MH261T/ MH361T Series

THERMAL TRANSFER / DIRECT THERMAL BAR CODE PRINTER

USER'S MANUAL

Copyright Information

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Agency Compliance and Approvals

Note:
There may have certification differences in the series models, please refer to product label for accuracy.

CE	EN 55032, Class A EN 55024 EN 55035 EN 62368-1 This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.
FC	FCC part 15B, Class A ICES-003, Class A This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense. This Class A digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe A est conform à la norme NMB-003 du Canada. 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.
	AS/NZS CISPR 22, Class A
c UL us LISTED I.T.E. E178707	UL 60950-1 (2nd Edition) CSA C22.2 No. 60950-1-07 (2nd Edition) UL 62368-1, 2nd Edition CAN/CSA C22.2 No. 62368-1-14, 2nd Edition
ENERGY STAR	Energy Star for Imaging Equipment Version 3.0
Mexico Registration	UL 60950-1

	EN 62368-1
	KN 32 KN 35 KN 60950-1 이 기기는 업무용(A 급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.
	GB 4943.1 GB 9254, Class A GB 17625.1 此为 A 级产品，在生活环境中，该产品可能会造成无线电干扰， 在这种情况下，可能需要用户对干扰采取切实可行的措施。
	IS 13252(Part 1)/ IEC 60950-1
	TP TC 004 TP TC 020
	CNS 13438 CNS 14336-1 CNS 15663
	IEC 60950-1

Important safety instructions:

1. Read all of these instructions and keep them for later use.
2. Follow all warnings and instructions on the product.
3. Disconnect the power plug from the AC outlet before cleaning or if fault happened.
   Do not use liquid or aerosol cleaners. Using a damp cloth is suitable for cleaning.
4. The mains socket shall be installed near the equipment and easily accessible.
5. The unit must be protected against moisture.
6. Ensure the stability when installing the device, Tipping or dropping could cause damage.
7. Make sure to follow the correct power rating and power type indicated on marking label provided by manufacture.
8. Please refer to user manual for maximum operation ambient temperature.

WARNING:
Moving parts, keep fingers and other body parts away.

CAUTION:
(For equipment with RTC (CR2032) battery or rechargeable battery pack)
Risk of explosion if battery is replaced by an incorrect type.
Dispose of used batteries according to the Instructions as below.

1. DO NOT throw the battery in fire.
2. DO NOT short circuit the contacts.
3. DO NOT disassemble the battery.
4. DO NOT throw the battery in municipal waste.
5. The symbol of the crossed out wheeled bin indicates that the battery should not be placed in municipal waste.

CAUTION:
Hot surface for printhead. Do not touch the printhead before it cooling.

WARNING:
Remove the power from AC inlet before opening the media cover for cleaning or repairing faults. After cleaning or fixing faults, media cover closing before power connecting to AC inlet.

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

CE Statement:
This equipment complies with EU radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

All operational modes:
2.4GHz: 802.11b, 802.11g, 802.11n (HT20), 802.11n (HT40)
5GHz: 802.11a, 802.11ac.

The frequency, mode and the maximum transmitted power in EU are listed below:
2412 MHz – 2472 MHz: 19.72 dBm (EIRP)(Wi-Fi)
5180 MHz – 5700 MHz: 22.5 dBm (EIRP)(Wi-Fi)
2402 MHz – 2480 MHz: 7.4 dBm (EIRP)(Bluetooth)
2402 MHz – 2480 MHz: 2.35 dBm (EIRP)(Bluetooth-BLE)

Requirements in AT/BE/BG/CZ/DK/EE/FR/DE/IS/IE/IT/EL/ES/CY/LV/LI/LT/LU/HU/MT/NL/NO/PL/PT/RO/SI/SK/TR/FI/SE/CH/UK/HR. 5150MHz~5350MHz is for indoor use only.

5150-5350MHz for Only indoor use
5470-5725MHz for indoor/outdoor use

Restrictions In AZE
National restrictions information is provided below

Frequency Band	Country	Remark
5150-5350MHz	**Azerbaijan**	**No license needed if used indoor and power not exceeding 30mW**
5470-5725MHz		

Hereby, TSC Auto ID Technology Co., Ltd. declares that the radio equipment type [Wi-Fi] IEEE 802.11 a/b/g/n/ac is in compliance with Directive 2014/53/EU
The full text of the EU declaration of conformity is available at the following internet address:
http://www.tscprinters.com/cms/theme/index-39.html

Canada, Industry Canada (IC) Notices

This Class B digital apparatus complies with Canadian ICES-003 and RSS-210.
Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Radio Frequency (RF) Exposure Information

The radiated output power of the Wireless Device is below the Industry Canada (IC) radio frequency exposure limits. The Wireless Device should be used in such a manner such that the potential for human contact during normal operation is minimized.

Canada, avis de l'Industry Canada (IC)

Cet appareil numérique de classe B est conforme aux normes canadiennes ICES-003 et RSS-210.
Son fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas causer d'interférence et (2) cet appareil doit accepter toute interférence, notamment les interférences qui peuvent affecter son fonctionnement.

NCC 警語:

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。(即低功率電波輻射性電機管理辦法第十二條)
低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。
前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。(即低功率電波輻射性電機管理辦法第十四條)

BSMI Class A 警語:

這是甲類的資訊產品，在居住的環境使用中時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

單元Unit	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛Lead (Pb)	汞Mercury (Hg)	鎘Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
內外塑膠件	○	○	○	○	○	○
內外鐵件	-	○	○	○	○	○
滾輪	○	○	○	○	○	○
銘版	○	○	○	○	○	○
電路板	-	○	○	○	○	○
晶片電阻	-	○	○	○	○	○
積層陶瓷表面黏著電容	○	○	○	○	○	○
集成電路-IC	-	○	○	○	○	○
電源供應器	○	○	○	○	○	○
印字頭	-	○	○	○	○	○
馬達	-	○	○	○	○	○
液晶顯示器	-	○	○	○	○	○
插座	-	○	○	○	○	○
線材	-	○	○	○	○	○

備考 1.〝超出 0.1 wt %〞及〝超出 0.01 wt %〞係指限用物質之百分比含量超出百分比含量基準值。

Note 1：“Exceeding 0.1 wt %” and “exceeding 0.01 wt %” indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.

備考 2.〝○〞係指該項限用物質之百分比含量未超出百分比含量基準值。

Note 2：“○” indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.

備考 3.〝-〞係指該項限用物質為排除項目。

Note 3：The “–” indicates that the restricted substance corresponds to the exemption.

1. Introduction

1.1 Product Introduction

Thank you very much for purchasing TSC bar code printer.

The new high-performance MH261T Series was designed to deliver the cleanest and high quality barcodes. It features a die-cast print mechanism housed in a very strong yet lightweight cabinet. This new design results in a more durable printer that is suited for your most heavy-duty demand cycles.

The MH261T Series printers are loaded with standard features including a color touch display with brand-new GUI design and six menu buttons to provide a great user experience, support for 600 meter long ribbons, 8” OD media rolls, built-in Ethernet, RS-232 interface, two USB hosts for keyboard and scanner connections, USB 2.0, serial and Parallel interfaces. GPIO ports, Wi-Fi and Bluetooth modules are available as an option.

This document provides an easy reference for operating the MH261T series. To print label formats, please refer to the instructions provided with your labeling software; if you need to write the custom programs, please refer to the TSPL/TSPL2 programming manual that can be found on TSC website at http://www.tscprinters.com.

1.2 Product Features

Item \ Model	MH261T	MH361T
Resolution	203 DPI 8 dots/mm	300 DPI 12 dots/mm
Printing method	Thermal transfer and direct thermal	
Max. print speed	305 mm (12")/second	254 mm (10")/second
Max. print width	168 mm(6.61")	
Max. print length	14,732 mm (580")	6,604 mm (260")
Enclosure	Die-cast print mechanism with large clear media view window	
Physical dimension	357 mm (W) x 313 mm (H) x 514 mm (D) 14.05" (W) x 12.32 (H) x 20.24" (D)	
Weight	17.8 kg (39.24 lbs)	
Label roll capacity	208.3 mm (8.2") O.D.	
Internal rewinder (full roll)	Internal rewinder kit (5" O.D.) (dealer option)	
Ribbon capacity	450 meter long, max. OD 81 mm, 1" core (Ink coated outside or inside)	
Ribbon width	50.8 mm ~ 178 mm (2"~7")	
Processor	32-bit RISC CPU	
Memory	• 512MB Flash memory • 256MB SDRAM • microSD Flash memory card reader for Flash memory expansion, up to 32 GB	
Interface	• RS-232 • Parallel • USB 2.0 (High speed mode) • Internal Ethernet, 10/100 Mbps • USB host *2 (Front side), for scanner or PC keyboard • GPIO (DB15F) (dealer option) • Slot-in 802.11 a/b/g/n/ac Wi-Fi with Bluetooth 4.2 combo module (dealer option)	
Power	Auto sensing power supply • Input: AC 100-240V, 4-2A, 50-60Hz • Output: DC 5V, 5A; DC 24V, 7A; DC 36V, 1.4A; Total 243W	
LCD display/ Operation buttons	• Multi-language selectable • 6 operation buttons (menu, select, up, down, left/pause, right/feed) • 1 LED (with 2 LEDs Green & Red)	
LCD	4.3" color display , 480 x 272 pixel; Resistive touch screen	
Sensors	• Gap transmissive sensor (Position adjustable) • Black mark reflective sensor (Bottom black mark sensor, Position adjustable) • Ribbon end sensor • Ribbon encoder sensor • Head open sensor	
Real time clock	Standard	
Internal font	• 8 alpha-numeric bitmap fonts • Monotype Imaging® CG Triumvirate Bold Condensed scalable font	

