poussière.
- Ne pas mettre l'imprimante en contact avec des liquides.
- Ne pas exposer l'imprimante à des chocs, impacts ou vibrations.
- S'assurer que l'imprimante et l'ordinateur sont hors tension avant de connecter le câble de données.
- La tête d'impression est brûlante pendant l'impression. C'est pourquoi laissez-la refroidir quelques instants avant d'y toucher.
- N'exécutez aucune opération ni action d'une autre manière que celle indiquée dans ce manuel. En cas de doute, veuillez contacter votre distributeur ou service après-vente.

## **Indicazioni di sicurezza importanti (Italian)**

Prima di mettere in funzione la stampante, leggere attentamente le seguenti indicazioni.

- Il dispositivo e la presa di corrente devono essere sempre facilmente accessibili.
- Non eseguire mai da sé gli interventi di manutenzione e riparazione, ma rivolgersi sempre a un tecnico di assistenza qualificato.
- Conservare le presenti istruzioni per l'uso in un luogo sempre accessibile.
- Collocare la stampante su una superficie stabile, per evitare che cada a terra.
- Non collocare la stampante in prossimità di gas facilmente infiammabili o di sostanze esplosive.
- Collegare la stampante a una presa di corrente con tensione adeguata.
- Per scollegare la stampante dalla rete di alimentazione, spegnere la stampante e disinserire sempre il connettore di rete dalla presa.
- Non esporre la stampante ad elevate temperature né alla luce solare diretta e alla polvere.
- Evitare il contatto della stampante con liquidi.
- Non esporre la stampante a colpi, scosse o vibrazioni.
- Verificare che la stampante e il computer siano spenti prima di collegare il cavo di trasmissione dati.
- Durante la stampa, la testina si surriscalda notevolmente. Prima di toccarla, se necessario opportuno quindi lasciarla raffreddare qualche istante.
- Non eseguire alcuna operazione o azione se non nella maniera descritta nel presente manuale. In caso di dubbio, contattare il rivenditore o dalla società incaricata dell'assistenza.

## **Instrucciones de seguridad importantes (Spanish)**

Lea las siguientes instrucciones con esmero antes de poner la impresora en servicio.

- El dispositivo y la toma de corriente deben estar ubicados de forma que sea fácil acceder a ellos.
- Nunca lleve a cabo trabajos de mantenimiento o reparación Ud. mismo, sino consulte a un técnico de servicio calificado.
- Guarde las presentes instrucciones de servicio en un lugar de fácil acceso en cualquier momento.
- Ponga la impresora sobre un base estable de manera que no pueda caer al suelo.
- Nunca coloque la impresora en la vecindad de gases de fácil inflamabilidad o sustancias explosivas.
- Asegure conectar la impresora sólo a un enchufe con un voltaje correcto.
- Cuando quiera desconectar la impresora de la red, apague la impresora y siempre tire la clavija de alimentación del enchufe.
- No exponga la impresora a temperaturas altas, a la luz solar directa y al polvo.
- No ponga la impresora en contacto con fluidos.
- Nunca exponga la impresora a sacudidas, choques o vibraciones.
- Asegúrese de que la impresora y el ordenador estén apagados antes de conectar el cable de datos.
- La cabeza de impresión se pone muy caliente durante la impresión. Por lo tanto, deje enfriarlo algún tiempo antes de tocarla.
- No permita que se realice cualquier operación o acción de una forma diferente a lo que se señala en el manual. En caso de duda, póngase en contacto con su comerciante o con su servicio post-venta.

## **Правила по технике безопасности. (Russian)**

Прочитайте, пожалуйста, инструкцию по технике безопасности перед включением в работу принтера.

- Устройство и розетка должны быть всегда легко доступны.
- Не выполняйте технические работы и ремонт техники самостоятельно, но сообщайте о неисправностях квалифицированным сервисным техникам.
- Данная инструкция должна быть всегда доступна каждому пользователю.
- Установите принтер на ровном и стабильном месте так, чтобы он не смог упасть на пол.
- Ни в коем случае не ставьте принтер вблизи легко воспламеняющихся газов и взрывчатых веществ.
- Включайте принтер в розетку только с соответствующим напряжением.
- Если Вы хотите отключить принтер от напряжения, сначала выключите принтер сам и затем выньте штекер из розетки.
- Берегите принтер от нагревания, от попадания на него прямых солнечных лучей и пыли.
- Не допускайте попадания жидкости на принтер.
- Нельзя подвергать принтер тряске, ударам и вибрации.
- Убедитесь, что принтер и компьютер выключены, только после этого соедините принтер с компьютером.
- Печатающая головка нагревается во время работы принтера. Поэтому подождите какое-то время, прежде чем дотронуться до нее.
- Пользуйтесь принтером так, как это написано в документации. Если у Вас возникают неясности, обращайтесь с вопросами к Вашим продавцам или в сервисный центр.

## **Instruções Importantes sobre Segurança (Portuguese)**

Leia as instruções de segurança antes de usar a impressora.

- A impressora e a tomada devem ser facilmente em todos os momentos acessíveis.
- Consulte sempre um técnico qualificado para executar uma reparação .
- Coloque a impressora sobre uma base sólida e nivelada, para que ela não sofra quedas.
- Jamais instale a impressora nas proximidades de lugares onde haja gás inflamável ou substâncias explosivas.
- Assegure-se de conectar a impressora à tomada elétrica com a voltagem apropriada.
- Quando desligar a impressora da rede, desligue sempre a impressora e retire o cabo da tomada.
- Não exponha a impressora a temperaturas altas ou luz solar direta.
- Não aproxime substâncias líquidas da impressora.
- Proteja a impressora de choques, impactos e vibrações.
- Desligue a impressora e o computador antes de conectar o cabo da rede.
- A cabeça da impressora pode ficar muito quente . Portanto, espere algum tempo antes de tocá-la.
- Não faça nenhuma operação ou ação além das recomendadas neste manual. Em caso de dúvida, contate seu revendedor ou companhia de serviço.



## Önemli Güvenlik Talimatları (Turkish)

Lütfen, yazıcıyı işleme geçirmeden önce bu güvenlik talimatlarını bütünüyle dikkatle okuyun.

- Cihaz ve elektrik prizinin her zaman kolayca erişilebilir olması gerekir.
- Bakım ve tamir çalışmalarını kesinlikle ve hiçbir surette kendi başınıza yapmayın; her zaman kalifiye bir uzman servis-teknisyenine haber verin.
- Yazıcıyı, üzerinden yere düşmesi mümkün olmayacak sabit ve düz bir zemine yerleştirin.
- Yazıcıyı kesinlikle ve hiçbir surette kolayca yanabilecek gaz veya patlayıcı maddeler içeren nesnelerin yakınına koymayın.
- Yazıcı akım kablosunu sadece doğru gerilime sahip bir prize takın.
- Yazıcıyı şebeke ağından ayırmak istediğinizde, yazıcıyı kapatın ve ağ-fişini her zaman prizden çıkartın.
- Yazıcıyı ne yüksek ısı ne de doğrudan güneş ışığına ve toza mâruz kalan mekânlarda bulundurun.
- Yazıcı hiçbir sıvı maddeyle temasta olmamalıdır.
- Yazıcı hiçbir sarsıntıya, darbeye veya titreşime mâruz kalmamalıdır.
- Veri kablosu bağlanmadan önce hem yazıcının hem de bilgisayarın kapalı olduklarından emin olmalısınız.
- Yazıcının başı basma esnasında yüksek ısıya ulaşıyor. Bu yüzden lütfen dokunmadan önce kısa süre soğumasını bekleyin.
- Yazıcının işletimi ve kullanımında bu dokümantasyondaki talimatların hiç dışına çıkmayın. Sorunlu görünen hususlarda lütfen imâlatçınıza veya müşteri hizmetleri servisimize başvurun.

## **TRADEMARK ACKNOWLEDGEMENTS**

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## About This Manual

This manual provides information to operators of the DT-210/230 to describe basic operations to enable safe and correct use of the printer.

## Symbols Description

The symbols in this manual are identified by their level of importance, as defined below. Read the following carefully before handling the product.



**CAUTION:** Provides information that must be observed to prevent damage to the equipment or loss of data.



**NOTE:** Advises you of information that is essential to complete a task.

## Related Software and Documents

### Related Software and Documents

Document name	Description
DT-210/230 User Manual	This manual.
DT-210/230 Maintenance Manual	This manual provides developer/ engineers with all the necessary information.
DT-210/230 Programming Guide	This provides description in Acrobat format of the commands used by each DT printer, along with sample programs and other information about the printer

Software	Utility
DT-210/230 Printer Driver (Windows) DT-210/230 Printer Driver (Linux)	DT-210/230 Utility (Windows)
JavaPOS SDK	
OPOS SDK	
OPOS SDK for .NET	

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# 1 PRODUCT OVERVIEW

Tally Dascom's DT-210/230 offers high-speed receipt printing for a wide range of terminal equipment including data, POS, and kitchen terminals. With extensive features, they can be used in a wide range of applications such as food service, retail and grocery.

With an internal memory large enough to store logos, footers, custom fonts, keywords and downloading custom applications, this unit has it all. The DT-210/230 can be desktop or wall-mounted and comes standard with USB interface, RS-232 serial, Centronics parallel, Ethernet, or Wi-Fi interfaces. Printer drivers included are: Windows XP (32 and 64 bit), Windows Vista (32 and 64 bit), Java POS, OPOS, and Linux.

## Features

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### Printing

- High speed printing (260 mm/s maximum).
  - Versatile roll capacity with ability to use 80mm, and 58mm wide paper rolls.
  - Can use paper roll with a maximum of 83mm diameter.
  - Equipped with a fast and quiet cutter (DT-230).
- 

### Handling

- Compact design, can be installed anywhere.
  - Drop-in paper roll mechanism facilitating easy paper handling and head cleaning.
  - Drip-proof design.
- 

### Software

- Command protocol is based on the ESC/POS Proprietary Command System.
  - OPOS ADK, OPOS ADK for .NET, JavaPOS ADK, Linux, and Windows printer drivers are available.
  - Barcode and 2D barcode printing supported.
  - Various layouts are possible by using page mode.
  - Buzzer reminder after each printout.
  - Paper-saving function is supported.
  - The DT-210/230 is ENERGY STAR qualified. (Some configurations may be exempted, depending on their
-



components.)

## Others

- Wide range of connectivity. The USB interface is standard interface. Serial/parallel/Ethernet/ Wi-Fi are optional interfaces. Various interface choices suit all needs.
- Built-in USB interface is also available for all interface models.
- The DT-210/230 Software & Documents Disc (drivers, utility, and manuals).
- Printer status and errors indicated by 3 LEDs and a buzzer.

## 1.2 Printer Specification

<b>Print Parameter</b>	Print method	Direct thermal line printing
	Resolution	203DPI, 8dots/mm
	Print speed	DT-230: 260mm/s Default; 240-270mm/s adjustable via DIP. DT-210: 220mm/s Default; 210-230mm/s adjustable via DIP.
	Print width	72mm (576dots)
	Interface	USB (On-board) + Cash Drawer (On-board) + one optional interface (daughter board): Serial, Parallel, Ethernet, Wi-Fi or fiscal interface.
	Print density	The density can be adjusted to different levels: DT-210: Level 1 Density light: Speed 230 mm/s Level 2 Density middle: Speed 220 mm/s Level 3 Density middle: Speed 210 mm/s Level 4 Density dark: Speed 200 mm/s DT-230: Level 1 Density light: Speed 270 mm/s Level 2 Density middle: Speed 260 mm/s Level 3 Density middle: Speed 250 mm/s Level 4 Density dark: Speed 240 mm/s
<b>Power consumption</b>		51.6W(Normal) 7W(Standby)
<b>Memory</b>	RAM	1Mbytes
	Flash	4Mbytes
<b>Receive buffer</b>		48Kbytes
<b>Fonts</b>	Characters per line	Font A, Special Font A: 48 cpl Font B, Special Font B: 64 cpl
	User-defined	Supported
	Code page	14 code pages (PC437, PC850, PC852, PC858, PC860, PC863, PC865, PC866, KU42, TIS11, TIS18, PC720, PC864, WPC1256)
	Chinese Character	GB18030 24×24
<b>Barcodes</b>	1D	UPC-A, UPC-E, EAN8, EAN13, CODE39, ITF, CODEBAR, CODE128,

		CODE32
	2D	PDR417, QR code
<b>Graphics</b>		Supports several bitmap densities and download image printing. (Maximum size of each bitmap is 64kB. The total size of memory is 256K.)
<b>Detect Function</b>	Sensors	Paper End, Paper Near End, Paper Jam and Cover Open sensors.
<b>Power Supply</b>		External power adapter
	Input	AC 100V-240V 50-60Hz
	Output	DC 24V±5%, 2.15A, A-1009-3P interface
<b>Paper Handling</b>	Paper type	Standard Thermal Paper (see P31- 5.4 paper specification)
	Paper width	79.5±0.5mm/57.5±0.5mm
	Paper thickness	0.056~0.1mm
	Paper roll diameter	Max. OD $\phi$ 83mm Min. ID $\phi$ 13mm
	Paper load	Upward cover open and Easy paper loading
	Paper cut	Manual tear; Auto-cutter (hay cutter type) and partial cut.
<b>Emulation</b>		ESC/POS (TM-T88IV) Compatible command set
<b>Noise</b>		The noise level will be less than 50 dBA at 260mm/s printing speed (to be measured in accordance with ISO 7779)
<b>Physical Spec.</b>	Operating condition	5~45°C/10~95% RH
	Storage condition	-10~50°C/10~95% RH
	Dimensions	147×198×146 (W×L×H mm)
	Color	Black
	Weight	Approx. 1.8kg
<b>Optional Kits</b>		Splash cover and Hanging plate
<b>Accessory</b>		Interface cover
<b>Reliability</b>	Head lifetime	150km
	MTBF	360, 000 hours
	Cutter lifetime	2,000,000 cuts
	MCBF	52,000,000 lines
<b>Software</b>	Driver	Windows, 32 & 64 Bit; Linux
<b>Certification</b>		CCC, CE, UL, FCC, Energy Star

## 1.3 Paper Specification

### 1.3.1 Continuous Paper

Paper type		Specified thermal paper
Form		Roll paper
Size	Roll paper diameter	83 mm {3.27"} maximum
	Min. core diameter	13mm
	Take-up roll paper width	79.5±0.5mm
	Paper width	79.5 ± 0.5 mm/57.5±0.5mm
	Paper thickness	0.065mm ~ 0.090mm
<p>CAUTION</p> <ul style="list-style-type: none"> <li>• Paper must not be pasted to the roll paper spool.</li> <li>• The remaining amount of the roll paper when a roll paper near-end is detected differs depending on the spool type.</li> </ul>		

### 1.3.2 Notices

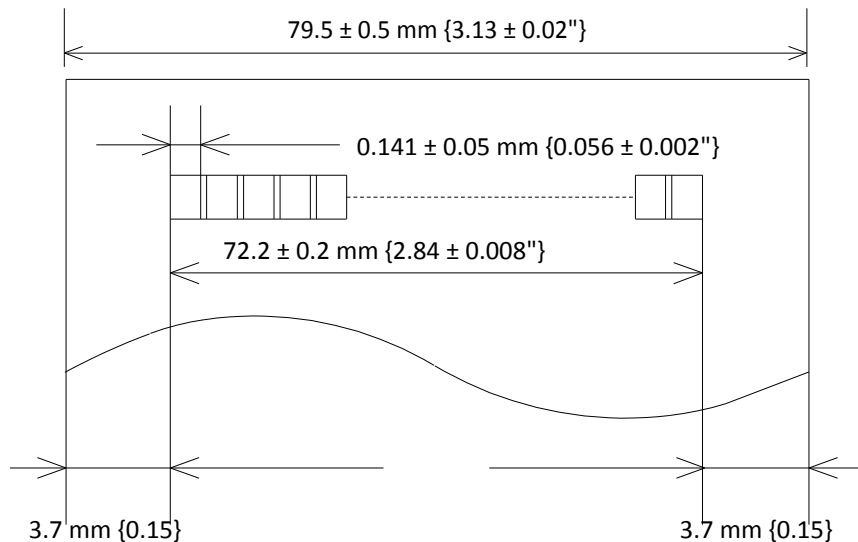
- Pls. use the recommended thermal paper or same quality paper, otherwise it will influence the printing quality and decrease the thermal printer head life.
- Don't stick the paper on the roll paper core.
- If the thermal paper is polluted by chemical or oil, the thermal paper heat sensibility decreases, which will influence the printing quality.
- Don't use finger nail or hard articles to touch the surface of thermal paper, otherwise it will cause color fading.
- When the environment temperature is higher than 70°C, the thermal paper color will fade, so pay attention to the influence of temperature, humidity and sunlight.

## 1.4 Printing and Cutting Positions

### 1.4.1 Printable Area

#### 80 mm paper width printing

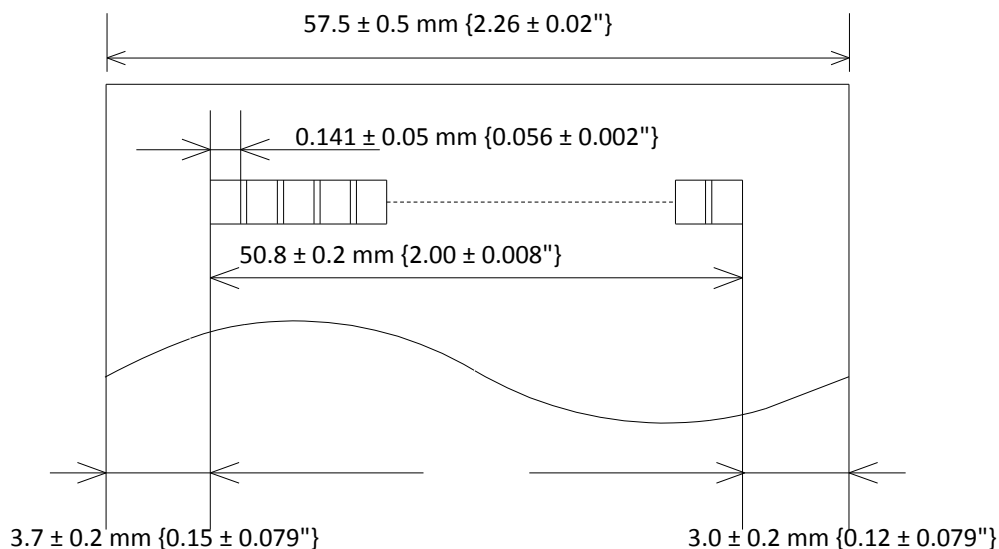
The printable area of a paper with width of  $79.5 \pm 0.5$  mm  $\{3.13 \pm 0.02\}$ " is  $72.2 \pm 0.2$  mm  $\{2.84 \pm 0.008\}$ " (576 dots) and the space on the right and left sides are approximately  $3.7 \pm 2$  mm  $\{0.15 \pm 0.079\}$ ".



All the numeric values are typical.

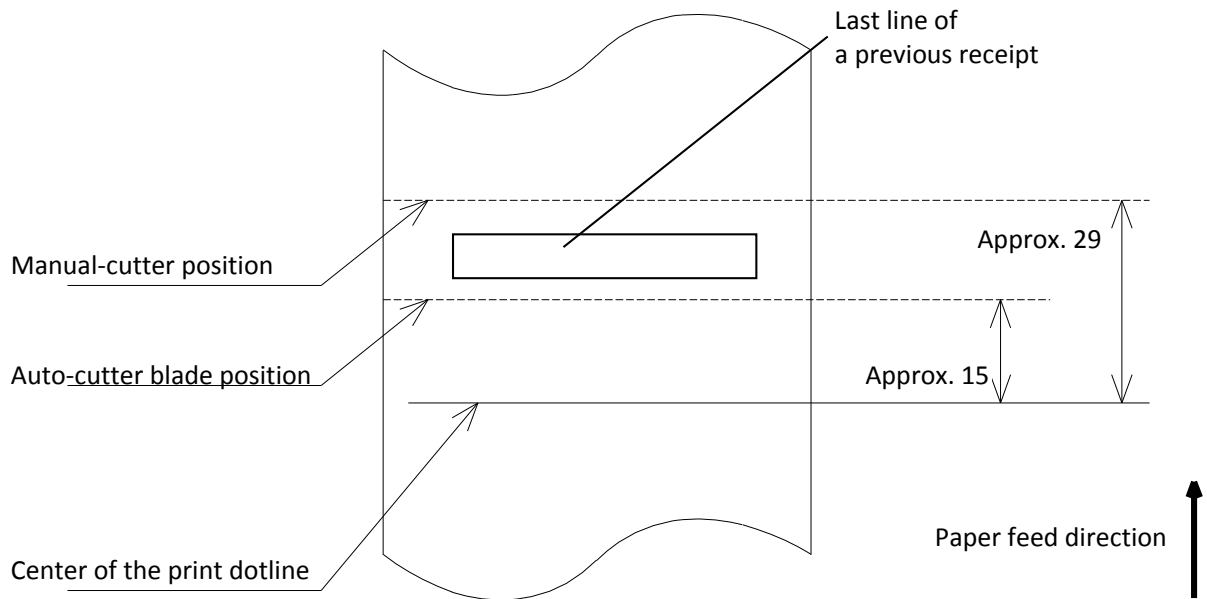
#### 58 mm paper width printing

The printable area of a paper with width of  $57.5 \pm 0.5$  mm  $\{2.26 \pm 0.02\}$ " is  $50.8 \pm 0.2$  mm  $\{2.00 \pm 0.008\}$ " (360 dots), and the space is approximately  $3.7$  mm  $\{0.15\}$ " on the left side and approximately  $3.0$  mm  $\{0.12\}$ " on the right side.



All the numeric values are typical.

### 1.4.2 Cutting Positions



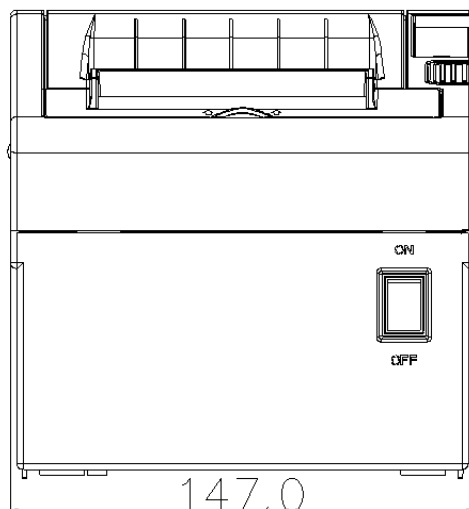
[Units: mm (All the numeric values are typical.)]



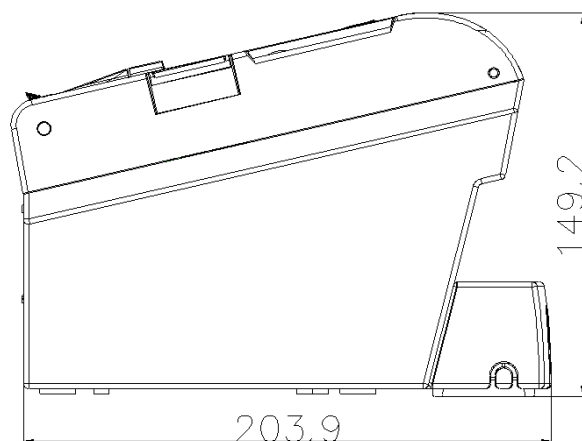
The values may vary slightly as a result of paper slack or variations in the paper. Take this into account when setting the cutting position of the auto cutter.

## 1.5 External Dimension and Mass

- Width: Approximately 147 mm {5.78"}
- Depth: Approximately 203.9 mm {8.03"}
- Height: Approximately 149.2 mm {5.87"}
- Mass: DT-210: Approx. 1.6kg {3.53lb} (excluding power adapter)  
DT-230: Approx. 1.7kg {3.75lb} (excluding power adapter)



**Front View**



**Side View**

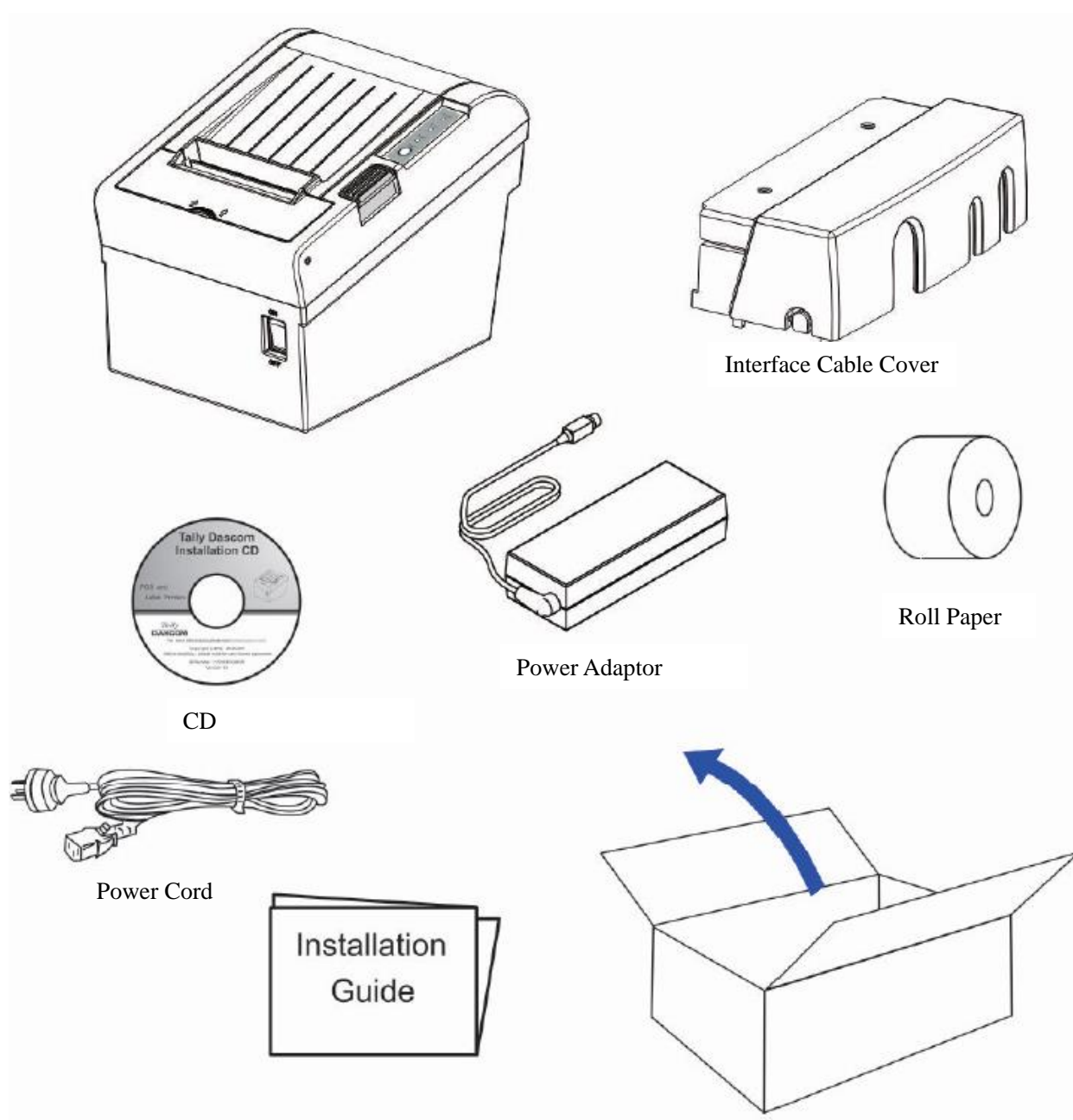
## 1.6 Unpacking

When you receive the printer, please check for possible shipping damage:

1. Inspect the outside of both the box and the printer for possible damage.
2. Open the top cover of the printer to see if the media compartments are in order.

