

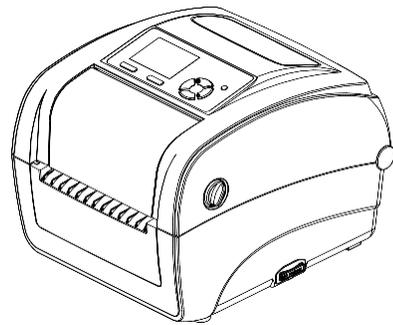


# Fastmark M5e

**Thermal Barcode Printer**  
(Direct & Transfer)

# User's Guide

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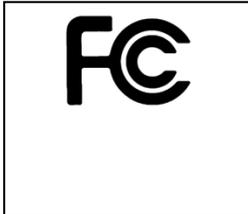
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## Regulatory statement:



### FCC part 15B, Class B

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



UL 60950-1(2<sup>nd</sup> Edition)  
CSA C22.2 No.60950-1-07  
(2<sup>nd</sup> Edition)  
120VAC ~ 60Hz ~ 2.5A



EN 55022, Class B  
EN 55024  
EN 60950-1



EN 60950-1



AS/NZS CISPR 22 (Class B)

### FCC STATEMENT:

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

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

### **Wichtige Sicherheits-Hinweise**

1. Bitte lesen Sie diese Hinweis sorgfältig durch.
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie keine Flüssig-oder Aerosolreiniger. Am besten eignet sich ein angefeuchtetes Tuch zur Reinigung.
4. Die Netzanschluß-Steckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.
5. Das Gerät ist vor Feuchtigkeit zu schützen.
6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Beschädigungen hervorrufen.
7. Beachten Sie beim Anschluß ans Stromnetz die Anschlußwerte.
8. Dieses Gerät kann bis zu einer Außentemperatur von maximal 40°C betrieben werden



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## Operational safety



## CAUTION

- Refer to the product label (bottom of printer) and verify your power source exactly meets those requirements.
- Mechanical and electrical repairs should be conducted by qualified service personnel.
- Do not use this product near heat or water.
- Unplug this product from the power outlet before cleaning.

## Cautions in setting up



## ATTENTION

- Unpack the printer. Make sure that the printer body and all accessories are included in the package and no parts are damaged.
- Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.
- Do not use the printer in a location exposed to direct sunlight or close to a heater or other heat generating equipment.
- Before connecting or disconnecting the interface cable, be sure to turn off the printer.
- Place the printer on a rigid, horizontal base in a location that is free of vibration.
- Hazardous moving parts in cutter module. Keep finger(s) and other body parts away.
- Refer to print adjustments in this manual before attempting alignments.
- The main circuit board includes real time clock feature and has lithium battery CR2032 installed. Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the manufacturer instructions.
- Do not turn off the printer during printing, as this may lead to a malfunction.

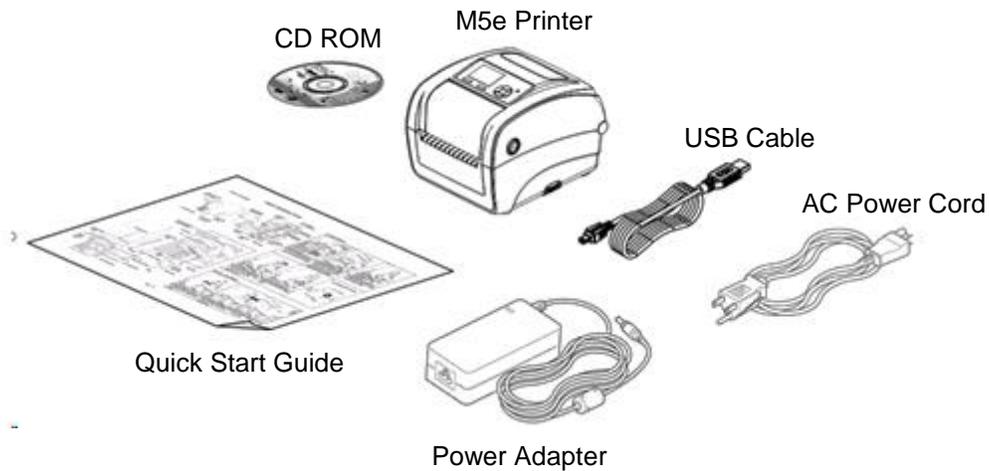
### “VORSICHT”

Explosionsgefahr bei unsachgemäßen Austausch der Batterie. Ersatz nur durch denselben oder einem vom Hersteller empfohlenem ähnlichen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

# Packaging

## Unpacking the printer



## Removing protective material

1. Open the packing box, remove the printer. Open right cover and remove foam block from printhead assembly. Remove paper between printhead and platen.
2. If any parts are missing, please contact the Customer Service Department of your purchased reseller or distributor.
3. It is recommended to keep packaging materials for future use if needed.

# Introduction

## Product

Thank you for purchasing your AMT Datasouth bar code printer.

The Fastmark M5e series of thermal transfer desktop barcode printer, label printer with its new, smaller footprint, offers the high performance that customers have come to expect from AMT Datasouth. Durable, reliable and fast, the Fastmark M5e generates 4-inch-wide labels, tags or receipts at up to 6 ips (203dpi), 4 ips (300dpi) offering a price performance combination that is unmatched by other desktop thermal barcode printers on the market.

The moveable sensor design can accept a wide range of label media. All of the most frequently used bar code formats are included. Fonts and bar codes can be printed in any one of the four directions.

Applications:

- ❖ Healthcare patient safety
- ❖ Work in process
- ❖ Distribution
- ❖ Shipping/ receiving
- ❖ Electronics labeling
- ❖ Compliance labeling
- ❖ Order fulfillment
- ❖ Distribution
- ❖ Ticketing

# Printer Overview

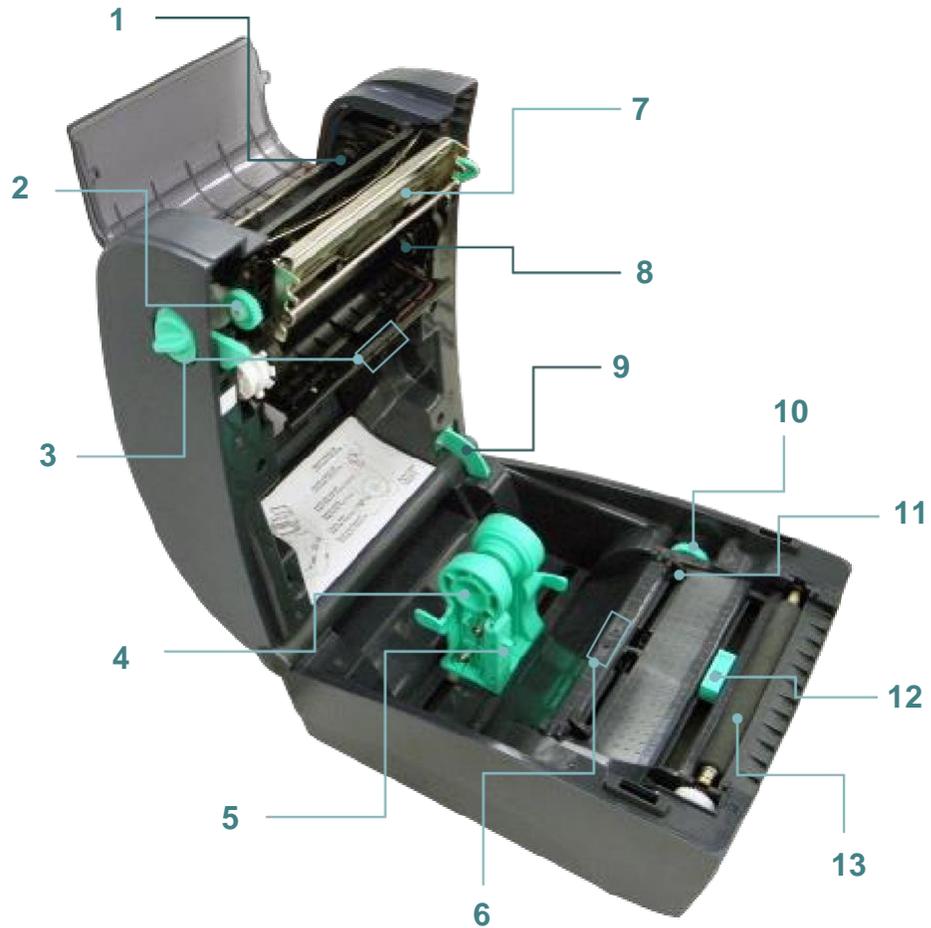
## Front view



- 1. LCD display
- 2. Menu button
- 3. Feed button
- 4. LED indicator
- 5. Navigation button
- 6. Ribbon access cover
- 7. Top cover lever
- 8. \*SD card socket
- 9. Paper exit chute

SD card spec	SD card capacity	Approved SD card manufacturer
V2.0 SDHC CLASS 4	2 GB	Transcend
V2.0 SDHC CLASS 4	8 GB	SanDisk
V3.0 CLASS 10 UHS	16 GB	SanDisk
V3.0 CLASS 10 UHS	32 MB	Transcend
V2.0 SDHC CLASS 4	microSD 4GB	Transcend

## Interior view



- |                                |                                   |
|--------------------------------|-----------------------------------|
| 1. Ribbon rewind hub           | 8. Ribbon supply hub              |
| 2. Ribbon rewind gear          | 9. Top cover support              |
| 3. Gap sensor (receiver)       | 10. Media guide adjustment button |
| 4. Media holder                | 11. Media guides                  |
| 5. Media holder locking switch | 12. Black mark sensor             |
| 6. Gap sensor (transmitter)    | 13. Platen roller                 |
| 7. Print head                  |                                   |

## Rear view



1. Ethernet interface
2. USB interface
3. USB host interface
4. RS-232C interface
5. Power jack socket
6. Power switch
7. External label entrance chute

**The interface picture here is for reference only. Please refer to the product specification for the interfaces availability.**

# Operator Controls

## LED indication

LED Color	Description
Green/ Solid	This illuminates that the power is on and the device is ready to use.
Green/ Flash	This illuminates that the system is downloading data from PC to memory or the printer is paused.
Amber	This illuminates that the system is clearing data from printer.
Red / Solid	This illuminates printer head open, cutter error.
Red / Flash	This illuminates a print error, such as head open, paper empty, paper jam, or memory error etc.

## Button function

- **Feed button**

- When the printer is ready, press the button to feed one label to the beginning of next label
- When the printer is printing, press the button to pause a print job. When the printer is paused the power LED will blink green. Press the button again to continue the print job
- When the printer enters the menu, press the button to enter/select cursor located item

- **Menu button**

- Enter the menu
- Exit from a menu or cancel a setting and return to the previous menu

- **Navigation button**

- Scroll the menu list

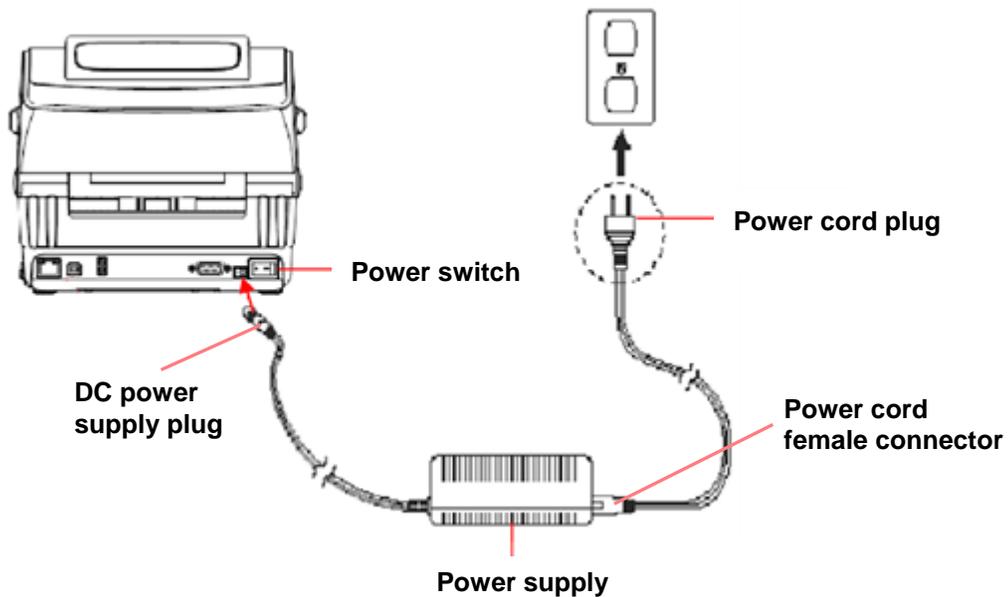
# Installation

## Setting up the printer

1. Place the printer on a flat, secure surface.
2. Make sure the power switch is off.
3. Connect the printer to the computer with the provided USB cable.
4. Plug the AC power cord (female connector) into the power supply socket. Then plug the DC power supply plug into the rear of the printer. Then plug the power cord into a properly grounded power outlet.



Verify the printer power switch is in the OFF position before installing the power cord.



## Open/Closing the top cover



1. Open the printer's top cover by pulling the top cover open levers located on each side of the printer and lifting the top cover to the maximum open angle.



2. A top cover support at the rear of the printer will engage with lower inner cover to hold the printer top cover open.



3. Hold the top cover and press the top cover support to disengage the top cover support with lower inner cover. Gently close the top cover.

## Loading the ribbon



1. Open the printer's top cover by pulling the top cover open levers located on each side of the printer and lifting the top cover to the maximum open angle.



2. Open the ribbon access cover and the media cover.

**Note:**

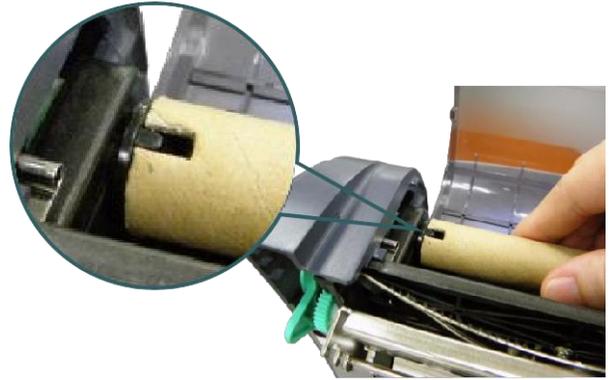
1. In normal print mode, the ribbon access cover can be opened or closed.
2. In peeler and cutter mode, please open the top cover, then the ribbon access cover can be opened or closed.