Bar code	1D bar code: Code 39, Code 93, Code128UCC, Code128 subsets A.B.C, Codabar, Interleave 2 of 5, EAN-8, EAN-13, EAN-128, UPC-A, UPC-E, EAN and UPC 2(5) digits add-on, MSI, PLESSEY, POSTNET, RSS-Stacked, GS1 DataBar, Code 11, China Post 2D bar code: PDF-417, Maxicode, DataMatrix, QR code, Aztec	
Font & bar code rotation	0, 90, 180, 270 degree	
Command set	TSPL-EZD (Compatible to EPL, ZPL, ZPL II, DPL)	
Media type	Continuous, die-cut, black mark (Bottom side black mark only), fan-fold, notch (outside wound)	
Media width	50.8 ~ 172.7 mm (2“ ~ 6.8“)	
Media thickness	0.06 ~ 0.268 mm (2.36~ 11.02 mil)	
Media core diameter	3.81 mm / 76.2 mm (1.5”/ 3”)	
Label length	10 ~ 14,732 mm (0.39“ ~ 580“)	10 ~ 6,604 mm (0.39“ ~ 260“)
Environment condition	Operation: 0~ 40˚C (32 ~ 104˚F), 25~85% non-condensing Storage: -40 ~ 60 ˚C (-40 ~ 140˚F), 10~90% non-condensing	
Safety regulation	FCC Class A, CE Class A, RCM Class A, UL, cUL, TÜV, CCC, KC, BIS, BSMI, EAC, Argentina S mark, Mexico CoC, ENERGY STAR®	
Environmental concern	Comply with RoHS, WEEE	
Dealer option	• GPIO Card (DB15F) • Heavy duty cutter (full cut)/ Regular guillotine cutter (Max.4ips) • 802.11 a/b/g/n/ac Wi-Fi with Bluetooth 4.2 combo module (including slot-in housing) • Peel-off kit • Internal rewinding kit (5” O.D.)	
User option	• 802.11 a/b/g/n/ac Wi-Fi + BT combo module (for Wi-Fi ready with re-installed Wi-Fi slot-in housing) • KP-200 Plus keyboard display unit	

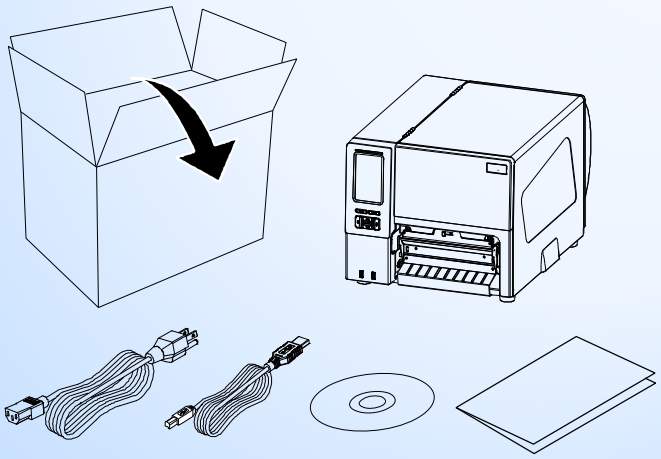
2. Operations Overview

2.1 Unpacking and Inspection

This printer has been specially packaged to withstand damage during shipping. Please carefully inspect the packaging and printer upon receiving the bar code printer. Please retain the packaging materials in case you need to reship the printer.

Unpacking the printer, the following items are included in the carton.

- One printer unit
- Windows labeling software CD disk
- One quick installation guide
- One power cord
- One USB interface cable



If any parts are missing, please contact the Customer Service Department of your purchased reseller or distributor.