If you discover shipping damage upon inspection:

- Immediately notify the shipping company and file a damage report.
- Keep all packaging material for shipping company inspection.
- Notify your authorized reseller.





The package contents vary with different customized order requirements.

## Shipping List

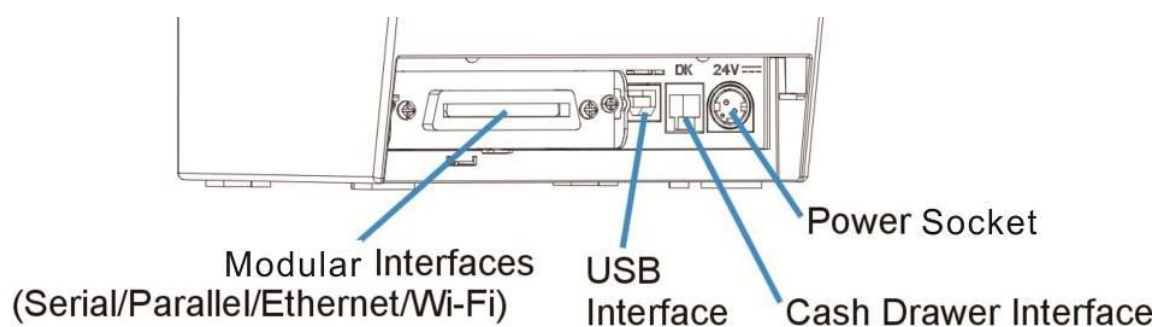
Items	QTY.	Remarks
Printer	1 unit	
Interface Cable Cover	1 piece	
Power Adapter	1 piece	
Power Cord	1 piece	
Roll Paper -Test	1 piece	
Graphic Installation Guide	1 piece	
CD	1 piece	including user guide, graphic installation guide, Driver and demo tool

## 1.7 Product Configurations

There are two models in this series.

- DT-210: without auto cutter
- DT-230: with auto cutter

## Interface Types



- USB interface
- Serial interface: USB + RS0232C
- Parallel interface: USB + bidirectional parallel port (IEEE1284)
- Cash Drawer Interface
- LAN interface: Ethernet (10Base-T, 100Base-TX)
- Wireless LAN interface: Wi-Fi (802.11), supports Android and windows system



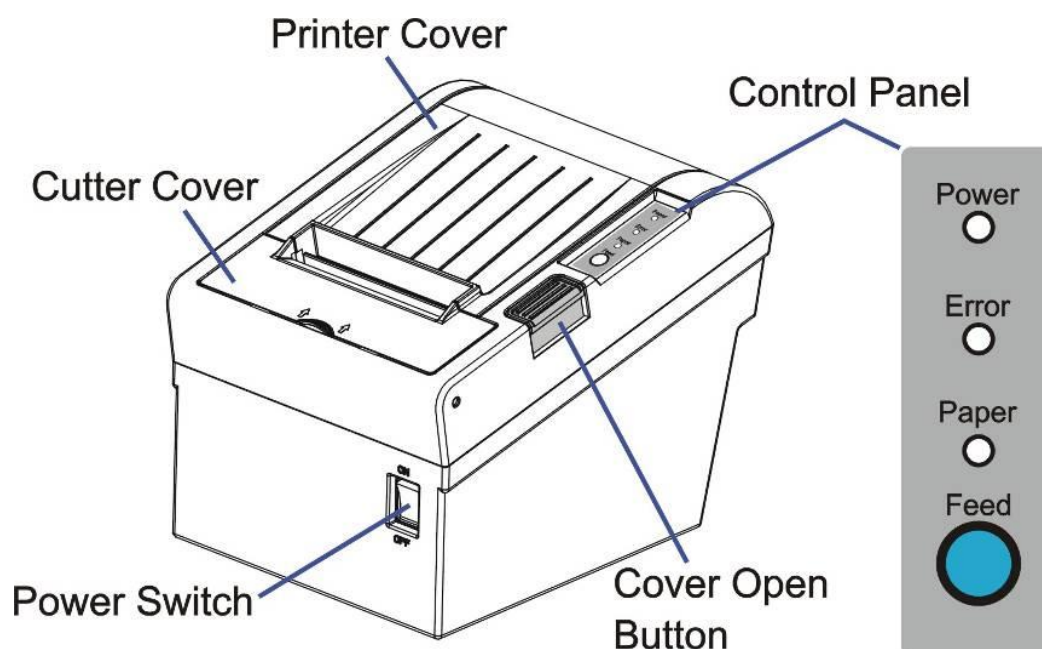
Model	Power Adapter	Interfaces							Power Cord	Paper Cut		Sensor
	100-240	USB	Cashbox	PAR	SER	ETH	Wi-Fi	Fiscal	EN/UK/EU	Cutter	Tear Bar	Black Mark
DT-210	✓	✓	✓	O	O	O	O	O	✓	N	✓	O
DT-230	✓	✓	✓	O	O	O	O	O	✓	✓	✓	O

Remarks: “ ✓ ” indicates standard configuration, “ O ” indicates optional configuration.

PAR=Parallel interface; SER= Serial interface; ETH=Ethernet interface.

## 1.8 Part Names and Functions

Printer components and functions are shown as below:



Component	Function
Printer Cover	Open the cover when loading roll paper.
Control Panel	Shows printer status.
Power Switch	To power printer ON or OFF.
Cutter Cover	To protect the auto-cutter and to clear paper jam at cutter.
Cover Open Button	Press down to open the Printer Cover

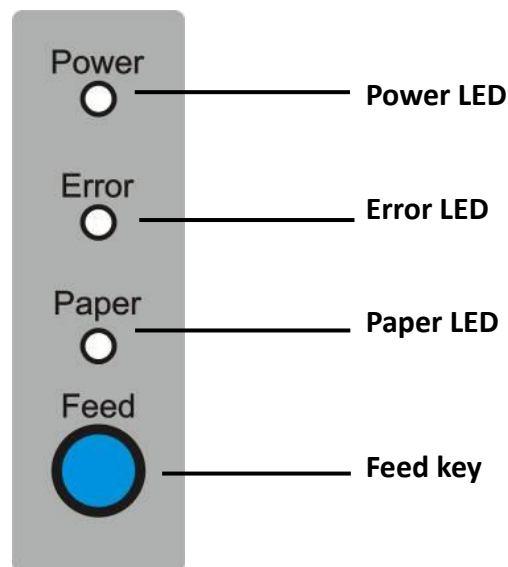
### 1.8.1 Power Switch

Turn the printer on or off. The marks on the switch: (O: OFF / | : ON)



Before turning on the printer, be sure to check that the AC adapter is connected to the power supply.

### 1.8.2 Control Panel



#### LEDs

##### Power LED (green)

- Lights when the power supply is on.
- Goes out when the power supply is turned off.

##### Error LED

Lights or flashes when the printer is offline.

- Lights after the power is turned on or after a reset (offline). Automatically goes out after a while to indicate that the printer is ready.
- Lights when the end of the roll paper is detected, and when printing has stopped (offline). If this happens, replace the roll paper.
- Flashes when an error occurs. (For details about the flash code, see "[Error Status](#)" in chapter 6.1.)
- Goes out during regular operation (online).

##### Paper LED

- Lights when there is no more roll paper or there is little remaining.
- Off when there is a sufficient amount of roll paper remaining.
- Flashed when a self-test is in progress.

---

## Feed Key

Pressing this key once feeds the roll paper by one line. Holding this button down feeds the roll paper continuously.

### 1.8.3 LED Indicators

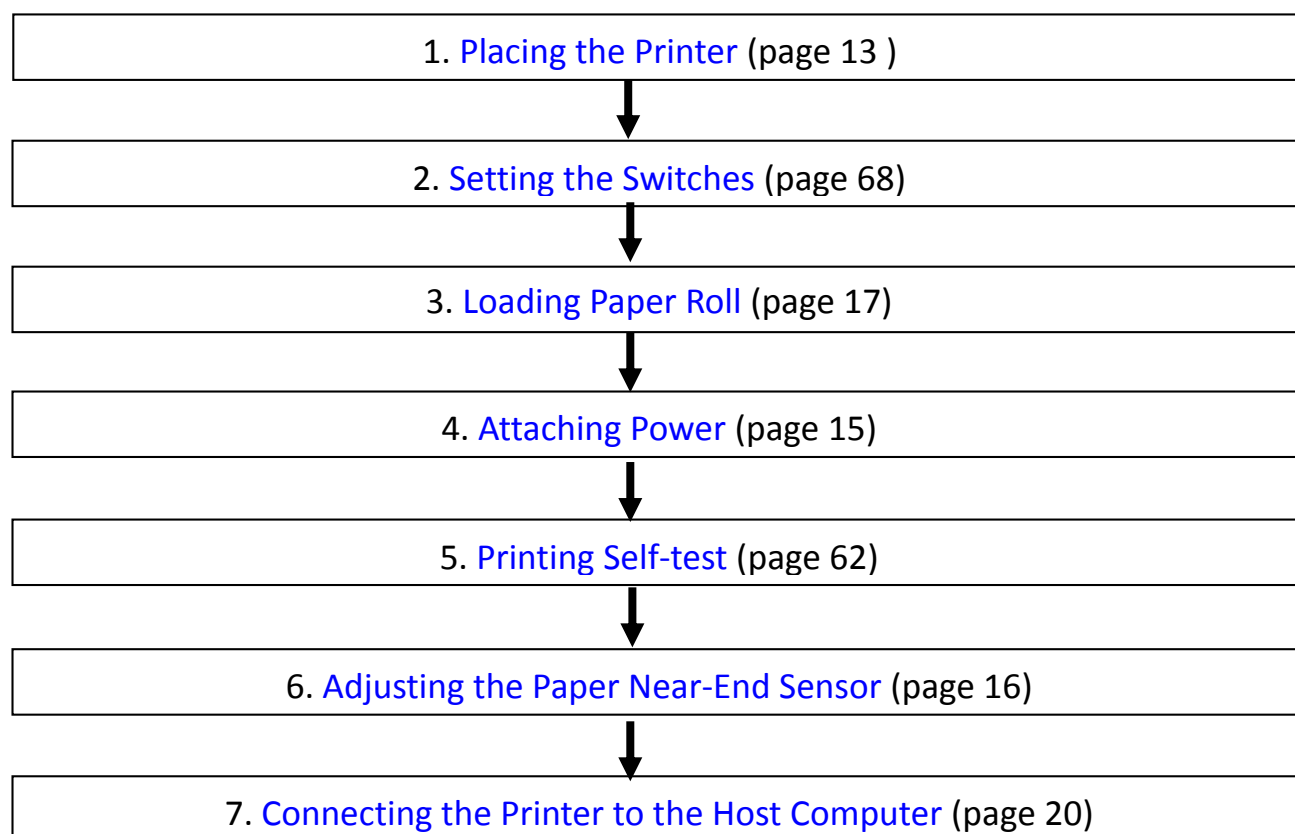
Description	POWER	ERROR	PAPER	BEEPER
Printer Cover is open	On	On	On	Short beep for twice and long beep for once
Roll paper is sufficient	On	Off	Off	No beep
Roll paper end	On	On	On	Short beep for three times
Roll paper near end	On	Off	On	No beep

## 2 SETUP

This chapter describes the setup and installation of the product and peripherals.

### 2.1 Flow of Setup

This chapter consists of the following sections along with the setup flow of the product and peripherals.



### 2.2 Placing the Printer

You can install this printer horizontally. With an optional mounting plate (P/N: 99501), you can also attach the printer to a wall. It's recommended that install the printer at horizontal line.

---

#### Horizontal Installation

You can install this printer horizontally. Place the printer on a solid, flat, stable surface; ensure the printer is placed in a stable position and there is easy access for users to the control panel and roll paper holder. Also ensure there is enough space for sufficient ventilation and for the printout.

**Important Notes on Horizontal Installation:**

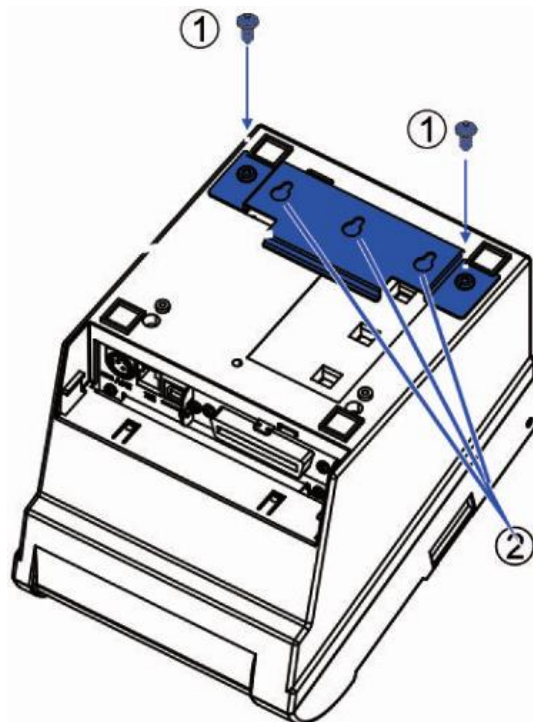
- The printer should install at a flat and steady place. It's recommend that install the printer at horizontal line. The angle of inclination should not exceed  $\pm 10^\circ$ (paper feed direction) if tilt install printer, it does not allow to tilt by other direction.
- Keep printer far away from source of water.
- Avoid the printer on place where it is vibration and shock.
- Ensure printer ground connect is safe.
- When the printer is at operation and maintenance, it is recommended to retain the enough space to ensure the printer can work in reliability and ease of operation.

---

**Vertical Installation****Vertical Installation Steps:**

You need to perform the follow tasks to install the printer on a wall. .

1. Mount the plate (P/N: 99501) on the lower housing of the printer with screws.
2. Align the positioning holes of the hanging plate and plug into the fixed screws on the wall.



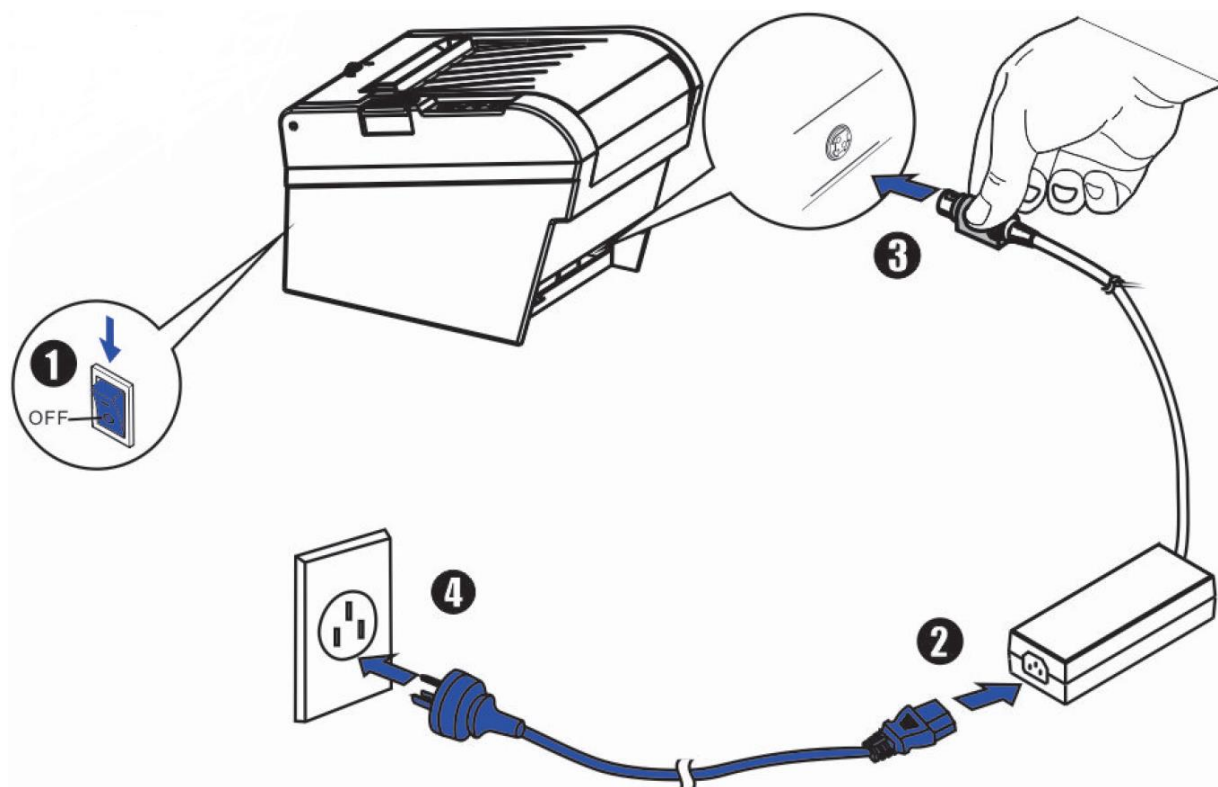
## 2.3 Attaching Power

### Checking the voltage of the power adapter



Before you connect the power adapter to the power socket check if the voltage is correct. If you connect the power adapter to power with incorrect voltage this may result in electrical damage to adapter and printer.

1. Make sure the printer and the computer are powered off.
2. Connect the power cord to the power adapter.
3. Connect the power adapter to the power supply interface at the rear of the printer.
4. Ensure the power cord is securely connected. Connect the power cord plug to a mains socket on the wall.



- 1) Please only use the power adapter are recommended by supplied or equivalent products;
- 2) When disconnecting the AC adapter plug, handheld plug connector housing, to avoid the pulling on the cable in force;
- 3) Avoid drag the power adapter cable, otherwise it will damage the cables, causing fire and shock;
- 4) Avoid put power adapter around a heating device, otherwise the cable may melt, causing fire and shock;
- 5) If you do not use the printer in a long time, disconnect the power supply of printer power adapter.



## 2.4 Adjusting the Paper Near-end Sensor

Below are two situations where a paper near-end sensor adjustment is required.

- To adjust the detection position to suit the diameter of the roll paper core used.
- To adjust the detection position of remaining amount of paper.

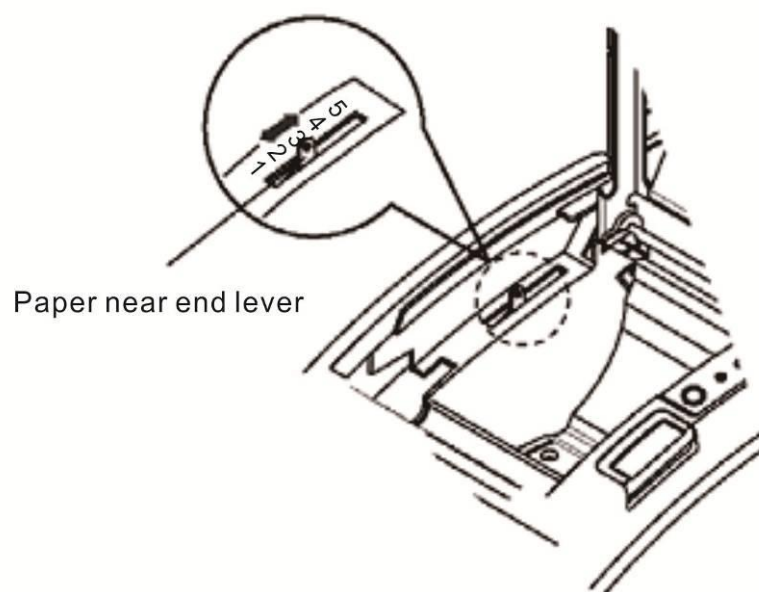


### CAUTION!

Since roll paper cores vary slightly in shape, depending on paper roll design and manufacturing tolerances, it is impossible to detect the remaining paper exactly.

Follow the steps below to adjust the roll paper near-end detector.

1. Open the roll paper cover, and remove the roll paper.
2. You will see a black lever inside as shown below.



3. Adjust the lever according to your need.

Adjustments position	Remaining amount of paper (outer diameter: mm)
1 (Minimum)	Approx. 26 {1.02"}
2	Approx. 27 {1.06"}
3	Approx. 28 {1.10"}
4	Approx. 30 {1.18"}
5	Approx. 32 {1.26"}
6 (Maximum)	Approx. 33 {1.30"}

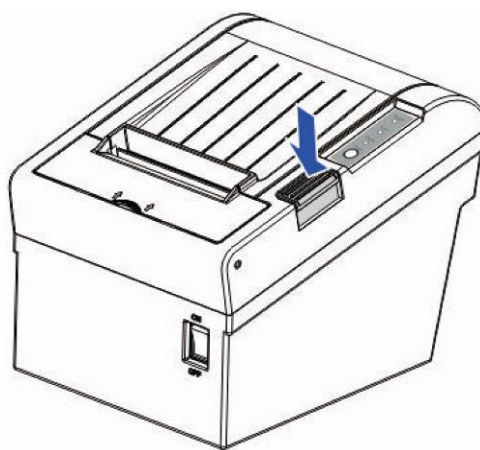
## 2.5 Loading Roll Paper



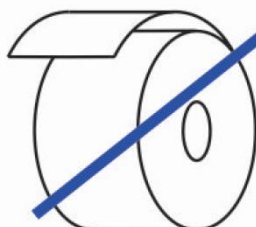
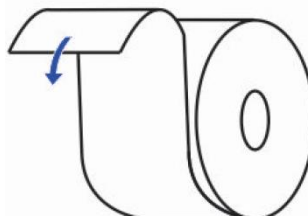
Confirm the type of paper used by the printer before printing. The default paper type is specified thermal paper.

### 2.5.1 Loading 80mm Media

1. Press the cover open button to open the cover.

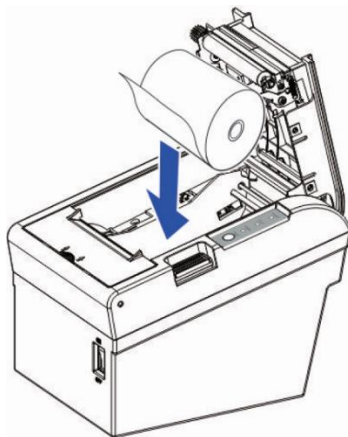


2. Remove the used roll paper core, if any.
3. Insert the paper roll with its print area facing down as shown in the figure.

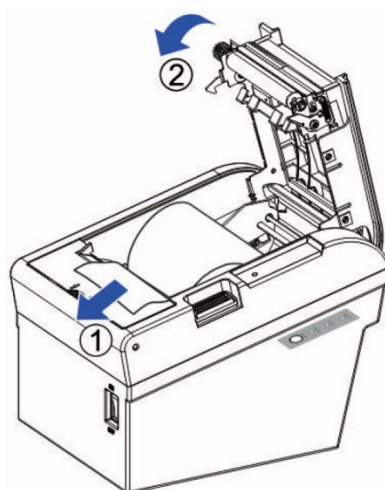




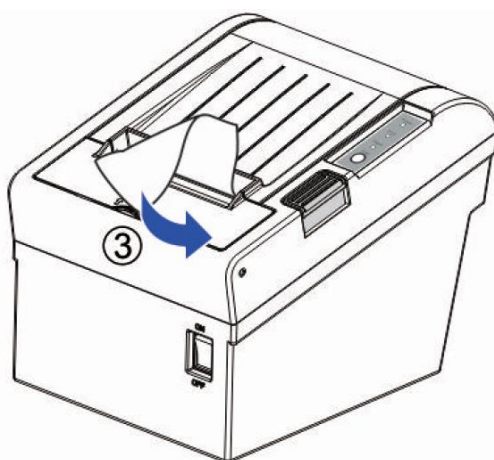
4. Install the media in the correct direction.



5. Pull out some roll paper, and close the cover. Make sure the paper inside is tight enough, otherwise it will tissue paper or other obstacle.



6. Tear off the paper with the manual cutter till you hear a sound.

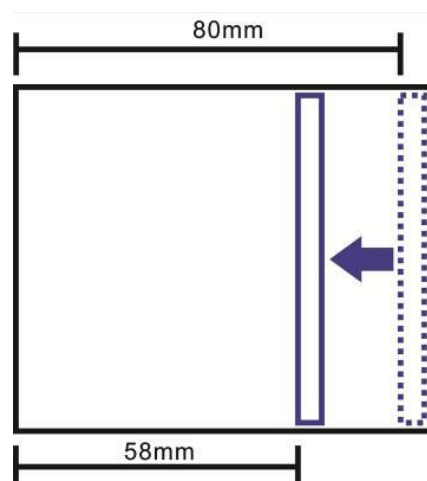
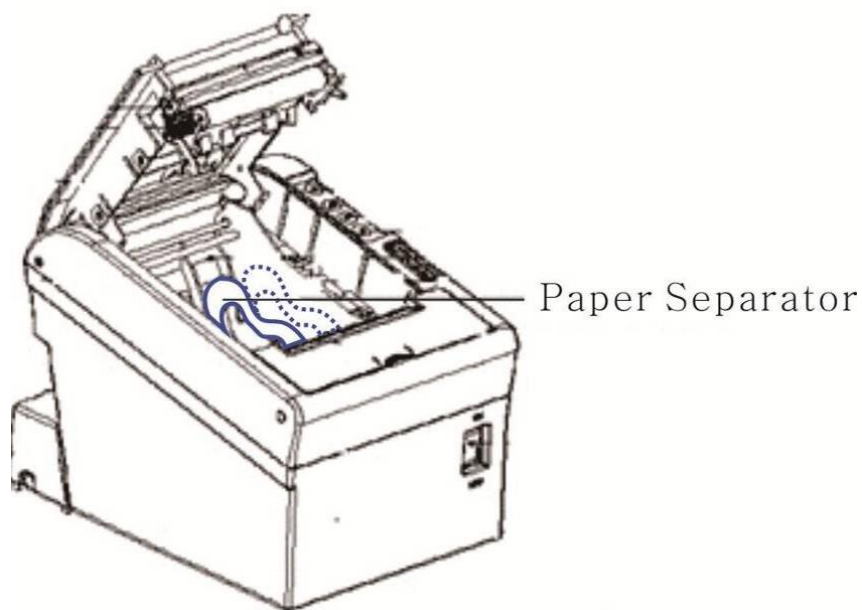


### 2.5.2 Loading 58mm Media

The printer is initially set to print on 80 mm width paper and you can change the printer to print on 58 mm width paper by installing the roll paper guide and changing the paper width setting with customized value.

Follow the steps below to install the roll paper guide.

1. Open the roll paper cover.
2. Hold the paper separator and carefully pull it out in the direction of arrow.
3. Move paper separator from right side to the specified position near the middle of paper holder, and carefully insert it into the specified position.



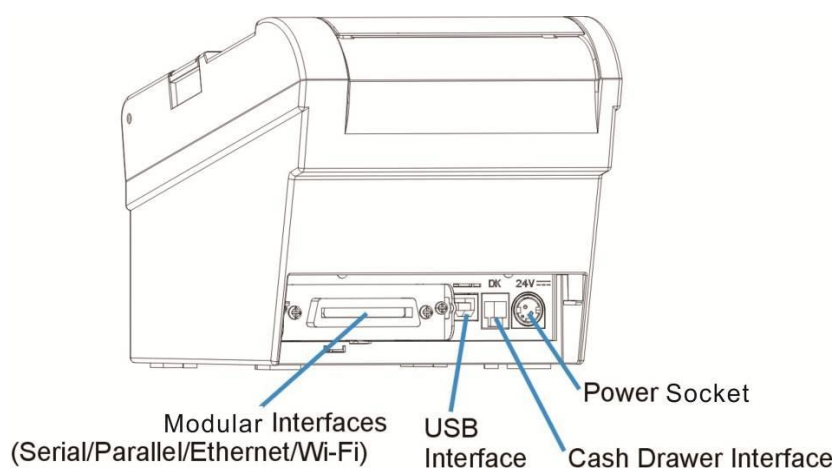
## 2.6 Connecting to Computer



### NOTE!

Be sure to install the driver before connecting the printer to the host computer.