3. Insert the ribbon right side onto the supply hub. Align the notches on the left side and mount onto the spokes.



4. Insert the paper core right side onto the rewind hub. Align the notches on the left side and mount onto the spokes.



5. Stick the ribbon onto the ribbon rewind paper core. Additional tape may be required.



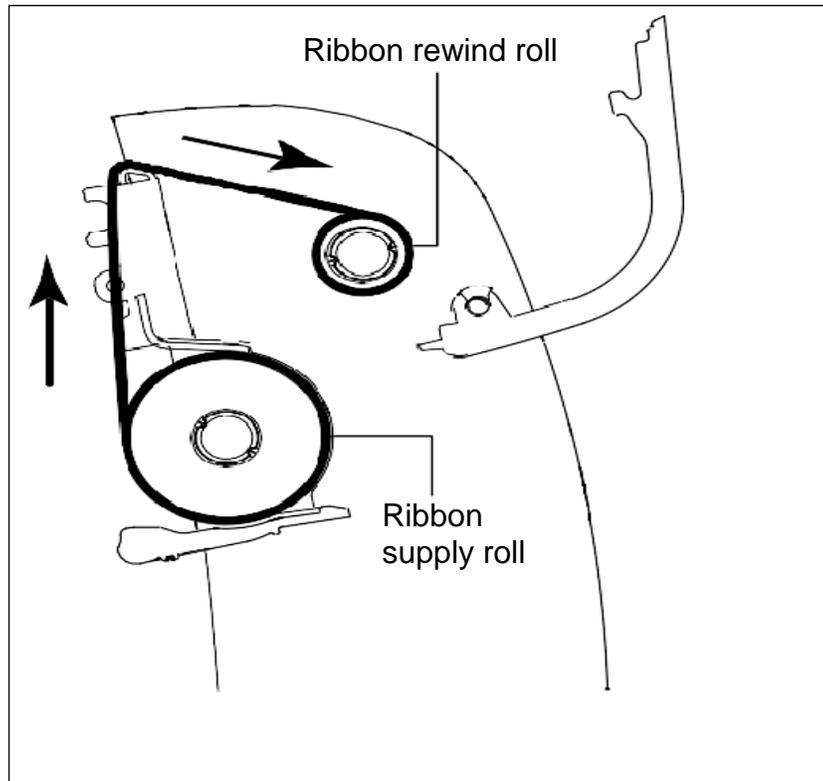
6. Turn the ribbon rewind gear until the ribbon plastic leader is thoroughly wound and the black section of the ribbon covers the print head.

**TIP:** Apply a small piece of tape to the black ribbon surface. Remove the piece of tape, if the black ribbon material is removed you have the correct surface facing outward. If not, turn the ribbon over to the opposite side.



7. Close the ribbon access cover and the top cover.

## Loading path for ribbon



## Loading the media



1. Open the printer top cover by pulling the tabs located on each side towards the front of the printer then lift the top cover to the maximum open angle.



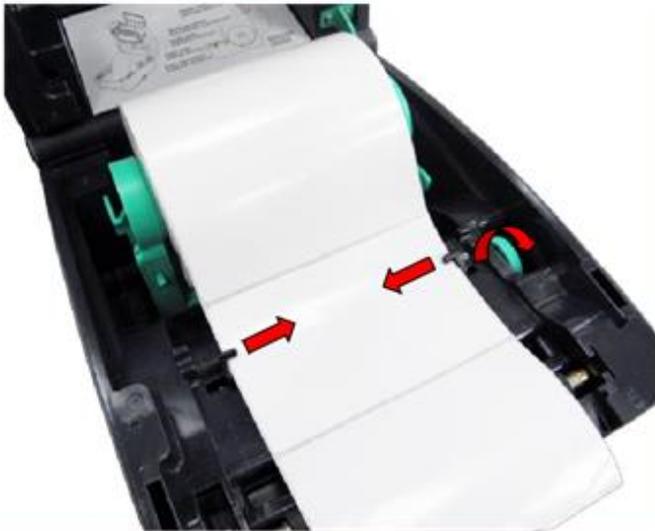
2. Separate and hold open the media holders.



3. Place the roll between the holders and close them onto the core.



4. Press down the media holder lock switch to hold the label roll firmly.



5. Place the paper, print side face up, through the media sensor and place the label leading edge onto the platen roller. Move the media guides to fit the label width by turning the guide adjuster knob.



6. Disengage the top cover support and close the top cover gently.

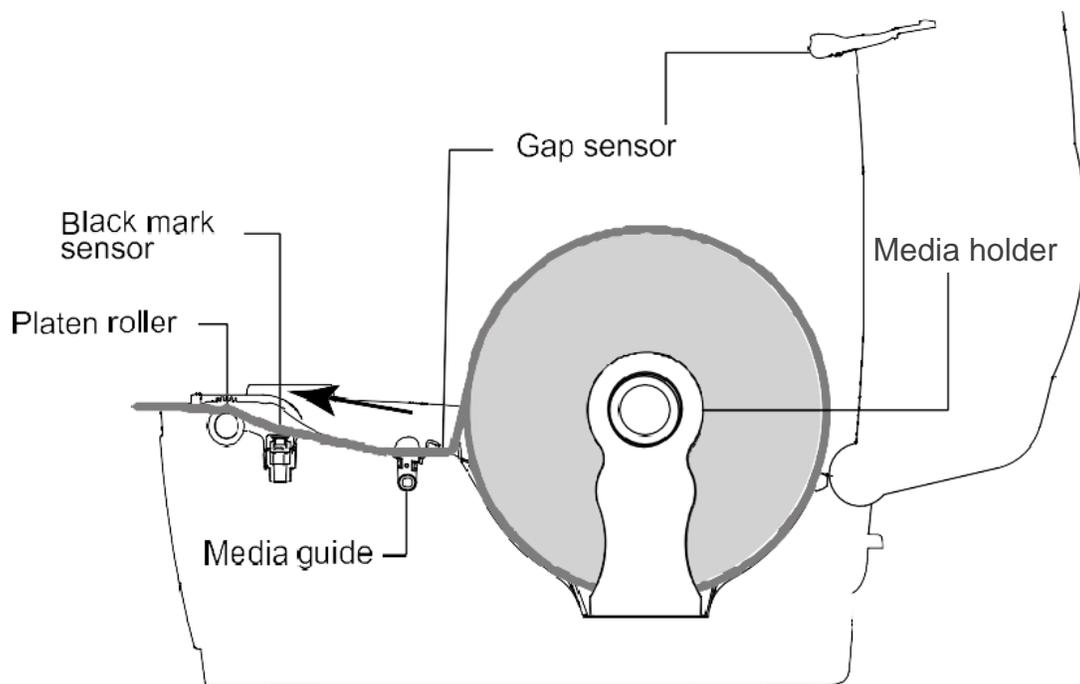
- 
7. Use “Diagnostic Tool” or LCD menu function to set the media sensor type and calibrate the selected sensor.

**Note:**

- Please calibrate the gap/black mark sensor when changing media.
- Please refer to the diagnostic utility quick start guide for more information. (Start the “Diagnostic tool”, select the “Printer Configuration” tab, then click on the “Calibrate Sensor” button)

---

## Loading path for media



## External label roll installation

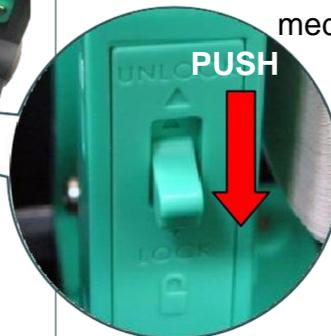
1. Attach the external paper roll mount on the bottom of the printer.

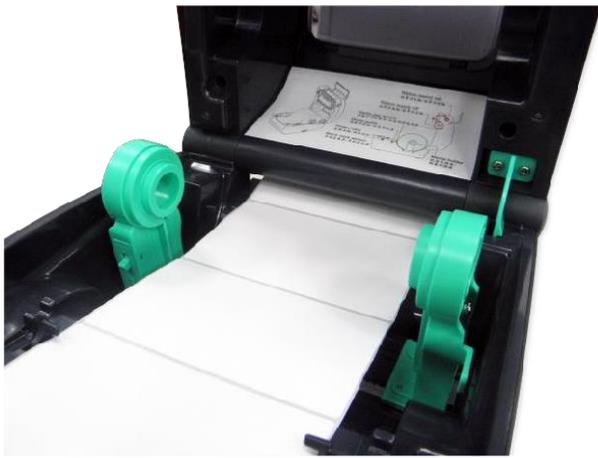


2. Insert a 3" label spindle into a paper roll. And install it onto the external paper roll mount.



3. Open the printer's top cover and separate the media holders to fit the media width. Press down the media holder lock switch to fix the media holder.





4. Feed the media through the rear external label entrance chute. Place the label print side facing up through the media sensor. Place the label leading edge onto the platen roller. Move the media guides to fit the label width by turning the guide adjuster knob.

5. Disengage the top cover support and close the top cover gently.



- 
6. Use “Diagnostic Tool” or LCD menu function to set the media sensor type and calibrate the selected sensor.

**Note:**

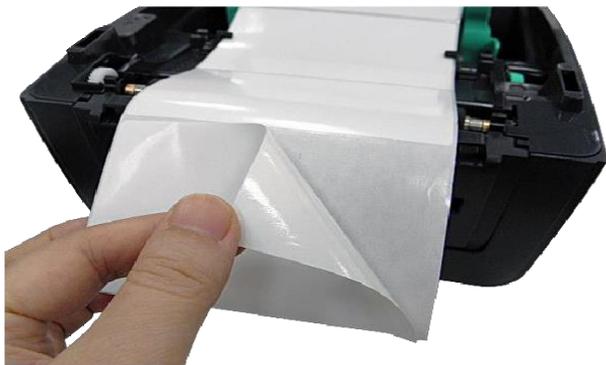
- Please calibrate the gap/black mark sensor when changing media.
  - Please refer to the diagnostic utility quick start guide for more information. (Start the “Diagnostic tool”, select the “Printer Configuration” tab, then click on the “Calibrate Sensor” button)
-

## Loading media in Peel-off mode (option)

1. Use “Diagnostic Tool” or LCD menu function to set the media sensor type and calibrate the selected sensor.

**Note:**

- Please calibrate the gap/black mark sensor before loading media in peel-off mode to avoid label jamming.
- Please calibrate the gap/black mark sensor when changing media.
- Please refer to the diagnostic utility quick start guide for more information. (Start the “Diagnostic tool”, select the “Printer Configuration” tab, then click on the “Calibrate Sensor” button)



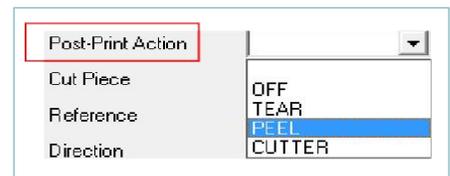
2. Open the printer cover. Pull the label through the front of the printer and remove a few labels leaving a 6-inch liner.



3. Open the peel-off module cover. Feed the liner into peel-off cover slot.



4. Close the peel-off module. Use the DiagTool or LCD menu function to enable the peel-off mode.



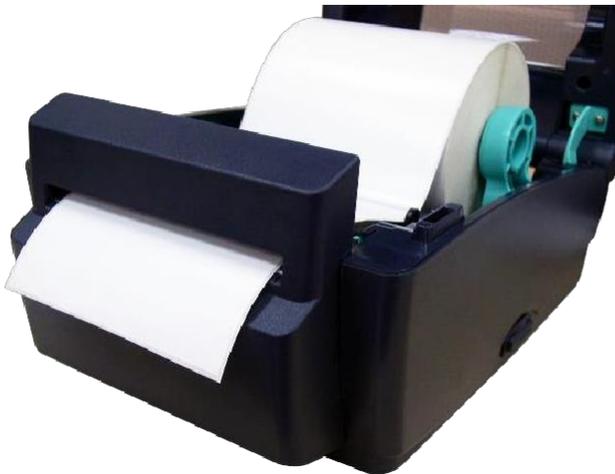


5. Disengage the top cover support to close the top cover. Printer is ready for peel-off mode.
6. Press the FEED button to test.

**Note:**

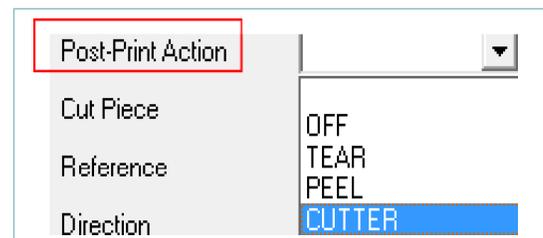
This peel-off module is supported for the thermal/ plain label only.

## Loading media with cutter (option)



1. Lead the media through the cutter paper opening.
2. Close the printer cover.

3. Use "Diagnostic Tool" or LCD menu function to set the media sensor type and calibrate the selected sensor.
4. Use the DiagTool or LCD menu function to enable the cutter mode. 
5. Press the FEED button to test.



**Note:** Please calibrate the gap/black mark sensor when changing media.

## **PAL™ Print and Program overview**

Printers featuring PAL™ Print and Program utility can be used in several ways in any given environment. This section describes 3 common ways this advanced capability is used. For help and assistance determining the best way to use this utility in your situation, please consult your sales representative.