Note:
Check the production date
Serial NO.: XXX 17 22 XXXX

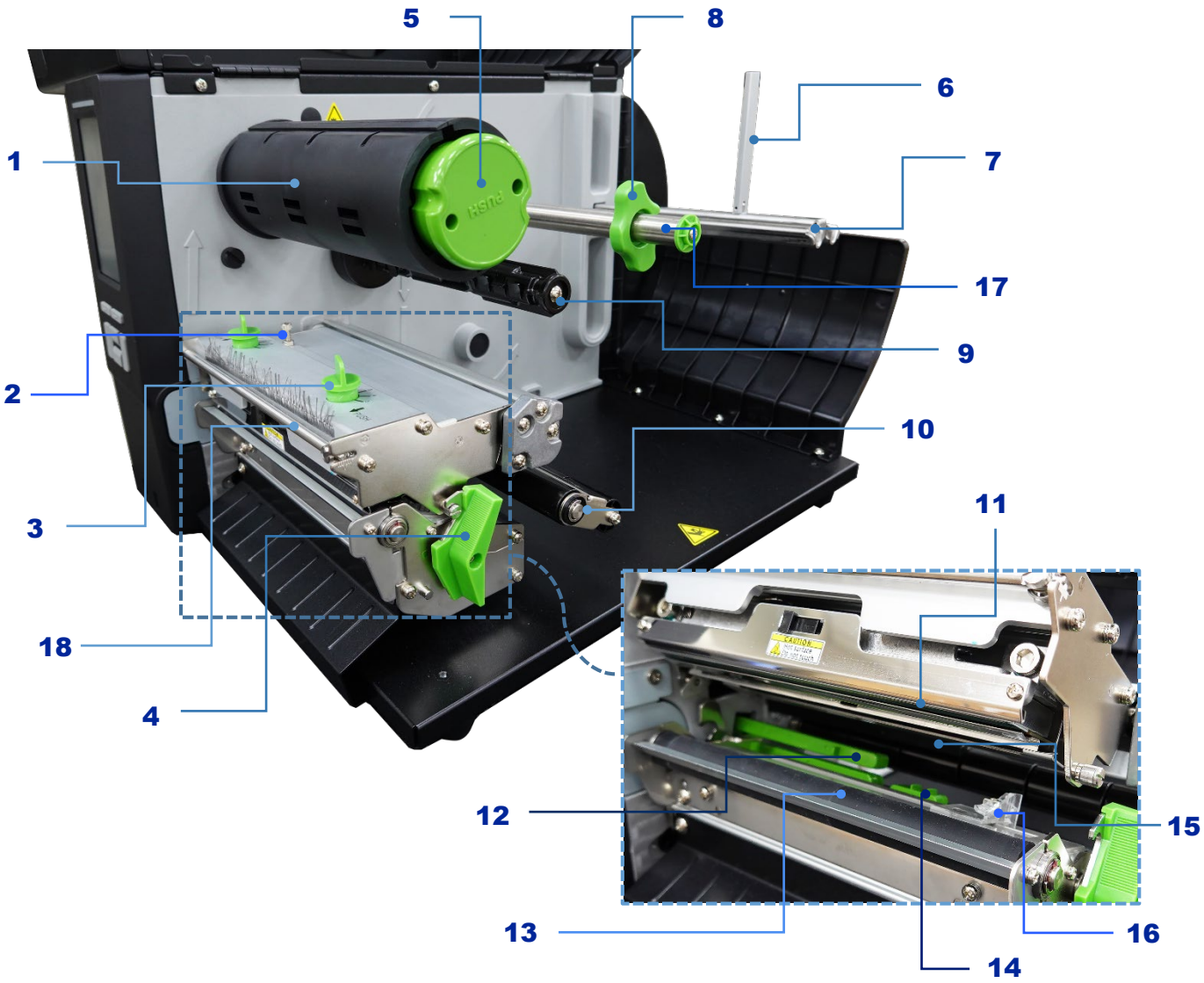
YEAR Год WEEK Неделю

2.2 Printer Overview

2.2.1 Front View

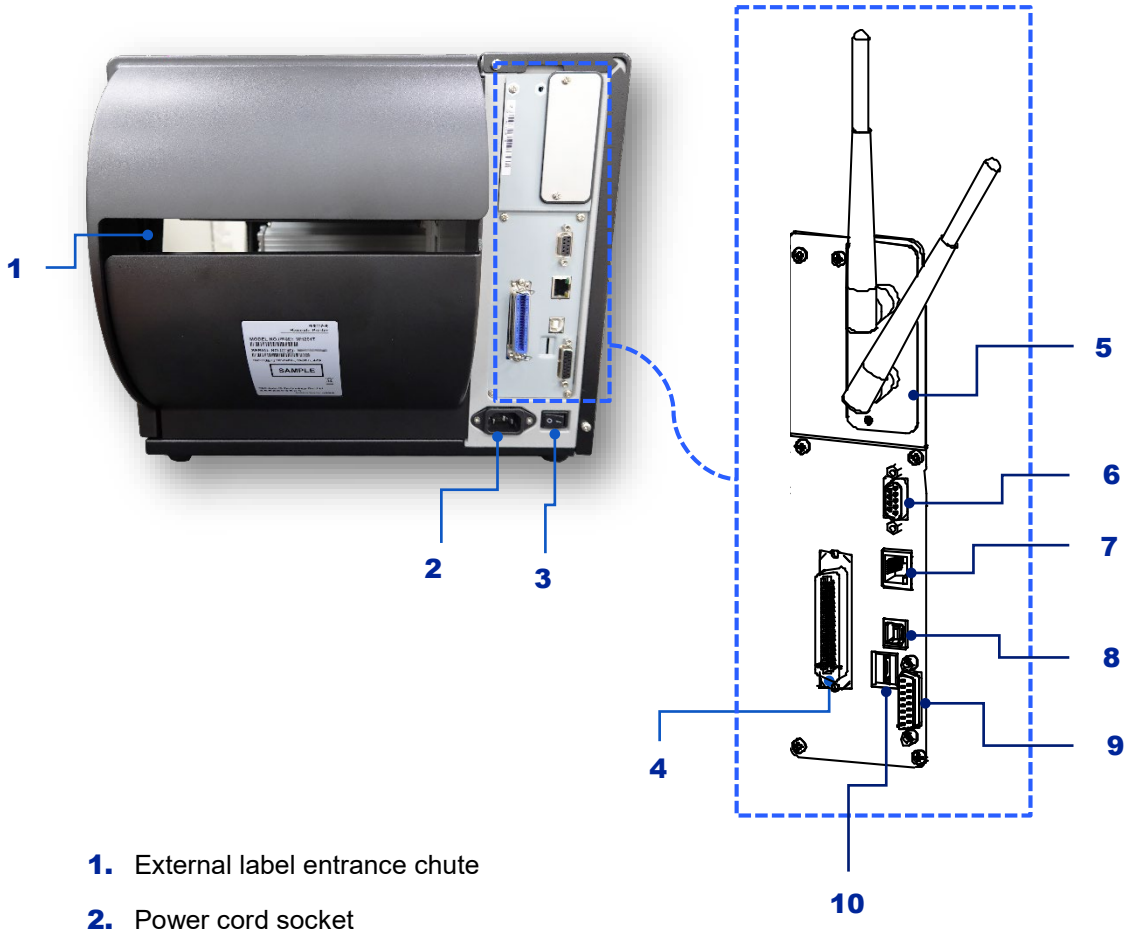
1. LED indicator
2. LCD display
3. Front panel buttons
4. USB host x 2
5. Media view window
6. Paper exit chute
7. Printer cover

2.2.2 Interior View



1	Ribbon rewind spindle	10	Media damper
2	Z axis mechanism adjustment knob	11	Print head
3	Print head pressure adjustment knobs	12	Gap sensor (shown as ▽ △)
4	Print head release lever	13	Platen roller
5	Ribbon release button	14	Black mark sensor (shown as △)
6	Label roll guard	15	Ribbon sensor
7	Label supply spindle	16	Front label guide
8	Rear label guide	17	Media guide bar
9	Ribbon supply spindle	18	Ribbon guide bar

2.2.3 Rear View



1. External label entrance chute
2. Power cord socket
3. Power switch
4. Centronics interface
5. Slot-in Wi-Fi module (Option)
6. RS-232C interface
7. Ethernet interface
8. USB interface
9. GPIO interface (Option)
10. SD card socket

2.3 Operator Control

This model comes with a high-contrast 4.3" color touch LCD panel with 6 button control user friendly design for simple printer set up and job status. Common tasks such as label calibration are one touch away. Menus can be customized to bring common tasks to the front screen.

2.3.1 LED Indication and Keys

LED	Indication	
Green	Off	Printer power is off.
	Solid	Printer power is on and the device is ready to use.
	Blinking	The system is downloading data from PC to memory or the printer is paused.
Amber	Solid	The system is clearing data from printer.
Red	Solid	Printer carriage open or cutter error.
	Blinking	A printing error, such as no paper, paper jam or no ribbon etc.

Keys	Function
Left/Right soft keys	The labels on the footer of the UI will explain the function for left and right soft key. Check the labels on the footer of the UI screen. The meaning of the select keys will vary.
Navigational keys	Used to select icons, menu selection, and navigation in the UI.

2.3.2 LCD Control Panel Icon Indication

Icons	Indication
	Wi-Fi device is ready
	Ethernet is connected
	Bluetooth device is ready
	Media capacity (%) notice
	Ribbon capacity (m) notice
	Print head cleaning notice
Buttons	**Indication**
	Enter the [Menu] (the [Menu] is locked and a password is required.)
	Calibrate the media sensor
	Enter the [Favorites] option (the [Favorites] is locked and a password is required.)
	Feed button (advance one label)

	Back button
	Enter cursor (be marked in green) located option
	Scroll down button
	Scroll up button

2.3.3 Touch Panel

Tap an item to open/use it.

3 Setup

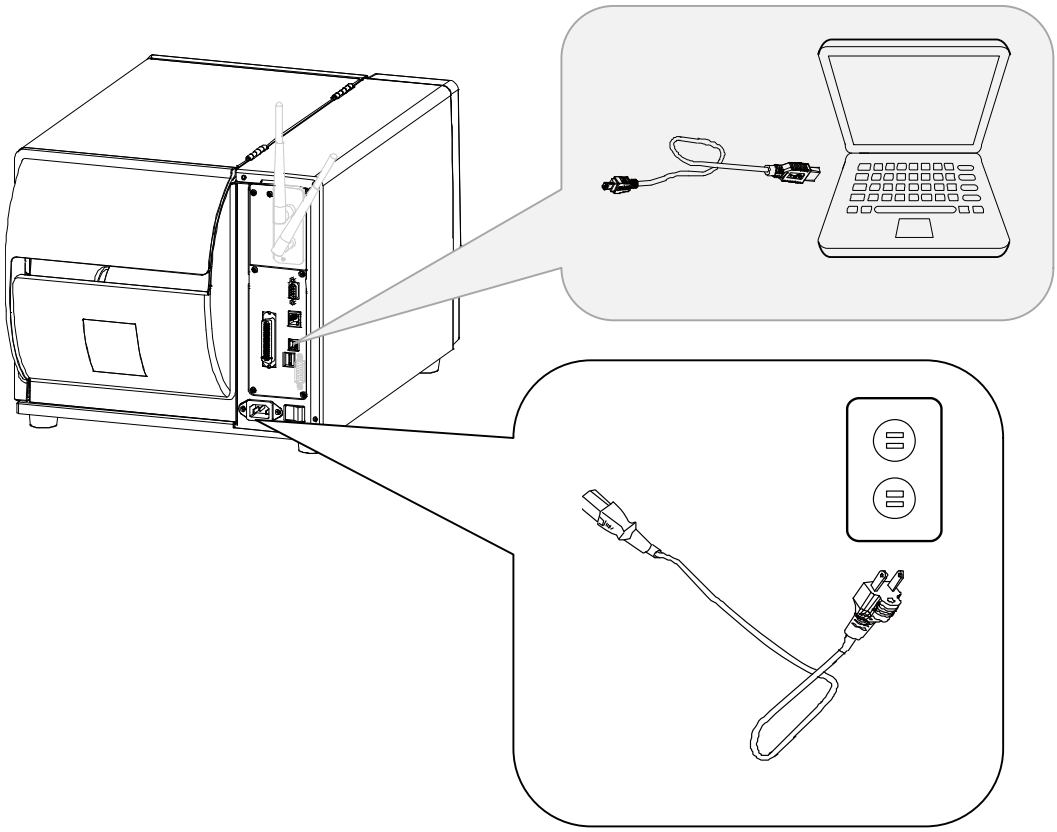
3.1 Setting up the Printer

1. Place the printer on a flat, secure surface.

2. Make sure the power switch is off.

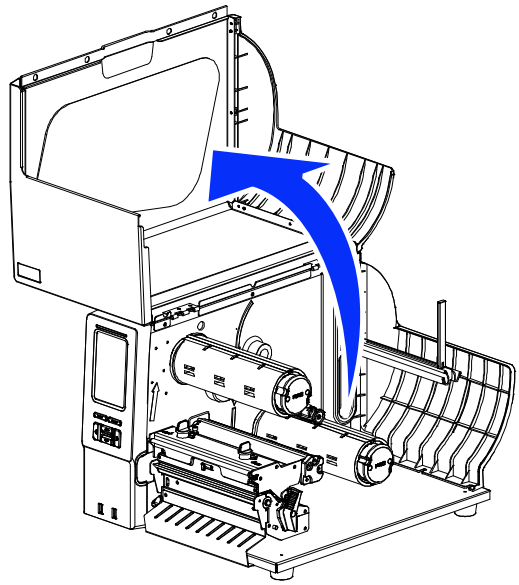
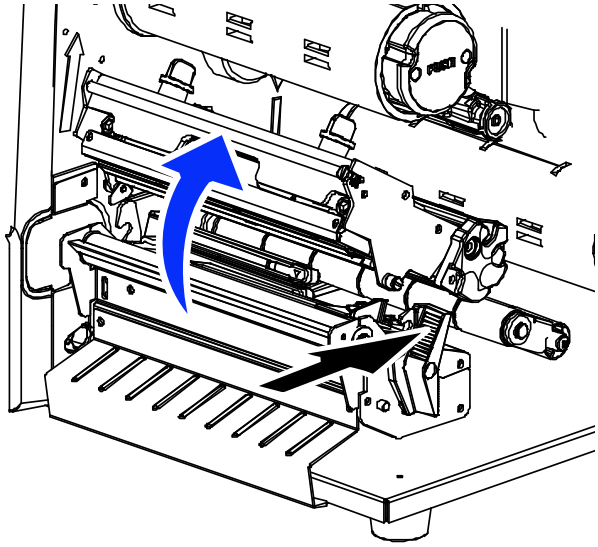
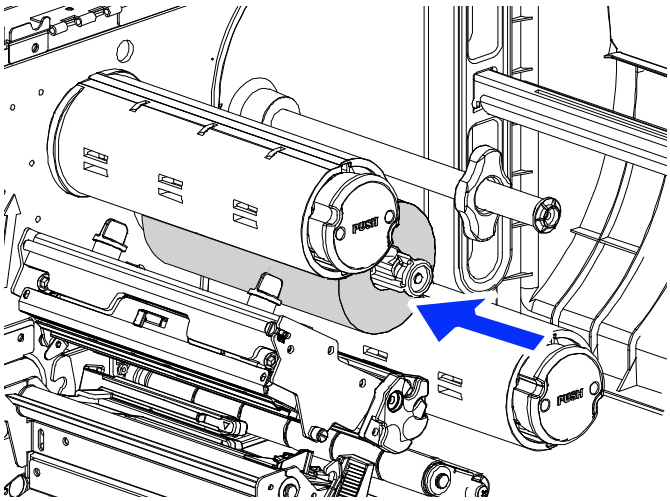
3. Connect the printer to the computer with the provided USB cable.