Before installing, disconnect the Power Unit from the printer (as well as turning the power switch off). Even when the power switch is off, voltage is still present at some points on the circuit board. Changing components while the power unit is connected can cause damage to the interface board and the printer.



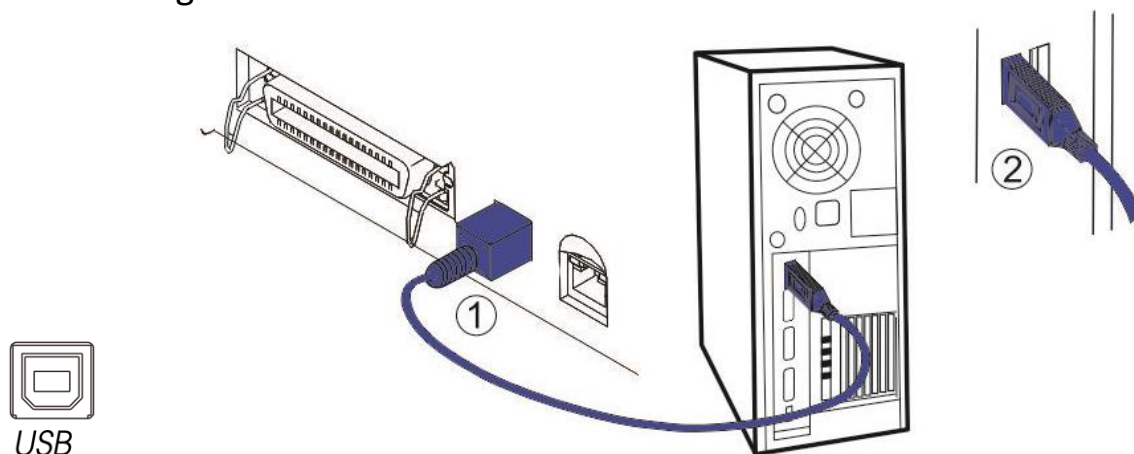
Component	Function
Power Socket	Connects power supply to the printer.
Cash Drawer Interface	Connects Cash Drawer interface cable from the cash drawer.
USB Interface	Connects USB interface cable from the host.
Modular Interface	Connects optional interface (Serial I/F, Parallel I/F, Ethernet I/F or Wi-Fi I/F) from the host.

### 2.6.1 Connection Cable Requirement

Connection cable must comply with the following requirements:

Connection Type	Specifications
USB	USB 1.1/2.0 compatible
Serial	RS232
Parallel	IEEE 1284.4
Cash Drawer	
Ethernet	10 Base-T/100 Base-TX compatible

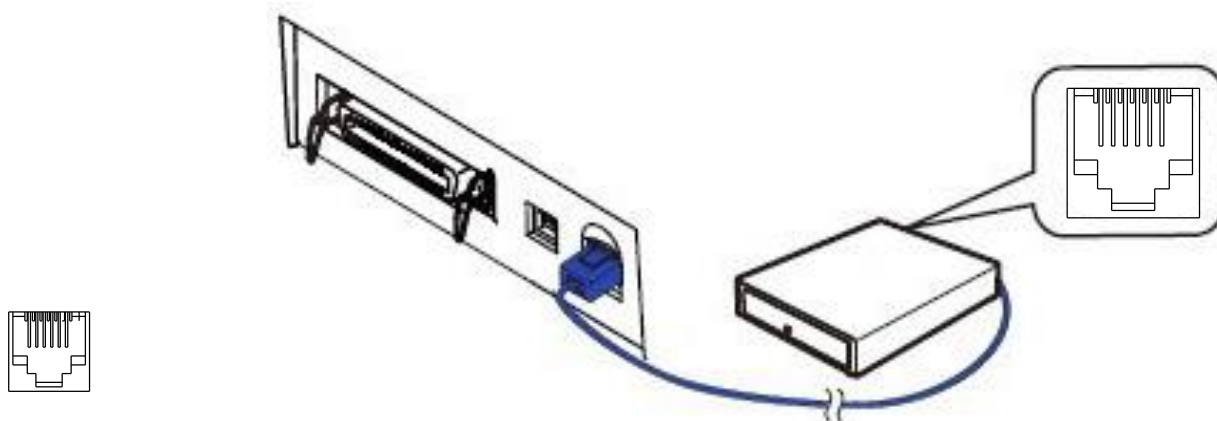
## 2.6.2 Connecting USB Interface



### CAUTION!

Be careful not to insert the USB interface cable into the cash drawer kick-out connector.

## 2.6.3 Connecting Cash Drawer Interface



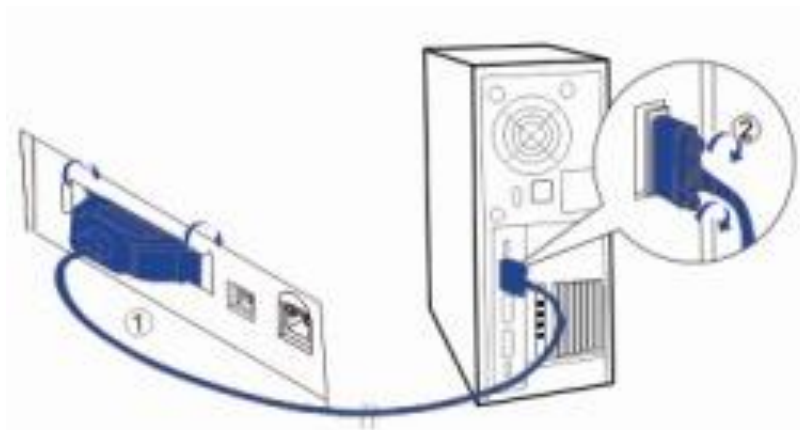
1. Confirm that the power switch is OFF.
2. Confirm the top and bottom of the cash drawer cable connector and insert it into the cash drawer kick-out connector at the back of the printer.
3. Screw the cash drawer's ground wire to the body of the printer.



### CAUTION!

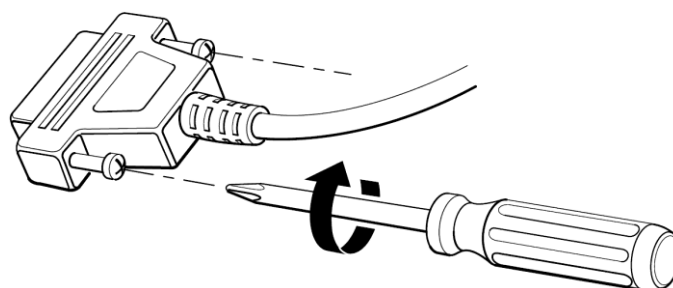
DO NOT connect any other device than the specified cash drawer to the cash drawer kick-out connector. (Do NOT connect a telephone line either.)

## 2.6.4 Connecting Serial Interface

**WARNING!**

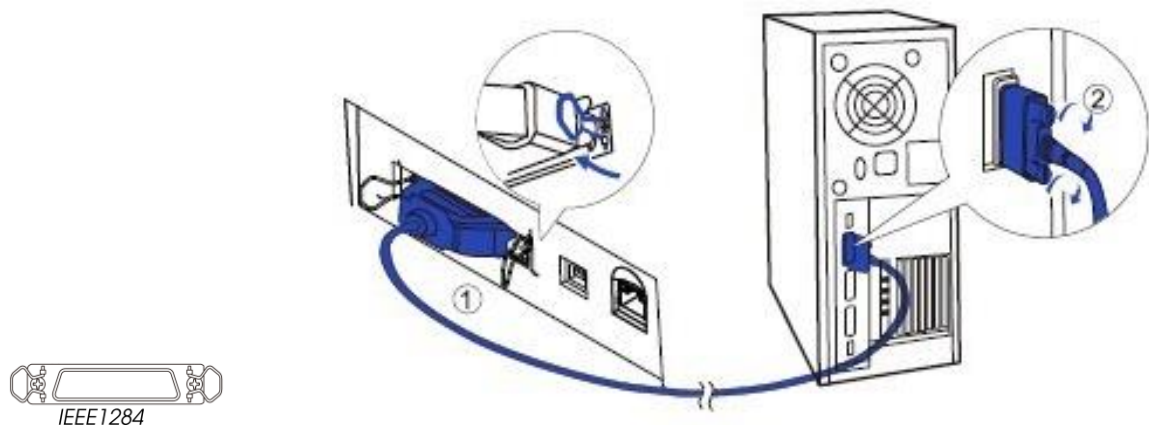
Be sure to turn off the power supply for both the printer and host computer before connecting the cables.

1. Insert the interface cable connector firmly into the interface connector on the connector panel.
2. When using the connectors equipped with screws, tighten them to secure the connectors firmly.



3. When using interface cables equipped with a grounding line, attach the ground line to the screw hole marked "FG" on the printer.
4. Connect the other end of the interface cable to the host computer.

## 2.6.5 Connecting Parallel Interface



1. Insert the interface cable connector firmly into the interface connector on the connector panel.
2. Press down the clips on either side of the connector to lock it in place.
3. When using interface cables equipped with a grounding line, attach the ground line to the screw hole marked "FG" on the printer.
4. Connect the other end of the interface cable to the host computer.

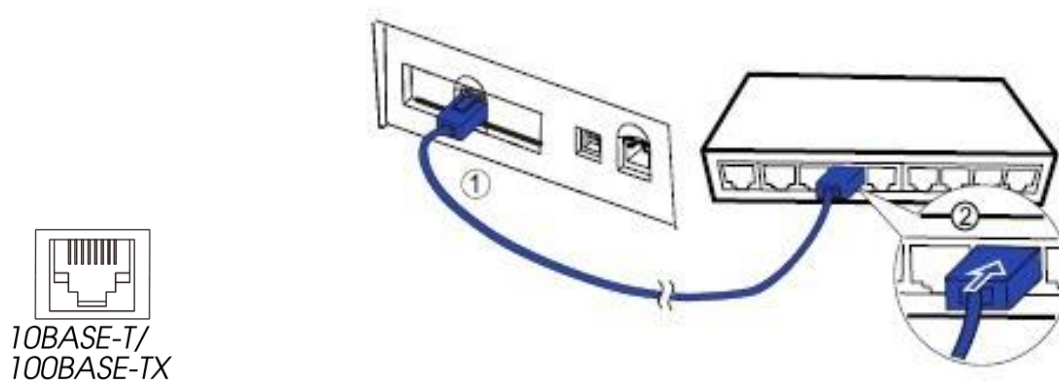
## 2.6.6 Connecting Ethernet Interface



- Before installation, make sure you have installed the driver and the driver for Ethernet interface (see Installing Driver on page 17)
- When LAN cables are installed outdoors, make sure devices without proper surge protection are cushioned by being connected through devices that do have surge protection. Otherwise, the devices can be damaged by lightning.
- Never attempt to connect the customer display cable, drawer kick-out cable, or the standard telephone line cable to the 10/100BASE-T LAN connector.

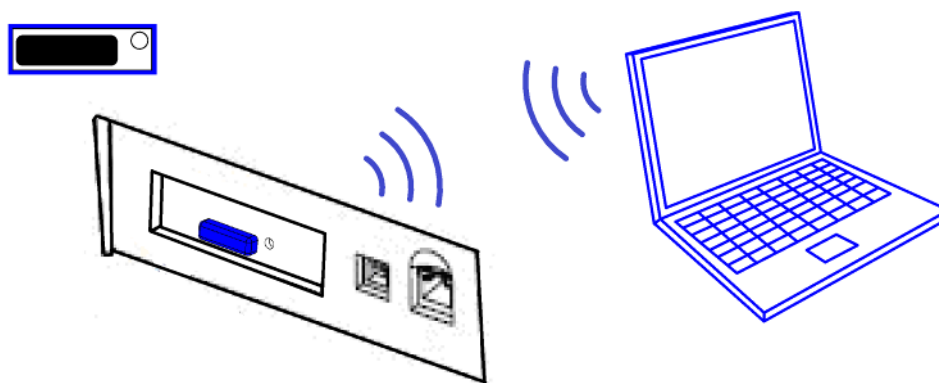
Connect the printer to a network by a LAN cable via a hub.

Connect a 10/100BASE-T cable to the 10/100BASE-T LAN connector by pressing firmly until the connector clicks into place.



### 2.6.7 Connecting Wi-Fi Interface

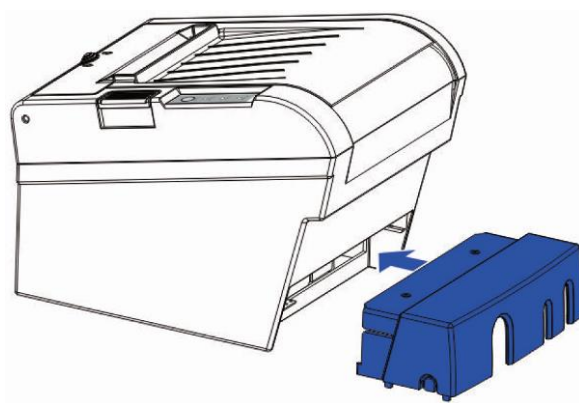
Users have to prepare a Wlan card by themselves and install it in the Wi-Fi interface.



## 2.7 Installing Optional Kits

### Interface Cover

Adjust the relative positions between interface cover and printer as shown below, and push the interface cover as arrow shows below.



### Splash Cover (optional kit)

Slip the fixed hooks on both sides of splash cover into the mounting hole on the printer, and close the splash cover.





## 3 NETWORK SETUP AND CONFIGURATION

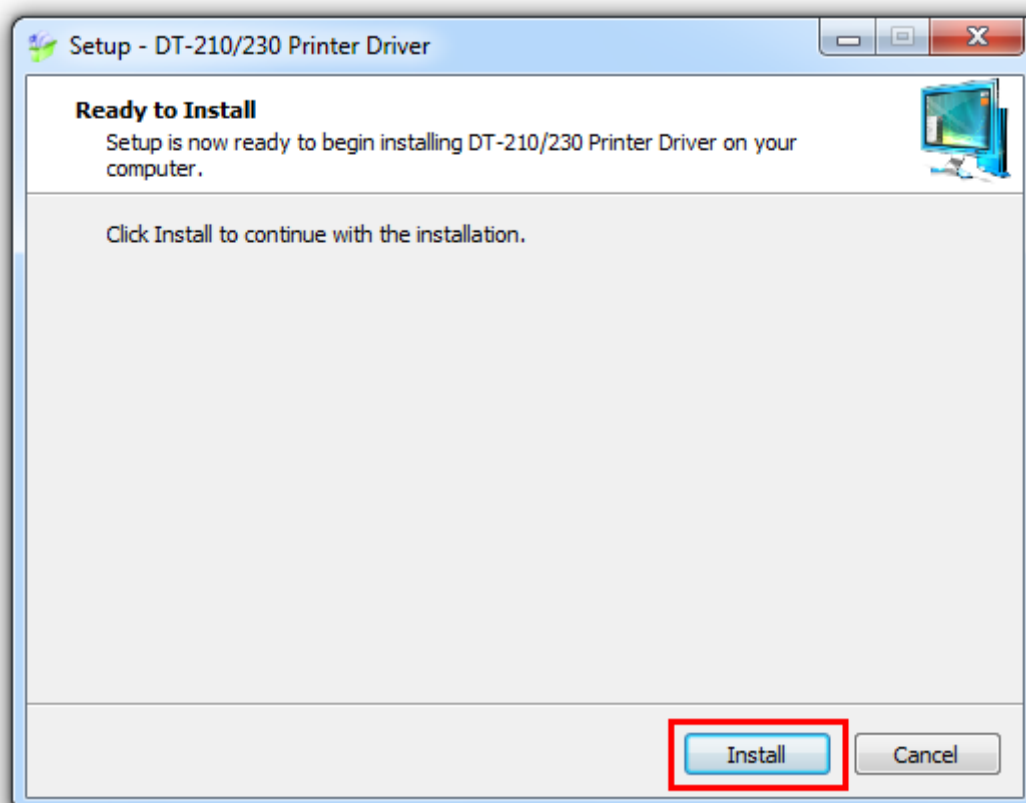
### 3.1 Installing Windows Driver



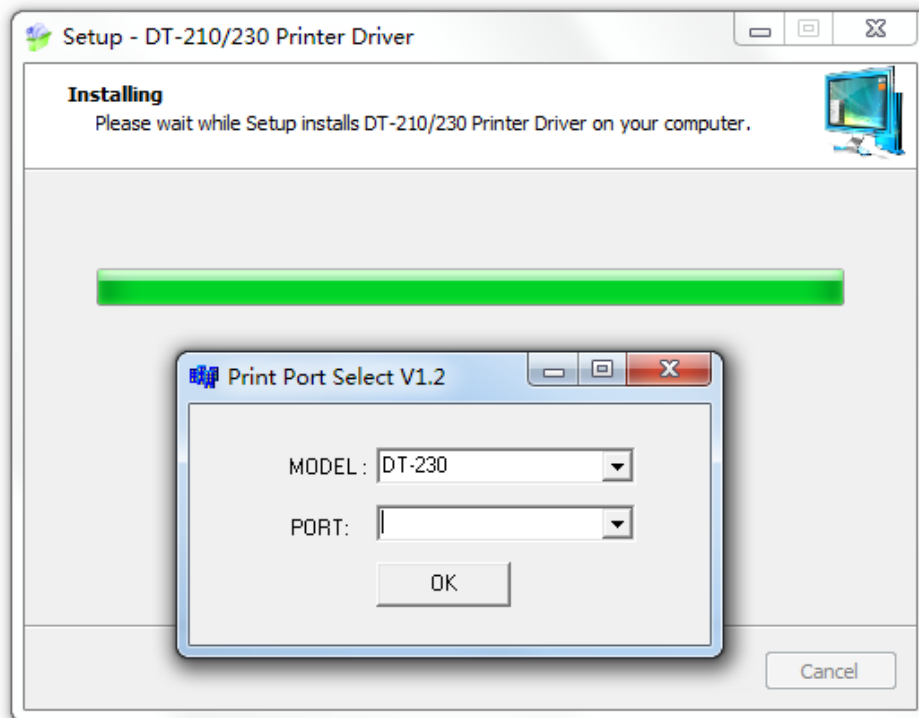
Switch off the printer before running the printer driver setup.

Your printer CD-ROM comes with Windows drivers. Go to the related folder and run the driver setup installer. If the Software Pack CD-ROM is not available, you can download the latest driver from the Tally Dascom Web Site: <http://www.dascom.com>

1. Double click the driver. You will see the screen as below. Click “Install” to continue.



2. Choose the desired port to use, after selecting the “Port” option (USB001 for USB port, com1 for serial port and LPT1 for parallel port), click “Next” to continue.



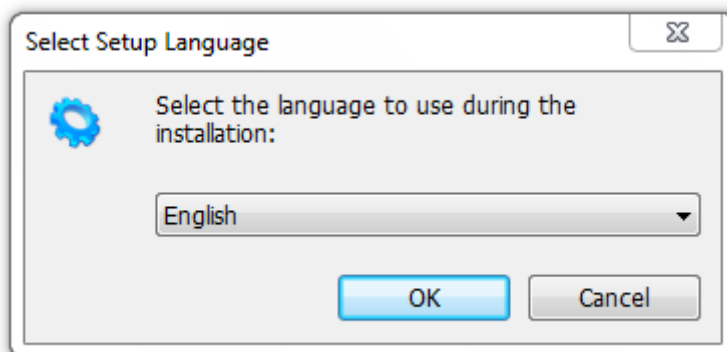
3. Click “Finish” to finish the installation process successfully.



## 3.2 Installing Setup Tool

Your printer CD-ROM comes with Tally Dascom Setup Tool. Go to the folder and run the installer.

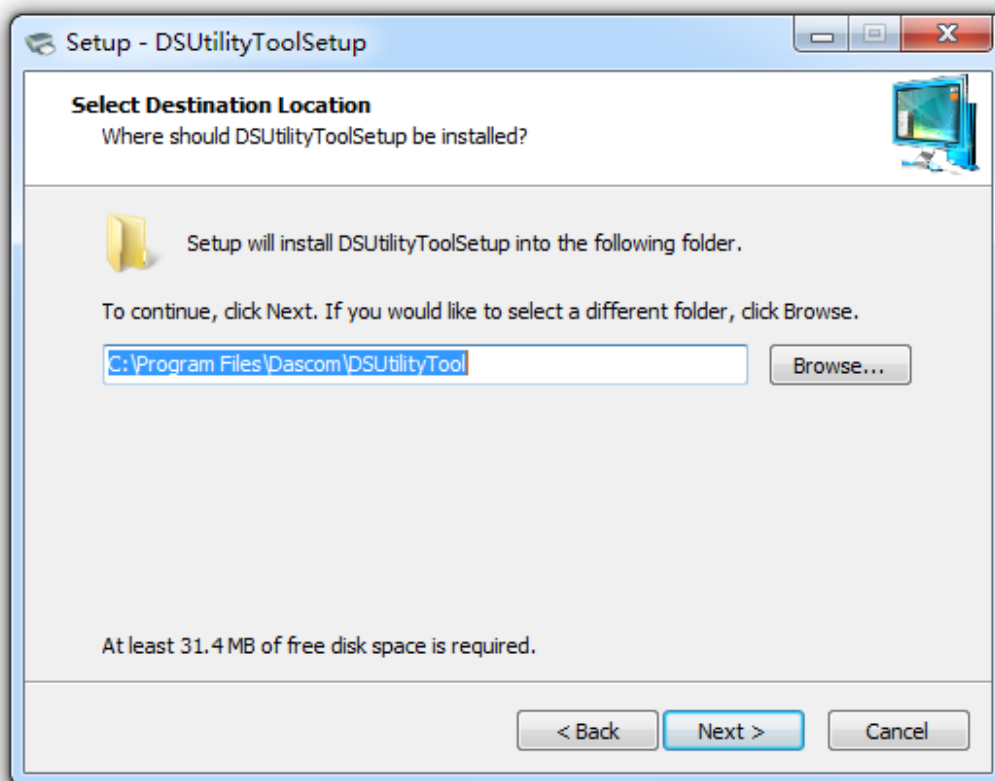
1. Choose setup language.



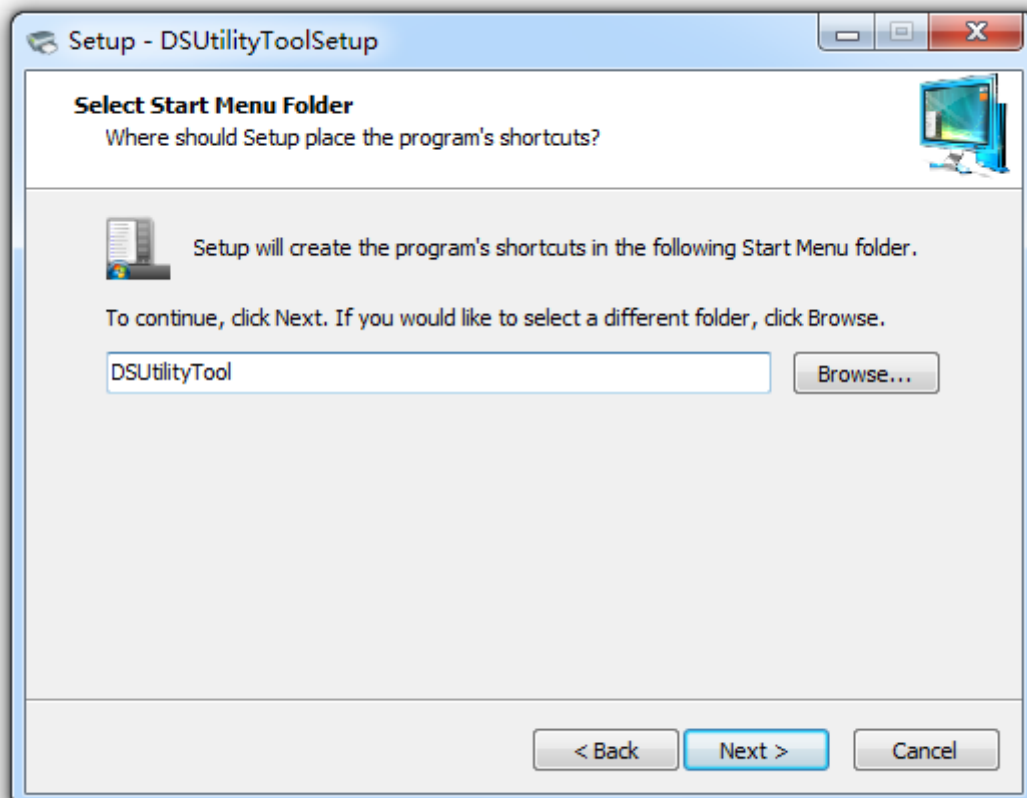
2. Click next.



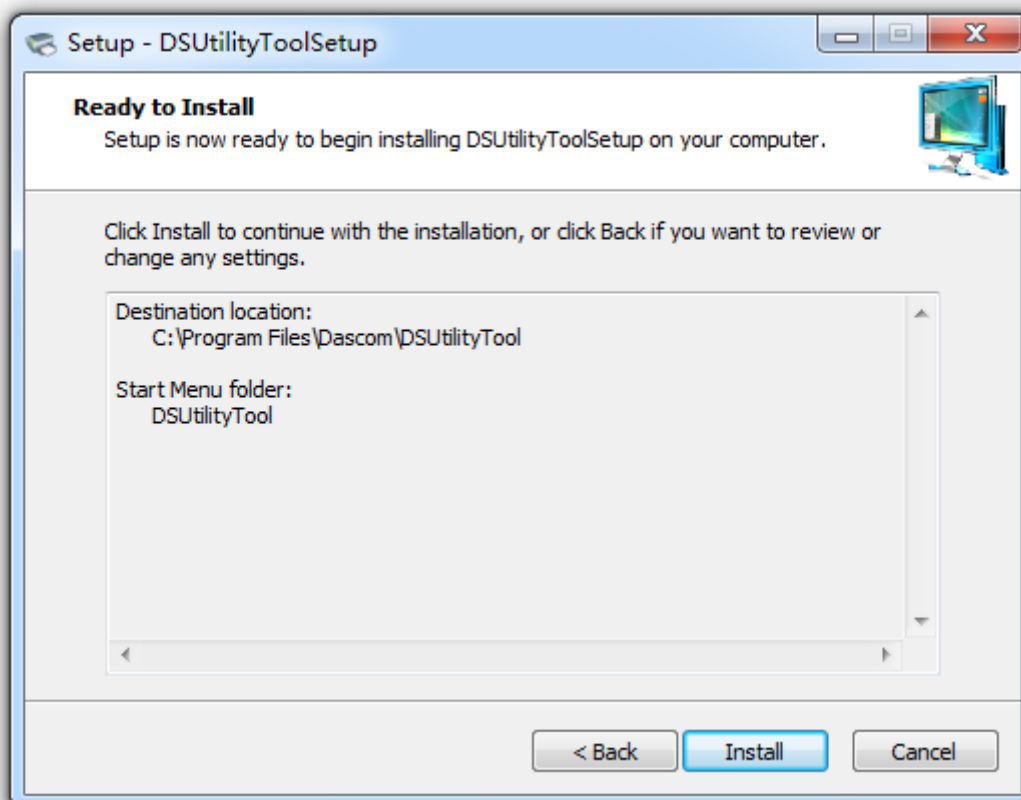
3. Select the installation path to the tool.