### **Traditional printing**

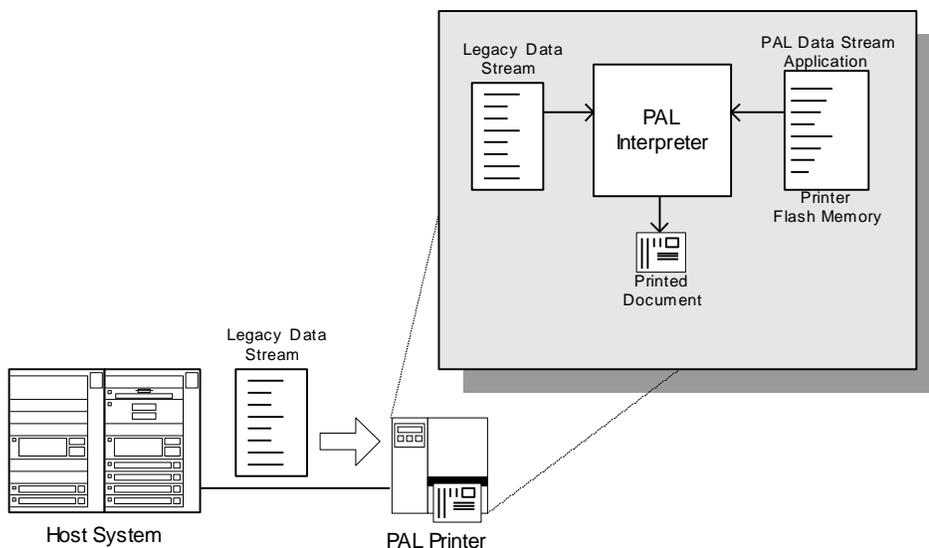
This environment represents the most common use of printers. Generally, a single print job (PAL™ print sequences) generates a single label. In this role the PAL™ Print and Program interpreter accepts the print job, performs the required operator processing and prints the; label, tag, or ticket. Using a Windows driver in conjunction with a Windows application program is a typical way to print in this environment. Alternatively, PAL™ print sequences may also be generated by any host application written to take advantage of this powerful language. When a PAL™ capable printer is used this way, no special “PAL™ program” must be loaded on the printer. Print sequences generated by a Windows driver or host program are simply sent to the printer resulting in print output just like traditional printers.

### **Legacy data stream interpretation**

PAL™ Print and Program capable printers uniquely address applications where upgrading to modern cost effective technology is desired. Often cost-prohibitive software reprogramming to change a data stream prevents an organization from moving to new printing technologies.

Using a PAL™ Print and Program capable printer solves this problem. In this case a PAL™ program is written which interprets a data stream normally sent to the legacy device being replaced. This program is stored on the printer and is automatically executed each time the printer is powered on. This program is able to produce a new label format based on this legacy data. Even though the host computer is sending the exact same legacy data to the printer, the label format can be completely different. For example, the new format may include bar codes, scaled and/or rotated fonts, lines, logo's etc. Even though the legacy device being replaced does not support these print abilities, the new label format can.

For example, text only outputs such as produced by a dot-matrix printer or card embosser may now be presented in a more functional format. Information in the data stream can be reformatted into any size font in any rotation, or even printed as bar code. This example demonstrates how PAL™ Print and Program capable printers can replace a legacy print device with no host software changes required.



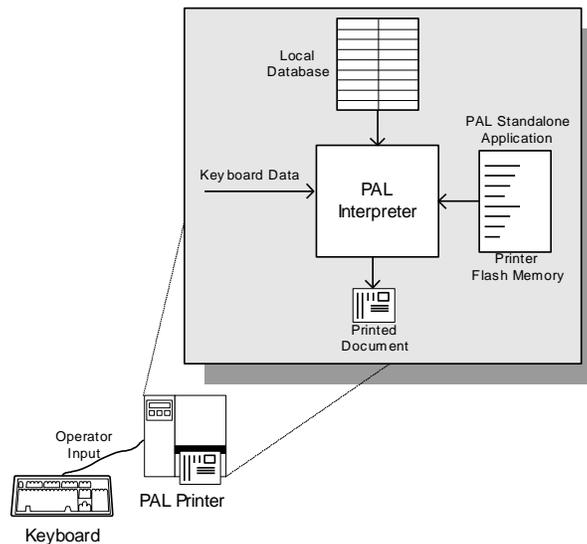
## Standalone/Downtime applications

PAL™ Print and Program capable printers may be programmed to operate independent of a PC/host connection. This standalone ability may be used in cases where no PC/host connection is needed or as a fail-safe backup when the PC/host or network is unavailable. The Standalone Application program is stored in the printer memory and can accept input from a PS/2 keyboard, bar code scanner, or other serial device such as an electronic scale. These programs may use the printer's LCD to prompt for user input and may also include databases. Unlike other bar code printers that allow basic static forms to be loaded in the printer, PAL™ Print and Program capable printers provide advanced capabilities.

Examples of these advanced capabilities are:

- ❑ Ability to operate on line from host or off line in stand-alone mode
- ❑ Ability to range check user input
- ❑ Ability to combine data from multiple fields into a single bar code
- ❑ Ability to access database stored in printer
- ❑ Ability to perform math calculations (addition, subtraction, multiplication, division, etc.)
- ❑ Ability to perform logical calculations (equal to, less than, greater than, etc.)

Shown below is an example where a stand-alone PAL™ application and database is stored in the printer. Operator input combined with internal database information is used to create a label. For example, this application could request a part number and physical dimensions of a particular part by prompting for this information on the printer LCD. After the operator inputs the requested information on the PS/2 or USB Host keyboard, the printer could calculate the volume, and then based on the part number, lookup the part description in a database to produce a label.



# Power-on Utilities

There are six power-on utilities to set up and test printer hardware. These utilities are activated by pressing the FEED button, turning on the printer power simultaneously, and then releasing the button at different status of LED.

Please follow the steps below for different power-on utilities:

1. Turn off the printer power switch.
2. Hold on the FEED button then turn on the power switch.
3. Release the button when LED indicates with different status (color) for different functions.

<b>Power on utilities</b>	<b>The LED color will be changed as following pattern:</b>							
<b>LED color</b>	Green	Amber	Red	Amber	Green	Green/Amber	Red/Amber	Solid green
<b>Functions</b>			(5 blinks)	(5 blinks)	(5 blinks)	(5 blinks)	(5 blinks)	
<b>Ribbon sensor calibration and gap / black mark sensor calibration</b>			Release					
<b>Gap / black mark sensor calibration, Self-test and enter dump mode</b>				Release				
<b>Printer initialization</b>					Release			
<b>Set black mark sensor as media sensor and calibrate the black mark sensor</b>						Release		
<b>Set gap sensor as media sensor and calibrate the gap sensor</b>							Release	
<b>Skip AUTO.BAS</b>								Release

## Ribbon and Gap/Black Mark sensor calibration

Gap/black mark sensor sensitivity should be calibrated at the following conditions:

1. A brand new printer
2. Change label stock
3. Printer initialization

Please follow the steps below to calibrate the ribbon and gap/black mark sensor:

1. Turn OFF the power switch
2. Hold on the button then turn on the power switch
3. Release the button when the LED becomes **red** and blinking. (Any red will do during the 5 blinks)
  - The ribbon sensor and gap/black mark sensor sensitivity will be calibrated.
  - The LED color will change in the following order:  
Green → amber → **red (5 blinks)** → amber (5 blinks) → green (5 blinks) → green/amber (5 blinks) → red/amber (5 blinks) → solid green



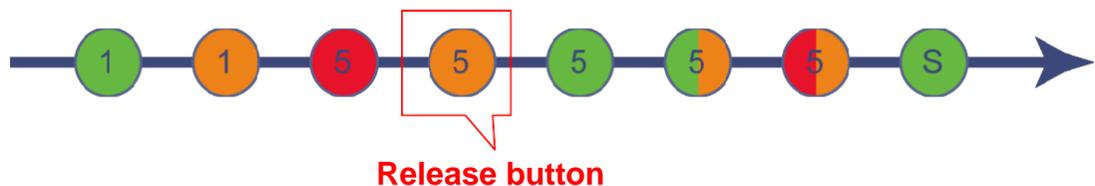
**Note:**

Please select gap or black mark sensor using Diagnostic Tool or by GAP or BLINE command prior to calibrate the sensor.

## Gap/Black Mark calibration, Self-test and Dump mode

While calibrate the gap/black mark sensor, the printer will measure the label length, print the internal configuration (self-test) on label and then enter the dump mode. To calibrate gap or black mark sensor, depends on the sensor setting in the last print job.

1. Turn OFF the power switch
2. Hold on the button then turn on the power switch
3. Release the button when the LED becomes **amber** and blinking. (Any amber will do during the 5 blinks)
  - The LED color will change in the following order:  
Green → amber → red (5 blinks) → **amber (5 blinks)** → green (5 blinks) → green/amber (5 blinks) → red/amber (5 blinks) → solid green



4. The sensor will calibrate, the label length is measured and then the unit prints the internal settings. Afterwards the unit enters the dump mode.

**Note:**

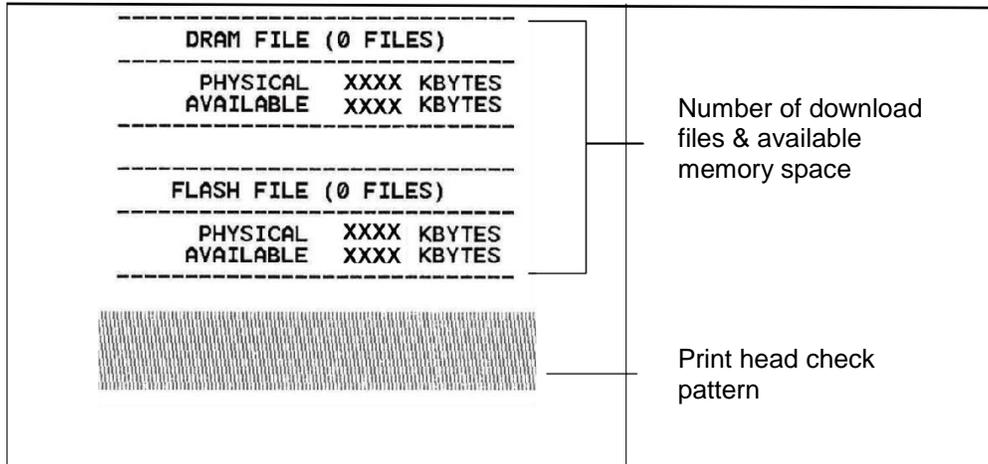
Please select gap or black mark sensor using Diagnostic Tool or by GAP or BLINE command prior to calibrate the sensor.

# Self-test

Self-test is printed by executing gap/black mark sensor calibration.

<pre> ----- SYSTEM INFORMATION ----- MODEL: XXXXXX FIRMWARE: X.XX CHECKSUM: XXXXXXXX S/N: XXXXXXXXXXXX TCF: NO DATE: 1970/01/01 TIME: 00:04:18 NON-RESET: 110 m (TPH) RESET: 110 m (TPH) NON-RESET: 0 (CUT) RESET: 0 (CUT) ----- PRINTING SETTING ----- SPEED: 5 IPS DENSITY: 8.0 WIDTH: 4.00 INCH HEIGHT: 4.00 INCH GAP: 0.00 INCH INTENSION: 5 CODEPAGE: 850 COUNTRY: 001 ----- Z SETTING ----- DARKNESS: 16.0 SPEED: 4 IPS WIDTH: 4.00 INCH TILDE: 7EH (~) CARET: 5EH (^) DELIMITER: 2CH (,) POWER UP: NO MOTION HEAD CLOSE: NO MOTION ----- RS232 SETTING ----- BAUD: 9600 PARITY: NONE DATA BIT: 8 STOP BIT: 1 ----- </pre>		<p>Model name</p> <p>F/W version</p> <p>Firmware checksum</p> <p>Printer S/N</p> <p>Configuration file</p> <p>System date</p> <p>System time</p> <p>Printed mileage (meter)</p> <p>Cutting counter</p> <p>Print speed (inch/sec)</p> <p>Print darkness</p> <p>Label size (inch)</p> <p>Gap distance (inch)</p> <p>Gap/black mark sensitivity</p> <p>Code page</p> <p>Country code</p> <p><u>ZPL setting information</u></p> <p>Print darkness</p> <p>Print speed (inch/sec)</p> <p>Label size</p> <p>Control prefix</p> <p>Format prefix</p> <p>Delimiter prefix</p> <p>Printer power up motion</p> <p>Printer head close motion</p> <p>RS232 serial port configuration</p>
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Continued on next page.



## Dump mode

The printer will enter dump mode after printing the printer configuration. In the dump mode, all characters will be printed in 2 columns as following. The left side characters are received from your system and right side data are the corresponding hexadecimal value of the characters. It allows users or engineers to verify and debug the program.