4. Plug the power cord into the AC power cord socket at the rear of the printer, and then plug the power cord into a properly grounded power outlet.

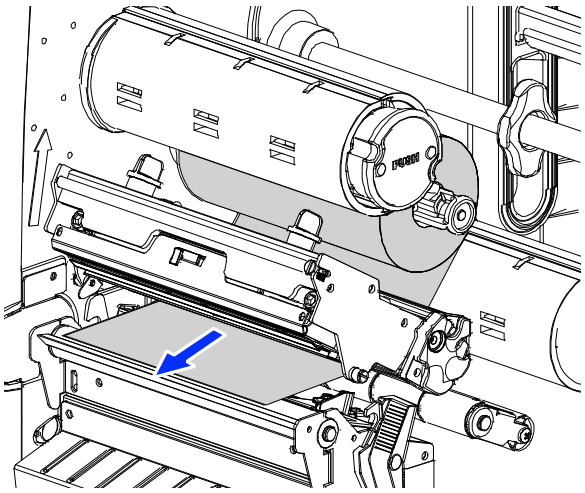


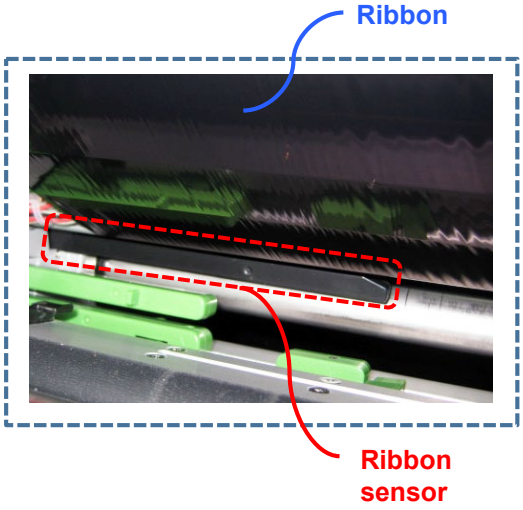
Note: Please switch OFF printer power switch prior to plug in the power cord to printer power jack.

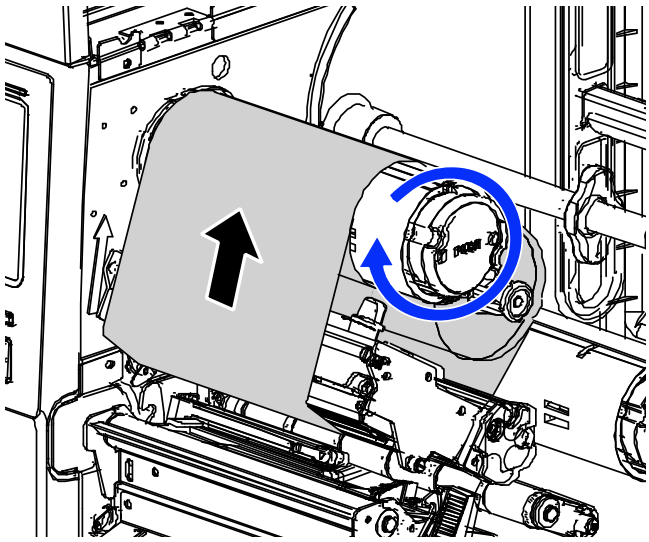
3.2 Loading the Ribbon

	1. Lift the handle to open the printer right side cover.
	2. Push the print head release lever to open the print head mechanism.
	3. Install the ribbon onto the ribbon supply spindle.

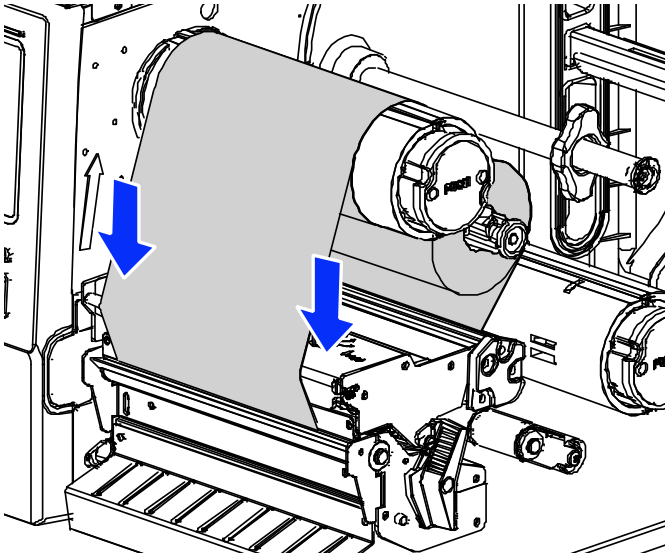
4. Thread the ribbon through the ribbon sensor slot and then through the open space in between print head and platen.





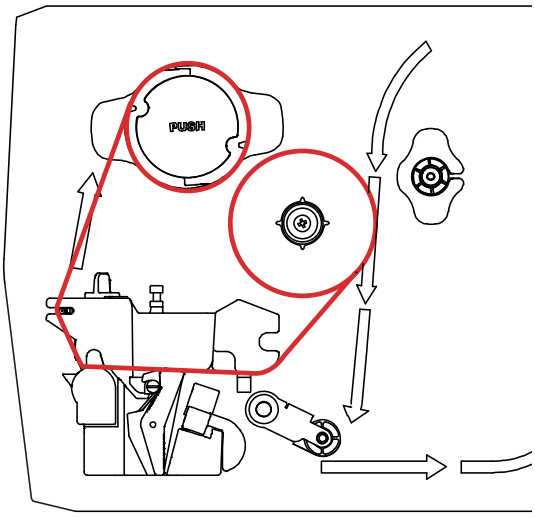


5. Wind the ribbon clockwise about 3~5 circles onto the ribbon rewind spindle until it is smooth and properly stretched.



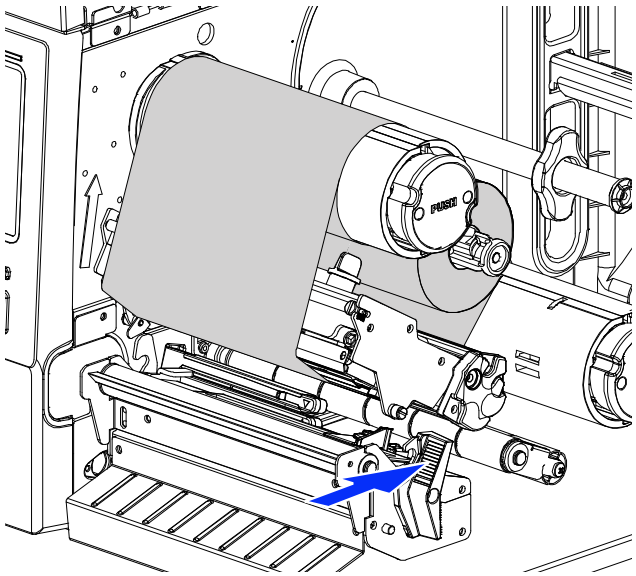
6. Close the print head mechanism by pushing down on both right and left sides of the deck, making sure the latches are engaged securely.

Loading path for ribbon:

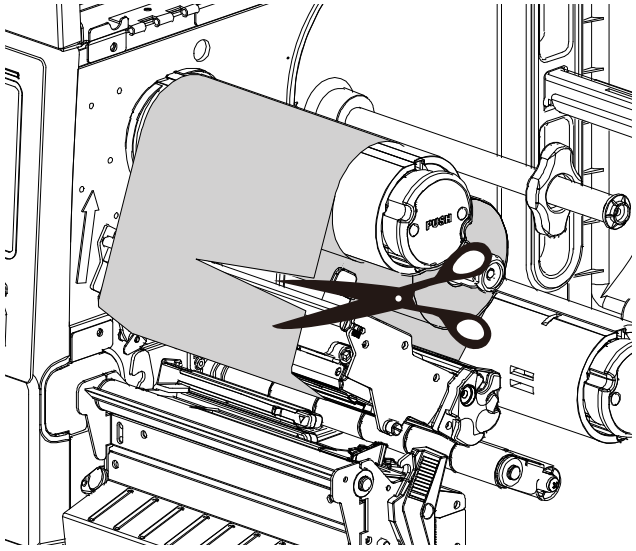


Note:
Please refer to video on TSC YouTube.