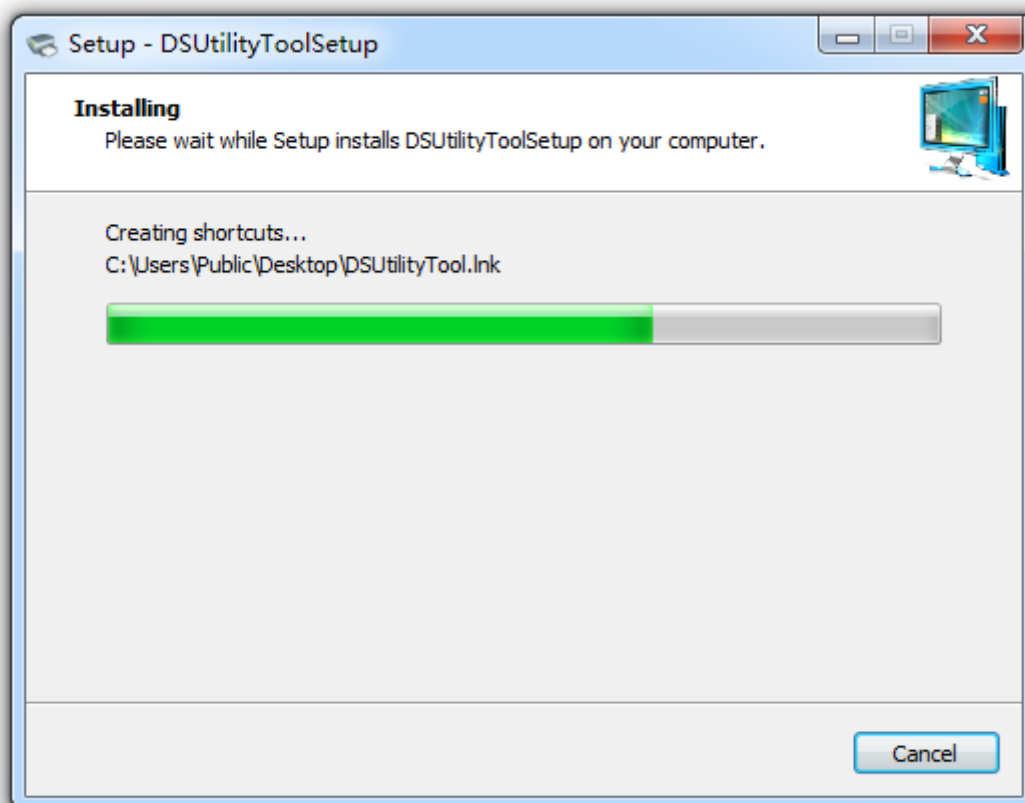
4. Click "Next".



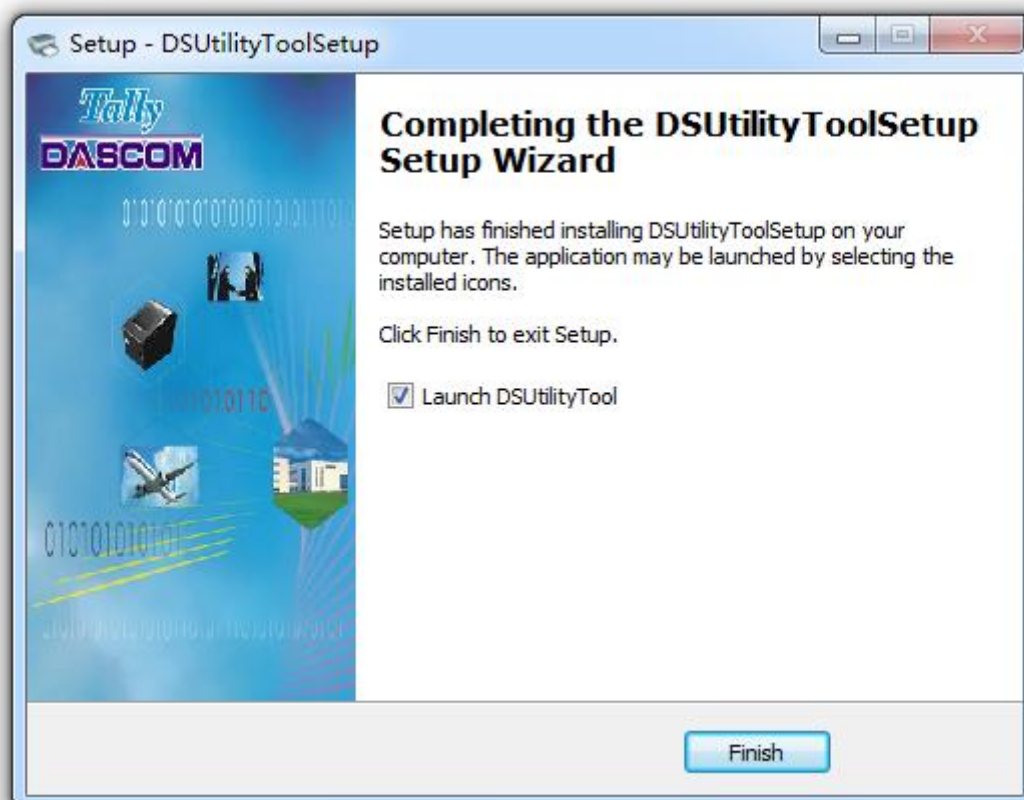
5. Click "Install".



6. Wait for a sec.



7. Installation complete. Click “Finish”.



### 3.3 Black Mark Setup

You could enable or disable the black mark function with the setup tool or the DIP switch.

(1) After the black mark is enabled, the self-test will display the following information:

BM Information:

Black mark mode	: YES
BM Sensor Select	: Left
Print Position	: 0.000mm
Cut Position	: 0.000mm



**CAUTION:** After the black mark and the cutter are enabled, the printer will position the black mark sensor and then performs one cutting. You could disable the BM position and afterwards cutting via the setup tool.

(2) When the BM is disabled, the self-test will display:

Black Mark Mode : NO



**CAUTION:** If the self-test page has the “BM information” section, the printer is installed with a black mark sensor. Users could turn on the black mark with the tool or the DIP switch.

(3) Black mark settings:

①. Use Black Mark: enable or disable the black mark.

②. Modify the position.

- Print Start Position: set the position from the black mark to the printing start point.
- Cutter Start Position: set the position from the black mark to the cutting point.

③. Black Mark Auto Locate: Whenever power on the printer or pressing down the upper cover, the printer will automatically locate the black mark.

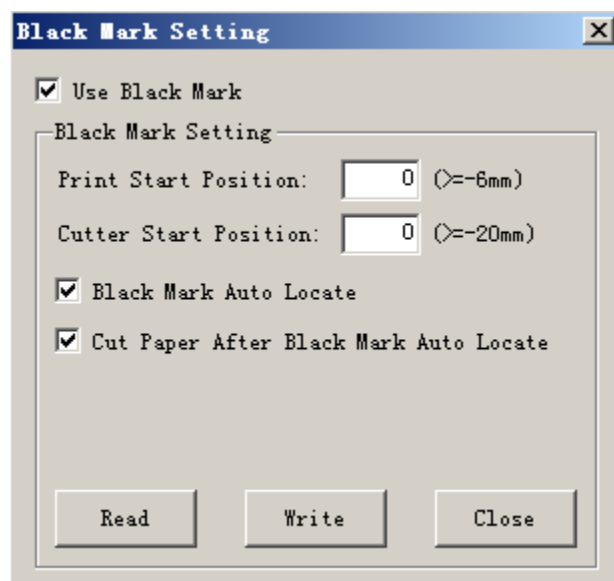
Unclick the “Black Mark Auto Locate” Option, and enter “Write” can disable the black mark automatic locating function..

④. Cut Paper After Black Mark Auto Locate: Whenever power on the printer or pressing down the upper cover, the printer will cut paper once after automatically locating the black mark.

Unclick the “Use Black Mark” Option, and enter “Write” can disable the black mark.



You have to enable the cutter via the switches so as to enable “Cut Paper After Black Mark Auto Locate” function.



Enable the Black Mark

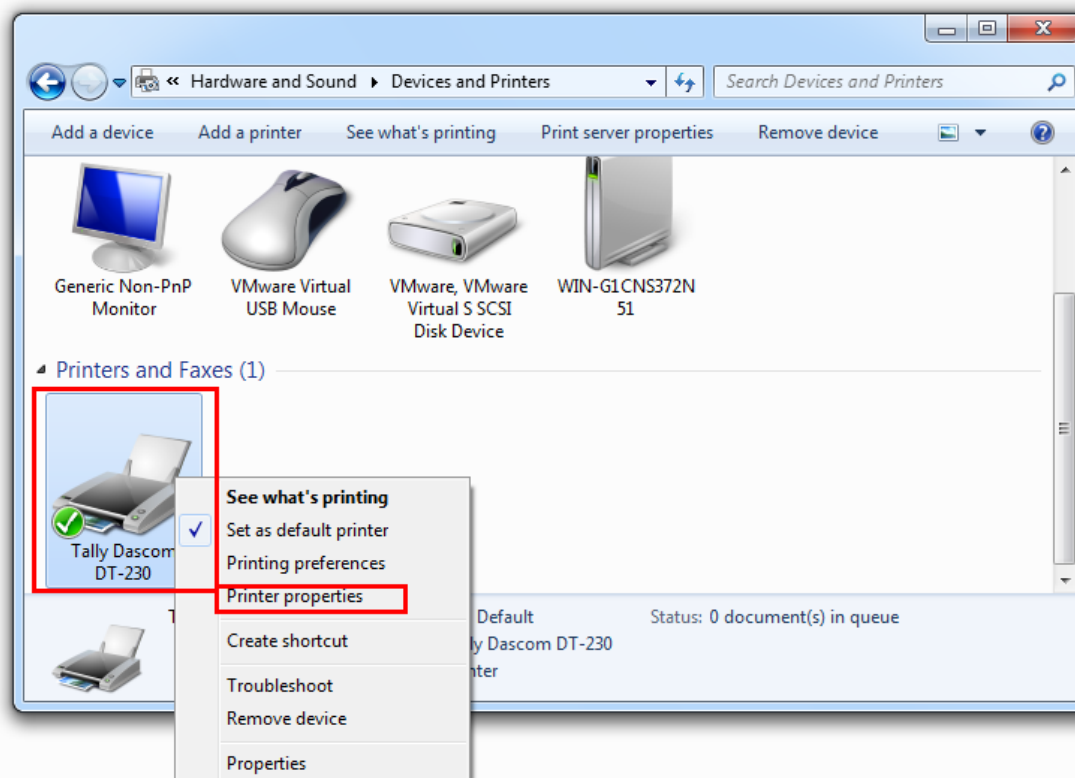


### 3.4 Installation Driver for Ethernet and Wi-Fi Interface

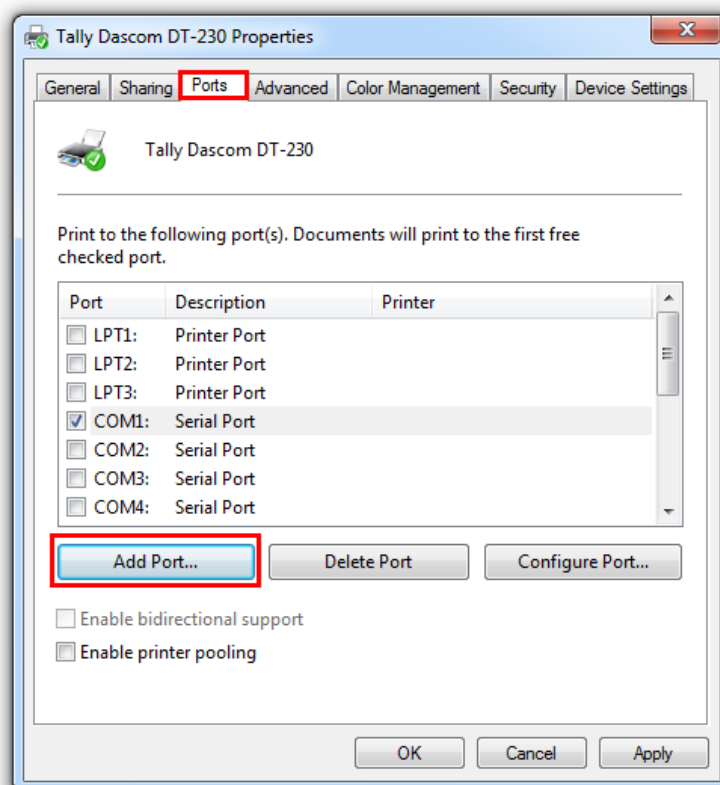


In different operation system, screen may differ slightly. Please operate according to the tips.

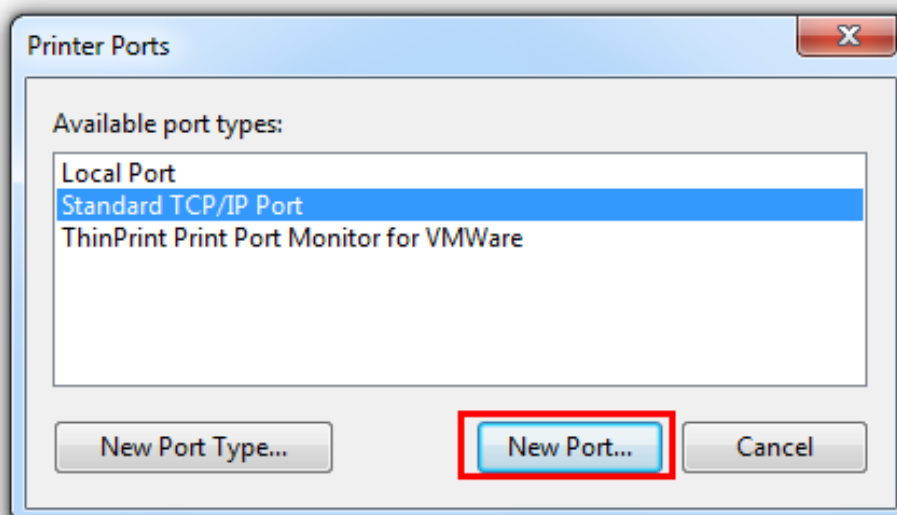
1. Install the printer driver as USB installation.
2. Click “Start”→ “Devices and Printers”, right click on the DT-230 Printer Driver, and then click “Printer Properties”.



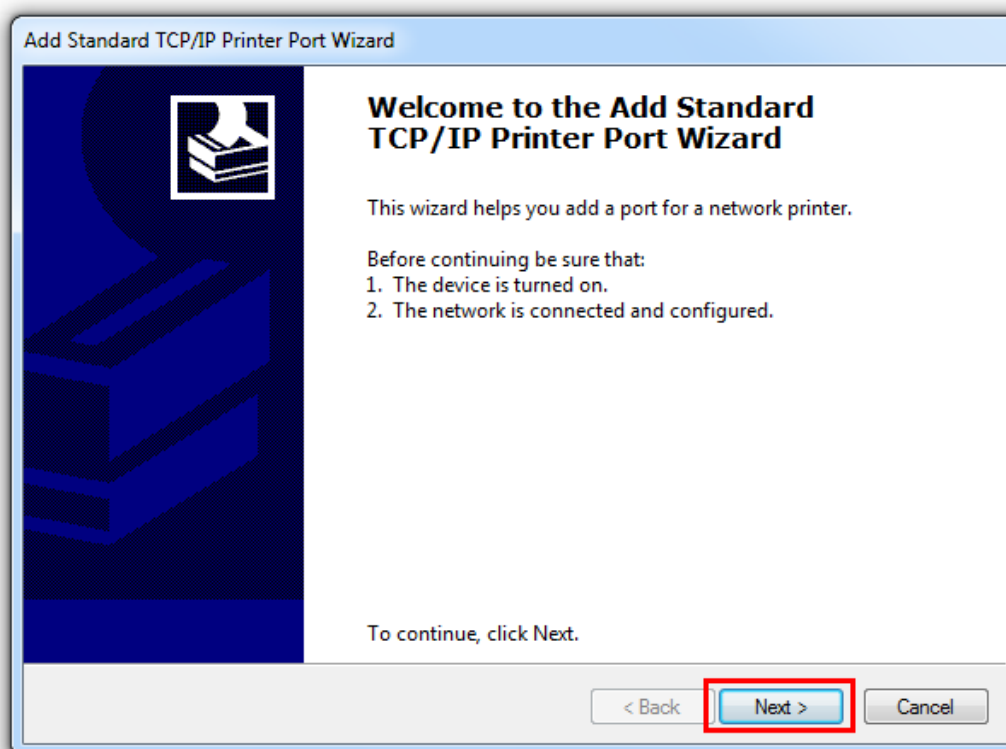
3. Then you will see the screen as below. Click “Ports” → “Add Port”.



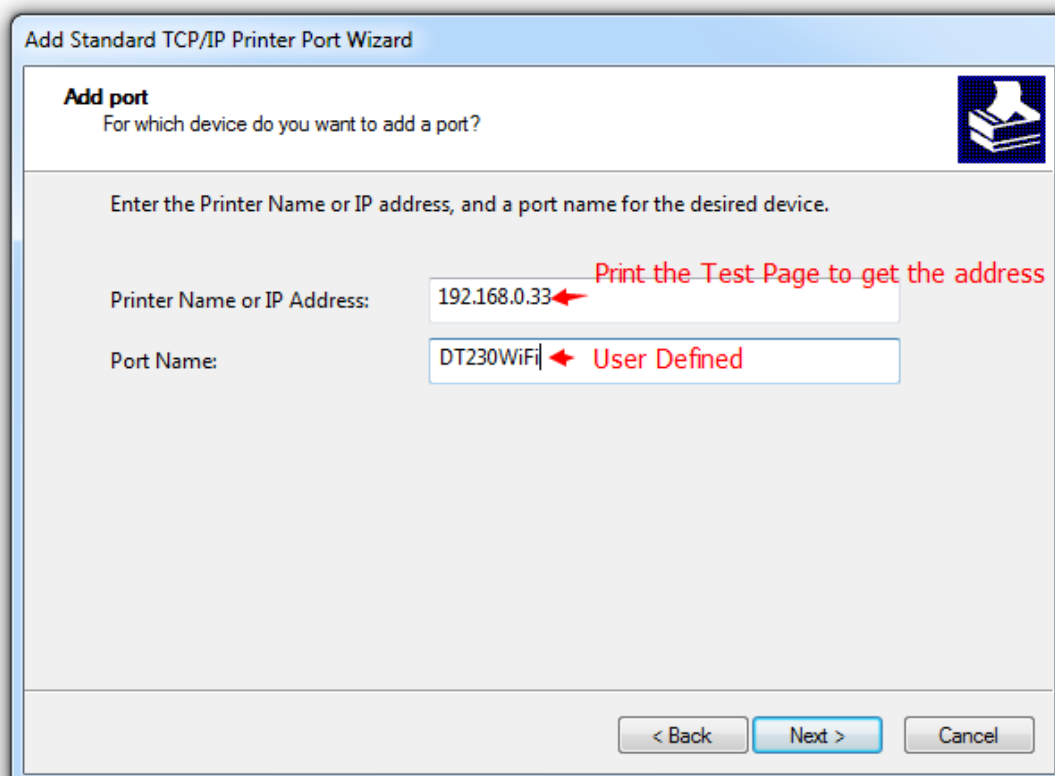
4. Select “Standard TCP/IP Port”, and click “New Port”.



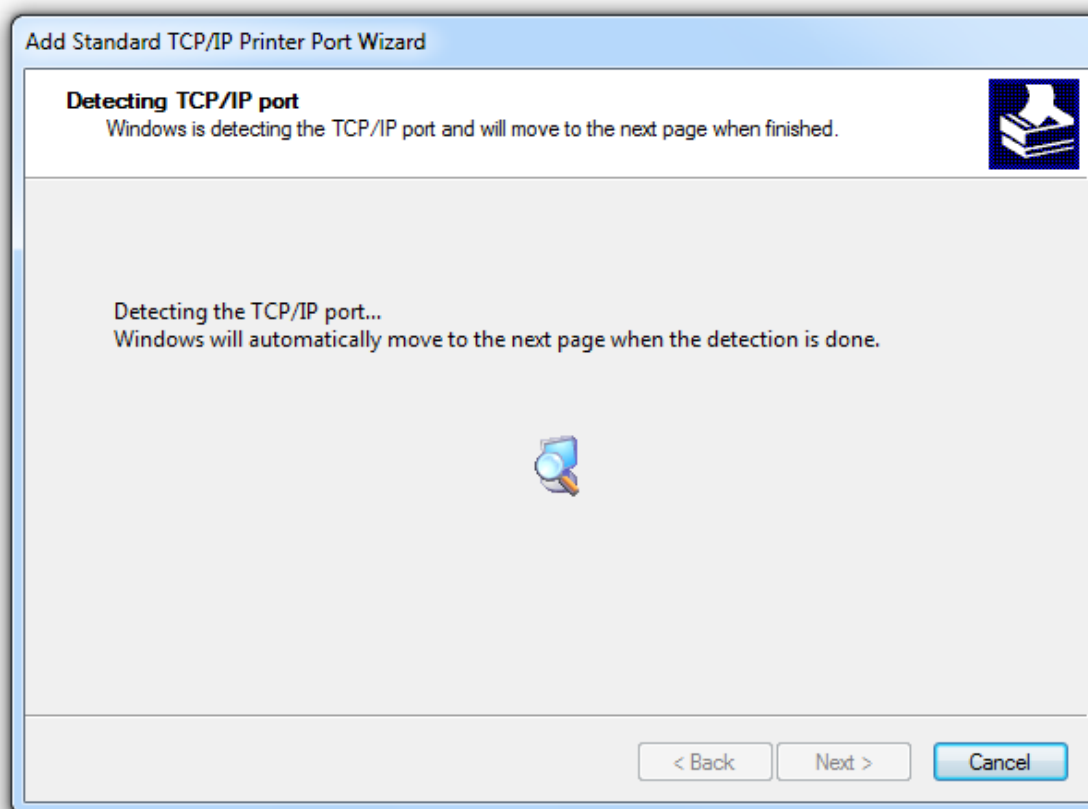
5. You will see the screen as below, click “Next” to continue.



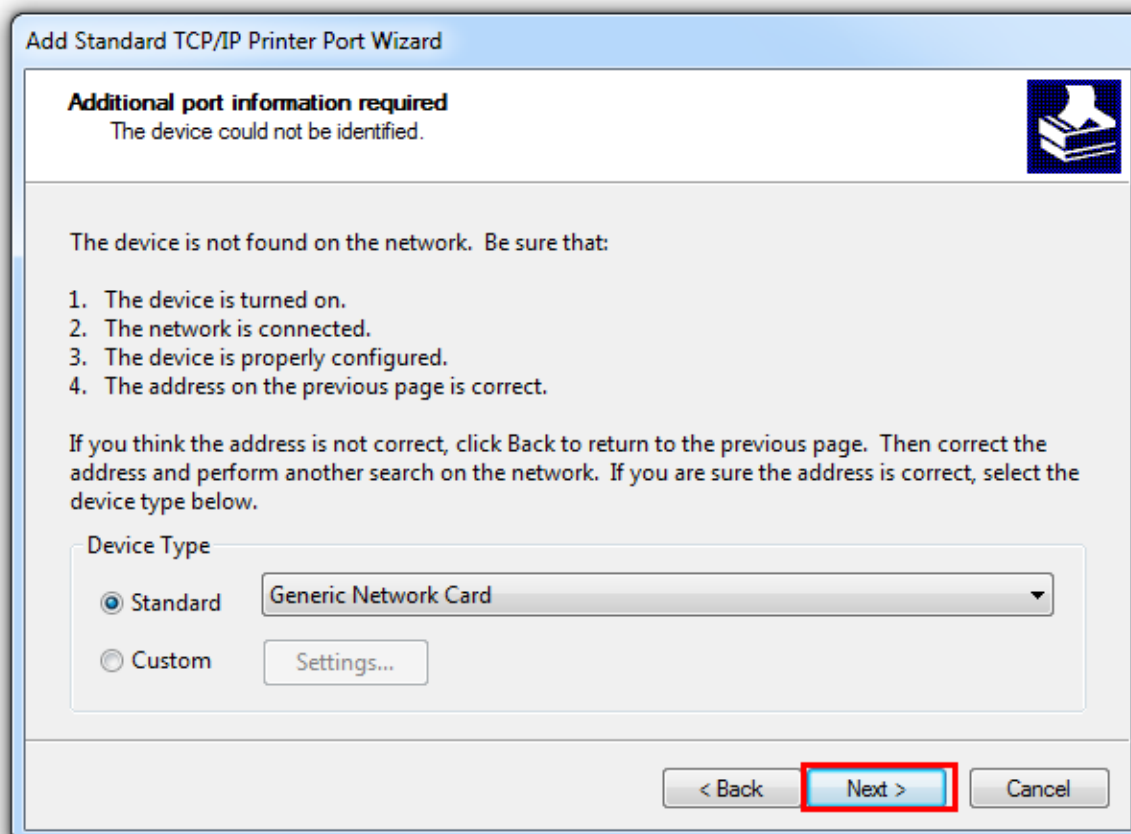
6. Complete the “Printer Name or IP Address” and “Port Name”. And then click “Next”.



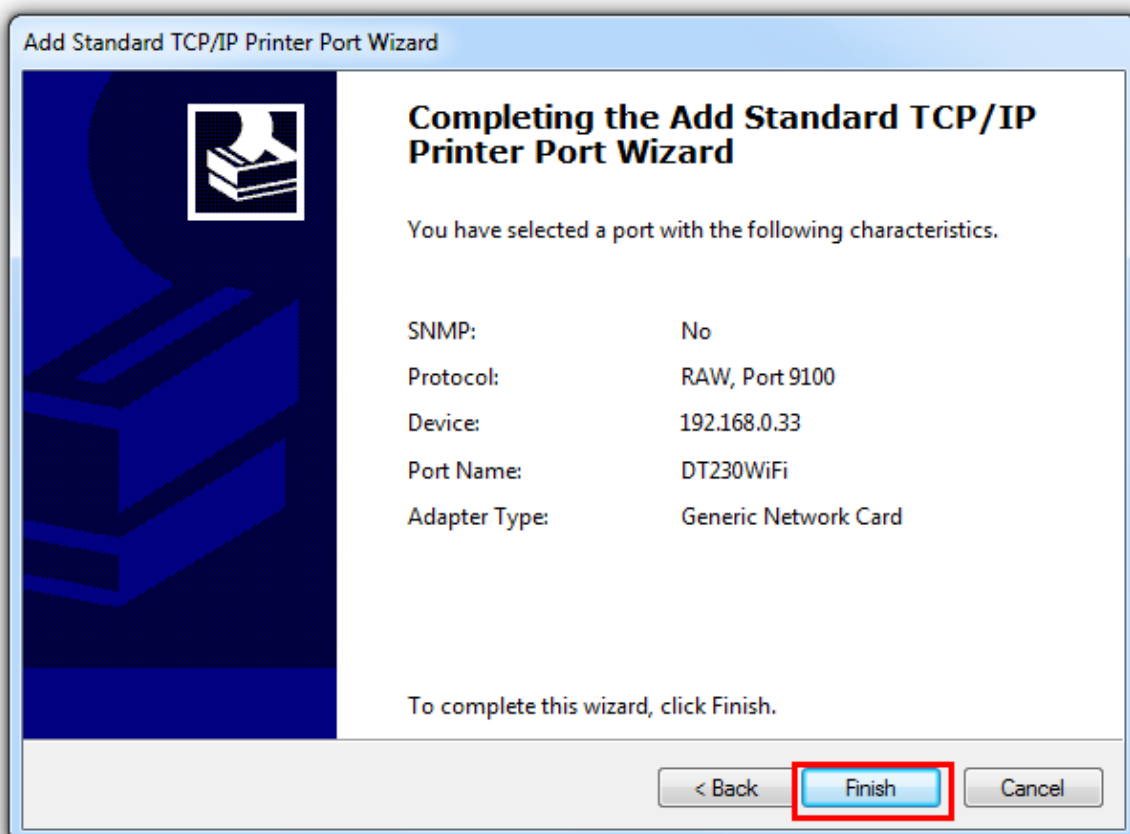
7. Wait for detecting the port.