ASCII Data	→	<pre> SPEED 2.0 53 50 45 45 44 20 32 2E 30 0D DENSITY 8 0A 44 45 4E 53 49 54 59 20 38 SET PEEL 0D 0A 53 45 54 20 50 45 45 4C OFF DIRE 20 4F 46 46 0D 0A 44 49 52 45 GTION 0 0 43 54 49 4F 4E 20 30 0D 0A 47 AP 3.00 mm 41 50 20 33 2E 30 30 20 6D 6D .0.00 mm 2C 30 2E 30 30 20 6D 6D 0D 0A REFERENCE 52 45 46 45 52 45 4E 43 45 20 0.0 SET C 30 2C 30 0D 0A 53 45 54 20 43 UTTER OFF 55 54 54 45 52 20 4F 46 46 0D SIZE 100. 0A 53 49 5A 45 20 31 30 30 2E 02 mm, 65.0 30 32 20 6D 6D 2C 36 35 2E 30 4 mm, CLS 34 20 6D 6D 0D 0A 43 4C 53 0D BARCODE 1 0A 42 41 52 43 4F 44 45 20 31 44.149."39 34 34 2C 31 34 39 2C 22 33 39 ".120.1.0. 22 2C 31 32 30 2C 31 2C 30 2C 2.6."57114 32 2C 36 2C 22 35 37 31 31 34 38T" PRIN 33 38 54 22 0D 0A 50 52 49 4E T 1.1 SPE 54 20 31 2C 31 0D 0A 53 50 45 ED 2.0 DE 45 44 20 32 2E 30 0D 0A 44 45 NSITY 8 \$ 4E 53 49 54 59 20 38 0D 0A 53  ET PEEL OF 45 54 20 50 45 45 4C 20 4F 46 F DIRECTI 46 0D 0A 44 49 52 45 43 54 49 ON 0 GAP 4F 4E 20 30 0D 0A 47 41 50 20 3.00 mm, 0. 33 2E 30 30 20 6D 6D 2C 30 2E 00 mm REF 30 30 20 6D 6D 0D 0A 52 45 46 ERENCE 0.0 45 52 45 4E 43 45 20 30 2C 30 SET CUTT 0D 0A 53 45 54 20 43 55 54 54 ER OFF SI 45 52 20 4F 46 46 0D 0A 53 49 ZE 100.02 5A 45 20 31 30 30 2E 30 32 20 mm, 65.04 m 6D 6D 2C 36 35 2E 30 34 20 6D m CLS BA 6D 0D 0A 43 4C 53 0D 0A 42 41 RCODE 144. 52 43 4F 44 45 20 31 34 34 2C 149."39".1 31 34 39 2C 22 33 39 22 2C 31 20.1.0.2.6 32 30 2C 31 2C 30 2C 32 2C 36 ."5711438T 2C 22 35 37 31 31 34 33 38 54 : PRINT 1 22 0D 0A 50 52 49 4E 54 20 31 .1 2C 31 0D 0A </pre>	←	Hex Decimal Data
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**Note:** Dump printing requires 4" wide paper. Turn printer OFF and back ON to resume normal printing.

## Printer initialization

Printer initialization is used to clear DRAM and restore printer settings to defaults. The only one exception is ribbon sensitivity, which will not be restored to default.

1. Turn OFF the power switch
2. Hold on the button then turn ON the power switch
3. Release the button when the LED becomes **green** and blinking. (Any green will do during the 5 blinks)
  - The LED color will change in the following order:  
 Green → amber → red (5 blinks) → amber (5 blinks) → **green (5 blinks)** → green/amber (5 blinks) → red/amber (5 blinks) → solid green

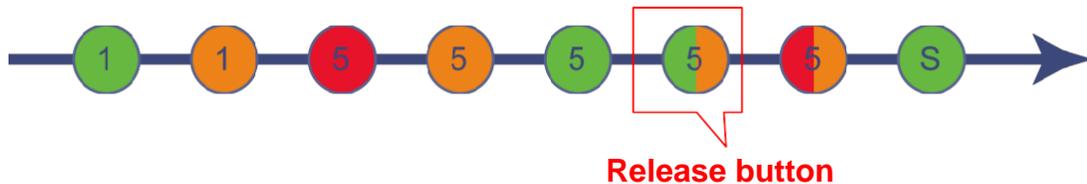


Printer initialization will restore setting accordingly:

Parameter	Default setting
Speed	3ips (76 mm/sec) (300DPI)
Density	8
Label Width	4" (101.5 mm)
Label Height	4" (101.5 mm)
Sensor Type	Gap sensor
Gap Setting	0.12" (3.0 mm)
Print Direction	0
Reference Point	0,0 (upper left corner)
Offset	0
Tear Mode	On
Peel off Mode	Off
Cutter Mode	Off
Serial Port Settings	9600 bps, none parity, 8 data bits, 1 stop bit
Code Page	850
Country Code	001
Clear Flash Memory	No
IP Address	DHCP

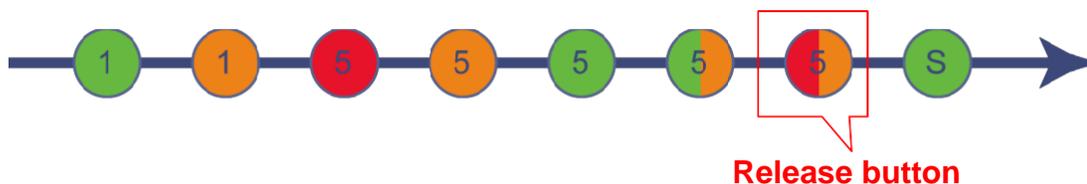
## Setting Black Mark sensing + calibration

1. Turn OFF the power switch
2. Hold on the button then turn ON the power switch
3. Release the button when the LED becomes **green/amber** and blinking.  
(Any green/amber will do during the 5 blinks)
  - The LED color will change in the following order:  
Green → amber → red (5 blinks) → amber (5 blinks) → green (5 blinks) → **green/amber**  
(5 blinks) → red/amber (5 blinks) → solid green



## Setting Gap sensing + calibration

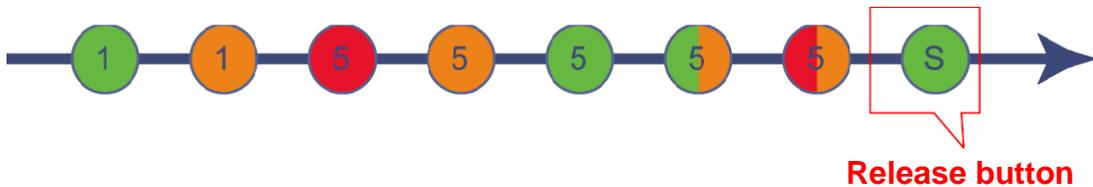
1. Turn OFF the power switch
2. Hold on the button then turn ON the power switch
3. Release the button when the LED becomes **red/amber** and blinking. (Any red/amber will do during the 5 blinks)
  - The LED color will change in the following order:  
Green → amber → red (5 blinks) → amber (5 blinks) → green (5 blinks) → green/amber  
(5 blinks) → **red/amber** (5 blinks) → solid green



## Skip AUTO.BAS

PAL programming language allows user to download an auto execution file to flash memory. The printer will run the AUTO.BAS program immediately when turning on printer power. The AUTO.BAS program can be interrupted without running the program by the power-on utility.

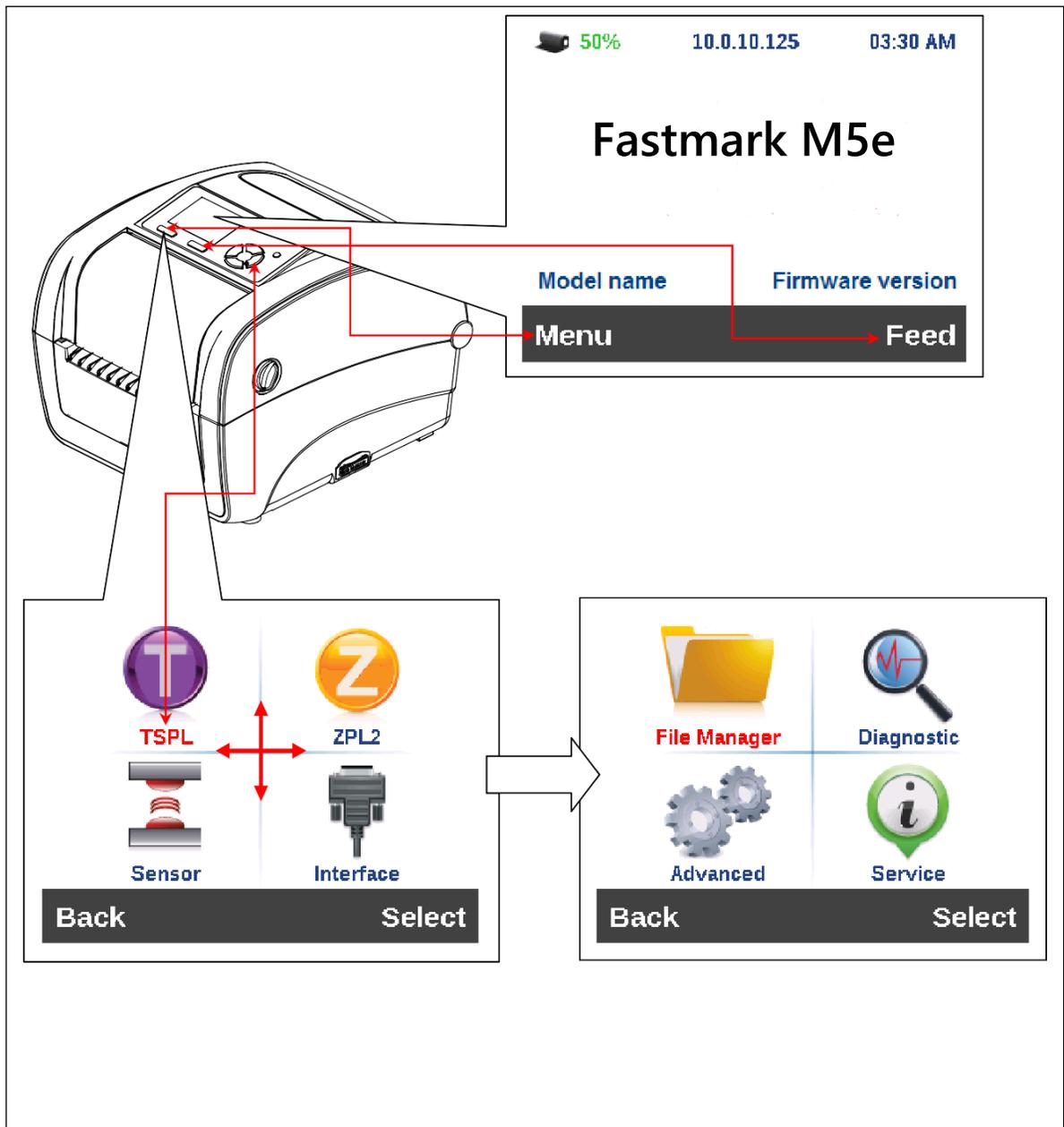
1. Turn OFF the power switch
2. Hold on the button then turn ON the power switch
3. Release the button when the LED becomes **green** and blinking. (Any green will do during the 5 blinks)
  - The LED color will change in the following order:  
Green → amber → red (5 blinks) → amber (5 blinks) → green (5 blinks) → green/amber (5 blinks) → red/amber (5 blinks) → **solid green**



# LCD Menu Function

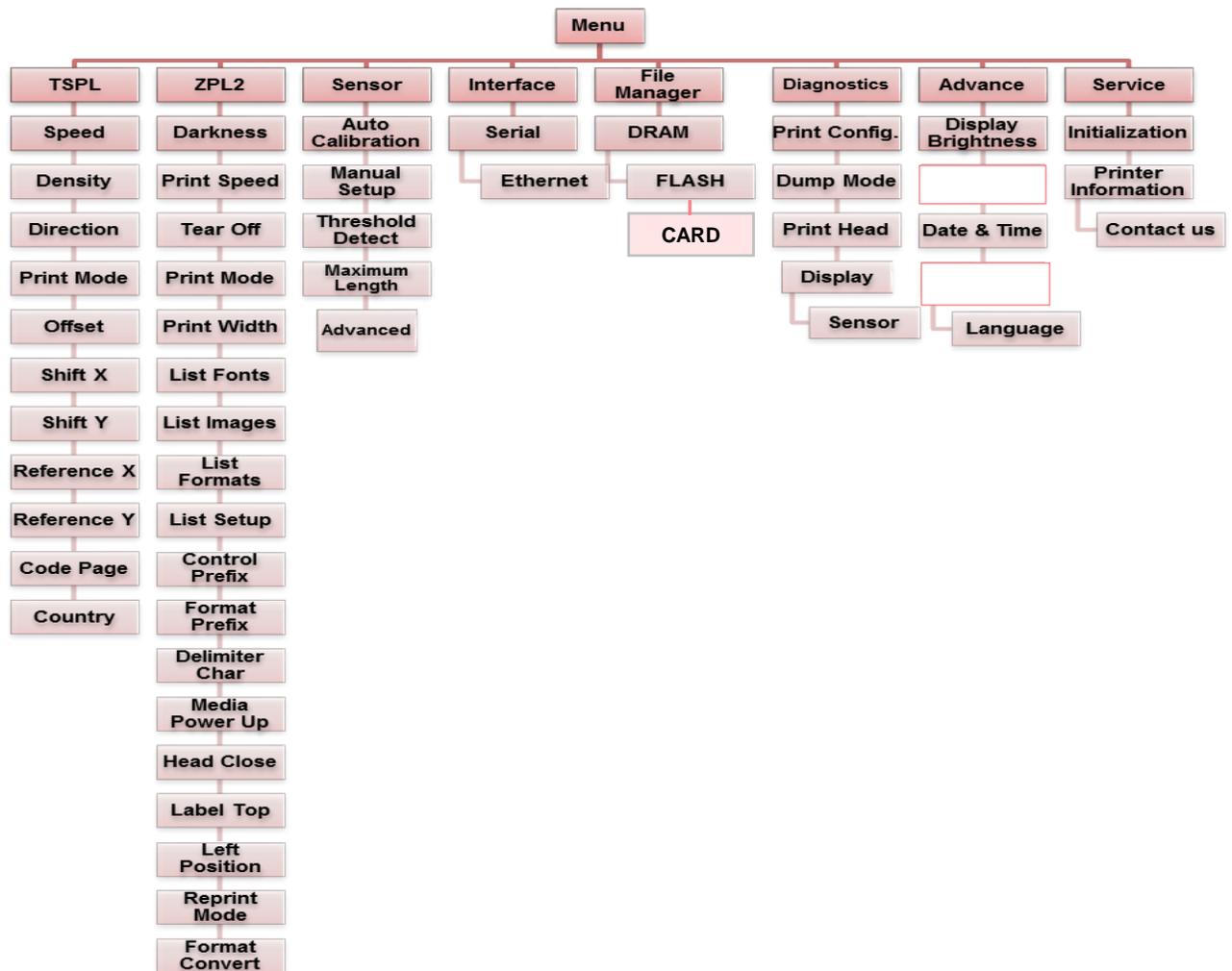
## Entering the menu

Press the “Menu” button to enter the main menu. Use the “Cross” button to select the item on main menu. The selected item will turn red. Press the “Feed” button to enter the setting list.