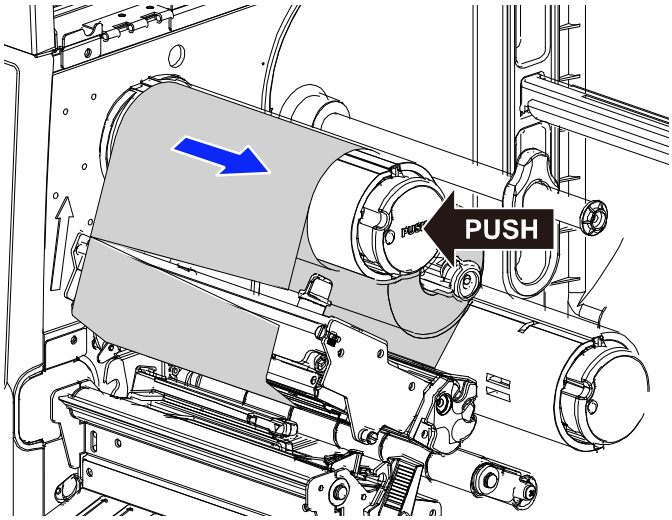
3.3 Removing the Used Ribbon



1. Lift the handle to open the printer right side cover.
2. Push the print head release lever to open the print head mechanism.

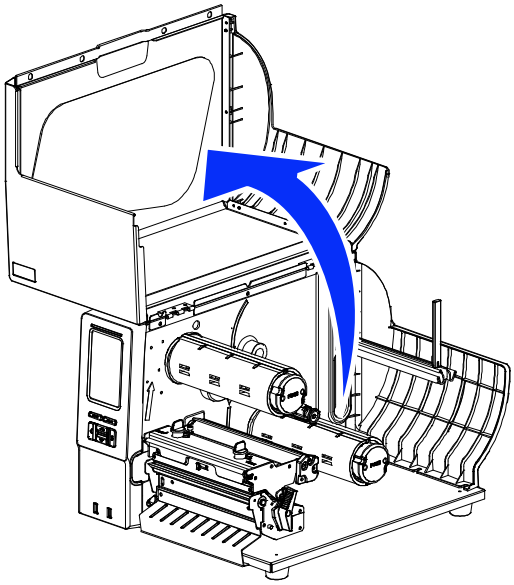
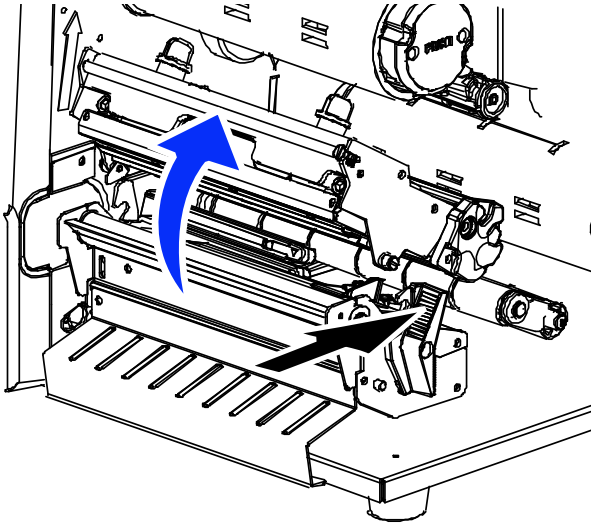
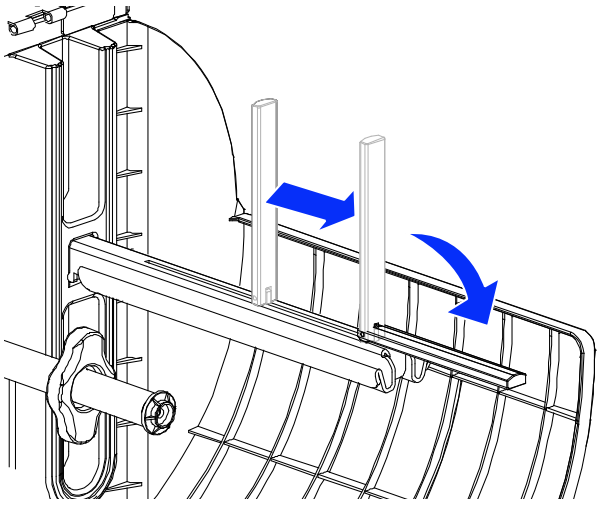


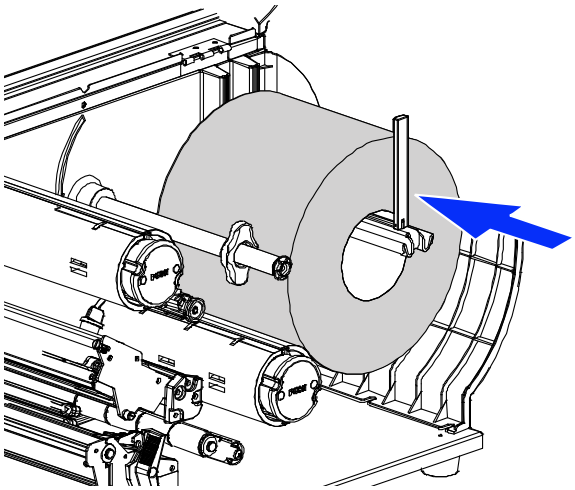
3. Break the ribbon between the ribbon guide bar and the ribbon rewind spindle.



4. Push the ribbon release button and slide the ribbon off from the ribbon rewind spindle.

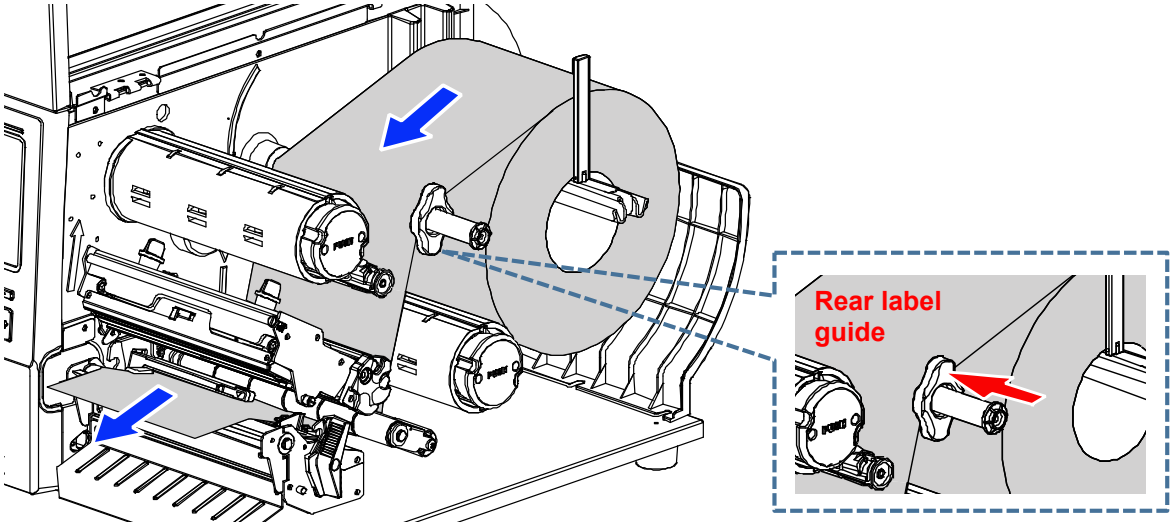
3.4 Loading the Media

	1. Lift the handle to open the printer right side cover.
	2. Push the print head release lever to open the print head mechanism.
	3. Remove the label roll guard from the label spindle.

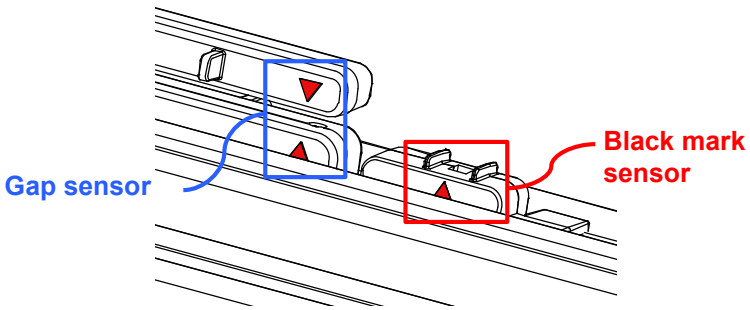


4. Place the roll of media on the label supply spindle and push it to the end of label spindle. Install the label roll guard gently to fit the width of label roll.

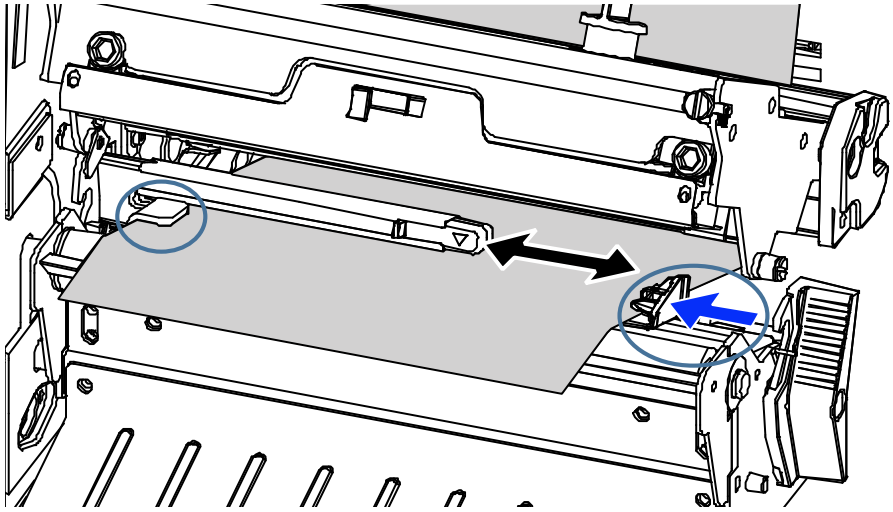
5. Pull label roll leading edge forward through the media guide bar, damper, media sensor (green) and place the label leading edge onto the platen roller. Adjust the rear label guide (green) to fit the width of the label. Move the media sensor at the correct position.