8. And then you will see the screen as below, click "Next" to continue.



9. Click “Finish” to complete the printer driver installation.



10. Click "Start" → "Devices and Printers", right click on the DT-230 Printer Driver, and then click "Printer Properties". Then click "Ports" → "Configure Port", finish the setup parameter in the screen as below. Click "OK" to finish the setup.

**Configure Standard TCP/IP Port Monitor**

Port Settings

Port Name: DT230WiFi

Printer Name or IP Address: 192.168.0.33

Protocol

☒ Raw ☐ LPR

Raw Settings

Port Number: 9100

LPR Settings

Queue Name:

☐ LPR Byte Counting Enabled

☒ SNMP Status Enabled

Community Name: public

SNMP Device Index: 1

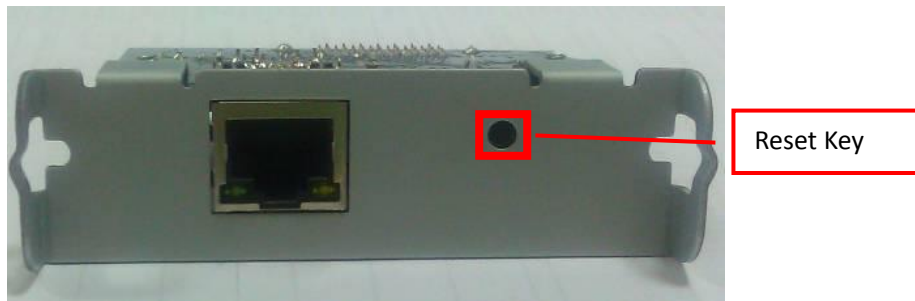
OK Cancel

## 3.5 Self Test for Ethernet and Wi-Fi

### 3.6.1 Ethernet

#### Self-test

Press Reset key with the tip of pen or a small tool when the printer is on. The printer will print out an Ethernet parameter.



Here is the self-test information:

Firmware	: V1.03.10
IP address	: 192.168.1.31
Subnet Mask	: 255.255.255.0
GateWay	: 192.168.1.1
DHCP	: Disable or Enable
MAC Address	: xx-xx-xx-xx-xx-xx

### 3.6.2 Wi-Fi

#### Self-test

Press Reset key with the tip of pen or a small tool when the printer is on. The printer will print out current software edition and the TCP/IP setting information of the interface card.



Here is the self-test information:

Firmware:	V1.0.04.01
WIFI mode:	AP (by default), STA, AP+STA
SSID:	DT-230_WIFI
Encryption:	OPEN
IP address:	192.168.0.33
Subnet Mask:	255.255.255.0
GateWay:	192.168.1.1

MAC Address: xx-xx-xx-xx-xx-xx

DHCP: Enable、Disable

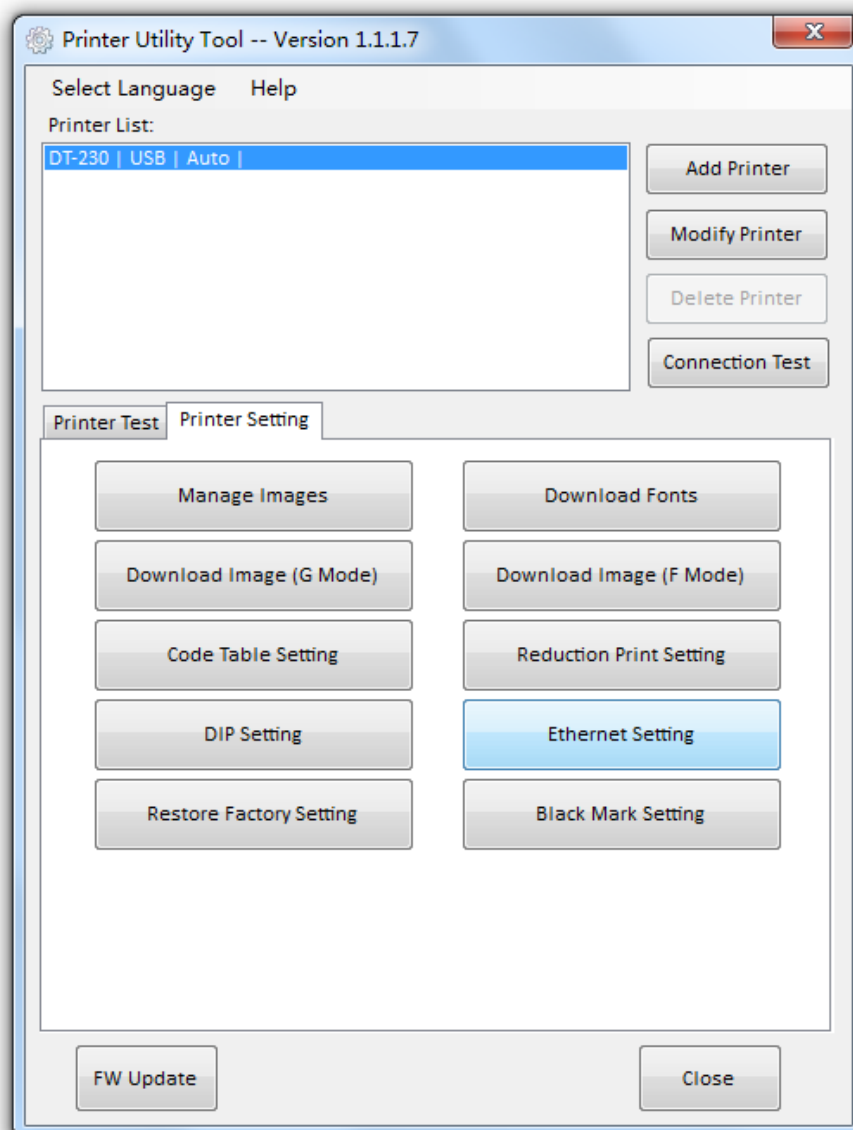
### 3.6.3 Reset Parameters

Press and hold Reset key, and then turn on the printer at the same time. The board will reset itself to factory setting.

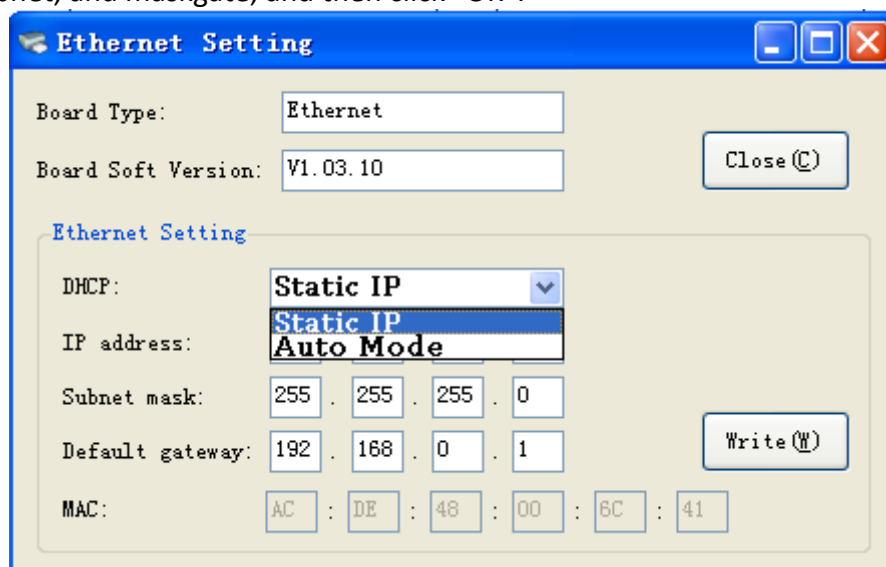


## 3.6 Ethernet IP Address Setting

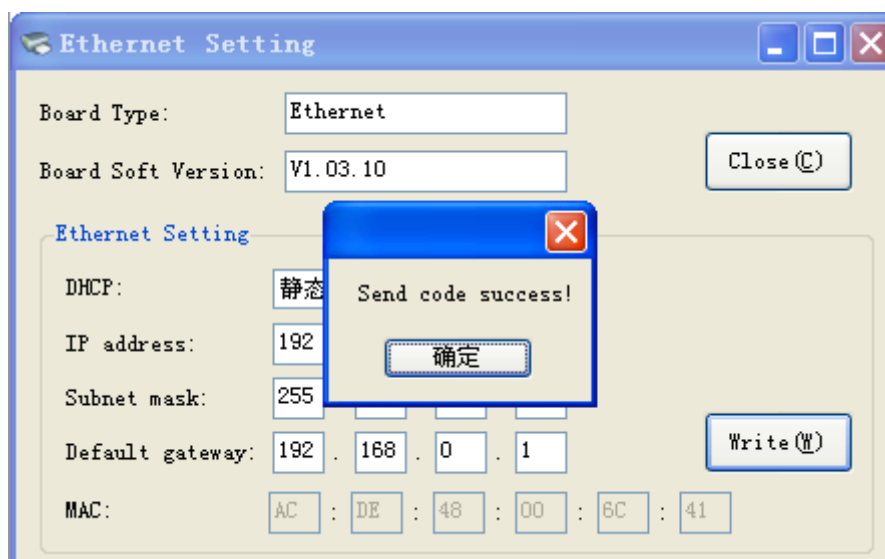
1. Connect the printer with the computer via USB; make sure the printer is power on.
2. Open the utility tool, choose “Printer Setting” – “Ethernet Setting”.



3. Write the I
4. P address, subnet, and maskgate, and then click "OK".



5. You would hear a sound from the printer, indicating the new setting is verified. Like the picture shows:



## 3.7 Wi-Fi Setting

If your printer connected to the computer with Wireless Ethernet, there are two kinds of modes: AP mode and STA mode.

- AP means Access Point (AdHoc Mode). When the printer is working under AP mode, it works as an access point to the cable network for the user.
- STA means Station mode (Infra Structure Mode). When the printer is working under STA mode, it works as a wireless terminal device. It is discoverable and choose access point.

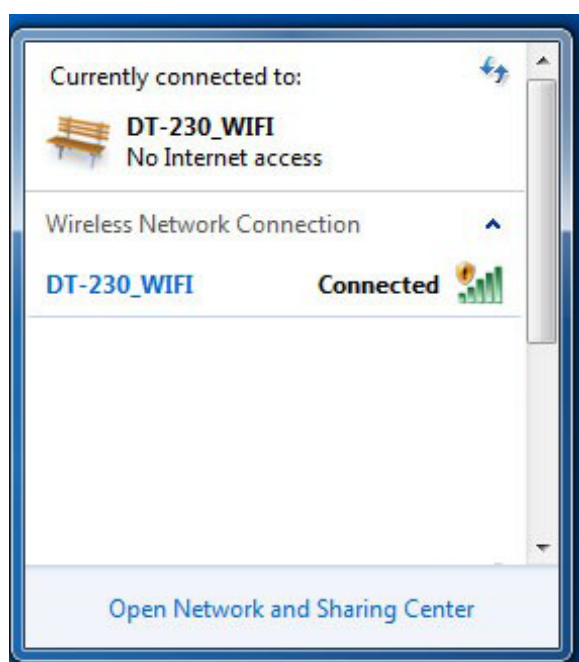
We would suggest you use AP mode for your initial usage. Factory setting: AP mode, at the convenience of users to change Wi-Fi parameters. Users can get access via web page to change Wi-Fi parameters, such as IP address, network name, or switching to STA mode.

### 3.7.1 Access to Wi-Fi Setting Page

1. Turn on printer,
2. You will see "DT-230\_WIFI" in the wireless network connection list. Click "Connect".



3. Double click "DT-230\_WIFI" for connection. It will display "Connected" if connection is successful.



4. Print a Wi-Fi self test to obtain the exact IP address; from the print-out, you can see the current IP is 192.168.0.33.

```
*****
Wireless Status
WIFI Work Mode :AP
Firmware       :1.0.04.01

AP Information
SSID           :DT-230_WIFI
Encryption     :Disable
IP Address     :192.168.0.33
Subnet Mask    :255.255.255.0
DHCP Gateway   :192.168.0.33
MAC Address    :ACCF2324172F
DHCP Server    :Enable
*****
```

5. Use a web browser to log on to <http://192.168.0.33>. Enter the user name and password, then click OK to proceed.  
Default username: "admin";  
Password: "admin"



6. Then you are on the Wi-Fi setting page where users can change related parameters.

中文 | English

System

Work Mode

STA Setting

AP Setting

Other Setting

Account

Upgrade SW

Restart

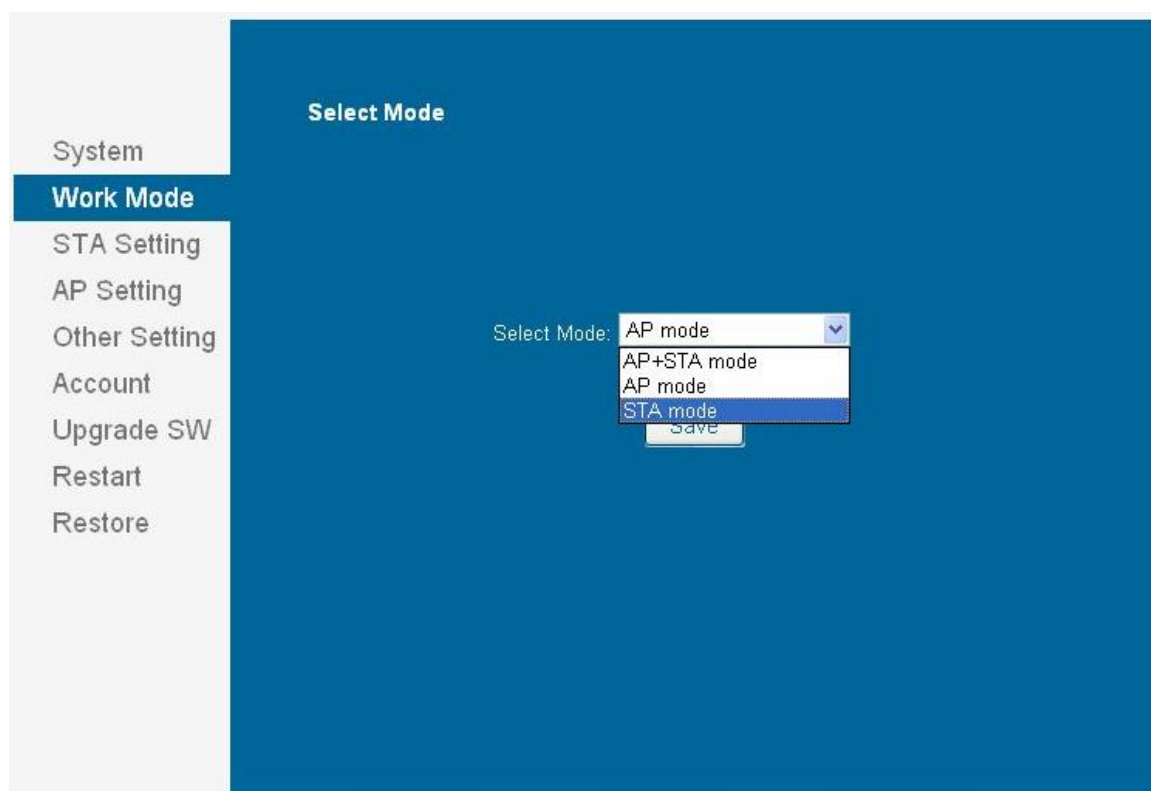
Restore

MID	HF-LPB100
Software Version	V1.0.04.01
WiFi Work Mode	AP
AP mode	
SSID	DT-230_WIFI
IP Address	192.168.0.33
MAC Address	ACCF2324172F
STA Mode	
Router SSID	
Signal Strength	
IP Address	
MAC Address	

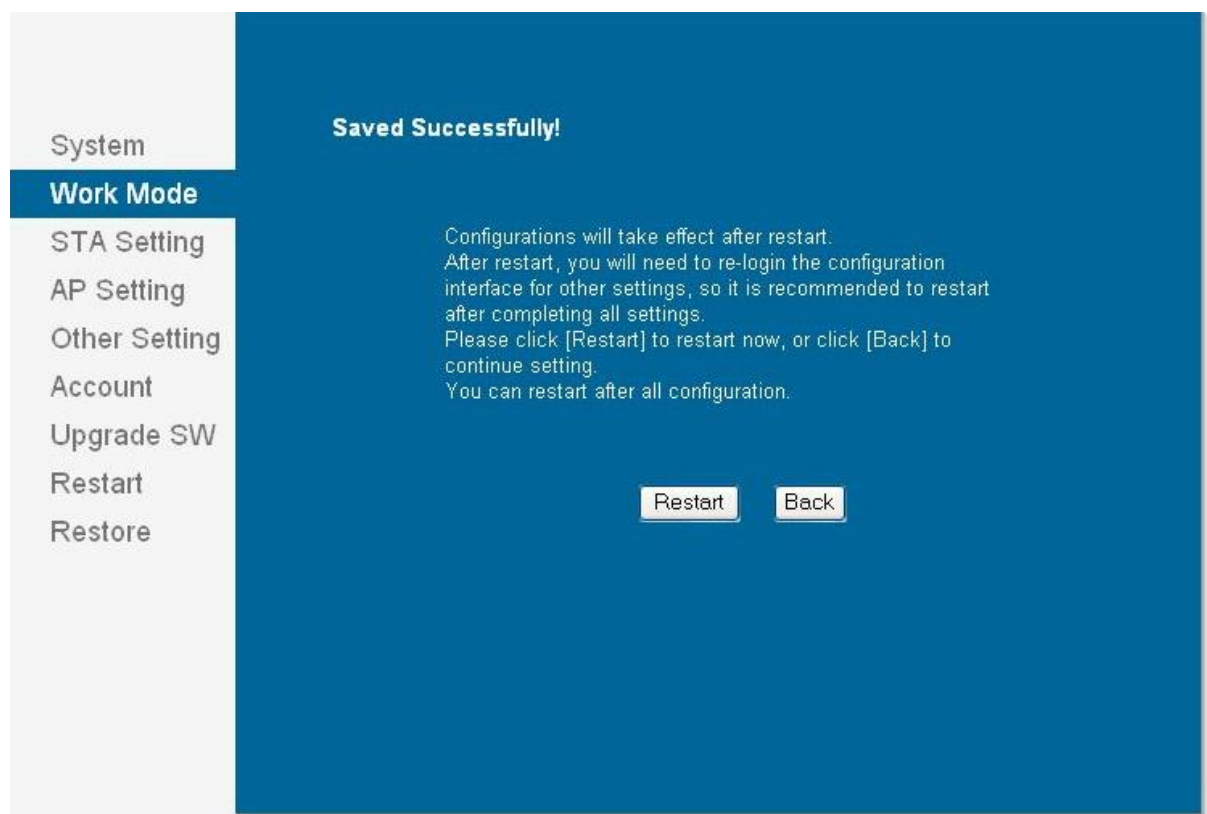
Web Ver:1.0.14

### 3.7.2 Wlan Setup - STA mode

1. Click work mode option, then choose STA mode.



2. Click "Save" button after modifying the parameter. But don't click restart!



3. Click “STA Setting” on the left, and you are on the page to STA setting. Click “Scan”.

中文 | English

System  
Work Mode  
**STA Setting**  
AP Setting  
Other Setting  
Account  
Upgrade SW  
Restart  
Restore

Network Name (SSID)  
Note: case sensitive HF-LPB100 Scan

Encryption Method Disable

Obtain an IP address automatically Enable

IP Address 0.0.0.0

Subnet Mask 0.0.0.0

Gateway Address 0.0.0.0

DNS Server Address 10.10.100.254

Save

Web Ver:1.0.14

4. You can see there is several access points available.

System  
Work Mode  
**STA Setting**  
AP Setting  
Other Setting  
Account  
Upgrade SW  
Restart  
Restore

**Please select your current wireless network**

Site Survey

	SSID	BSSID	RSSI	Channel
●	WirelessNet	54:89:98:1D:F8:E1	11	2
●	embedded	14:CF:92:44:2F:14	45	6
●	public	E0:5:C5:CC:D4:80	49	11
●	iphone	32:6F:0:94:E0:F5	0	10

OK Refresh



5. Choose the network you need. And then click “OK”.  
For example: “embedded”, see below picture.

**Please select your current wireless network**

Site Survey

	SSID	BSSID	RSSI	Channel
<input type="radio"/>	WirelessNet	54:89:98:1D:F8:E1	11	2
<input checked="" type="radio"/>	embedded	14:CF:92:44:2F:14	45	6
<input type="radio"/>	public	E0:5:C5:CC:D4:80	49	11
<input type="radio"/>	iphone	32:6F:0:94:E0:F5	0	10

OK Refresh

6. You are asked to provide password for access of this network.

Network Name (SSID)  Scan

Note: case sensitive

Encryption Method

Encryption Algorithm

Password

Obtain an IP address automatically ☐

IP Address

Subnet Mask

Gateway Address

DNS Server Address

Save

Microsoft Internet Explorer

The password is empty!

OK



7. Enter the password. And then click “Save” after other settings.

System  
Work Mode  
**STA Setting**  
AP Setting  
Other Setting  
Account  
Upgrade SW  
Restart  
Restore

Network Name(SSID)  
Note: case sensitive  
embedded

Encryption Method  
WPA2PSK

Encryption Algorithm  
AES

Password  
.....  
☐ Show passwords

Obtain an IP address automatically  
Enable

IP Address  
0.0.0.0

Subnet Mask  
0.0.0.0

Gateway Address  
0.0.0.0

DNS Server Address  
10.10.100.254



Above setting are just examples, not your actual on-site network setting.

Please refer to your IT/network engineer for help.

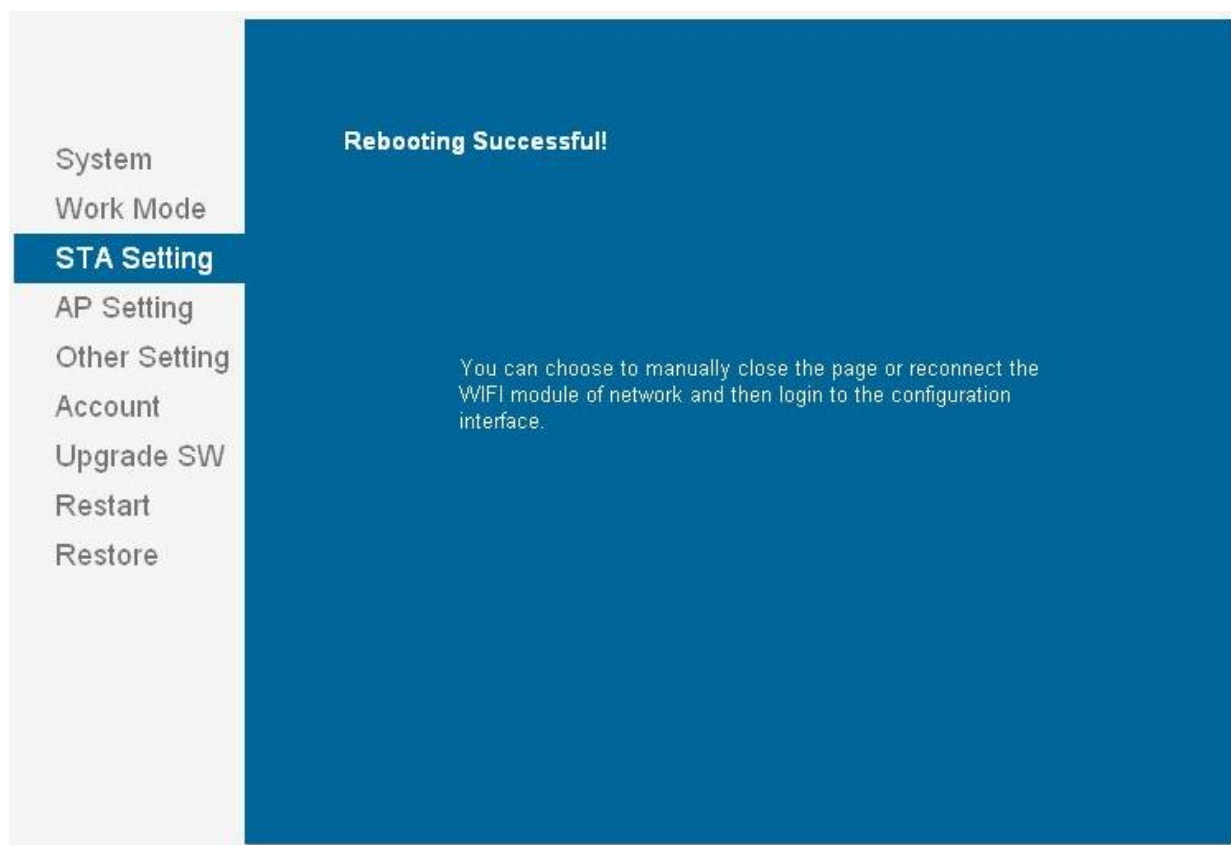
8. If you want to change STA setting parameters, press “back” to do so; otherwise press “restart” to verify the setting.

System  
Work Mode  
**STA Setting**  
AP Setting  
Other Setting  
Account  
Upgrade SW  
Restart  
Restore

**Saved Successfully!**

Configurations will take effect after restart.  
After restart, you will need to re-login the configuration interface for other settings, so it is recommended to restart after completing all settings.  
Please click [Restart] to restart now, or click [Back] to continue setting.  
You can restart after all configuration.

9. New setting is effective.



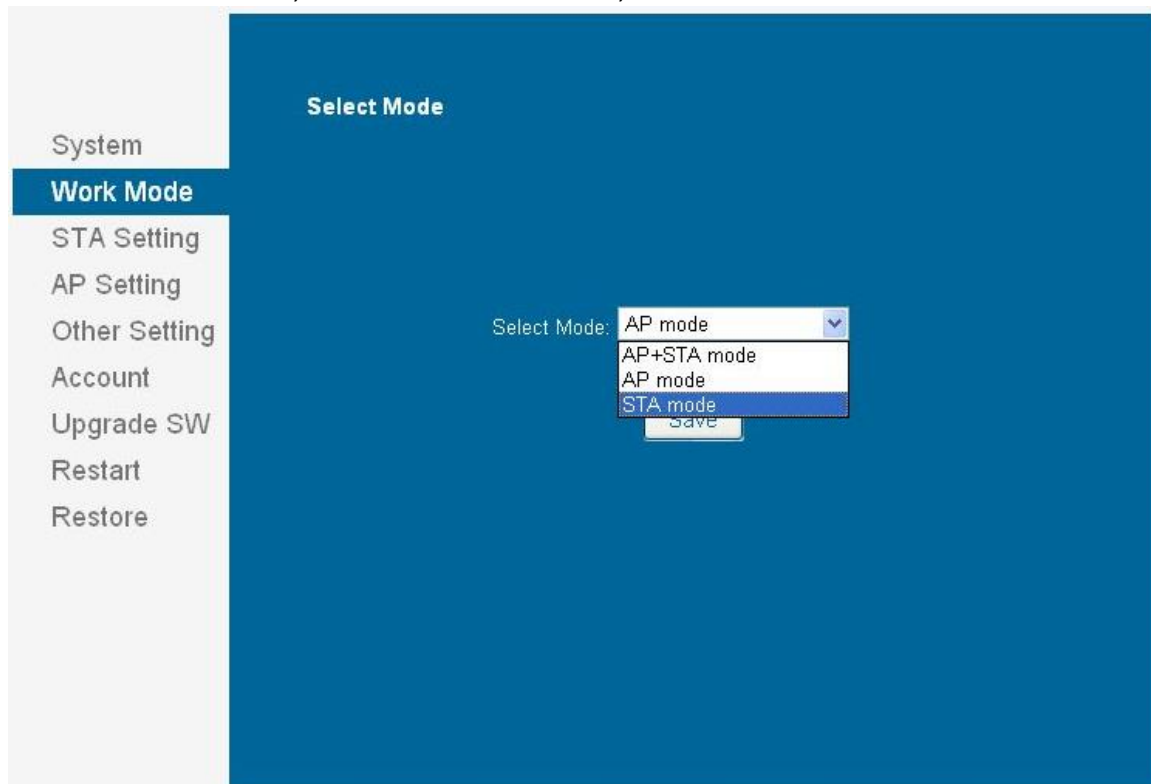
10. After restarting the printer, new settings are valid. You could confirm it by a Wi-Fi self-test.