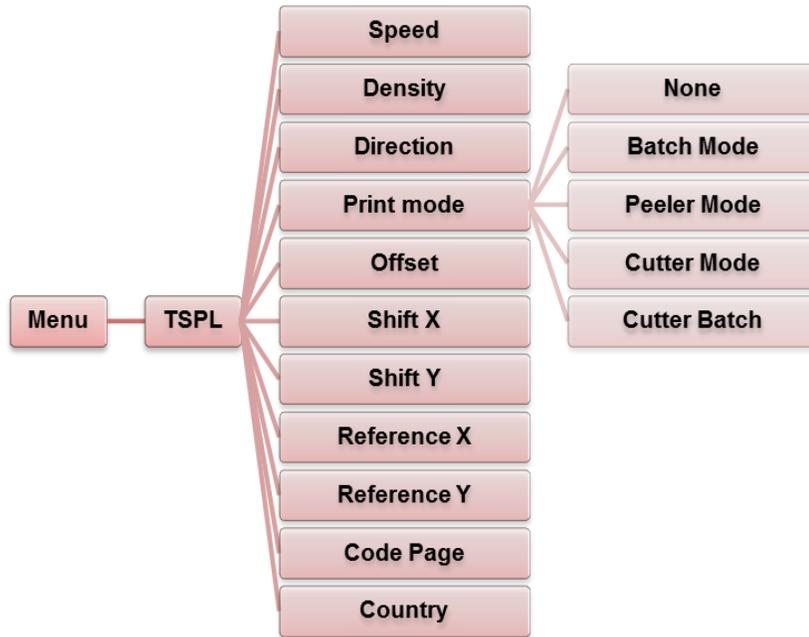


## Main menu overview

There are 8 categories for the main menu. You can easily set the settings of printer without connecting the computer. Please refer to following sections for more details.



## TSPL2

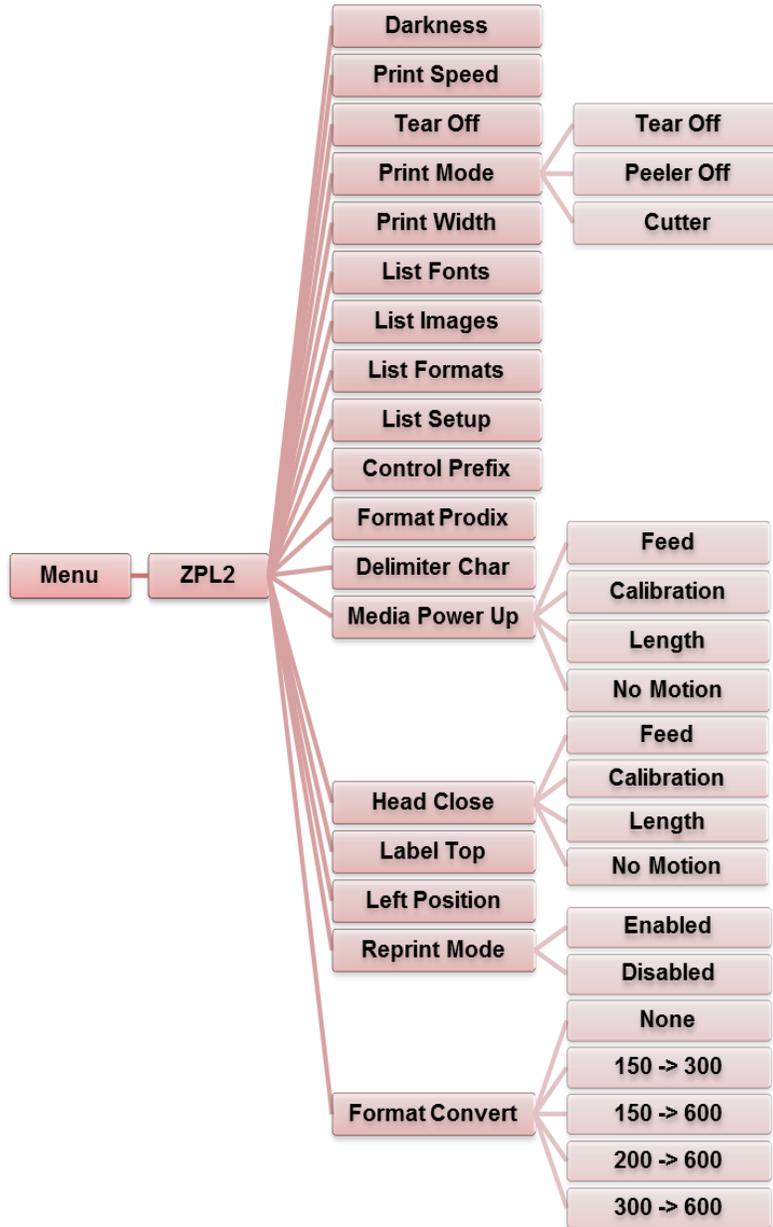


Item	Description	Default
<b>Speed</b>	Use this item to setup print speed. Each increase or decrease is 1 inch per second. Available setting is from 4 to 12.	<b>6</b>
<b>Density</b>	Use this option to setup print darkness. The available setting is from 0 to 15, and the step is 1. You may need to adjust your density based on selected media.	<b>8</b>
<b>Direction</b>	<p>The direction setting value is either 1 or 0. Use this item to setup the printout direction.</p>	<b>0</b>

<b>Print mode</b>	This item is used to set the print mode. There are 5 modes as listed below:	<b>Batch Mode</b>												
	<table border="1"> <thead> <tr> <th><b>Printer Mode</b></th> <th><b>Description</b></th> </tr> </thead> <tbody> <tr> <td><b>None</b></td> <td>Next label top of form is aligned to the print head burn line location. (Tear Off Mode)</td> </tr> <tr> <td><b>Batch Mode</b></td> <td>Once image is printed completely, label gap/black mark will be fed to the tear plate location for tear away.</td> </tr> <tr> <td><b>Peeler Mode</b></td> <td>Enable the label peel off mode.</td> </tr> <tr> <td><b>Cutter Mode</b></td> <td>Enable the label cutter mode.</td> </tr> <tr> <td><b>Cutter Batch</b></td> <td>Cut the label once at the end of the print job.</td> </tr> </tbody> </table>		<b>Printer Mode</b>	<b>Description</b>	<b>None</b>	Next label top of form is aligned to the print head burn line location. (Tear Off Mode)	<b>Batch Mode</b>	Once image is printed completely, label gap/black mark will be fed to the tear plate location for tear away.	<b>Peeler Mode</b>	Enable the label peel off mode.	<b>Cutter Mode</b>	Enable the label cutter mode.	<b>Cutter Batch</b>	Cut the label once at the end of the print job.
	<b>Printer Mode</b>		<b>Description</b>											
	<b>None</b>		Next label top of form is aligned to the print head burn line location. (Tear Off Mode)											
	<b>Batch Mode</b>		Once image is printed completely, label gap/black mark will be fed to the tear plate location for tear away.											
	<b>Peeler Mode</b>		Enable the label peel off mode.											
<b>Cutter Mode</b>	Enable the label cutter mode.													
<b>Cutter Batch</b>	Cut the label once at the end of the print job.													
<b>Offset</b>	This item is used to fine tune media stop location. Available setting value is from "+" to "-" or "0" to "9".	<b>+000</b>												
<b>Shift X</b>	This item is used to fine tune print position. Available setting value is from "+" to "-" or "0" to "9".	<b>+000</b>												
<b>Shift Y</b>		<b>+000</b>												
<b>Reference X</b>	This item is used to set the origin of printer coordinate system, horizontally and vertically. Available setting value is from "0" to "9".	<b>000</b>												
<b>Reference Y</b>		<b>000</b>												
<b>Code page</b>	Use this item to set the code page of international character set.	<b>850</b>												
<b>Country</b>	Use this option to set the country code.	<b>001</b>												

**Note:** If printing from enclosed software/driver, it will take precedence and overwrite the settings entered from the panel.

# ZPL2



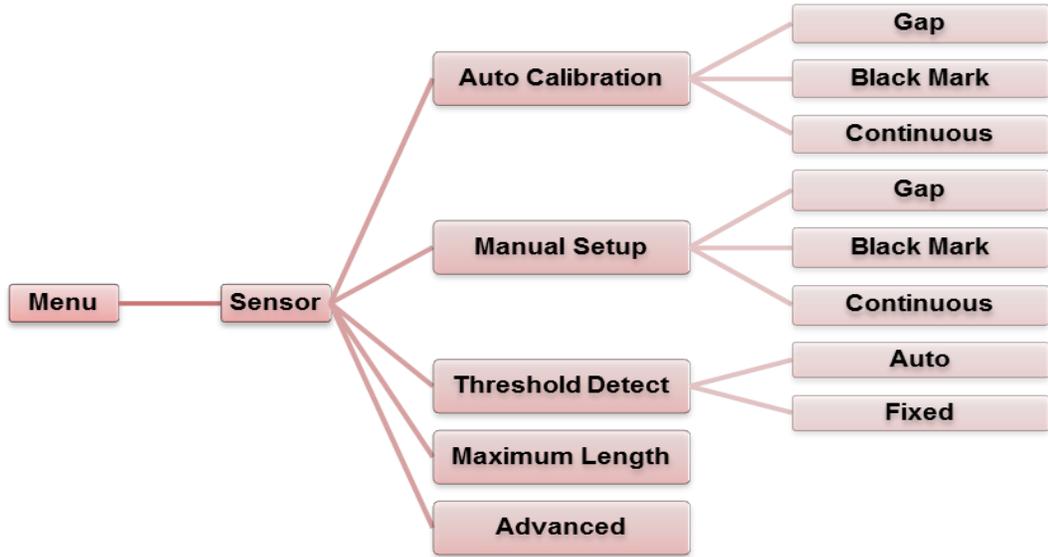
<b>Item</b>	<b>Description</b>	<b>Default</b>								
<b>Darkness</b>	Use this item to setup print darkness. The available setting is from 0 to 30, incremented by 1. You may need to adjust your density based on selected media.	<b>16</b>								
<b>Print Speed</b>	Use this item to setup print speed. Each increase or decrease is 1 ips. Available setting is from 1 to 6.	<b>N/A</b>								
<b>Tear Off</b>	This item is used to fine tune media stop location. Available setting value is from "+" to "-" or "0" to "120" dots.	<b>+000</b>								
<b>Print mode</b>	<p>This item is used to set the print mode. There are 3 modes as listed below:</p> <table border="1"> <thead> <tr> <th><b>Printer Mode</b></th> <th><b>Description</b></th> </tr> </thead> <tbody> <tr> <td><b>Tear Off</b></td> <td>Next label top of form is aligned to the print head burn line location.</td> </tr> <tr> <td><b>Peeler Off</b></td> <td>Enable the label peel off mode.</td> </tr> <tr> <td><b>Cutter</b></td> <td>Enable the label cutter mode</td> </tr> </tbody> </table>	<b>Printer Mode</b>	<b>Description</b>	<b>Tear Off</b>	Next label top of form is aligned to the print head burn line location.	<b>Peeler Off</b>	Enable the label peel off mode.	<b>Cutter</b>	Enable the label cutter mode	<b>Tear Off</b>
<b>Printer Mode</b>	<b>Description</b>									
<b>Tear Off</b>	Next label top of form is aligned to the print head burn line location.									
<b>Peeler Off</b>	Enable the label peel off mode.									
<b>Cutter</b>	Enable the label cutter mode									
<b>Print Width</b>	This item is used to set print width. The available value is from "0" to "832" dots.	<b>812 dots</b>								
<b>List Fonts</b>	This feature is used to print current printer available font lists. The fonts stored in the printer's DRAM, Flash or optional memory card.	<b>N/A</b>								
<b>List Images</b>	This feature is used to print current printer available image lists. The images stored in the printer's DRAM, Flash or optional memory card.	<b>N/A</b>								
<b>List Formats</b>	This feature is used to print current printer available format lists. The formats stored in the printer's DRAM, Flash or optional memory card.	<b>N/A</b>								
<b>List Setup</b>	This feature is used to print current printer configuration on the label.	<b>N/A</b>								
<b>Control Prefix</b>	This feature is used to set control prefix character.	<b>N/A</b>								
<b>Format Prefix</b>	This feature is used to set format prefix character.	<b>N/A</b>								
<b>Delimiter Char</b>	This feature is used to set delimiter character.	<b>N/A</b>								

<b>Media Power Up</b>	This option is used to set the media action when you turn on the printer.	<b>No Motion</b>										
	<table border="1"> <thead> <tr> <th><b>Selections</b></th> <th><b>Description</b></th> </tr> </thead> <tbody> <tr> <td><b>Feed</b></td> <td>Printer will advance one label</td> </tr> <tr> <td><b>Calibration</b></td> <td>Printer will calibrate the sensor levels, determine length and feed label</td> </tr> <tr> <td><b>Length</b></td> <td>Printer will determine length and feed label</td> </tr> <tr> <td><b>No Motion</b></td> <td>Printer will not move media</td> </tr> </tbody> </table>		<b>Selections</b>	<b>Description</b>	<b>Feed</b>	Printer will advance one label	<b>Calibration</b>	Printer will calibrate the sensor levels, determine length and feed label	<b>Length</b>	Printer will determine length and feed label	<b>No Motion</b>	Printer will not move media
	<b>Selections</b>		<b>Description</b>									
	<b>Feed</b>		Printer will advance one label									
	<b>Calibration</b>		Printer will calibrate the sensor levels, determine length and feed label									
<b>Length</b>	Printer will determine length and feed label											
<b>No Motion</b>	Printer will not move media											
<b>Head Close</b>	This option is used to set the media action when you close the print head mechanism.	<b>No Motion</b>										
	<table border="1"> <thead> <tr> <th><b>Selections</b></th> <th><b>Description</b></th> </tr> </thead> <tbody> <tr> <td><b>Feed</b></td> <td>Printer will advance one label</td> </tr> <tr> <td><b>Calibration</b></td> <td>Printer will calibrate the sensor levels, determine length and feed label</td> </tr> <tr> <td><b>Length</b></td> <td>Printer will determine print length and feed label</td> </tr> <tr> <td><b>No Motion</b></td> <td>Printer will not move media</td> </tr> </tbody> </table>		<b>Selections</b>	<b>Description</b>	<b>Feed</b>	Printer will advance one label	<b>Calibration</b>	Printer will calibrate the sensor levels, determine length and feed label	<b>Length</b>	Printer will determine print length and feed label	<b>No Motion</b>	Printer will not move media
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	<b>Feed</b>		Printer will advance one label									
	<b>Calibration</b>		Printer will calibrate the sensor levels, determine length and feed label									
<b>Length</b>	Printer will determine print length and feed label											
<b>No Motion</b>	Printer will not move media											
<b>Label Top</b>	This option is used to adjust print position vertically on the label. The range is -120 to +120 dots.	<b>0</b>										
<b>Left Position</b>	This option is used to adjust print position horizontally on the label. The range is -9999 to +9999 dots.	<b>+0000</b>										
<b>Reprint Mode</b>	When reprint mode is enabled, you can reprint the last label printed by pressing the UP  button on the control panel.	<b>Disabled</b>										
<b>Format Convert</b>	Selects the bitmap scaling factor. The first number is the original dots per inch (dpi) value; the second, the dpi to which you would like to scale.	<b>None</b>										

**Note:** If printing from enclosed software/driver, it will take precedence and overwrite the settings entered from the panel.