Note:
*** The sensor location is marked by a triangle mark ▽ at the sensor housing.**
*** The media sensor position is moveable, please make sure the gap or black mark is at the location where media gap/black mark will pass through for sensing.**



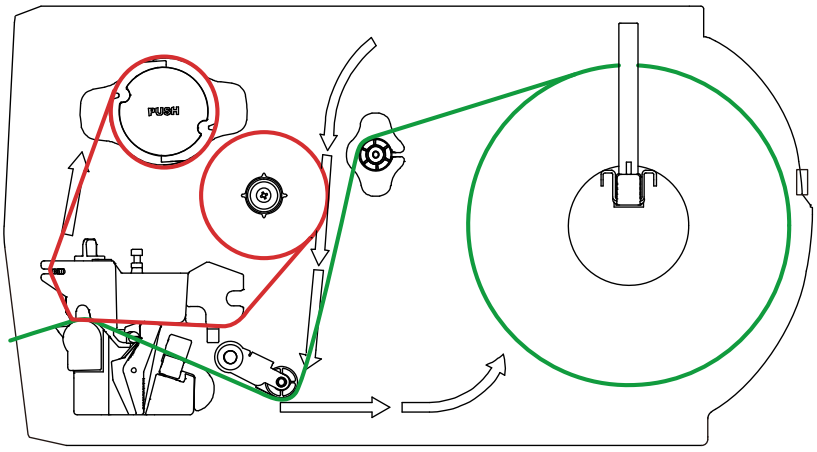
6. Adjust the front label guide to fit the width of the label. Making sure the label is into both label guides.
7. Close the print head mechanism by pushing down on both right and left sides of the deck. Make sure the latches are engaged securely.



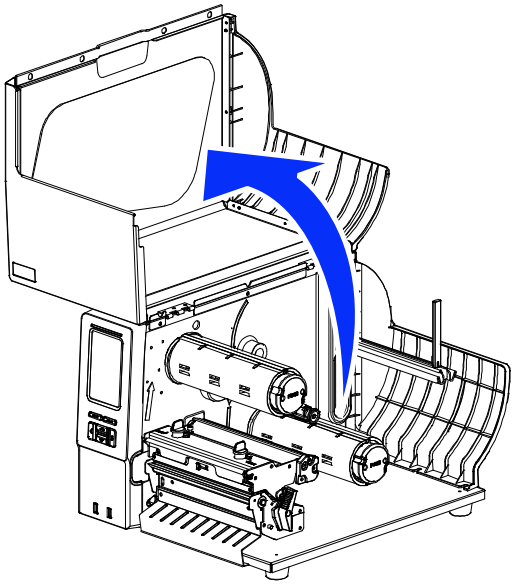
8. Using the front display panel ( ), calibrate the media sensor.

Note:
*** Please calibrate the gap/black mark sensor when changing media.**
*** Please refer to video on TSC YouTube or driver CD.**

Loading path for media & ribbon



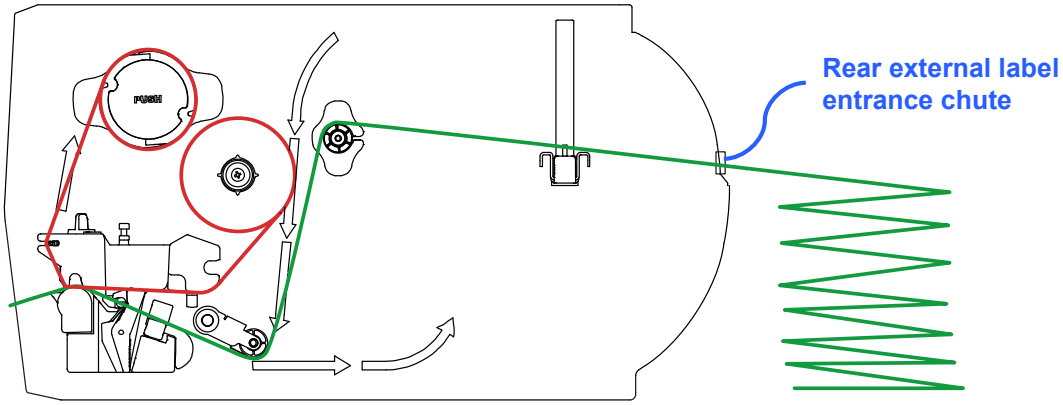
3.5 Loading the Fan-fold Media



1. Lift the handle to open the printer right side cover.

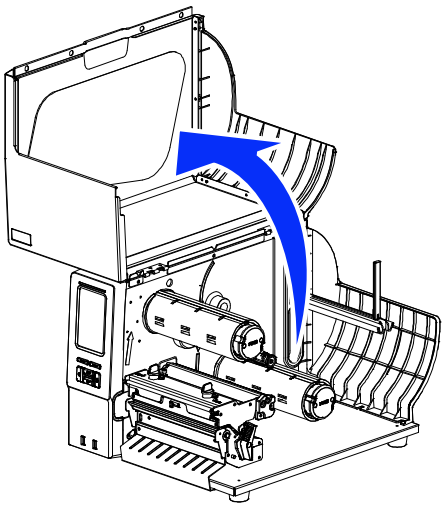
2. Insert the fan-fold media through the rear external label entrance chute. Refer to section 3.4 to loading the media.

3. Using the front display panel ( ), calibrate the media sensor.



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

3.6 Loading Media in Peel-off Mode (Option)



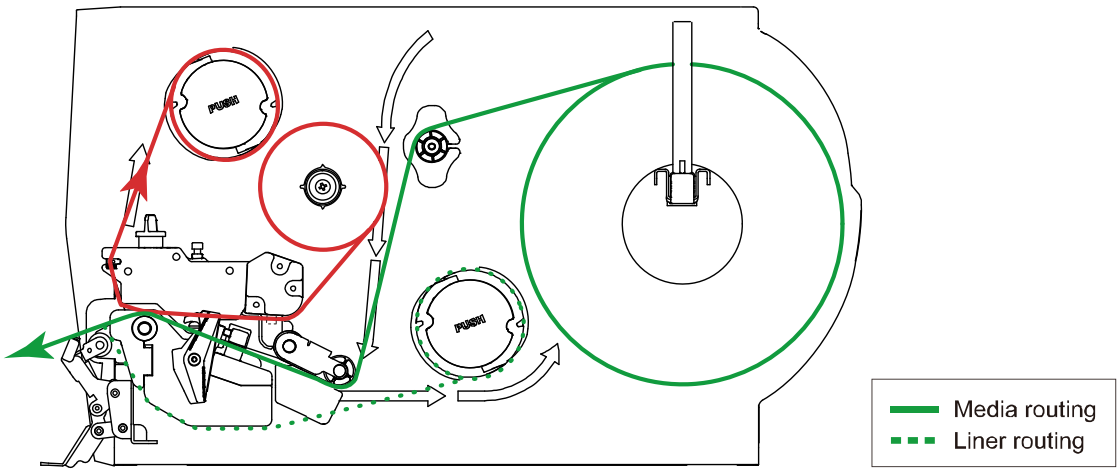
1. Lift the handle to open the printer right side cover and refer to the [Loading the Media] section to load the media.
2. Using the front display panel to calibrate the media. ( )
3. Enter the [Menu] to set peeler mode. (→[Setting]→[Print Mode]→ [Peeler Mode])

Note:

- **Please calibrate the gap/black mark sensor before loading media in peel-off mode to avoid paper jam.**
- **Please calibrate the gap/black mark sensor when changing media.**

4. Open print head release lever to pull approximately 650mm of label through the front of the printer and remove some labels.
5. Open the peeler off cover. Feed the liner between peel-off roller and platen roller.
6. Wrap the label onto the internal rewind spindle and wind the spindle counter-clockwise about 3~5 circles until the liner is properly stretched.
7. Close the peeler off cover and the print head mechanism.
8. Peeling will automatically start. Press the FEED button to test.