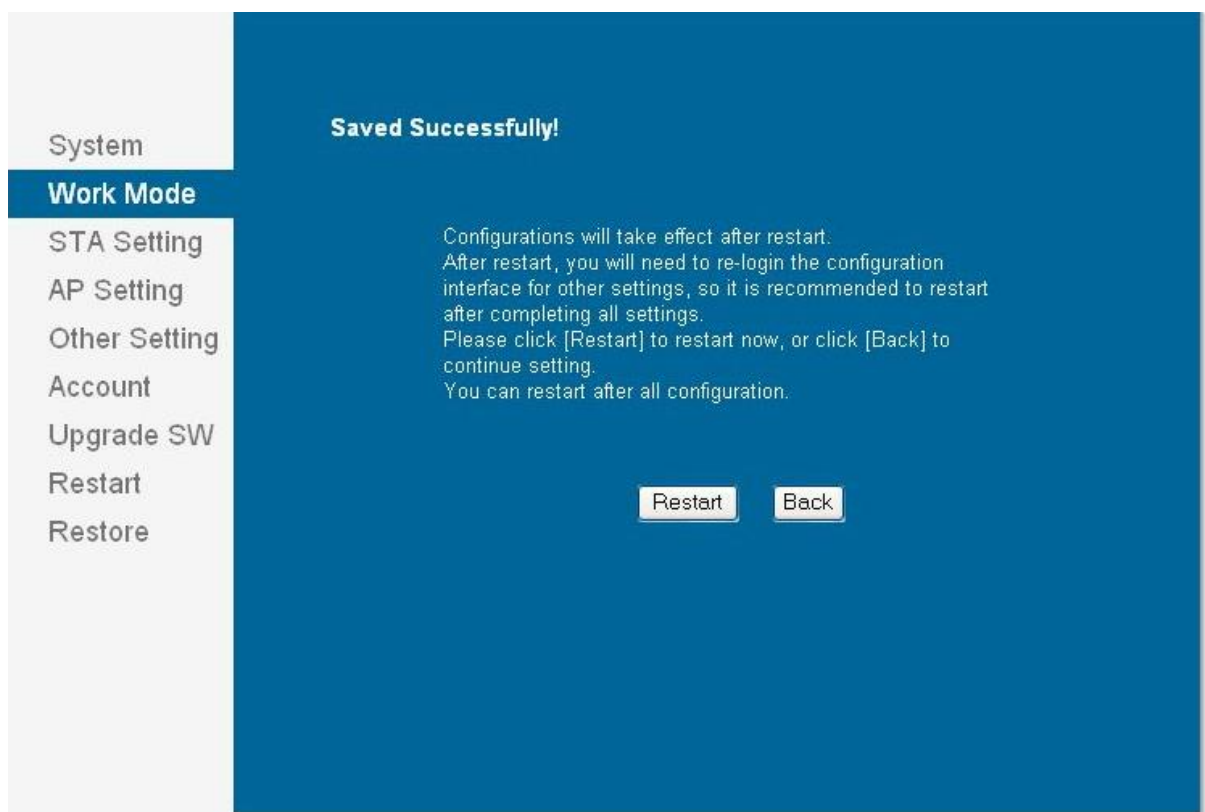
NOTE: After changing to STA mode, access point will assign an IP address to the printer, by printing WIFI configuration page, users could see the IP address, and use it for entering WIFI setting page in the future.

### 3.7.3 Wlan Setup - AP mode

1. Click on the “Work Mode”, roll down to “AP mode”, click on “Save”.



2. Click “Save” button after modifying the parameter. But don’t click restart!



3. You could change the network mode, SSID, IP address or other settings. Click “Save” button after modifying the parameters.

Please refer to the IT/network engineer for correct setting.

**System**  
**Work Mode**  
**STA Setting**  
**AP Setting**  
**Other Setting**  
**Account**  
**Upgrade SW**  
**Restart**  
**Restore**

**Wireless AP Setting**

Network Mode	11bgn
Network Name(SSID)	DT-230_WIFI
Module MAC Address	ACCF2324172F
Select Channel	2412MHz(channel 1)

Save

**Wireless AP Security Setting**

Encryption Mode	Disable
-----------------	---------

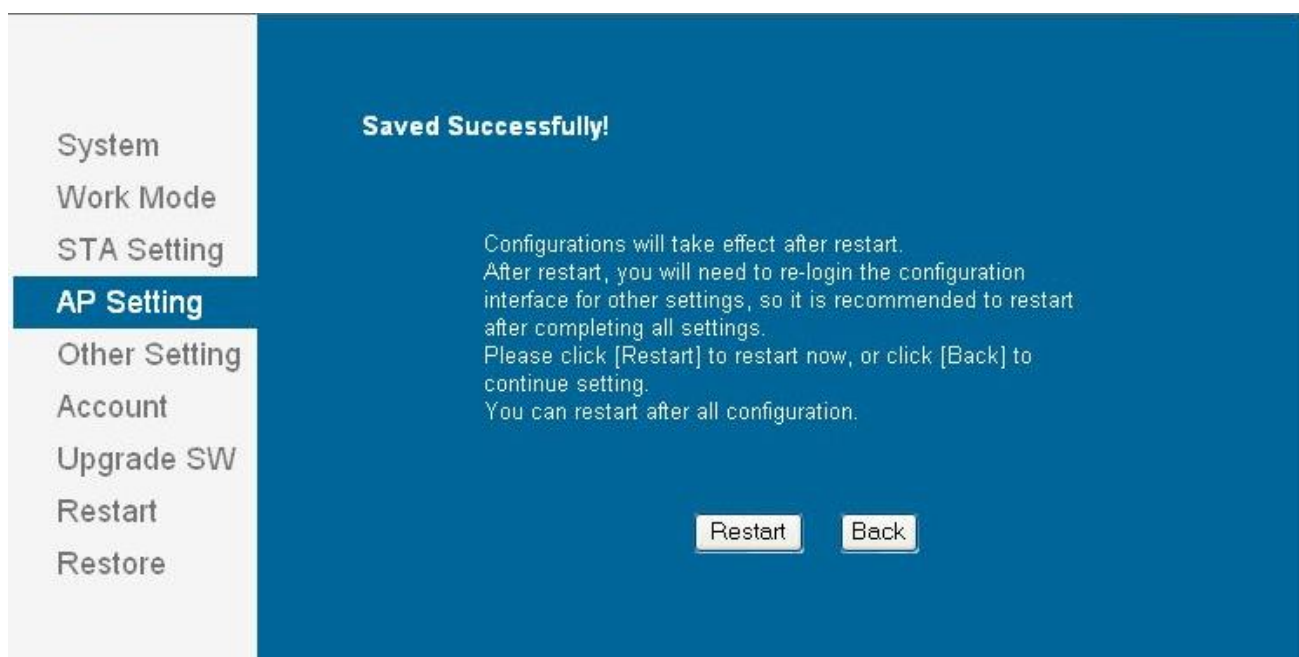
Save

**Network Parameters Setting**

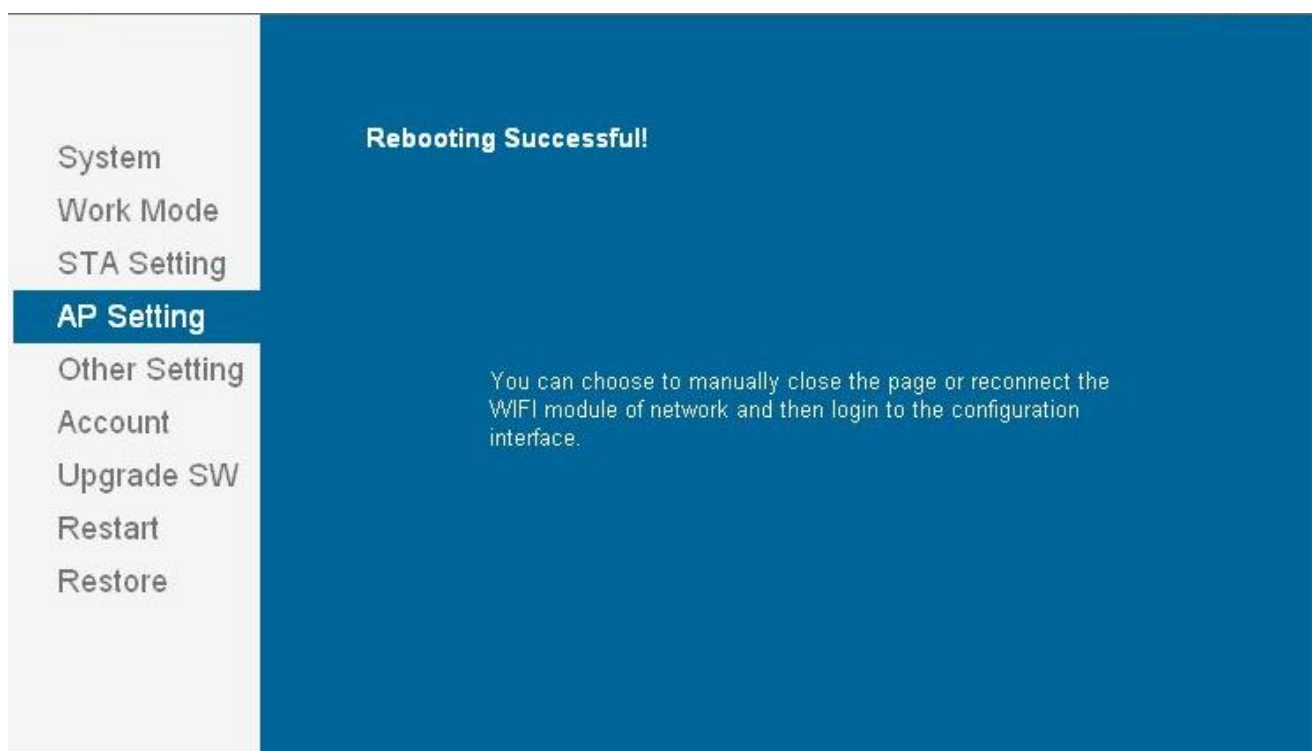
IP Address (DHCP Gateway Setting)	192.168.0.33
Subnet Mask	255.255.255.0
DHCP Server	Enable

Save

4. Restart printer, new parameter will be valid.



5. Restart printer, new parameter will be valid.



6. After restarting the printer, new settings are valid. You could confirm it by a Wi-Fi self-test.

### 3.7.4 Return to Factory Setting

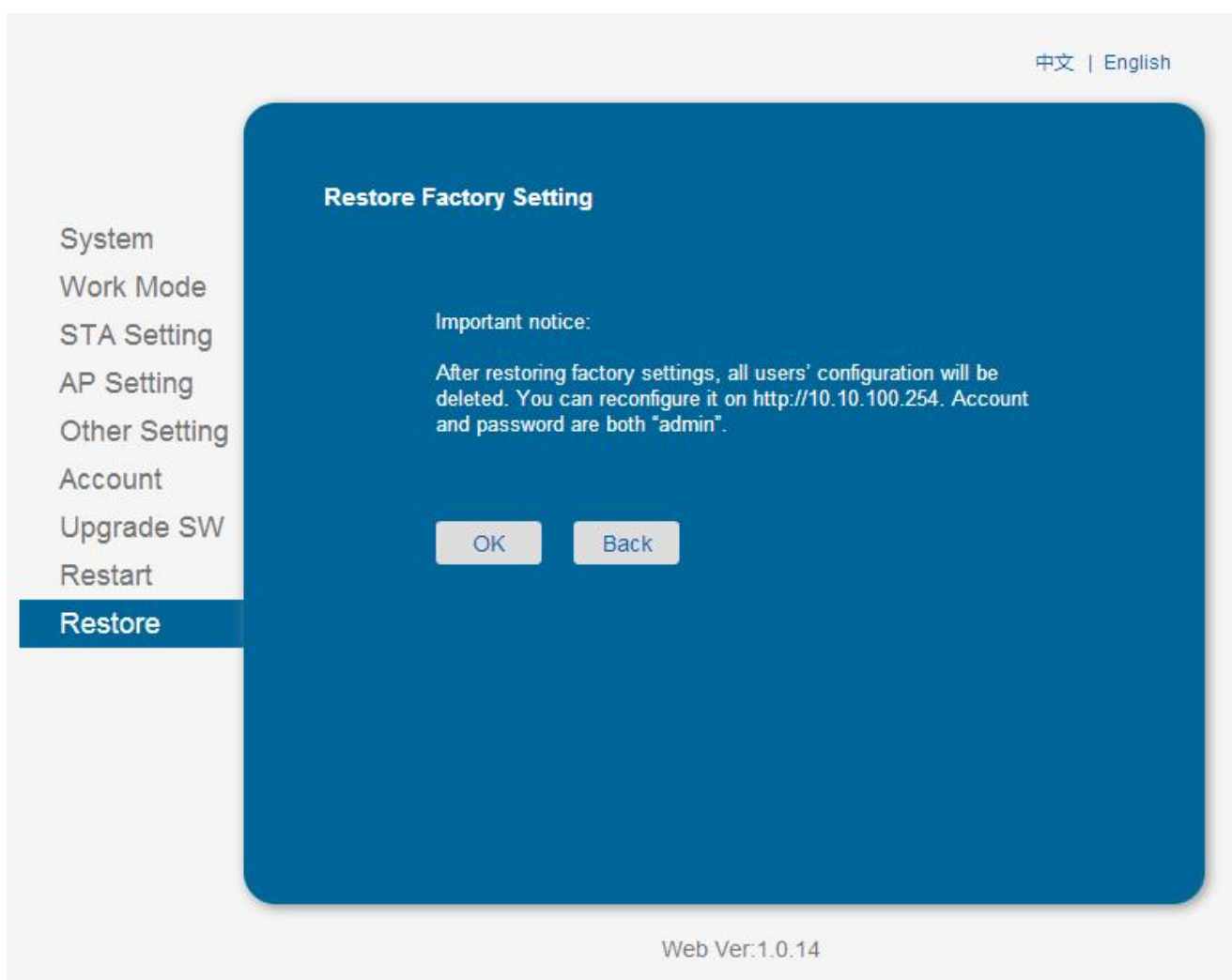
There are two methods to restore factory setting.

Method One:

1. Turn off the printer.
2. Press and hold the black button on the Wlan board. And then turn on the printer.
3. Wait for five seconds, the Wlan board will return to factory setting.

Method Two:

Visit <http://192.168.0.33>. Default username is admin with password admin for the first time to log in. Click OK on the Restore Page.



## 4 SETTING DIP SWITCHES

On this printer, you can make various settings such as printer density, baud rate, and auto-cutter enable/disable etc. with switches. For DT-210/230, there are two kinds of switched: DIP switch and memory switch.

### 4.1 DIP Switch Setting

The DIP switches are already set for the current interfaces. Change the setting if necessary.

Functions of the DIP switches differ depending on the interface.

Follow the steps below to change the DIP switch settings.

---

**CAUTION!**

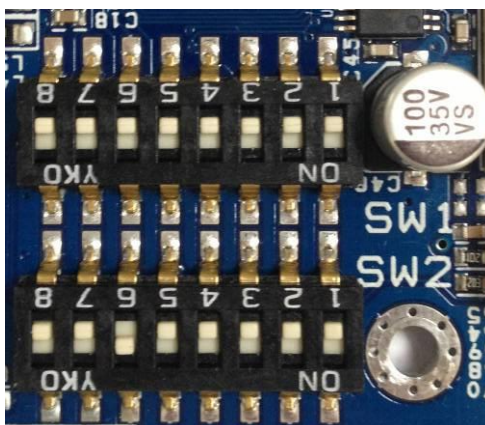
- Before you remove the DIP switch cover, turn the printer off. Otherwise, short-circuit may cause the printer to malfunction.
  - DIP switch settings are enabled only when the power is turned on or the printer is reset via the interface. If the settings are changed after that, the functions will not change.
- 

1. Make sure the power supply for the printer is turned off.
2. Unscrew the screw to remove the DIP switch cover from the base of the printer.



Metal Plate

3. Set the DIP switches, using the tip of a tool, such as a small screwdriver. There are two DIP switch banks on the main controller board (SW1 and SW2), eight DIP switches for each bank.



DIP Switch 1 & Switch 2



#### 4. Replace the DIP switch cover, and screw it in place.



New DIP switch settings are enabled after the printer is turned on!

##### 4.1.1 For Serial Interface (RS-232C)

When using the built-in USB interface, it is not necessary to change the DIP switch setting but their function changes. For the details, see “[For Parallel and USB2.0 Interface](#)”.

#### DIP Switches Bank 1

SW	Function	ON	OFF	Initial setting
1-1	Auto Line Feed at CR	Enable	Disable	OFF
1-2	Handshaking	XON/XOFF	DTR/DSR	OFF
1-3	Data Length	7bits	8bits	OFF
1-4	Parity Check	Yes	No	OFF
1-5	Parity Selection	EVEN	ODD	OFF
1-6	Baud Rate Selection (bps)	See the “ <a href="#">Transmission Speed</a> ” table below		OFF
1-7				ON
1-8				OFF

#### Transmission Speed

Transmission Speed (bps: bits per second)	1-6	1-7	1-8
2400	ON	OFF	OFF
4800			ON
9600	OFF	ON	OFF
19200 (default)	OFF	OFF	
38400	OFF	ON	ON
57600	OFF	OFF	
115200	ON	ON	

**Note:** Depending on print conditions, such as print duty, print head temperature, and data transmission speed, print speed is automatically adjusted, which can cause white lines due to intermittent print (the motor sometimes stops). To avoid this, set the transmission speed higher or keep the print speed constant by setting it lower.

#### DIP Switches Bank 2

SW	Function	ON	OFF	Initial setting
2-1	Reserved	-	-	OFF
2-2	Internal bell control	Internal bell disable	Internal bell enable	OFF
2-3	Auto Cutter	Disable	Enable	OFF



2-4	BUSY Condition	Receive Buffer Full	Offline or Receive Buffer Full	OFF
2-5	Print Density	See <a href="#">“Selecting the Print Density”</a> on page 48.		OFF
2-6				OFF
2-7				OFF
2-8	Near-End Sensor Status	Disable	Enable	OFF

#### 4.1.2 For Parallel, USB2.0 and Ethernet Interface

When using the serial interface, it is not necessary to change the DIP switch setting but their function changes. For the details, see [“For Serial Interface \(RS-232C\)”](#) on page 47 .

##### DIP Switches Bank 1

SW	Function	ON	OFF	Initial setting
1-1	Auto Line Feed at CR	Enable	Disable	OFF
1-2	Reserved	-	-	OFF
~				
1-8				

##### DIP Switches Bank 2

SW	Function	ON	OFF	Initial Setting
2-1	Reserved	-	-	OFF
2-2	Internal bell control	Internal bell disable	Internal bell enable	OFF
2-3	Auto Cutter	Disable	Enable	OFF
2-4	BUSY Condition	Receive Buffer Full	Offline or Receive Buffer Enable	OFF
2-5	Print Density	See <a href="#">“Selecting the Print Density”</a> on page 53.		OFF
2-6				OFF
2-7				OFF
2-8	Near-End Sensor Status	Disable	Enable	OFF

### 4.1.3 Selecting the Print Density

2-5	2-6	2-7	Print Density (Mono color)	Default
ON	ON	Reserved	1 (Light)	2
OFF	OFF	Reserved	2 (Standard)	
ON	OFF	Reserved	3 (Darker than standard)	
OFF	ON	Reserved	4 (Dark)	



- If the print density is set to 3 or 4 level, printing speed may be reduced.
- The print density can be set with DIP switches or the customized value.

### 4.1.4 Auto Cutter Enable/Disable Selection

Dip Switch Set 2		
SW 2-3	ON	Auto Cutter Disabled
	OFF	Auto Cutter Enabled
Application	Ignores Auto Cutter error for continuous printing.	

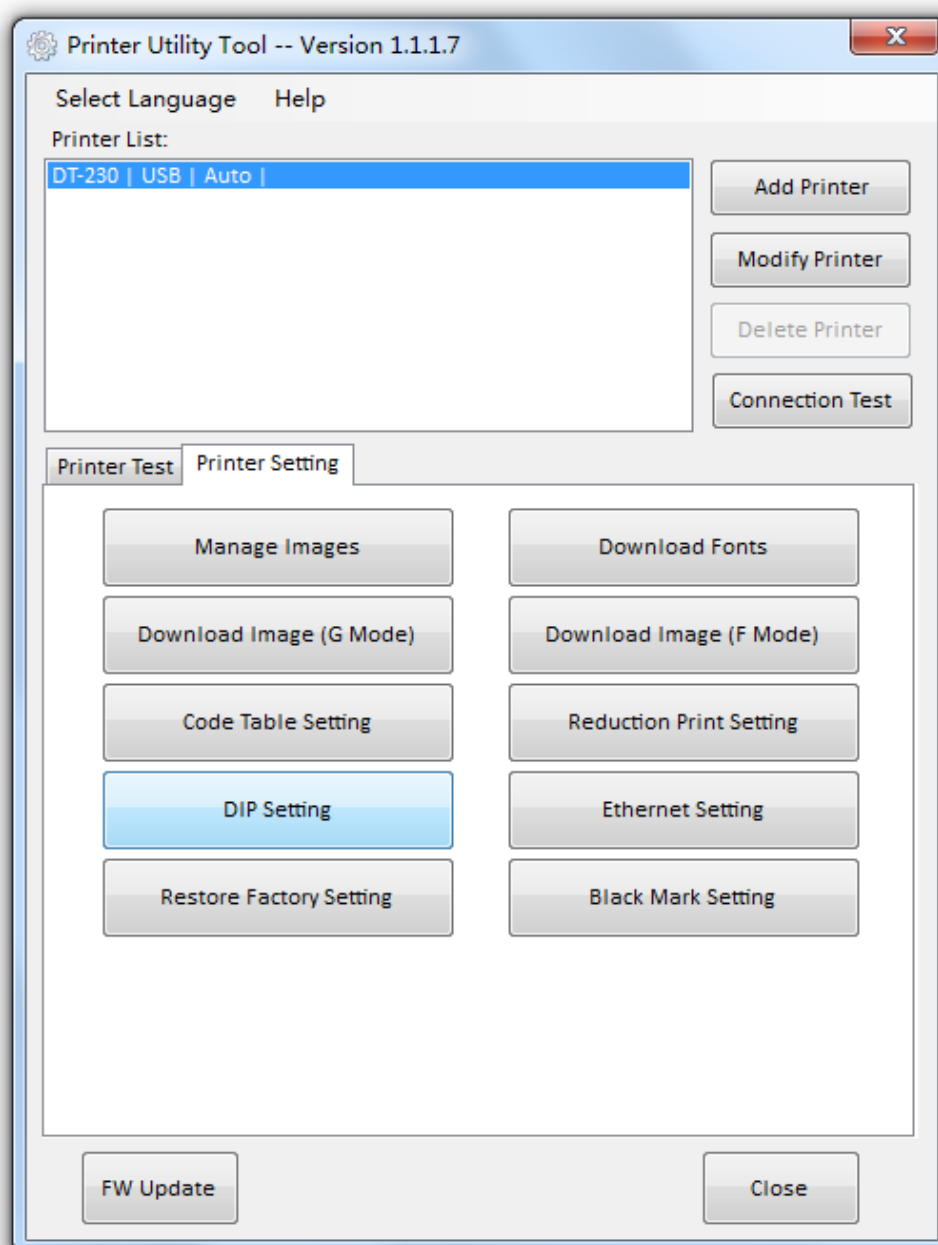
## 4.2 Memory Switch Setting

You can access the switch via the setup tool, which is more convenient. Here is the steps:

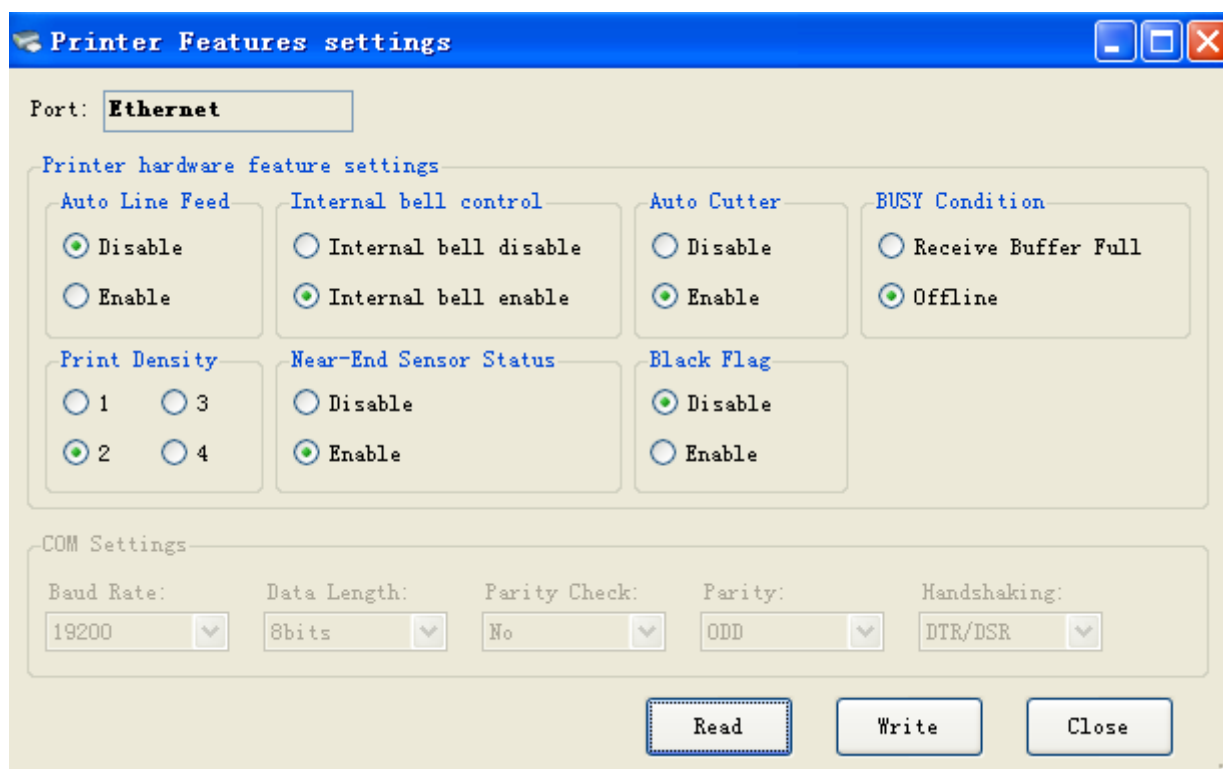


**CAUTION!** Only with parallel connection!

1. Open the utility tool for DT-210/230.
2. Choose “Printer Setting” – “DIP Setting”.



3. You could change the setting here. And then click “Write” to verify the new settings.



The image shows a software window titled "Printer Features settings" with a blue title bar and standard window controls. The window is divided into several sections. At the top, there is a "Port:" label followed by a text box containing "Ethernet". Below this is a section titled "Printer hardware feature settings" which contains seven sub-sections, each with a title and two radio button options. The "Auto Line Feed" section has "Disable" selected. The "Internal bell control" section has "Internal bell enable" selected. The "Auto Cutter" section has "Enable" selected. The "BUSY Condition" section has "Offline" selected. The "Print Density" section has "2" selected. The "Near-End Sensor Status" section has "Enable" selected. The "Black Flag" section has "Disable" selected. Below the hardware settings is a "COM Settings" section with five labels and corresponding dropdown menus: "Baud Rate:" (19200), "Data Length:" (8bits), "Parity Check:" (No), "Parity:" (ODD), and "Handshaking:" (DTR/DSR). At the bottom right of the window are three buttons: "Read", "Write", and "Close".