## Sensors

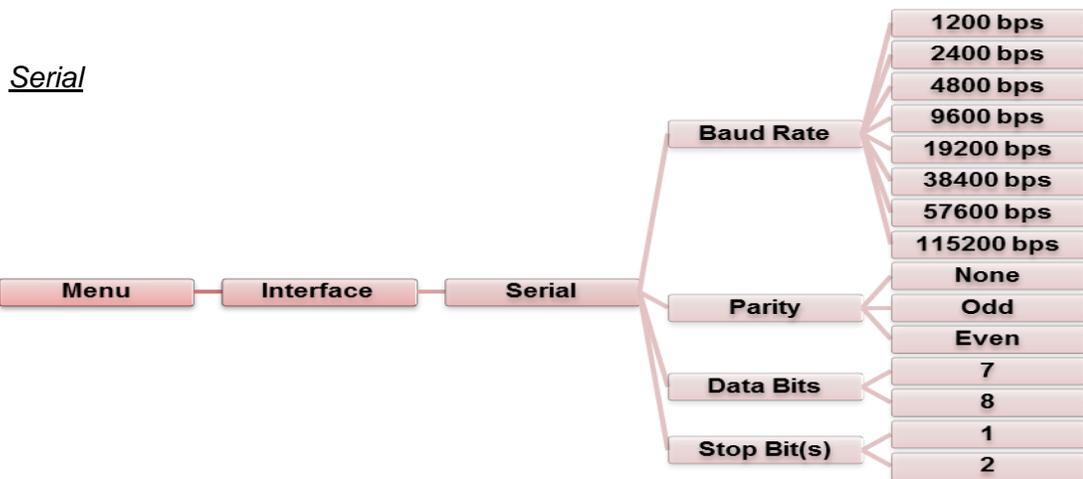
This option is used to calibrate the selected sensor. We recommend sensor calibration when changing media and before printing.



Item	Description	Default
<b>Auto Calibration</b>	This option is used to set the media sensor type and calibrate the selected sensor automatically. Printer will feed 2 to 3 gap labels to calibrate the sensor sensitivity automatically.	<b>N/A</b>
<b>Manual setup</b>	In case “Automatic” does not apply to the media type, use “Manual” function to set the media length and gap/b line size. Then scan the backing/mark to calibrate the sensor sensitivity.	<b>N/A</b>
<b>Threshold Detect</b>	This option is used to set sensor sensitivity in fixed or auto mode.	<b>Auto</b>
<b>Maximum Length</b>	This option is used to set the maximum length for label calibration.	<b>9.9 inch</b>
<b>Advanced</b>	This function can set the minimum media length and maximum gap/b line length for “auto-calibrate” sensor sensitivity.	<b>N/A</b>

## Interface

This option is used to set the printer interface settings.



Item	Description	Default
<b>Baud Rate</b>	This item is used to set the RS-232 baud rate.	<b>9600</b>
<b>Parity</b>	This item is used to set the RS-232 parity.	<b>None</b>
<b>Data Bits</b>	This item is used to set the RS-232 Data Bits.	<b>8</b>
<b>Stop Bit(s)</b>	This item is used to set the RS-232 Stop Bits.	<b>1</b>

## Ethernet

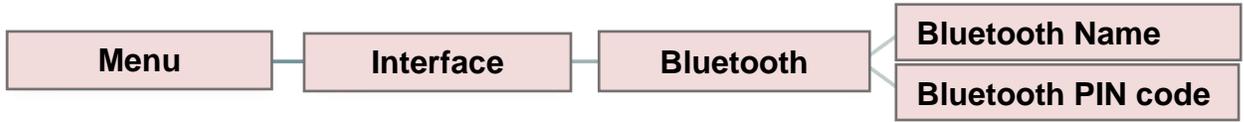
Use this menu option is to configure the internal Ethernet, verify status, and reset the module.



Item	Description	Default
<b>Status</b>	Use this menu to check the Ethernet IP address and MAC setting status.	<b>N/A</b>
<b>DHCP</b>	This item is used to turn ON or OFF the DHCP (Dynamic Host Configuration Protocol) network protocol.	<b>N/A</b>
<b>Static IP</b>	Use this menu to set the printer's IP address, subnet mask and gateway.	<b>N/A</b>

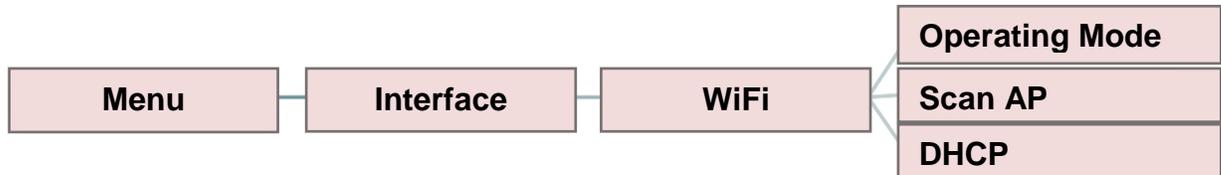
## Bluetooth

This option is used to set the printer Bluetooth settings.



Item	Description	Default
<b>Bluetooth Name</b>	This item is used to set the local name for Bluetooth.	<b>BT-SPP</b>
<b>Bluetooth PIN Code</b>	This item is used to set the local PIN code for Bluetooth.	<b>0000</b>

## WiFi



Item	Description	Default
<b>Operating</b>	This item is used to set the operating mode of wireless local area networks to connect devices to the networks. <b>Note:</b> Infrastructure mode requires the use of an access point for this communication to take place. Ad hoc mode involves connecting a computer directly to another computer.	<b>Infrastructure</b>
<b>Scan AP</b>	This item is used to scan the access point device.	<b>N/A</b>
<b>DHCP</b>	This item is used to ON or OFF the DHCP (Dynamic Host Configuration Protocol) network protocol.	<b>ON</b>

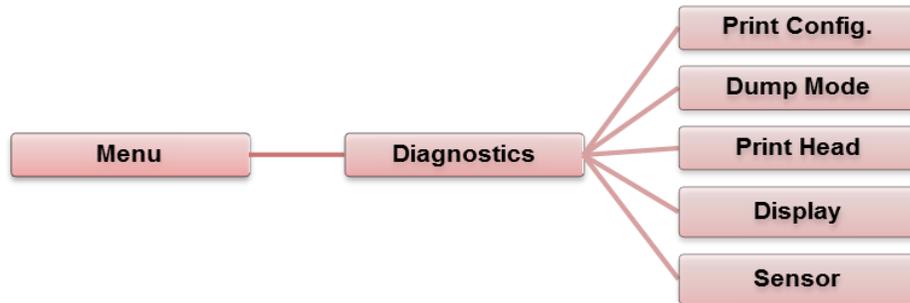
## File Manager

This feature is used to check the printer's available memory and file list.



Item	Description
<b>DRAM</b>	Use this menu to show, delete and run (.BAS) files saved in the printer DRAM memory.
<b>FLASH</b>	Use this menu to show, delete and run (.BAS) files saved in the printer Flash memory.

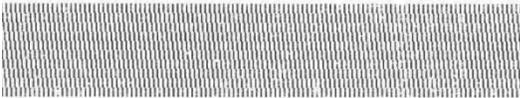
# Diagnostics



## Print Configuration

This feature prints the current printer configuration.

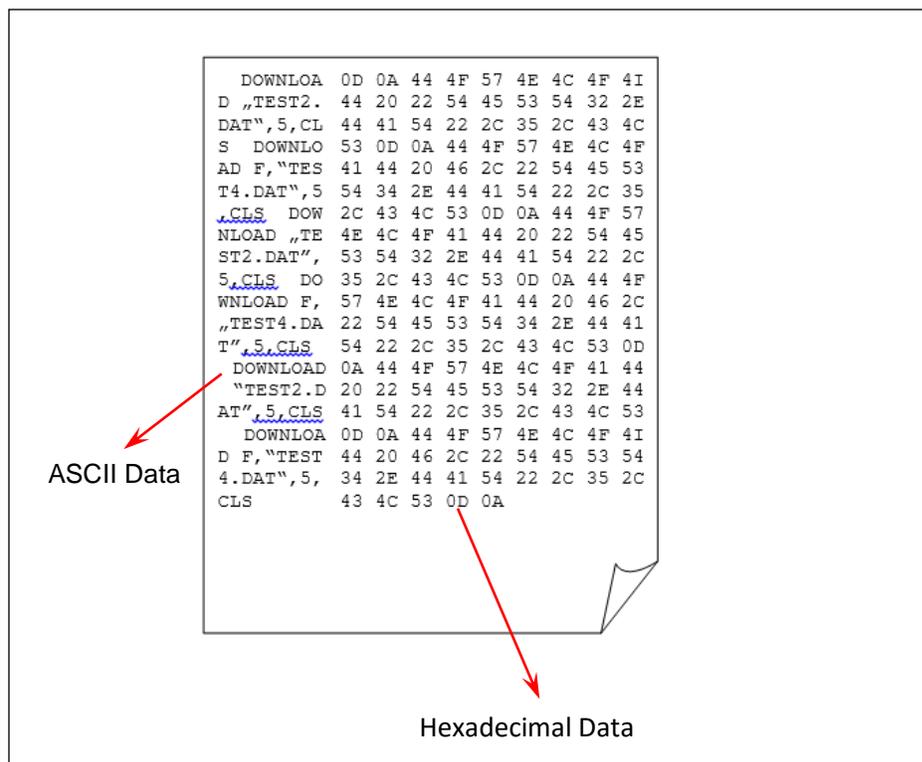
Self-test printout	
<pre>           -----           SYSTEM INFORMATION           -----           MODEL:  XXXXXX           FIRMWARE: X.XX           CHECKSUM: XXXXXXXX           S/N:  XXXXXXXXXXXX           TCF:  NO           DATE:  1970/01/01           TIME:  00:04:18           NON-RESET: 110    m (TPH)           RESET:  110    m (TPH)           NON-RESET: 0      (CUT)           RESET:  0      (CUT)           -----         </pre>	<ul style="list-style-type: none"> <li>Model name</li> <li>F/W version</li> <li>Firmware checksum</li> <li>Printer S/N</li> <li>TSC configuration file</li> <li>System date</li> <li>System time</li> <li>Printed mileage (meter)</li> <li>Cutting counter</li> </ul>
<pre>           -----           PRINTING SETTING           -----           SPEED:  5 IPS           DENSITY: 8.0           WIDTH:  4.00 INCH           HEIGHT: 4.00 INCH           GAP:  0.00 INCH           INTENSION: 5           CODEPAGE: 850           COUNTRY: 001           -----         </pre>	<ul style="list-style-type: none"> <li>Print speed (inch/sec)</li> <li>Print darkness</li> <li>Label size (inch)</li> <li>Gap distance (inch)</li> <li>Gap/black mark sensor</li> <li>intension</li> <li>Code page</li> <li>Country code</li> </ul>

<pre> -----                 Z SETTING ----- DARKNESS: 16.0 SPEED: 4 IPS WIDTH: 4.00 INCH TILDE: 7EH (~)  CARET: 5EH (^) DELIMITER: 2CH (,) POWER UP: NO MOTION HEAD CLOSE: NO MOTION ----- </pre>	<p>ZPL setting information</p> <ul style="list-style-type: none"> <li>Print darkness</li> <li>Print speed (inch/sec)</li> <li>Label size</li> <li>Control prefix</li> <li>Format prefix</li> <li>Delimiter prefix</li> <li>Printer power up motion</li> <li>Printer head close motion</li> </ul> <p><b>Note:</b> ZPL is a Zebra® language emulation.</p>
<pre> -----                 RS232 SETTING ----- BAUD: 9600 PARITY: NONE DATA BIT: 8 STOP BIT: 1 ----- </pre>	<p>RS232 serial port configuration</p>
<pre> ----- DRAM FILE (0 FILES) ----- PHYSICAL   XXXX KBYTES AVAILABLE  XXXX KBYTES -----  FLASH FILE (0 FILES) ----- PHYSICAL   XXXX KBYTES AVAILABLE  XXXX KBYTES -----   </pre>	<p>Numbers of download files Total &amp; available memory space</p> <p>Print head check pattern</p>

**Note:** Printing the configuration page requires 4" wide media.

## Dump Mode

Captures the data from the communications port and prints out the data received by the printer. In the dump mode, all characters will be printed in 2 columns. The left side characters are received from your system and right side data are the corresponding hexadecimal value of the characters. It allows users or engineers to verify and debug the program. **Note: Printing a dump requires 4" wide media.**



## Print Head

This feature verifies the head temperature, resistance and missing dots.