Loading path for peeler mode:



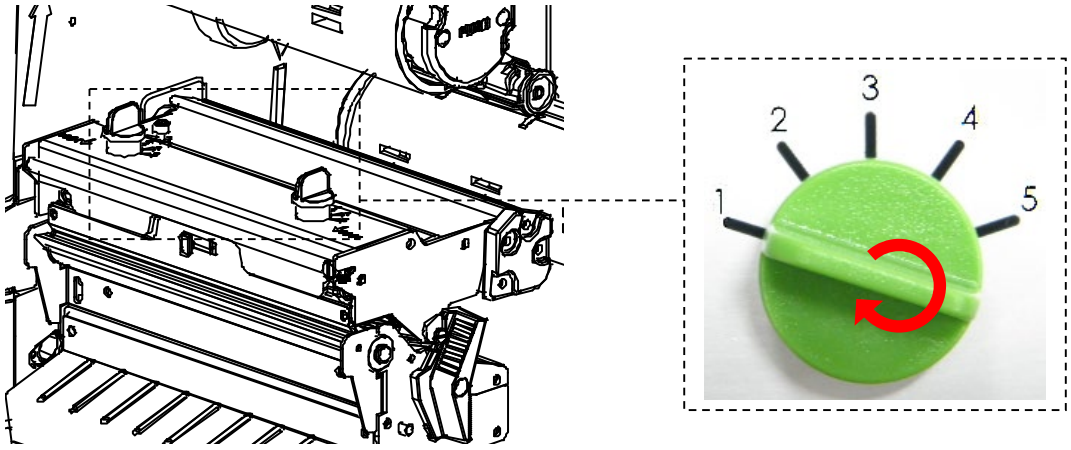
4 Adjustment Knob

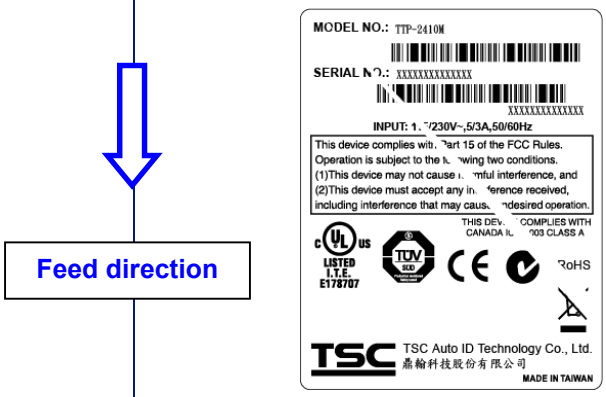
4.1 Print Head Pressure Adjustment Knob

The print head pressure adjustment knob has 5 levels of adjustment. Because the printer's paper alignment is to the left side of mechanism, different media widths require different pressure to print correctly. Therefore it may require to adjust the pressure knob to get your best print quality. For example, if the label width is 4", adjust both print head pressure adjustment knobs to the same level. If the label is less than 2" wide, increase the left side print head pressure by rotating the adjustment knob clockwise and decrease the right side pressure by rotating the adjustment knob counter-clockwise to level 1. Please refer to section 4.4 for more information.

4.2 Mechanism Fine Adjustment to Avoid Ribbon Wrinkles

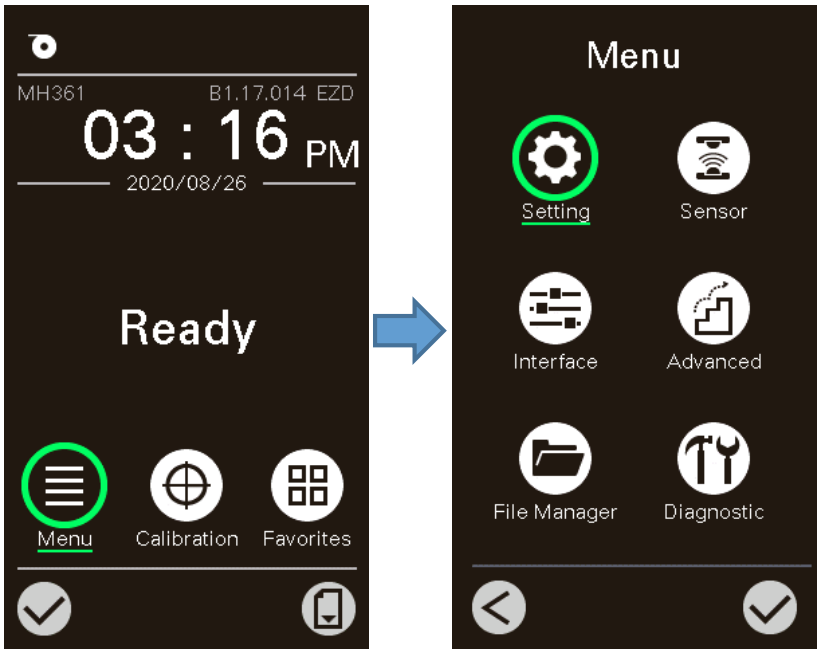
This printer has been fully tested before delivery. There should be no ribbon wrinkle presented on the media for general-purpose printing application. Ribbon wrinkle is related to the media thickness, print head pressure balance, ribbon film characteristics, print darkness setting…etc. In case the ribbon wrinkle happens, please follow the instructions below to adjust the printer parts.

<table>
<tr><td>Adjustable Printer Parts</td><td colspan="2"> 
</td></tr>
<tr><td>Symptom</td><td>1. Wrinkle happens from label lower left to upper right direction ("/")</td><td>2. Wrinkle happens from label lower right to upper left direction ("\")</td></tr>
</table>

Wrinkle Example		
	If the wrinkle on the label starts from the lower left side to upper right side, please do following adjustment. 1. Clockwise direction adjust the ribbon tension adjustment knob to “2” or “1” position. Then check if wrinkle is gone. 2. Decrease the right side print head pressure adjustment knob setting 1 level per each adjustment then print the label again to check if wrinkle is gone. 3. If the right side print head adjustment knob setting has been set to index 1 (the lowest pressure index), please increase the left side print head pressure. 4. If the left side print head adjustment knob setting has been set to 5 (the highest pressure index) the wrinkle can’t be avoid, please rotate the both knobs back to setting 1 then rotate the Z-axis mechanism adjustment knob clockwise for a few degrees and print again for fine tune the print head pressure distribution. **Note for step 4:** *Factory default setting, the Z-axis knob is rotated counter clockwise to the end of thread. *Turn the Z-axis mechanism adjustment knob clockwise until you feel the knob touch the mechanism for the first adjustment. * If the wrinkle is still there, please turn the Z-axis mechanism adjustment knob clockwise about 1/4 circle each time for adjustment * If the winkled direction is change from “/” to “\” by adjusting the Z-axis mechanism adjustment knob, please turn the Z axis mechanism adjustment knob counter clockwise to avoid the wrinkle.	If the wrinkle on the label starts from the lower right side to upper left side, please do following adjustment. 1. Counter clockwise adjust the ribbon tension adjustment knob to “4” or “5” position. Then check if wrinkle is gone. 2. Decrease the left side print head pressure adjustment knob setting 1 level per each adjustment then print the label again to check if wrinkle is gone. 3. If the left side print head adjustment knob level has been set to index 1 (the lowest index), please increase the right side print head pressure.

5 LCD Menu Function

5.1 Enter the Main Menu



*** By touch panel:**

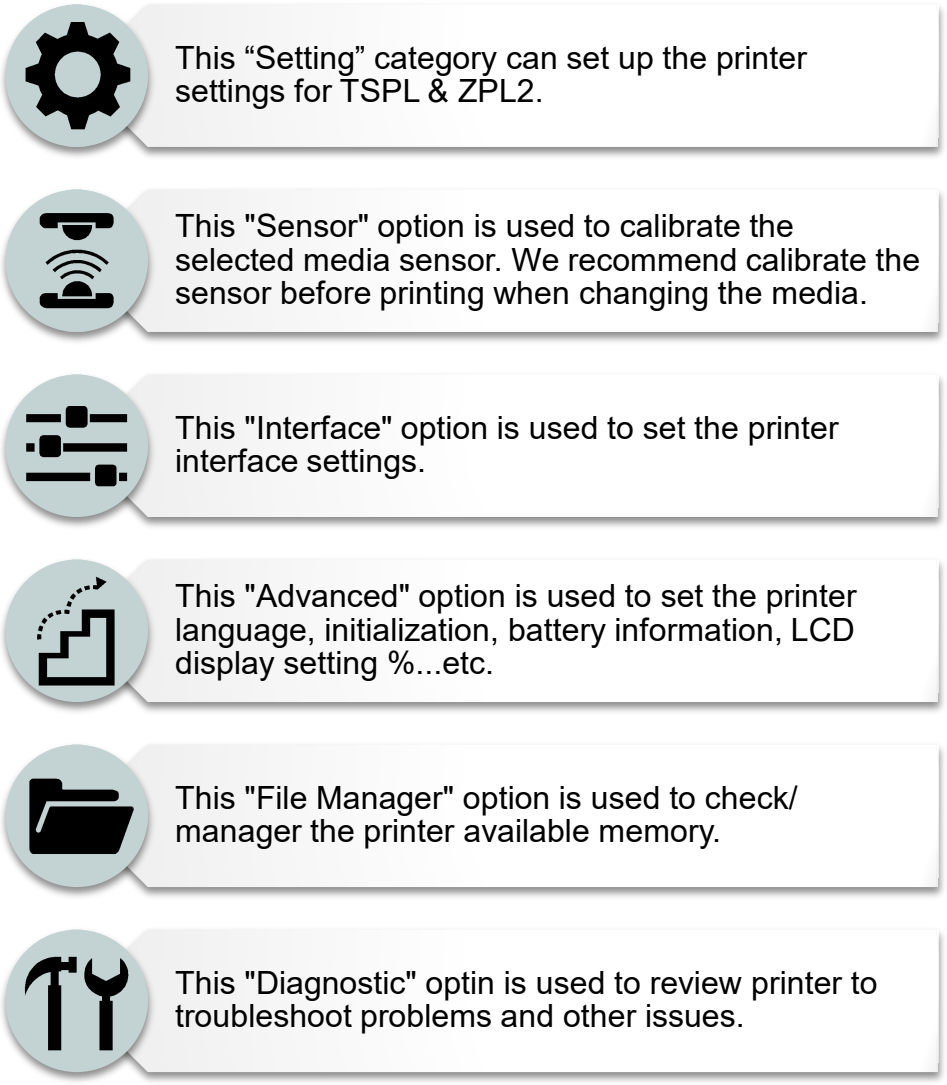
Tap the “Menu” icon on LCD to enter the main menu.