Port: **Ethernet**

Printer hardware feature settings

Auto Line Feed  
☒ Disable  
☐ Enable

Internal bell control  
☐ Internal bell disable  
☒ Internal bell enable

Auto Cutter  
☐ Disable  
☒ Enable

BUSY Condition  
☐ Receive Buffer Full  
☒ Offline

Print Density  
☐ 1 ☐ 3  
☒ 2 ☐ 4

Near-End Sensor Status  
☐ Disable  
☒ Enable

Black Flag  
☒ Disable  
☐ Enable

COM Settings

Baud Rate: 19200 Data Length: 8bits Parity Check: No Parity: ODD Handshaking: DTR/DSR

Read Write Close

## 5 SETTING/CHECKING MODES

Besides the ordinary print mode, the printer has the following modes to set or to check settings of the printer.

- Self-test Mode
- Hexadecimal Dumping Mode

### 5.1 Print a Parameter Setting Page (Self-test Page)

Before you connect the printer to the computer, make sure that the printer is in proper working order. You can do this by printing a configuration status paper.

Follow the steps below to run this mode.

1. Make sure the media is properly loaded, the top cover of the printer is closed and the printer is power off.
2. While pressing the FEED button, turn on the printer. (Keep pressing the FEED button until the printer starts printing.)

The printer then starts printing current status of the printer.



---

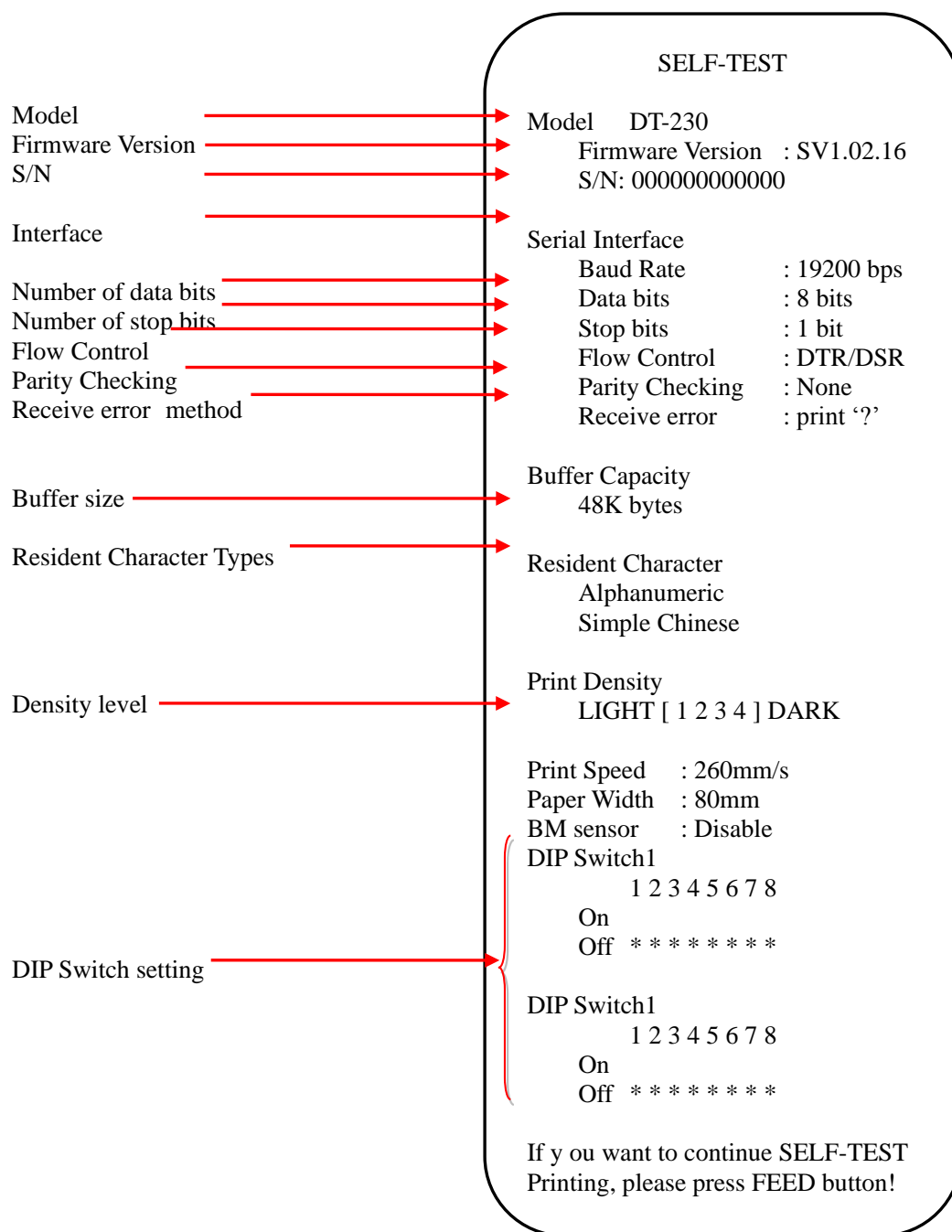
With the LAN interface, before printing starts, it takes 6 seconds if the IP address is fixed and 13 seconds if the IP address is obtained with the automatic setting. (It may take longer depending on the response time from the host.)

---

When the printer finishes printing the printer status, the following message is printed and the Paper LED flashed. (The printer is now in the self-test wait mode.):

“If you want to continue SELF-TEST  
Printing, please press FEED button!”

Here is the self test status page and its explanation. The printout is an example. It may differ depending of installed options or interfaces:



### 3. Press the FEED button while the printer is in the self-test mode.

Then the printer will print a rolling pattern using only the built-in character set.

After printing the following message, the printer is initialized and returned to the normal mode.

## 5.2 Hexadecimal Dumping Mode

This function is to print out all received data in hexadecimal numbers. If printing cannot occur correctly, this function allows checking whether or not the printer is receiving data correctly.

Follow the steps below to run this mode.

1. Open the roll paper cover.
2. While pressing the FEED button, turn on the printer.
3. Close the roll paper cover.

The printer starts printing "HEX DUMP PRINT MODE" followed by the received data printed in hexadecimal numbers and some characters.

---

### CAUTION!



- The printer prints "." if there is no characters corresponding to data.
  - During hexadecimal dump, functions except some command will be disabled.
  - If print data does not cover a line, press the FEED switch to print the line.
- 

Printing example:

Hexadecimal Dump

To terminate hexadecimal dump,  
press FEED button three times.

```
1B 21 00 1B 26 02 40 40 1B 69 . ! . . & . @@ . i
1B 25 01 1B 63 34 00 1B 30 31 . % . . c 4 . . 0 1
41 42 43 44 45 46 47 48 49 4A A B C D E F G H I J
```

\*\*\* completed \*\*\*

Turn off the printer or press the FEED button three times to return to the normal mode.

## 6 TROUBLESHOOTING

Your printer is extremely reliable, but occasionally problems may occur. This chapter provides information on some of the common problems you may encounter and how you may solve them. If you encounter problems that you cannot resolve, contact your dealer for assistance.

Read the following instructions before maintenance and avoid incorrect operation, so as to prevent injury to you and damage to the printer.

### 6.1 Error Status

LED indicators on the control panel and buzzer alarm

Trouble	Potential Problem	Solution
No LEDs on	Incorrect power supply cable connections and power outlet	Check the power supply cable connections and the power outlet and correct them.
	PCB damaged	Contact your dealer for assistance.
Paper LED always on	Paper near end	The roll paper is near end, the printer can work normally, procure
Error LED always on and beeper alarms	Printer Cover open	Close the Printer Cover.
Power, Paper and Error LEDs always on and beeper alarms	Paper end	Reload the roll paper.
Error LED blinks and beeper alarms	Thermal Print Head overheated	Turn the printer off and wait some minutes before you resume.
	Overvoltage	Print with specified voltage.
	Low-voltage	Print with specified voltage, use original power adapter.

### 6.2 Trouble occur during printing

Trouble	Potential Problem	Solution
Colored stripe in the paper	Paper near end	Install a new roll of paper.
Blurred or spot printing	Incorrect roll paper	Install the paper roll correctly.
	Poor paper quality	Use recommended thermal roll paper.
	Dirty thermal head or print roller	Clean the thermal head or print roller.
	Low Print density	Increase the print density level.
Paper Jam	Paper stuck	Open the printer cover, check the paper path and remove jammed paper.
Vertical dot line missing	Dirty thermal head or print	Clean the thermal head or print roller.
	Thermal head damaged	Contact your dealer for assistance.



## 6.3 Trouble occur during cutting

Trouble	Potential Problem	Solution
Colored stripe in the paper	Cutter abrasion, insufficient cutting	Replace the cutter
Cutter jam, the movable cutter cannot move back	Worn gear and worn wheel abrasion	Replace the worn gear and worn wheel
	Motor burnt	Replace the motor
	Paper scraps	Clean the paper scraps on the transmission system
Insufficient cutting	Cutter edge abrasion, paper too thick	Replace the cutter
Paper Jam	Thermal printer head over hear	Reduce the density of printing
	Driving too fast	Reduce the printer speed to the limit of thermal printer head
	Wrong paper feeding position	Put the paper parallel with paper mount and insert into the space between the platen roller and the thermal print head

## 6.4 Removing Jammed Paper

When a paper jam occurs, never pull out the paper forcibly. Open the roll paper cover and remove the jammed paper.

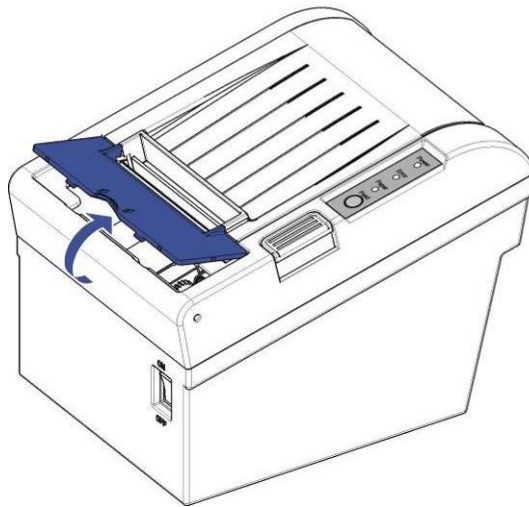
When the cover cannot be opened, follow the steps below to remove the jammed paper.



Printhead may be hot, please do not touch!

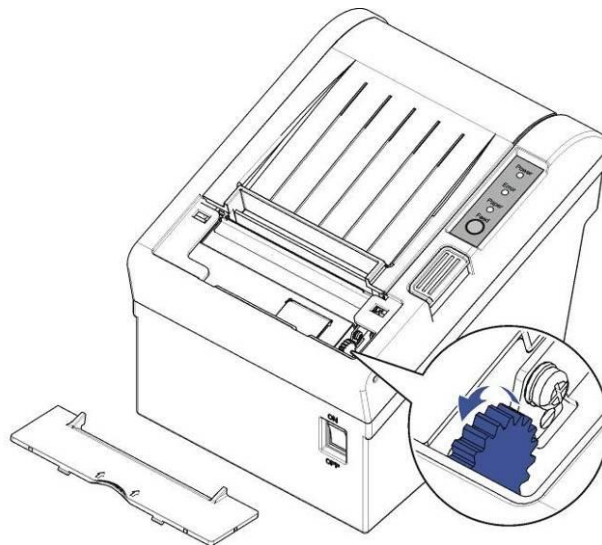
1. Turn off the printer.

2. Lift up the cutter cover to open it like the picture shows.



3. Turn the knob until the cutter blade returns to the normal position.

This returns the cutter blade to the normal position. There is label near the cutter to assist you.



4. Close the cutter cover.
5. Open the printer cover and remove the jammed paper.

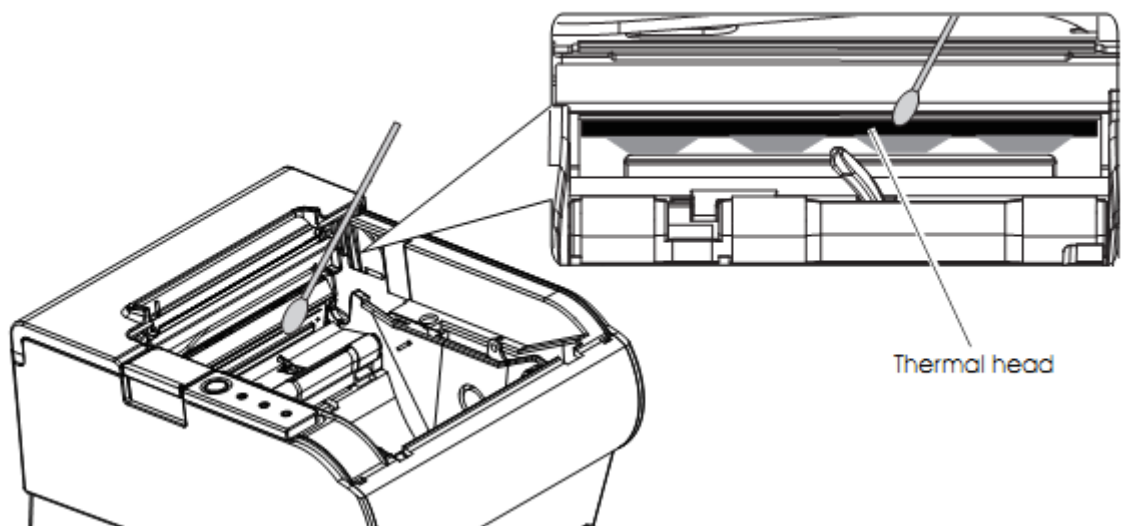
## 6.5 Cleaning Thermal Head

DASCOM recommends cleaning the thermal print head periodically (generally every 3 months) to maintain receipt print quality.



- After printing, the thermal print head becomes very hot. Be careful not to touch it and to let it cool before you clean it.
- Do not damage the thermal print head by touching it with your fingers or any hard object.

Turn off the printer, open the printer cover, and clean the thermal elements of the print head with a cotton swab moistened with an alcohol solvent (ethanol, methanol, or isopropyl).



Depending on the roll paper used, paper dust may stick to the platen roller and roll paper end sensor. To remove the paper dust, clean the platen roller and roll paper end sensor with a cotton swab moistened with water. Turn on the printer power only after the water has completely dried.

## 7 COMMUNICATION INTERFACES SPECIFICATIONS

Power Supply interface, USB interface and cash drawer interface are standard interfaces for the printer.

Serial interface, Parallel interface, Ethernet interface and Wi-Fi interface are optional interfaces for the printer.

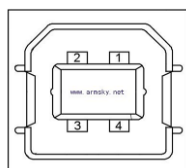
The interface pin assignment is listed below.

### 7.1 USB interface

#### USB interface pin assignment

PIN No.	Description	Classic wire color
1	VBUS	Red
2	D-	White
3	D+	Green
4	GND	Black

#### USB interface connector diagram

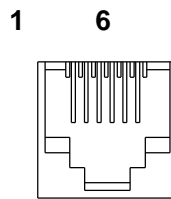


### 7.2 Cash Drawer interface

#### Cash Drawer interface pin assignment

Cash drawer interface supports DC24V, 1A, RJ-11 6P type socket.

Pin. No.	Description	Direction
1	Frame Ground	-
2	Drawer kick-out drive signal 1	Output
3	Drawer open/close signal	Input
4	+24V	-
5	Drawer kick-out drive signal 2	Output
6	GND	-

**Cash Drawer interface connector diagram**

## 7.3 Serial interface

**Serial interface pin assignment**

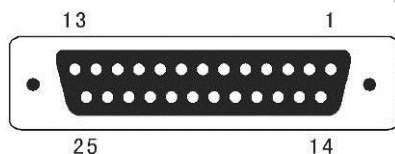
Serial interface compatible with RS-232 standard, with 25 pin (D hole type) socket.

PIN No.	Description
PIN 1	Frame Ground
PIN 2	TXD
PIN 3	RXD
PIN 4	RTS
PIN 5	Unconnected
PIN 6	DSR
PIN 7	Signal Ground
PIN 8~19	Unconnected
PIN 20	DTR
PIN 21~25	Unconnected



User can view the setting of interface via printing configuration sample.

The default setting of serial interface is as follow, 38400 bps (baud rates), 8 bit (data bit), 1 bit (stop bit), no parity, support RTS/CTS handshaking protocol.

**Serial interface connector diagram**

## 7.4 Parallel interface

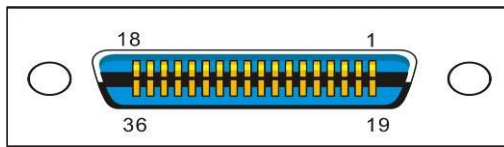
### Parallel interface pin assignment

Parallel interface with 36 pin CENTRONICS socket.

Pin No.	Signal From	Description
1	H	Strobe Signal; Data latch pulse, latch the data to the printer at the rising edge of the negative pulse.
2	H	Data 0 (The lowest bit)
3	H	Data 1
Pin No.	Signal From	Description
4	H	Data 2
5	H	Data 3
6	H	Data 4
7	H	Data 5
8	H	Data 6
9	H	Data 7 (The highest bit)
10	P	ACK Signal; Printer response signal, indicates that the printer has received a Data byte.
11	P	Busy Signal; The printer is busy; High level indicates that the printer can't receive data.
12	P	PE Signal; Paper end signal; High level indicates that the printer is out of paper.
13	—	Unconnected
14	—	Unconnected
15	—	Unconnected
16	Logic Ground	
17	Frame Ground, separated from logic ground.	
18	—	Unconnected
19~30	Logic Ground	
31	—	Unconnected
32	P	Printer error signal. Low level indicates that an error occurs in the printer. It will come with paper end.
33	Logic Ground	
34~35	—	Unconnected
36	Unconnected	



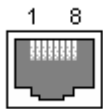
H indicates that signal comes from Host computer; P indicates that signal comes from Printer.

**Parallel interface connector diagram**

## 7.5 Ethernet interface

**Ethernet interface pin assignment**

Pin. No.	Name	Description
1	TX+	Tranceive Data+
2	TX-	Tranceive Data-
3	RX+	Receive Data+
4	n/c	Not connected
5	n/c	Not connected
6	RX-	Receive Data-
7	n/c	Not connected
8	n/c	Not connected

**Ethernet interface connector diagram**

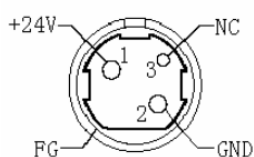
## 7.6 Wi-Fi interface

Wi-Fi interface supports 2.4 GHz, IEEE Std. 802.11b/g/n standard.

## 7.7 Power Adapter

**Power Socket pin assignment**

Pin Number	Signal Name
1	+24 V
2	GND
3	N.C
SHELL	F.G.

**Power Supply connector diagram**

**Power Supply interface type**

Printer - Unetop DC-002 or similar products

Computer - Unetop DP-002 or similar products



## 8 CHARACTER CODE PAGES



- The character code tables show only character configurations. They do not show the actual print pattern.
- “SP” in the table shows a space.

### 8.1 Common to All Pages (International Character Set: USA)

HEX	0	1	2	3	4	5	6	7
0	NUL 00	DLE 16	SP 32	0 48	@ 64	P 80	` 96	p 112
1	 01	XON 17	! 33	1 49	A 65	Q 81	a 97	q 113
2	 02	 18	“ 34	2 50	B 66	R 82	b 98	R 114
3	 03	XOFF 19	# 35	3 51	C 67	S 83	c 99	s 115
4	EOT 04	DC4 20	\$ 36	4 52	D 68	T 84	d 100	t 116
5	ENQ 05	NAK 21	% 37	5 53	E 69	U 85	e 101	u 117
6	ACK 06	 22	& 38	6 54	F 70	V 86	f 102	V 118
7	 07	CAN 23	‘ 39	7 55	G 71	W 87	g 103	w 119
8	 08	 24	( 40	8 56	H 72	X 88	h 104	x 120
9	HT 09	 25	) 41	9 57	I 73	Y 89	i 105	y 121
A	LF 10	 26	* 42	: 58	J 74	Z 90	j 106	Z 122
B	 11	ESC 27	+ 43	; 59	K 75	[ 91	k 107	{ 123
C	FF 12	FS 28	, 44	< 60	L 76	\ 92	l 108	 124
D	CR 13	GS 29	- 45	= 61	M 77	] 93	m 109	} 125
E	 14	RS 30	. 46	> 62	N 78	^ 94	n 110	~ 126
F	 15	 31	/ 47	? 63	O 79	_ 95	o 111	SP 127







## 8.2 International Character Sets

Country	ASCII code (Hex)											
	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
USA	#	\$	@	[	\	]	^	`	{		}	~
France	#	\$	à	°	ç	§	^	`	é	ù	è	¨
Germany	#	\$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
U.K.	£	\$	@	[	\	]	^	`	{		}	~
Denmark I	#	\$	@	Æ	Ø	Å	^	`	æ	ø	å	~
Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
Italy	#	\$	@	°	\	é	^	ù	à	ò	è	ì
Spain I	Pt	\$	@	i	Ñ	¿	^	`	¨	ñ	}	~
Japan	#	\$	@	[	¥	]	^	`	{		}	~
Norway	#	¤	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
Denmark II	#	\$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
Spain II	#	\$	á	i	Ñ	¿	é	`	í	ñ	ó	ú
Latin America	#	\$	á	i	Ñ	¿	é	ü	í	ñ	ó	ú
Korea	#	\$	@	[	₩	]	^	`	{		}	~
Slovenia/ Croatia	#	\$	Ž	Š	Đ	Ć	Č	ž	š	đ	ć	č
China	#	¥	@	[	\	]	^	`	{		}	~







### 8.3 [User-defined page]

HEX	8	9	A	B	C	D	E	F
0	SP 128	SP 144	SP 160	SP 176	SP 192	SP 208	SP 224	SP 240
1	SP 129	SP 145	SP 161	SP 177	SP 193	SP 209	SP 225	SP 241
2	SP 130	SP 146	SP 162	SP 178	SP 194	SP 210	SP 226	SP 242
3	SP 131	SP 147	SP 163	SP 179	SP 195	SP 211	SP 227	SP 243
4	SP 132	SP 148	SP 164	SP 180	SP 196	SP 212	SP 228	SP 244
5	SP 133	SP 149	SP 165	SP 181	SP 197	SP 213	SP 229	SP 245
6	SP 134	SP 150	SP 166	SP 182	SP 198	SP 214	SP 230	SP 246
7	SP 135	SP 151	SP 167	SP 183	SP 199	SP 215	SP 231	SP 247
8	SP 136	SP 152	SP 168	SP 184	SP 200	SP 216	SP 232	SP 248
9	SP 137	SP 153	SP 169	SP 185	SP 201	SP 217	SP 233	SP 249
A	SP 138	SP 154	SP 170	SP 186	SP 202	SP 218	SP 234	SP 250
B	SP 139	SP 155	SP 171	SP 187	SP 203	SP 219	SP 235	SP 251
C	SP 140	SP 156	SP 172	SP 188	SP 204	SP 220	SP 236	SP 252
D	SP 141	SP 157	SP 173	SP 189	SP 205	SP 221	SP 237	SP 253
E	SP 142	SP 158	SP 174	SP 190	SP 206	SP 222	SP 238	SP 254
F	SP 143	SP 159	SP 175	SP 191	SP 207	SP 223	SP 239	SP 255







## 8.4 [PC437: USA, Standard Europe]

HEX	8	9	A	B	C	D	E	F
0	Ç 128	É 144	á 160	 176	Ł 192	ll 208	α 224	≡ 240
1	ü 129	æ 145	í 161	 177	┘ 193	ƒ 209	β 225	± 241
2	é 130	Æ 146	ó 162	 178	Ƨ 194	π 210	Γ 226	≥ 242
3	â 131	ô 147	ú 163	 179	Ƨ 195	ll 211	π 227	≤ 243
4	ä 132	ö 148	ñ 164	┘ 180	— 196	Ł 212	Σ 228	┘ 244
5	à 133	ò 149	Ñ 165	Ƨ 181	† 197	ƒ 213	σ 229	┘ 245
6	å 134	û 150	ä 166	ll 182	Ƨ 198	π 214	μ 230	÷ 246
7	ç 135	ù 151	ø 167	π 183	ll 199	ll 215	τ 231	≈ 247
8	ê 136	ÿ 152	č 168	Ƨ 184	ll 200	Ƨ 216	Φ 232	° 248
9	ë 137	Ö 153	Г 169	ll 185	Ƨ 201	┘ 217	Θ 233	• 249
A	è 138	Ü 154	Г 170	ll 186	ll 202	Г 218	Ω 234	• 250
B	ï 139	ø 155	½ 171	ll 187	Ƨ 203	 219	δ 235	√ 251
C	î 140	£ 156	¼ 172	ll 188	ll 204	 220	∞ 236	ⁿ 252
D	ì 141	¥ 157	ì 173	ll 189	= 205	ll 221	Φ 237	² 253
E	Ä 142	Pt 158	« 174	┘ 190	ll 206	ll 222	ε 238	■ 254
F	Ä 143	f 159	» 175	┘ 191	ll 207	 223	∩ 239	SP 255







## 8.5 [PC850: Multilingual]

HEX	8	9	A	B	C	D	E	F
0	Ç 128	É 144	á 160	 176	Ł 192	ð 208	Ó 224	– 240
1	ü 129	æ 145	í 161	 177	Ł 193	Ð 209	β 225	± 241
2	é 130	Æ 146	ó 162	 178	Ƨ 194	Ê 210	Ô 226	= 242
3	â 131	ô 147	ú 163	 179	Ƨ 195	Ë 211	Ò 227	¾ 243
4	ä 132	ö 148	ñ 164	† 180	– 196	È 212	õ 228	¶ 244
5	à 133	ò 149	Ñ 165	Á 181	† 197	ı 213	Õ 229	§ 245
6	å 134	û 150	ä 166	Â 182	ã 198	Í 214	μ 230	÷ 246
7	ç 135	ù 151	å 167	À 183	Ã 199	Î 215	þ 231	‚ 247
8	ê 136	ÿ 152	ı 168	© 184	Ł 200	İ 216	þ 232	° 248
9	ë 137	Ö 153	® 169	¶ 185	Ƨ 201	Ƨ 217	Ú 233	“ 249
A	è 138	Ü 154	¬ 170	 186	Ł 202	Ƨ 218	Û 234	• 250
B	ï 139	ø 155	½ 171	¶ 187	Ƨ 203	 219	Ü 235	¹ 251
C	î 140	£ 156	¼ 172	¶ 188	Ƨ 204	 220	Ý 236	³ 252
D	ì 141	Ø 157	ı 173	ø 189	= 205	ı 221	Ý 237	² 253
E	Ä 142	× 158	« 174	¥ 190	Ƨ 206	İ 222	– 238	■ 254
F	Å 143	ƒ 159	» 175	Ƨ 191	Ƨ 207	 223	’ 239	SP 255