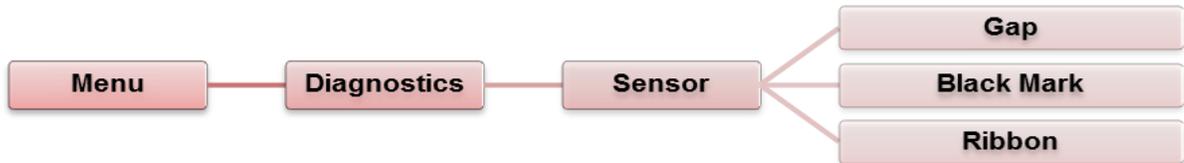
## Display

This feature verifies the display.



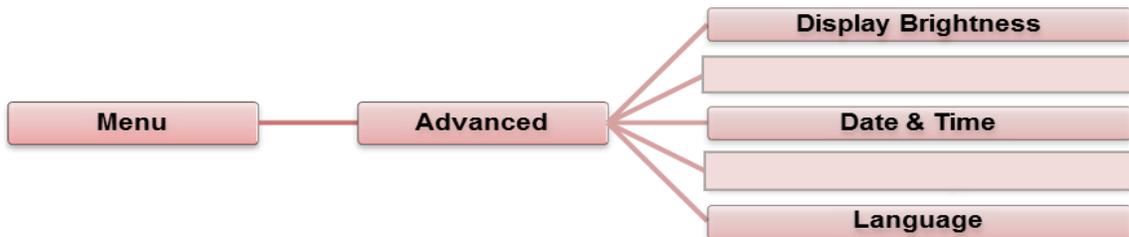
## Sensor

This feature verifies the sensor setting.



## Advanced

This feature is used to set the printer advanced settings.



Item	Description
<b>Display Brightness</b>	This item is used to adjust the brightness for display.
<b>Date &amp; Time</b>	This item is used to setup the display date and time.
<b>Language</b>	This item is used to setup the display language.

## Service

This feature is used to restore printer settings to factory defaults.



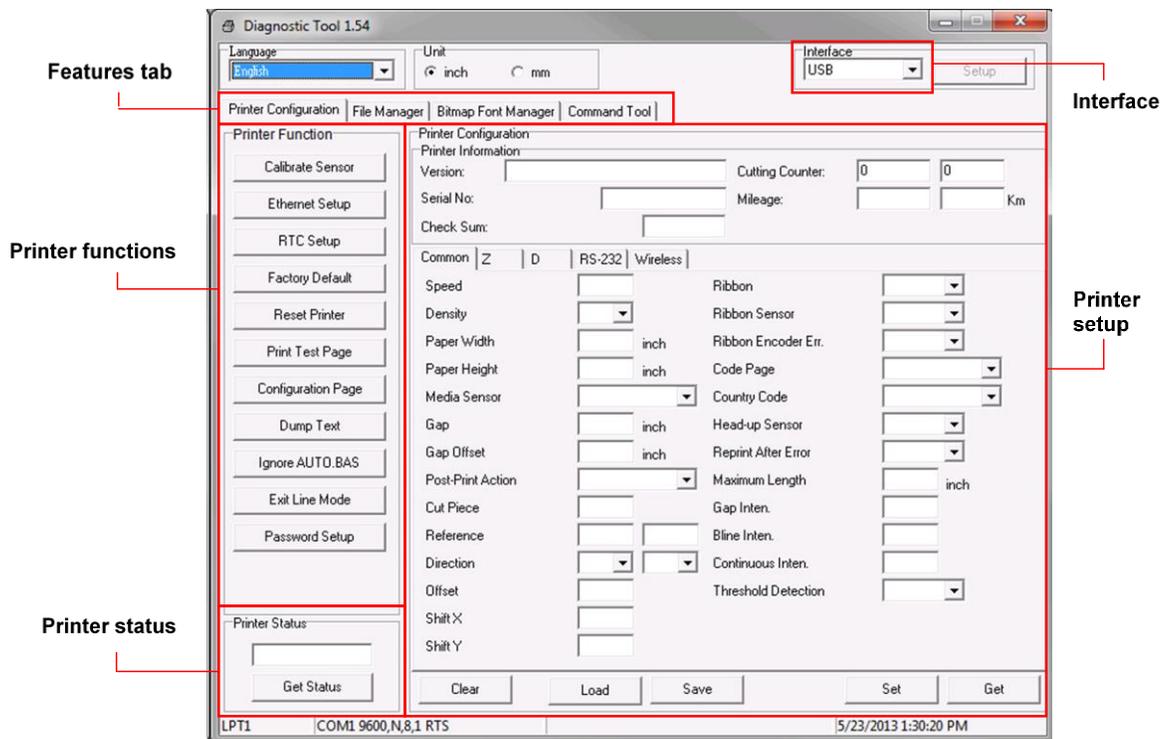
Item	Description
<b>Initialization</b>	This feature is used to restore printer default settings.
<b>Printer Information</b>	This feature is used verify the printer serial number, printed mileage(m), labels(pcs.) and cutting counter.

# Diagnostic Tool

The Diagnostic Utility is a toolbox that allows users to explore the printer's settings and status; change printer settings; download graphics, fonts, and firmware; create printer bitmap fonts; and to send additional commands to the printer. Using this convenient tool, you can explore the printer status and settings and troubleshoot the printer.

## Starting Diagnostic Tool

1. Double click on the Diagnostic tool icon  `DiagTool.exe` to start the software.
2. There are four features (Printer Configuration, File Manager, Bitmap Font Manager, Command Tool) included in the Diagnostic utility.



## Using Printer Function

1. Select the PC interface connected to the bar code printer.
2. Click the “Function” button for settings.
3. The detail functions in the Printer Function Group are listed as below.

Printer Function	Function	Description
Calibrate Sensor	Calibrate Sensor	Calibrate the sensor specified in the Printer Setup group media sensor field
Ethernet Setup	Ethernet Setup	Setup the IP address, subnet mask, gateway for the on board Ethernet
RTC Setup	RTC Setup	Synchronize printer Real Time Clock with PC
Factory Default	Factory Default	Initialize the printer and restore the settings to factory default.
Reset Printer	Reset Printer	Reboot printer
Print Test Page	Print Test Page	Print a test page
Configuration Page	Configuration Page	Print printer configuration
Dump Text	Dump Text	To activate the printer dump mode.
Ignore AUTO.BAS	Ignore AUTO.BAS	Ignore the downloaded AUTO.BAS program
Exit Line Mode	Exit Line Mode	Exit line mode.
Password Setup	Password Setup	Set the password to protect the settings



**For more information about the Diagnostic Tool, please refer to the diagnostic utility quick start guide in the CD disk \ Diagnostic Utilities directory.**

## Setting Ethernet by diagnostic utility

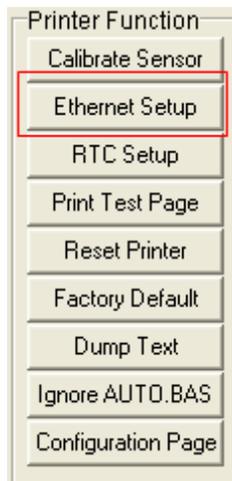
The Diagnostic Utility is enclosed in the CD disk \Diagnostic Utilities directory. Users can use the Diagnostic Tool to setup the Ethernet by RS-232, USB and Ethernet interfaces. The following contents will instruct users how to configure the Ethernet by these three interfaces.

## Using USB interface to setup Ethernet interface

1. Connect the USB cable between the computer and the printer.
2. Turn on the printer power.
3. Start the Diagnostic Utility by double clicking on the  `DiagTool.exe` icon.
4. The Diagnostic Utility default interface setting is USB. If the USB interface is connected to the printer, no other settings need to be changed in the interface field.

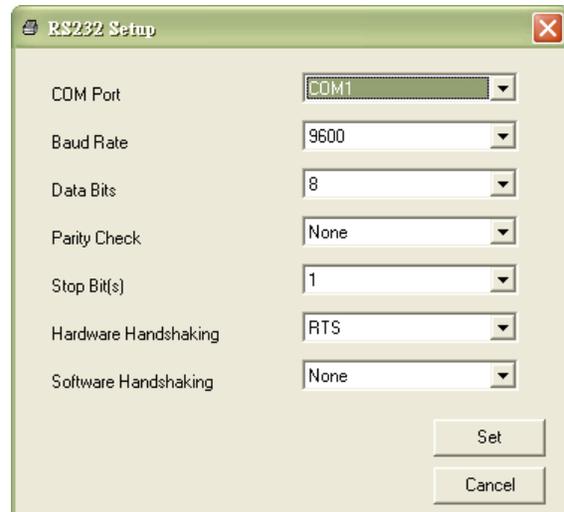


5. Click on the Printer Function “Ethernet Setup” button. DHCP is the default. Select “Static IP” to assign the IP address, subnet mask and gateway for the on board Ethernet.

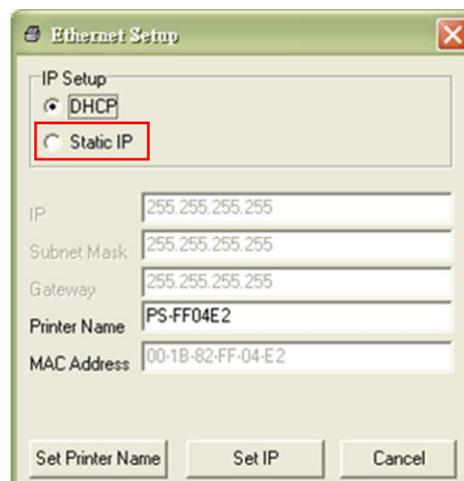


## Using RS-232 interface to setup Ethernet interface

1. Connect the computer and the printer with a RS-232 cable.
2. Turn on the printer power.
3. Start the Diagnostic Utility by double clicking on the  `DiagTool.exe` icon.
4. Select “COM” as interface then click on the “Setup” button to select the serial port baud rate, parity check, data bits, stop bit and flow control parameters.

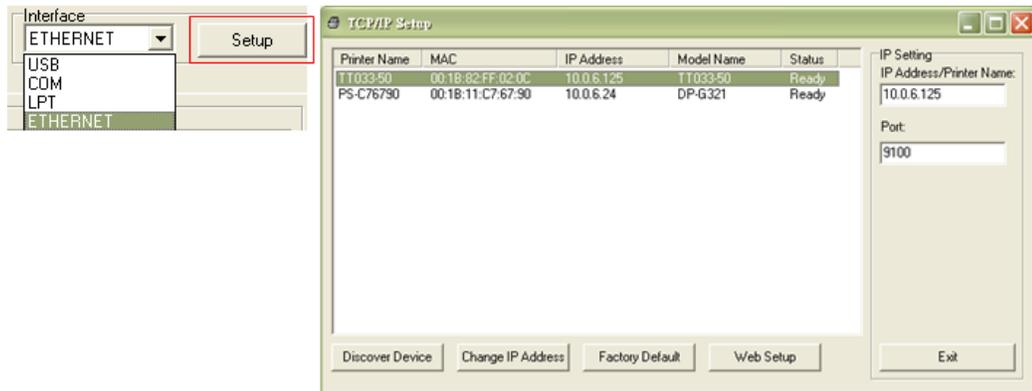


5. Click on the Printer Function “Ethernet Setup” button. DHCP is the default. Select “Static IP” to assign the IP address, subnet mask and gateway for the on board Ethernet.

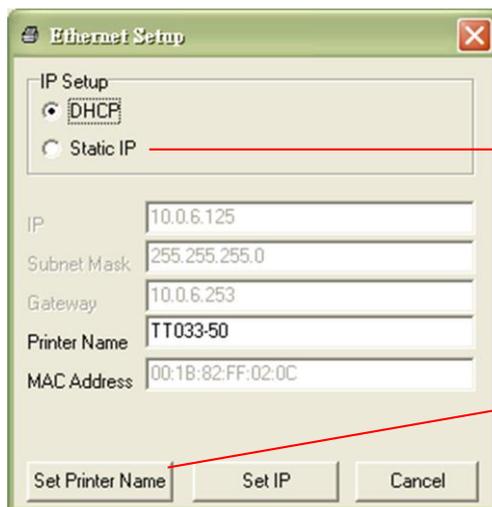


## Using Ethernet interface to setup Ethernet interface

1. Connect the computer and the printer to the LAN.
2. Turn on the printer power.
3. Start the Diagnostic Utility by double clicking on the  **DiagTool.exe** icon.
4. Select “Ethernet” as the interface then click on the “Setup” button to setup the IP address, subnet mask and gateway for the on board Ethernet.



5. Click the “Discover Device” button to explore the printers that exist on the network.
6. Select the printer in the left side of listed printers, the correspondent IP address will be shown in the right side “IP address/Printer Name” field.
7. Click “Change IP Address” to configure the IP address obtained by DHCP or static.



The default IP address is obtained by DHCP. To change the setting to static IP address, click “Static IP” radio button, then enter the IP address, subnet mask and gateway. Click “Set IP” button to save new IP address

Users can also change the “Printer Name” to another model name in this field. Click “Set Printer Name” to save new name.

8. Click “Exit” button to exit and go back to Diagnostic Tool main screen.

#### **Factory Default button**

This function will reset the IP address, subnet mask and gateway parameters obtained by DHCP and reset the printer name.

#### **Web setup button**

While using the Diagnostic Utility to setup the printer, you can also explore and configure the printer settings and status or update the firmware within the IE or Firefox web browser. This feature provides a user friendly setup interface and the capability of managing the printer remotely over a network.

# Troubleshooting

## Common problems

The following guide lists the most common problems that may be encountered when operating this bar code printer. If the printer still does not function after all suggested solutions have been invoked, please contact the Customer Service Department of your purchased reseller or distributor for assistance.

Problem	Possible Cause	Recovery Procedure
<b>Power indicator does not illuminate</b>	<ul style="list-style-type: none"> <li>* The power cord is not properly connected.</li> </ul>	<ul style="list-style-type: none"> <li>* Plug the power cord in printer and outlet.</li> <li>* Switch the printer on.</li> </ul>
<b>Carriage Open</b>	<ul style="list-style-type: none"> <li>* The printer carriages are open.</li> </ul>	<ul style="list-style-type: none"> <li>* Please close the print carriages.</li> </ul>
<b>Not Printing</b>	<ul style="list-style-type: none"> <li>* The external interface cable is not connected correctly.</li> <li>* The wireless or Bluetooth device is not correctly connected between host and printer.</li> <li>* The port specified in the Windows driver is not correct.</li> </ul>	<ul style="list-style-type: none"> <li>* Re-connect interface cable or replace cable.</li> <li>* Please reset the wireless device setting.</li> <li>* Select the correct printer port in the driver.</li> <li>* Clean the printhead.</li> <li>* Print head's harness connector(s) are not properly connected. Turn off the printer and reconnect.</li> <li>* Check your program if there is a command PRINT at the end of the file. There should be a CRLF at the end of each command line.</li> </ul>
<b>No print on the label</b>	<ul style="list-style-type: none"> <li>* Label or ribbon is incorrectly installed.</li> <li>* Using the wrong type of media or ribbon.</li> </ul>	<ul style="list-style-type: none"> <li>* Follow the instructions in loading the media and ribbon.</li> <li>* Ribbon and media are not compatible.</li> <li>* Verify the ribbon-inked side.</li> <li>* The print density setting is incorrect.</li> </ul>
<b>No Ribbon</b>	<ul style="list-style-type: none"> <li>* Running out of ribbon.</li> <li>* The ribbon is installed incorrectly.</li> </ul>	<ul style="list-style-type: none"> <li>* Supply a new ribbon roll.</li> <li>* Please refer to the steps in user's manual to reinstall the ribbon.</li> </ul>

<b>No Paper</b>	<ul style="list-style-type: none"> <li>* Running out of label.</li> <li>* The label is installed incorrectly.</li> <li>* Gap/black mark sensor is not calibrated.</li> </ul>	<ul style="list-style-type: none"> <li>* Supply a new label roll.</li> <li>* Please refer to the steps in user's manual to reinstall the label roll.</li> <li>* Calibrate the gap/black mark sensor.</li> </ul>
<b>Paper Jam</b>	<ul style="list-style-type: none"> <li>* Gap/black mark sensor is not set properly.</li> <li>* Make sure label size is set properly.</li> <li>* Labels may be stuck inside the printer mechanism.</li> </ul>	<ul style="list-style-type: none"> <li>* Calibrate the media sensor.</li> <li>* Set media size correctly.</li> <li>* Remove the stuck label inside the printer mechanism.</li> </ul>
<b>Take Label</b>	<ul style="list-style-type: none"> <li>* Peel function is enabled.</li> </ul>	<ul style="list-style-type: none"> <li>* If the peeler module is installed, please remove the label.</li> <li>* If there is no peeler module in front of the printer, please switch off the printer and install it.</li> <li>* Check if the connector is plugging correctly.</li> </ul>
<b>Cannot download a file to memory (FLASH / DRAM/CARD)</b>	<ul style="list-style-type: none"> <li>* The space in memory is full.</li> </ul>	<ul style="list-style-type: none"> <li>* Delete unused files in the memory.</li> </ul>
<b>Cannot access SD card</b>	<ul style="list-style-type: none"> <li>* SD card is damaged.</li> <li>* SD card doesn't insert correctly.</li> <li>* Use the non-approved SD card manufacturer.</li> </ul>	<ul style="list-style-type: none"> <li>* Use the supported capacity SD card.</li> <li>* Insert the SD card again.</li> <li>* The supported SD card spec and the approved SD card manufacturer.</li> </ul>
<b>Poor Print Quality</b>	<ul style="list-style-type: none"> <li>* Ribbon and media is loaded incorrectly</li> <li>* Dust or adhesive accumulation on the print head.</li> <li>* Print density is not set properly.</li> <li>* Printhead element is damaged.</li> <li>* Ribbon and media are incompatible.</li> <li>* The printhead pressure is not set properly.</li> </ul>	<ul style="list-style-type: none"> <li>* Reload the supply.</li> <li>* Clean the print head.</li> <li>* Clean the platen roller.</li> <li>* Adjust the print density and print speed.</li> <li>* Run printer self-test and check the print head test pattern if there is dot missing in the pattern.</li> <li>* Change proper ribbon or proper label media.</li> <li>* Adjust the printhead pressure adjustment knob.</li> <li>* The release lever is not properly latched properly.</li> </ul>

<b>Missing print on the left or right side of label</b>	<ul style="list-style-type: none"> <li>* Wrong label size setup.</li> </ul>	<ul style="list-style-type: none"> <li>* Set the correct label size.</li> </ul>
<b>Gray line on the blank label</b>	<ul style="list-style-type: none"> <li>* The print head is dirty.</li> <li>* The platen roller is dirty.</li> </ul>	<ul style="list-style-type: none"> <li>* Clean the print head.</li> <li>* Clean the platen roller.</li> </ul>
<b>Irregular print</b>	<ul style="list-style-type: none"> <li>* The printer is in Hex Dump mode.</li> <li>* The RS-232 setting is incorrect.</li> </ul>	<ul style="list-style-type: none"> <li>* Turn off and on the printer to skip the dump mode.</li> <li>* Re-set the Rs-232 setting.</li> </ul>
<b>Label feeding is not stable (skewed) when printing</b>	<ul style="list-style-type: none"> <li>* The media guide does not touch the edge of the media.</li> </ul>	<ul style="list-style-type: none"> <li>* If the label is moving to the right side, please move the label guide to left.</li> <li>* If the label is moving to the left side, please move the label guide to right.</li> </ul>
<b>Skip labels when printing</b>	<ul style="list-style-type: none"> <li>* Label size is not specified properly.</li> <li>* Sensor sensitivity is not set properly.</li> <li>* The media sensor is covered with dust.</li> </ul>	<ul style="list-style-type: none"> <li>* Check if label size is setup correctly.</li> <li>* Calibrate the sensor by Auto Gap or Manual Gap options.</li> <li>* Clean the GAP/Black mark sensor with air.</li> </ul>
<b>Wrinkle Problem</b>	<ul style="list-style-type: none"> <li>* Printhead pressure is incorrect.</li> <li>* Ribbon installation is incorrect.</li> <li>* Media installation is incorrect.</li> <li>* Print density is incorrect.</li> <li>* Media feeding is incorrect.</li> </ul>	<ul style="list-style-type: none"> <li>* Please refer to Ribbon Flow Adjustment section.</li> <li>* Please set the suitable density to improve the print quality.</li> <li>* Adjust label guides to remove drag or interference.</li> </ul>
<b>RTC time is incorrect after printer reboot</b>	<ul style="list-style-type: none"> <li>*The battery has run down.</li> </ul>	<ul style="list-style-type: none"> <li>* Replace battery on the main board.</li> </ul>
<b>The left printout alignment is incorrect</b>	<ul style="list-style-type: none"> <li>* Wrong label size setup.</li> <li>* The parameter Shift X in LCD menu is incorrect.</li> </ul>	<ul style="list-style-type: none"> <li>* Set the correct label size.</li> <li>* Press [MENU] → [SELECT] x 3 → [DOWN] x 5 → [SELECT] to fine tune the parameter of Shift X.</li> </ul>

<p><b>Incorrect small label print position</b></p>	<ul style="list-style-type: none"> <li>* Media sensor sensitivity is not set properly.</li> <li>* Label size is incorrect.</li> <li>* The parameter Shift Y in the LCD menu is incorrect.</li> <li>* The vertical offset setting in the driver is incorrect.</li> </ul>	<ul style="list-style-type: none"> <li>* Calibrate the sensor sensitivity.</li> <li>* Set the correct label size and gap size.</li> <li>* Press [MENU] → [SELECT] x3 → [DOWN] x6 → [SELECT] to fine tune the parameter of Shift Y.</li> <li>* If using the label printing software, set the vertical offset in the driver.</li> </ul>
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# Maintenance

## Tools and methods

Printer	Method	Interval
Print Head	<ol style="list-style-type: none"> <li>1. Always turn off the printer before cleaning the print head.</li> <li>2. Allow the print head to cool for a minimum of one minute.</li> <li>3. Use a (Head cleaner pen) or cotton swab and 99% isopropyl Alcohol to clean the print head surface.</li> </ol>	Clean the print head when changing a new label roll
	<p>The diagram illustrates the cleaning process of a print head. It shows a side view of the print head assembly with a 'Head Cleaner Pen' being used to clean the 'Print Head' surface. A callout box provides a magnified view of the 'Print Head' and 'Element' area, showing the internal structure and the cleaning action.</p>	
Platen Roller	<ol style="list-style-type: none"> <li>1. Turn the power off.</li> <li>2. Rotate the platen roller and wipe it thoroughly with 99% alcohol and a cotton swab, or lint-free cloth.</li> </ol>	Clean the platen roller when Changing a new label roll
Tear Bar /Peel Bar	Use the lint-free cloth with 99% alcohol to wipe it.	As needed
Sensor	Compressed air or vacuum	Monthly
Exterior	Wipe it with water-dampened cloth	As needed
Interior	Brush or vacuum	As needed

### Note:

- Do not touch print head by hand. If you touch it accidentally, please use alcohol to clean it.
- Please use 99% alcohol. DO NOT use medical alcohol, which may damage the printer head.
- Regularly clean the print head and supply sensors when changing a new ribbon to keep printer performance and extend printer life

# Product Specifications

## Standard features

Standard product features	M5e
Thermal transfer/ or direct thermal	○
6 operating buttons and 1 LED with 3 colors	○
320 x 240 TFT LCD (UI of operating menu)	○
32-bit RISC high performance processor (Atmel 9G25/ 400 MHz)	○
Center alignment holder with spiral spring	○
Gap transmissive sensor (Fixed, center of offset 4 from center)	○
Black mark reflective sensor (Position adjustable)	○
Ribbon encoder sensor	○
Head open sensor	○
Automatic media/ribbon sensor selecting	○
128 MB Flash memory	○
64 MB DDR2 DRAM	○
SD card reader for memory expansion, up to 32 GB	○
RS-232 interface (Max. 115,200 bps)	○
USB 2.0 interface (Hi speed mode)	○
Internal Ethernet print server (10/100 Mbps) interface	○
USB host	○
Standard industry emulations right out of the box including Eltron <sup>®</sup> and Zebra <sup>®</sup> language support	○
Internal 8 alpha-numeric bitmap fonts	○
Fonts and bar codes can be printed in any one of the four directions (0, 90,180, 270 degree)	○
Internal Monotype Imaging <sup>®</sup> true type font engine with one CG Triumvirate Bold Condensed scalable font	○
Downloadable fonts from PC to printer memory	○
Unicode UTF8 support	○

## Bar code symbologies & graphics

Supported bar codes		Supported images
1D bar code	2D bar code	BITMAP, BMP, PCX (Max. 256 colors graphics)
Code128 subsets A.B.C, Code128UCC, EAN128, Interleave 2 of 5, Code 39, Code 93, EAN-13, EAN-8, Codabar, POSTNET, UPC-A, UPC-E, EAN and UPC 2(5) digits, MSI, PLESSEY, China Post, ITF14, EAN14, Code 11, TELPEN, PLANET, Code 49, Deutsche Post Identcode, Deutsche Post Leitcode, LOGMARS	CODABLOCK F mode, DataMatrix, Maxicode, PDF-417, Aztec, MicroPDF417, QR code, RSS Barcode (GS1 Databar)	

## Printer optional features

The printer offers the following optional features

Product option features	User option	Dealer option	Factory option
Peel-off kit		○	
Regular cutter (full cut guillotine cutter)  <i>Paper thickness: 0.06~ 0.19 mm</i> <i>Paper length: 1" ~ max. length</i> <i>Max. width: 110 mm</i>  <i>Note:</i> <i>Except for the linerless cutter, all regular/heavy duty/care label cutters</i> <i>DO NOT cut on media with glue.</i>		○	
Plus keyboard display unit	○		
Plus programmable smart keyboard	○		
External roll mount with 3" core label spindle	○		
Sleeve adapter	○		
External Bluetooth module (serial interface)	○		
External 802.11 b/g/n wireless module (serial interface)	○		
Parallel port (replace USB host)			○
Real time clock & Buzzer			○

## General specifications

General specifications	
<b>Physical dimensions</b>	7.9" (W) x 7.5" (H) x 10.2" (D)
<b>Weight</b>	5.0 lbs
<b>Mechanism</b>	Clamshell with Double-walled plastic
<b>Power</b>	External universal switching power supply <ul style="list-style-type: none"> <li>• Input: AC 100-240V/ 2.5A, 50-60 Hz</li> <li>• Output: DC 24V/ 3.75A, 90W</li> </ul>
<b>Environmental condition</b>	Operation: 5 ~ 40°C (41 ~ 104°F), 25~85% non-condensing Storage: -40 ~ 60 °C (-40 ~ 140°F), 10~90% non-condensing
<b>Environmental concern</b>	Comply with RoHS, WEEE, REACH

## Print specifications

Print specifications	
<b>Print head resolution (dots per inch/mm)</b>	300 dots/inch
<b>Print method</b>	Direct & Transfer
<b>Dot size (width x length)</b>	0.084 x 0.084mm (1mm = 12 dots)
<b>Print speed (inches per second)</b>	Up to 4-ips
<b>Max. print width</b>	4.15"
<b>Max. print length</b>	40"
<b>Printout bias</b>	Vertical: 1mm max Horizontal: 1mm max

## Ribbon specifications

Ribbon specifications	
Ribbon outside diameter	Max. 1.5" OD
Ribbon length	120 yards
Ribbon core inside diameter	0.5" ID core
Ribbon width	1.5" ~4.3"
Ribbon wound type	Ink coated outside wound

## Media specifications

Media specifications	
Media roll capacity	Max. 5" OD
Media core diameter	1" & 1.5 ID core
Media type	Continuous, die-cut, black mark, external fan-fold, notch
Media wound type	Outside wound
Media width	.78" ~ 4.4"
Media thickness	.002" ~ .007"
Label length	.39" ~ max. print length
Label length (peeler mode)	1.0" ~ 6"
Label length (cutter mode)	1.0" ~ max. print length
Black mark	Min. .31" (W) x .078" (H)
Gap height	Min. .078"



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