## 8.6 [PC852: Latin2]

HEX	8	9	A	B	C	D	E	F
0	Ç 128	É 144	á 160	 176	Ł 192	đ 208	Ó 224	- 240
1	ü 129	Í 145	í 161	 177	Ł 193	Đ 209	β 225	“ 241
2	é 130	Í 146	ó 162	 178	Ƨ 194	Ǿ 210	Ô 226	‘ 242
3	â 131	ô 147	ú 163	 179	Ƨ 195	Ě 211	Ň 227	˘ 243
4	ä 132	ö 148	Ą 164	ł 180	— 196	ď 212	ń 228	˘ 244
5	û 133	Ĺ 149	ą 165	Á 181	† 197	Ň 213	ň 229	§ 245
6	ć 134	ĭ 150	ž 166	Â 182	Ǻ 198	Í 214	Š 230	÷ 246
7	ç 135	Ś 151	ž 167	Ě 183	ǻ 199	Î 215	š 231	˘ 247
8	ł 136	ś 152	Ę 168	Ş 184	Ł 200	ě 216	Ř 232	° 248
9	ë 137	Ö 153	ę 169	Ǻ 185	Ƨ 201	Ƨ 217	Ú 233	“ 249
A	Ő 138	Ü 154	SP 170	 186	Ł 202	Ƨ 218	ř 234	• 250
B	ő 139	ť 155	ž 171	Ǻ 187	Ƨ 203	 219	Ů 235	ů 251
C	î 140	ť 156	Č 172	Ǻ 188	Ƨ 204	 220	ý 236	Ř 252
D	Ž 141	Ł 157	ş 173	Ž 189	= 205	Ƨ 221	Ý 237	ř 253
E	Ä 142	× 158	« 174	ž 190	Ƨ 206	Ů 222	ţ 238	■ 254
F	Ć 143	č 159	» 175	Ƨ 191	α 207	 223	’ 239	SP 255

## 8.7 [PC858: Euro]

HEX	8	9	A	B	C	D	E	F
0	Ç 128	É 144	á 160	 176	Ł 192	ð 208	Ó 224	– 240
1	ü 129	æ 145	í 161	 177	Ł 193	Ð 209	β 225	± 241
2	é 130	Æ 146	ó 162	 178	Ƨ 194	Ê 210	Ô 226	= 242
3	â 131	ô 147	ú 163	 179	Ƨ 195	Ë 211	Ò 227	¾ 243
4	ä 132	ö 148	ñ 164	† 180	– 196	È 212	õ 228	¶ 244
5	à 133	ò 149	Ñ 165	Á 181	† 197	€ 213	Õ 229	§ 245
6	å 134	û 150	ä 166	Â 182	ã 198	Í 214	μ 230	÷ 246
7	ç 135	ù 151	å 167	À 183	Ã 199	Î 215	þ 231	‚ 247
8	ê 136	ÿ 152	ı 168	© 184	Ł 200	Ï 216	ƒ 232	° 248
9	ë 137	Ö 153	® 169	Ƨ 185	Ƨ 201	Ƨ 217	Ú 233	“ 249
A	è 138	Ü 154	¬ 170	 186	Ł 202	Ƨ 218	Û 234	• 250
B	ï 139	ø 155	½ 171	Ƨ 187	Ƨ 203	 219	Ü 235	<sup>1</sup> 251
C	î 140	£ 156	¼ 172	Ƨ 188	Ƨ 204	 220	Ý 236	<sup>3</sup> 252
D	ì 141	Ø 157	ı 173	ø 189	= 205	ı 221	Ý 237	<sup>2</sup> 253
E	Ä 142	× 158	« 174	¥ 190	Ƨ 206	İ 222	– 238	■ 254
F	Å 143	ƒ 159	» 175	Ƨ 191	α 207	 223	’ 239	SP 255

## 8.8 [PC860: Portuguese]









HEX	8	9	A	B	C	D	E	F
0	Ç 128	É 144	á 160	 176	Ł 192	ll 208	α 224	≡ 240
1	ü 129	À 145	í 161	 177	Ł 193	ŧ 209	β 225	± 241
2	é 130	È 146	ó 162	 178	ŧ 194	π 210	Γ 226	≥ 242
3	â 131	ô 147	ú 163	 179	ŧ 195	ll 211	π 227	≤ 243
4	ã 132	õ 148	ñ 164	ŧ 180	— 196	Ł 212	Σ 228	∫ 244
5	à 133	ò 149	Ñ 165	ŧ 181	† 197	ƒ 213	σ 229	∫ 245
6	Á 134	Ú 150	ä 166	ll 182	ƒ 198	π 214	μ 230	÷ 246
7	ç 135	ù 151	œ 167	π 183	ll 199	ll 215	τ 231	≈ 247
8	ê 136	Ï 152	ç 168	ŧ 184	ll 200	ŧ 216	Φ 232	° 248
9	Ê 137	Õ 153	Ô 169	ll 185	ŧ 201	ŧ 217	Θ 233	• 249
A	è 138	Ü 154	¬ 170	ll 186	ll 202	ŧ 218	Ω 234	• 250
B	Í 139	ø 155	½ 171	ŧ 187	ŧ 203	 219	δ 235	√ 251
C	Ï 140	£ 156	¼ 172	ll 188	ŧ 204	 220	∞ 236	n 252
D	ì 141	Ù 157	ì 173	ll 189	= 205	ŧ 221	Φ 237	² 253
E	Ä 142	Pt 158	« 174	ŧ 190	ŧ 206	ŧ 222	ε 238	■ 254
F	Ä 143	Ó 159	» 175	ŧ 191	ŧ 207	 223	∩ 239	SP 255











## 8.9 [PC863: Canadian-French]

HEX	8	9	A	B	C	D	E	F
0	Ç 128	É 144	Ì 160	⋮ 176	Ł 192	⏏ 208	α 224	≡ 240
1	Ü 129	È 145	´ 161	⋮ 177	⌞ 193	⏏ 209	β 225	± 241
2	é 130	Ê 146	ó 162	⋮ 178	⌞ 194	π 210	Γ 226	≥ 242
3	â 131	ô 147	ú 163	 179	⌞ 195	⏏ 211	π 227	≤ 243
4	Â 132	Ë 148	¨ 164	⌞ 180	— 196	⏏ 212	Σ 228	∫ 244
5	à 133	Ï 149	¸ 165	⌞ 181	† 197	⏏ 213	σ 229	∫ 245
6	¶ 134	û 150	³ 166	⌞ 182	⌞ 198	π 214	μ 230	÷ 246
7	ç 135	ù 151	⁻ 167	π 183	⌞ 199	⏏ 215	τ 231	≈ 247
8	ê 136	α 152	Î 168	⌞ 184	⏏ 200	⏏ 216	Φ 232	° 248
9	ë 137	Ô 153	Г 169	⌞ 185	⏏ 201	⏏ 217	Θ 233	• 249
A	è 138	Ü 154	¬ 170	⏏ 186	⏏ 202	Г 218	Ω 234	· 250
B	ï 139	ø 155	½ 171	⌞ 187	⏏ 203	⏏ 219	ø 235	√ 251
C	î 140	£ 156	¼ 172	⏏ 188	⏏ 204	⏏ 220	∞ 236	ⁿ 252
D	= 141	Ù 157	¾ 173	⏏ 189	= 205	⏏ 221	Φ 237	² 253
E	À 142	Û 158	« 174	⏏ 190	⏏ 206	⏏ 222	ε 238	■ 254
F	§ 143	f 159	» 175	⏏ 191	⏏ 207	⏏ 223	∩ 239	SP 255

## 8.10 [PC865: Nordic]

HEX	8	9	A	B	C	D	E	F
0	Ç 128	É 144	á 160	 176	Ł 192	ll 208	α 224	≡ 240
1	ü 129	æ 145	í 161	 177	ł 193	ŧ 209	β 225	± 241
2	é 130	Æ 146	ó 162	 178	ṽ 194	π 210	Γ 226	≥ 242
3	â 131	ô 147	ú 163	 179	ṽ 195	ll 211	π 227	≤ 243
4	ä 132	ö 148	ñ 164	† 180	— 196	Ł 212	Σ 228	 244
5	à 133	ò 149	Ñ 165	‡ 181	† 197	Ɔ 213	σ 229	¡ 245
6	å 134	û 150	ä 166	 182	Ɔ 198	π 214	μ 230	÷ 246
7	ç 135	ù 151	º 167	π 183	 199	 215	τ 231	≈ 247
8	ê 136	ÿ 152	¿ 168	Ɔ 184	ll 200	‡ 216	Φ 232	° 248
9	ë 137	Ö 153	Г 169	 185	Ɔ 201	┘ 217	Θ 233	• 249
A	è 138	Ü 154	Г 170	 186	ll 202	Г 218	Ω 234	· 250
B	ï 139	ø 155	½ 171	Ɔ 187	ŧ 203	 219	δ 235	√ 251
C	î 140	£ 156	¼ 172	┘ 188	 204	 220	∞ 236	ⁿ 252
D	ì 141	Ø 157	ì 173	ll 189	= 205	 221	Φ 237	² 253
E	Ä 142	Pt 158	« 174	┘ 190	 206	 222	ε 238	■ 254
F	Å 143	f 159	¤ 175	Г 191	ll 207	 223	∩ 239	SP 255

## 8.11 [PC866: Cyrillic #2]

HEX	8	9	A	B	C	D	E	F
0	А 128	Р 144	а 160	 176	Л 192	л 208	р 224	Ё 240
1	Б 129	С 145	б 161	 177	Л 193	л 209	с 225	ё 241
2	В 130	Т 146	в 162	 178	Т 194	т 210	т 226	Ё 242
3	Г 131	У 147	г 163	 179	т 195	л 211	у 227	е 243
4	Д 132	Ф 148	д 164	т 180	— 196	л 212	ф 228	ї 244
5	Е 133	Х 149	е 165	т 181	т 197	ф 213	х 229	і 245
6	Ж 134	Ц 150	ж 166	т 182	т 198	г 214	ц 230	ŷ 246
7	З 135	Ч 151	з 167	т 183	т 199	т 215	ч 231	ŷ 247
8	И 136	Ш 152	и 168	т 184	л 200	т 216	ш 232	° 248
9	Й 137	Щ 153	й 169	т 185	т 201	т 217	щ 233	• 249
A	К 138	Ъ 154	к 170	т 186	л 202	г 218	ъ 234	• 250
B	Л 139	Ы 155	л 171	т 187	т 203	 219	ы 235	√ 251
C	М 140	Ь 156	м 172	т 188	т 204	 220	ь 236	№ 252
D	Н 141	Э 157	н 173	т 189	= 205	 221	э 237	¤ 253
E	О 142	Ю 158	о 174	т 190	т 206	 222	ю 238	■ 254
F	П 143	Я 159	п 175	т 191	т 207	 223	я 239	SP 255

## 8.12 [KU42: Thai]

HEX	8	9	A	B	C	D	E	F
0	๒ 128	๐ 144	SP 160	ฒ 176	ย 192	ไ 208	' 224	๒ 240
1	๓ 129	๑ 145	ก 161	ณ 177	ร 193	แ 209	๒ 225	๒+ 241
2	๔ 130	๒ 146	ข 162	ด 178	ถ 194	โ 210	๒ 226	๒๑ 242
3	๕ 131	๓ 147	ค 163	ต 179	ล 195	ใ 211	+ 227	๒- 243
4	๖ 132	๔ 148	ฃ 164	ถ 180	ว 196	๒ 212	๑ 228	๒๒ 244
5	๗ 133	๕ 149	ง 165	ท 181	ศ 197	ๆ 213	• 229	๒๓ 245
6	๘ 134	๖ 150	จ 166	ธ 182	ษ 198	๒ 214	◌ 230	๒+ 246
7	๙ 135	๗ 151	ฉ 167	น 183	ส 199	๒ 215	๒ 231	๒- 247
8	๐ 136	๘ 152	ช 168	บ 184	ห 200	๒ 216	๒ 232	๒๒ 248
9	๑ 137	๙ 153	ฅ 169	ป 185	ฬ 201	๒ 217	๒ 233	๒๓ 249
A	๒ 138	๐ 154	ฒ 170	ผ 186	อ 202	๒ 218	๒- 234	๒+ 250
B	๓ 139	๑ 155	ณ 171	ฝ 187	ฮ 203	๒ 219	๒๑ 235	๒- 251
C	๔ 140	๒ 156	ด 172	พ 188	ะ 204	๒ 220	๒๒ 236	๒๑ 252
D	๕ 141	๓ 157	ต 173	ฟ 189	ภ 205	๒ 221	๒+ 237	๒๓ 253
E	๖ 142	๔ 158	ฃ 174	ภ 190	า 206	๒ 222	๒- 238	๒+ 254
F	๗ 143	๕ 159	ท 175	ม 191	ำ 207	๒ 223	๒๑ 239	SP 255

## 8.13 [TIS11: Thai]

HEX	8	9	A	B	C	D	E	F
0	๐ 128	๑ 144	๒ 160	๓ 176	๔ 192	๕ 208	๖ 224	๗ 240
1	๘ 129	๙ 145	๑๐ 161	๑๑ 177	๑๒ 193	๑๓ 209	๑๔ 225	๑๕ 241
2	๑๖ 130	๑๗ 146	๑๘ 162	๑๙ 178	๒๐ 194	๒๑ 210	๒๒ 226	๒๓ 242
3	๒๔ 131	๒๕ 147	๒๖ 163	๒๗ 179	๒๘ 195	๒๙ 211	๓๐ 227	๓๑ 243
4	๓๒ 132	๓๓ 148	๓๔ 164	๓๕ 180	๓๖ 196	๓๗ 212	๓๘ 228	๓๙ 244
5	๓๔ 133	๓๕ 149	๓๖ 165	๓๗ 181	๓๘ 197	๓๙ 213	๔๐ 229	๔๑ 245
6	๓๖ 134	๓๗ 150	๓๘ 166	๓๙ 182	๔๐ 198	๔๑ 214	๔๒ 230	๔๓ 246
7	๓๘ 135	๓๙ 151	๔๐ 167	๔๑ 183	๔๒ 199	๔๓ 215	๔๔ 231	๔๕ 247
8	๔๐ 136	๔๑ 152	๔๒ 168	๔๓ 184	๔๔ 200	๔๕ 216	๔๖ 232	๔๗ 248
9	๔๒ 137	๔๓ 153	๔๔ 169	๔๕ 185	๔๖ 201	๔๗ 217	๔๘ 233	๔๙ 249
A	๔๔ 138	๔๕ 154	๔๖ 170	๔๗ 186	๔๘ 202	๔๙ 218	๕๐ 234	๕๑ 250
B	๔๖ 139	๔๗ 155	๔๘ 171	๔๙ 187	๕๐ 203	๕๑ 219	๕๒ 235	๕๓ 251
C	๔๘ 140	๔๙ 156	๕๐ 172	๕๑ 188	๕๒ 204	๕๓ 220	๕๔ 236	๕๕ 252
D	๕๐ 141	๕๑ 157	๕๒ 173	๕๓ 189	๕๔ 205	๕๕ 221	๕๖ 237	๕๗ 253
E	๕๒ 142	๕๓ 158	๕๔ 174	๕๕ 190	๕๖ 206	๕๗ 222	๕๘ 238	๕๙ 254
F	๕๔ 143	๕๕ 159	๕๖ 175	๕๗ 191	๕๘ 207	๕๙ 223	๖๐ 239	SP 255

## 8.14 [TIS18: Thai]

HEX	8	9	A	B	C	D	E	F
0	๒ 128	๓ 144	SP 160	๔ 176	๕ 192	๖ 208	๗ 224	๘ 240
1	๒ 129	๓ 145	๕ 161	๖ 177	๗ 193	๘ 209	๙ 225	๑ 241
2	๒ 130	๓ 146	๖ 162	๗ 178	๘ 194	๙ 210	๑ 226	๒ 242
3	๒ 131	๓ 147	๗ 163	๘ 179	๙ 195	๑ 211	๒ 227	๓ 243
4	๒ 132	๓ 148	๘ 164	๙ 180	๑ 196	๒ 212	๓ 228	๔ 244
5	๒ 133	๓ 149	๙ 165	๑ 181	๒ 197	๓ 213	๔ 229	๕ 245
6	๒ 134	๓ 150	๑ 166	๒ 182	๓ 198	๔ 214	๕ 230	๖ 246
7	๒ 135	๓ 151	๒ 167	๓ 183	๔ 199	๕ 215	๖ 231	๗ 247
8	๒ 136	๓ 152	๓ 168	๔ 184	๕ 200	๖ 216	๗ 232	๘ 248
9	๒ 137	๓ 153	๔ 169	๕ 185	๖ 201	๗ 217	๘ 233	๙ 249
A	๒ 138	๓ 154	๕ 170	๖ 186	๗ 202	๘ 218	๙ 234	๑ 250
B	๒ 139	๓ 155	๖ 171	๗ 187	๘ 203	๙ 219	๑ 235	๒ 251
C	๒ 140	๓ 156	๗ 172	๘ 188	๙ 204	๑ 220	๒ 236	๓ 252
D	๒ 141	๓ 157	๘ 173	๙ 189	๑ 205	๒ 221	๓ 237	๔ 253
E	๒ 142	๓ 158	๙ 174	๑ 190	๒ 206	๓ 222	๔ 238	๕ 254
F	๒ 143	๓ 159	๑ 175	๒ 191	๓ 207	๔ 223	๕ 239	SP 255

## 8.15 [PC720: Arabic]

HEX	8	9	A	B	C	D	E	F
0	SP 128	SP 144	ب 160	ٲ 176	ل 192	ل 208	ض 224	ٲ 240
1	SP 129	س 145	ة 161	ٲ 177	ل 193	ٲ 209	ط 225	ٲ 241
2	é 130	و 146	ت 162	ٲ 178	ٲ 194	ٲ 210	ظ 226	ٲ 242
3	a 131	ô 147	ث 163	ل 179	ٲ 195	ل 211	ع 227	ٲ 243
4	SP 132	ٲ 148	ج 164	ٲ 180	ـ 196	ل 212	غ 228	ٲ 244
5	à 133	ـ 149	ح 165	ٲ 181	ٲ 197	ٲ 213	ف 229	ٲ 245
6	SP 134	û 150	خ 166	ٲ 182	ٲ 198	ٲ 214	ٲ 230	ٲ 246
7	ç 135	ù 151	د 167	ٲ 183	ٲ 199	ٲ 215	ق 231	ٲ 247
8	ê 136	ء 152	ذ 168	ٲ 184	ل 200	ٲ 216	ك 232	و 248
9	ë 137	آ 153	ر 169	ٲ 185	ٲ 201	ل 217	ل 233	و 249
A	è 138	أ 154	ز 170	ٲ 186	ل 202	ٲ 218	م 234	و 250
B	ï 139	ؤ 155	س 171	ٲ 187	ٲ 203	ٲ 219	ن 235	ٲ 251
C	î 140	ع 156	ش 172	ٲ 188	ٲ 204	ٲ 220	ه 236	ٲ 252
D	SP 141	إ 157	ص 173	ل 189	ٲ 205	ٲ 221	و 237	2 253
E	SP 142	ئ 158	« 174	ل 190	ٲ 206	ٲ 222	ى 238	ٲ 254
F	SP 143	ا 159	» 175	ٲ 191	SP 207	ٲ 223	ي 239	SP 255

## 8.16 [PC864: Arabic]

HEX	8	9	A	B	C	D	E	F
0	° 128	β 144	SP 160	• 176	© 192	ذ 208	– 224	? 240
1	· 129	∞ 145	 161	۱ 177	ء 193	ر 209	ف 225	? 241
2	· 130	φ 146	آ 162	۲ 178	آ 194	ز 210	ق 226	ن 242
3	√ 131	± 147	£ 163	۳ 179	أ 195	س 211	ك 227	ه 243
4	⌘ 132	½ 148	¤ 164	٤ 180	ؤ 196	ش 212	ل 228	ھ 244
5	— 133	¼ 149	أ 165	٥ 181	ع 197	ص 213	م 229	ی 245
6	 134	≈ 150	SP 166	٦ 182	ئ 198	ض 214	ن 230	ي 246
7	† 135	« 151	€ 167	٧ 183	ا 199	ط 215	ه 231	غ 247
8	‡ 136	» 152	ا 168	٨ 184	ب 200	ظ 216	و 232	ق 248
9	‡ 137	لا 153	ب 169	٩ 185	ة 201	ع 217	ی 233	لا 249
A	‡ 138	لا 154	ت 170	ف 186	ت 202	غ 218	ي 234	لا 250
B	‡ 139	SP 155	ث 171	؛ 187	ث 203	ا 219	ض 235	ل 251
C	٦ 140	SP 156	، 172	س 188	ج 204	٦ 220	ع 236	ك 252
D	٦ 141	لا 157	ج 173	ش 189	ح 205	÷ 221	غ 237	ي 253
E	٦ 142	لا 158	ح 174	ص 190	خ 206	× 222	غ 238	■ 254
F	٦ 143	ء 159	خ 175	؟ 191	د 207	ع 223	م 239	SP 255



## 8.17 [WPC1256: Arabic]

HEX	8	9	A	B	C	D	E	F
0	€ 128	گ 144	SP 160	° 176	ه 192	ذ 208	à 224	≈ 240
1	' 129	' 145	' 161	± 177	ء 193	ر 209	ل 225	" 241
2	پ 130	' 146	¢ 162	² 178	آ 194	ز 210	â 226	≈ 242
3	f 131	“ 147	£ 163	³ 179	أ 195	س 211	م 227	´ 243
4	” 132	” 148	¤ 164	´ 180	ؤ 196	ش 212	ن 228	Ô 244
5	... 133	• 149	¥ 165	μ 181	إ 197	ص 213	ه 229	ء 245
6	† 134	— 150	¡ 166	¶ 182	ئ 198	ض 214	و 230	´ 246
7	‡ 135	— 151	§ 167	· 183	ا 199	× 215	ç 231	÷ 247
8	^ 136	ک 152	“ 168	د 184	ب 200	ط 216	è 232	س 248
9	‰ 137	™ 153	© 169	¹ 185	ة 201	ظ 217	é 233	ù 249
A	ٹ 138	ڑ 154	ھ 170	؛ 186	ت 202	ع 218	ê 234	ہ 250
B	‹ 139	› 155	« 171	» 187	ث 203	غ 219	ë 235	û 251
C	Œ 140	œ 156	¬ 172	¼ 188	ج 204	- 220	ی 236	ü 252
D	چ 141	SP 157	 173	½ 189	ح 205	ف 221	ي 237	SP 253
E	ژ 142	SP 158	® 174	¾ 190	خ 206	ق 222	î 238	SP 254
F	ذ 143	ں 159	— 175	؟ 191	د 207	ك 223	ï 239	ے 255

## 9 PRINTING CONTROL COMMAND SETS

- Be compatible with ESC/POS command set
- Support NV image and page mode printing

### List of Commands

Command	Name
HT	Horizontal tab
LF	Print and line feed
FF	Print and return to standard mode (in page mode)
CR	Print and carriage return
CAN	Cancel print data in page mode
DLE EOT	Transmit real-time status
DLE ENQ	Send real-time request to printer
DLE DC4	Generate pulse in real-time ( $fn = 1$ )
	Execute power-off sequence ( $fn = 2$ )
	Clear buffer(s) ( $fn = 8$ )
ESC FF	Print data in page mode
ESC SP	Set right-side character spacing
ESC !	Select print mode(s)
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 spacing
ESC 3	Set line spacing
ESC =	Select peripheral device
ESC ?	Cancel user-defined characters
ESC @	Initialize printer
ESC D	Set horizontal tab positions
ESC E	Turn emphasized mode on/off
ESC G	Turn double-strike mode on/off
ESC J	Print and feed paper
ESC L	Select page mode
ESC M	Select character font
ESC R	Select an international character set
ESC S	Select standard mode
ESC T	Select print direction in page mode
ESC V	Turn 90 degrees clockwise rotation mode on/off
ESC W	Set print area in page mode
ESC \	Set relative print position

Command	Name
ESC a	Select justification
ESC c 3	Select paper sensor(s) to output paper-end signals
ESC c 4	Select paper sensor(s) to stop printing
ESC c 5	Enable/disable panel buttons
ESC d	Print and feed <i>n</i> lines
ESC p	Generate pulse
ESC t	Select character code table
ESC {	Turn upside-down print mode on/off
FS g 1	Write to NV user memory
FS g 2	Read from NV user memory
GS !	Select character size
GS \$	Set absolute vertical print position in page mode
GS ( A	Execute test print
GS ( D	Enable/disable real-time command
GS ( E	Set user setup commands  <Function 1> Change into the user setting mode. <Function 2> End the user setting mode session. <Function 5> Set the customized setting values. <Function 6> Transmit the customized setting values. <Function 11> Set the configuration item for the serial interface. <Function 12> Transmit the configuration item for the serial interface.
GS ( H	Request transmission of response or status  <Function 48> Set the process ID response.
GS ( K	Select print control method(s)  <Function 50> Select the print speed.
GS ( L / GS 8 L	Set graphics data  <Function 48> Transmit the NV graphics memory capacity. <Function 50> Print the graphics data in the print buffer. <Function 51> Transmit the remaining capacity of the NV graphics memory. <Function 64> Transmit the key code list for defined NV graphics. <Function 65> Delete all NV graphics data. <Function 66> Delete the specified NV graphics data. <Function 67> Define the NV graphics data (raster format). <Function 69> Print the specified NV graphics data. <Function 112> Store the graphics data in the print buffer (raster format).

Command	Name
<b>GS ( k</b>	Set up and print symbol  <Function 065> PDF417: Set the number of columns in the data region. <Function 066> PDF417: Set the number of rows. <Function 067> PDF417: Set the width of the module. <Function 068> PDF417: Set the row height. <Function 069> PDF417: Set the error correction level. <Function 070> PDF417: Select the options. <Function 080> PDF417: Store the data in the symbol storage area. <Function 081> PDF417: Print the symbol data in the symbol storage area. <Function 082> PDF417: Transmit the size information of the symbol data in the symbol storage area.  <Function 167> QR Code: Set the size of module. <Function 169> QR Code: Select the error correction level. <Function 180> QR Code: Store the data in the symbol storage area. <Function 181> QR Code: Print the symbol data in the symbol storage area. <Function 182> QR Code: Transmit the size information of the symbol data in the symbol storage area.
<b>GS *</b>	Define downloaded bit image
<b>GS /</b>	Print downloaded bit image
<b>GS :</b>	Start/end macro definition
<b>GS B</b>	Turn white/black reverse print mode on/off
<b>GS H</b>	Select print position of HRI characters
<b>GS I</b>	Transmit printer ID
<b>GS L</b>	Set left margin
<b>GS P</b>	Set horizontal and vertical motion units
<b>GS V</b>	Select cut mode and cut paper
<b>GS W</b>	Set print area width
<b>GS \</b>	Set relative vertical print position in page mode
<b>GS ^</b>	Execute macro
<b>GS a</b>	Enable/disable Automatic Status Back (ASB)
<b>GS f</b>	Select font for HRI characters
<b>GS g 0</b>	Initialize maintenance counter
<b>GS g 2</b>	Transmit maintenance counter
<b>GS h</b>	Set bar code height
<b>GS k</b>	Print bar code
<b>GS r</b>	Transmit status
<b>GS w</b>	Set bar code width
<b>FS p</b>	Print NV bit image
<b>FS q</b>	Define NV bit image
<b>GS v 0</b>	Print raster bit image

The commands listed below in the first column are defined as “obsolete commands” in the ESC/POS command system.

This printer supports both upward-compatible commands and obsolete commands. However, the upward-compatible commands are recommended to use.

Obsolete command		Upward-compatible command
<b>ESC i</b>	Partial cut (one point left uncut)	<b>GS V</b>
<b>ESC m</b>	Partial cut (three points left uncut)	<b>GS V</b>
<b>ESC u</b>	Transmit peripheral device status	<b>GS r</b>
<b>ESC v</b>	Transmit paper sensor status	<b>GS r</b>
<b>FS p</b>	Print NV bit image	<b>GS ( L &lt;Function 69&gt;</b>
<b>FS q</b>	Define NV bit image	<b>GS ( L &lt;Function 67&gt;</b>
<b>GS v 0</b>	Print raster bit image	<b>GS ( L &lt;Function 112 + 50&gt;</b>



“Obsolete commands” are commands that are supported by legacy models; however it is recommended to replace them with upward-compatible commands, because they will not be supported in the future products.

## FCC STATEMENT

1. 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.

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



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This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

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This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

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