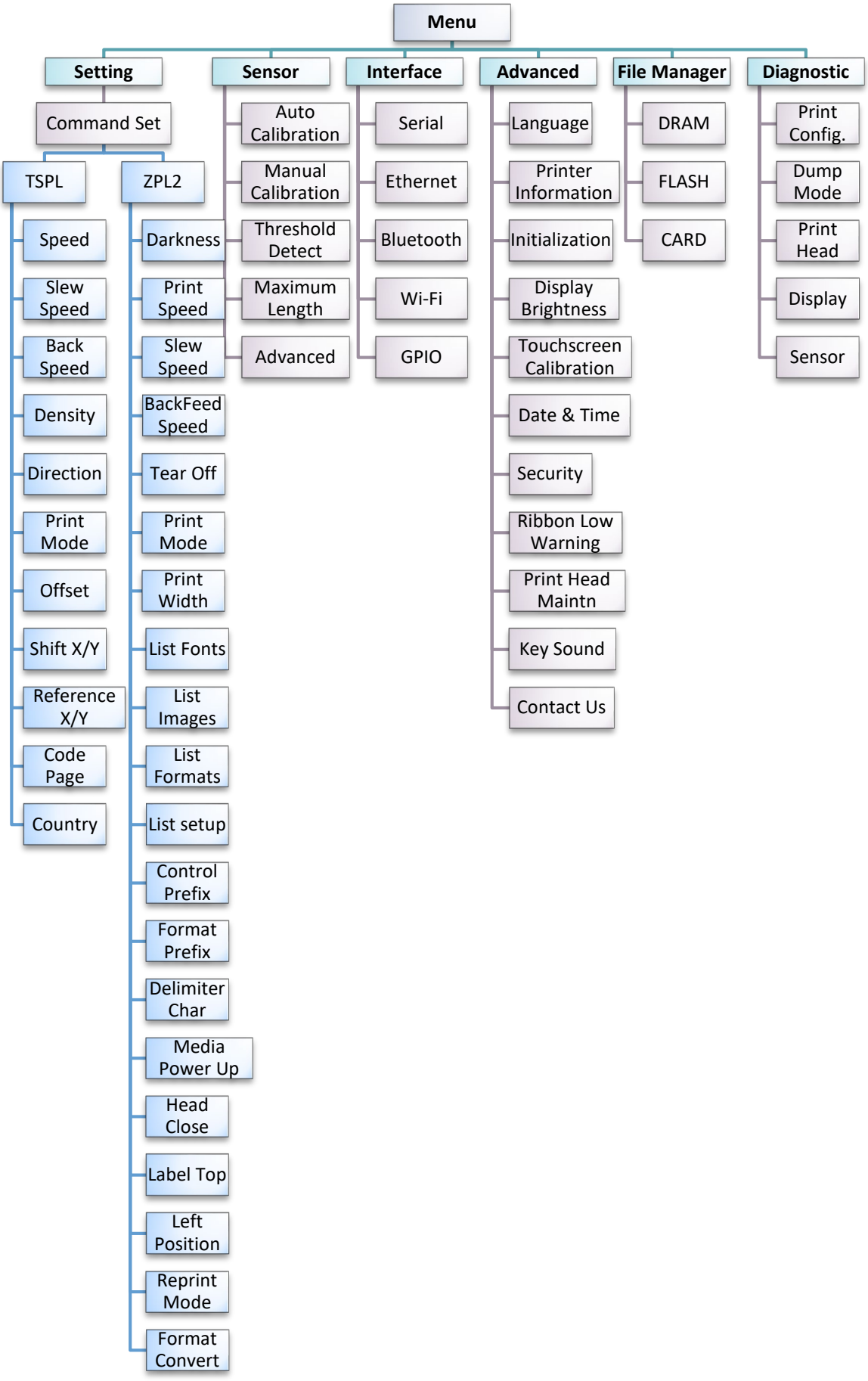
*** By key:**

Press the “Menu” key (Left soft key) to enter the main menu.

5.2 Main Menu Overview

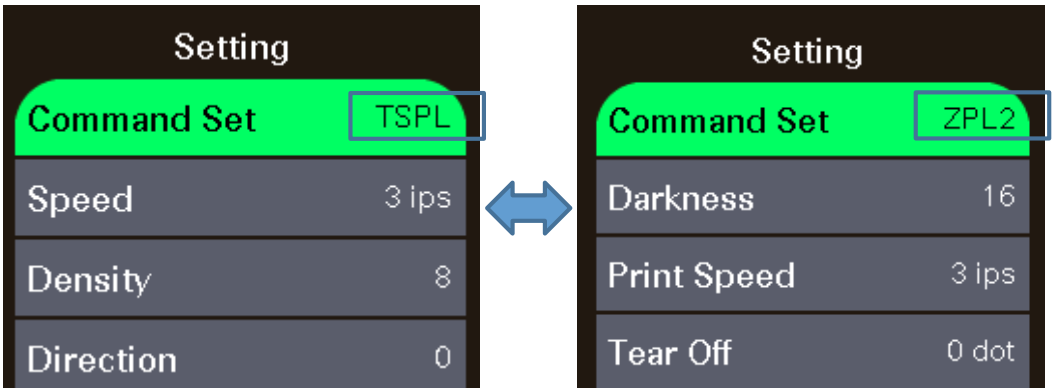
There are 6 categories for the main menu. You can easy to set the settings of printer without connecting the computer. Please refer to following sections for more details.




Menu
Setting
Command Set
TSPL
Speed
Slew Speed
Back Speed
Density
Direction
Print Mode
Offset
Shift X/Y
Reference X/Y
Code Page
Country
ZPL2
Darkness
Print Speed
Slew Speed
BackFeed Speed
Tear Off
Print Mode
Print Width
List Fonts
List Images
List Formats
List setup
Control Prefix
Format Prefix
Delimiter Char
Media Power Up
Head Close
Label Top
Left Position
Reprint Mode
Format Convert
Sensor
Auto Calibration
Manual Calibration
Threshold Detect
Maximum Length
Advanced
Interface
Serial
Ethernet
Bluetooth
Wi-Fi
GPIO
Advanced
Language
Printer Information
Initialization
Display Brightness
Touchscreen Calibration
Date & Time
Security
Ribbon Low Warning
Print Head Maintn
Key Sound
Contact Us
File Manager
DRAM
FLASH
CARD
Diagnostic
Print Config.
Dump Mode
Print Head
Display
Sensor

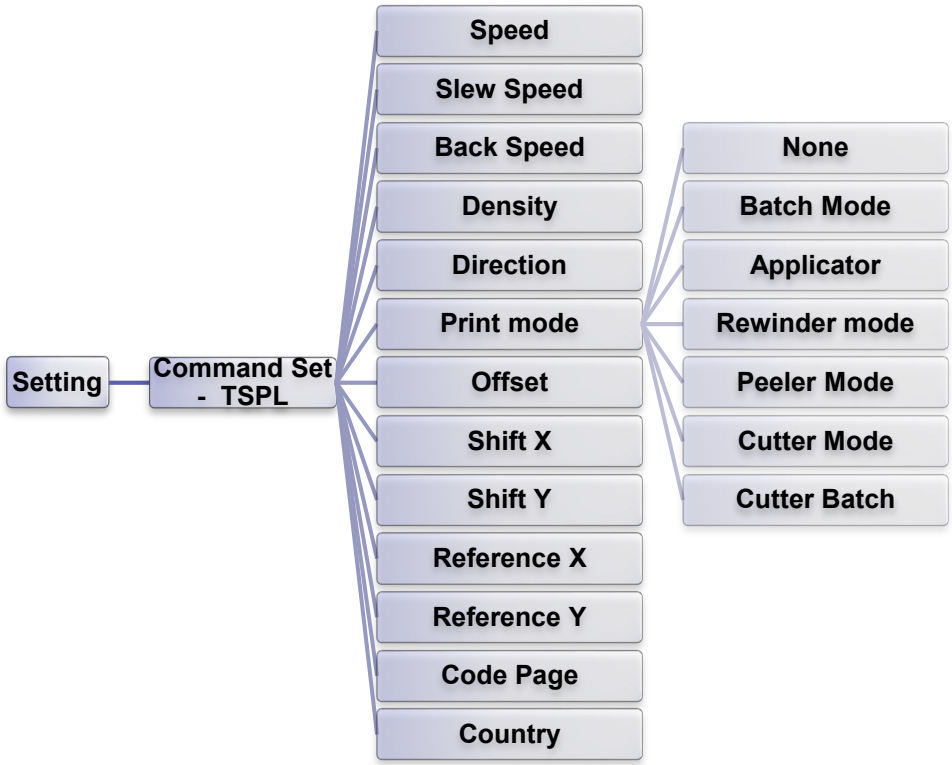
5.3 Setting

This “Setting” category can set up the printer settings for TSPL & ZPL2. Tap the “Command Set” item or press right soft key to switch the TSPL & the ZPL2.

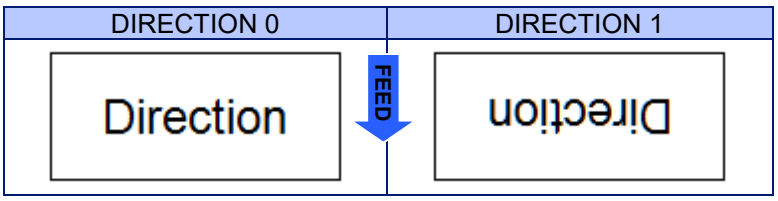


5.3.1 TSPL

This “TSPL” category can set up the printer settings for TSPL2.



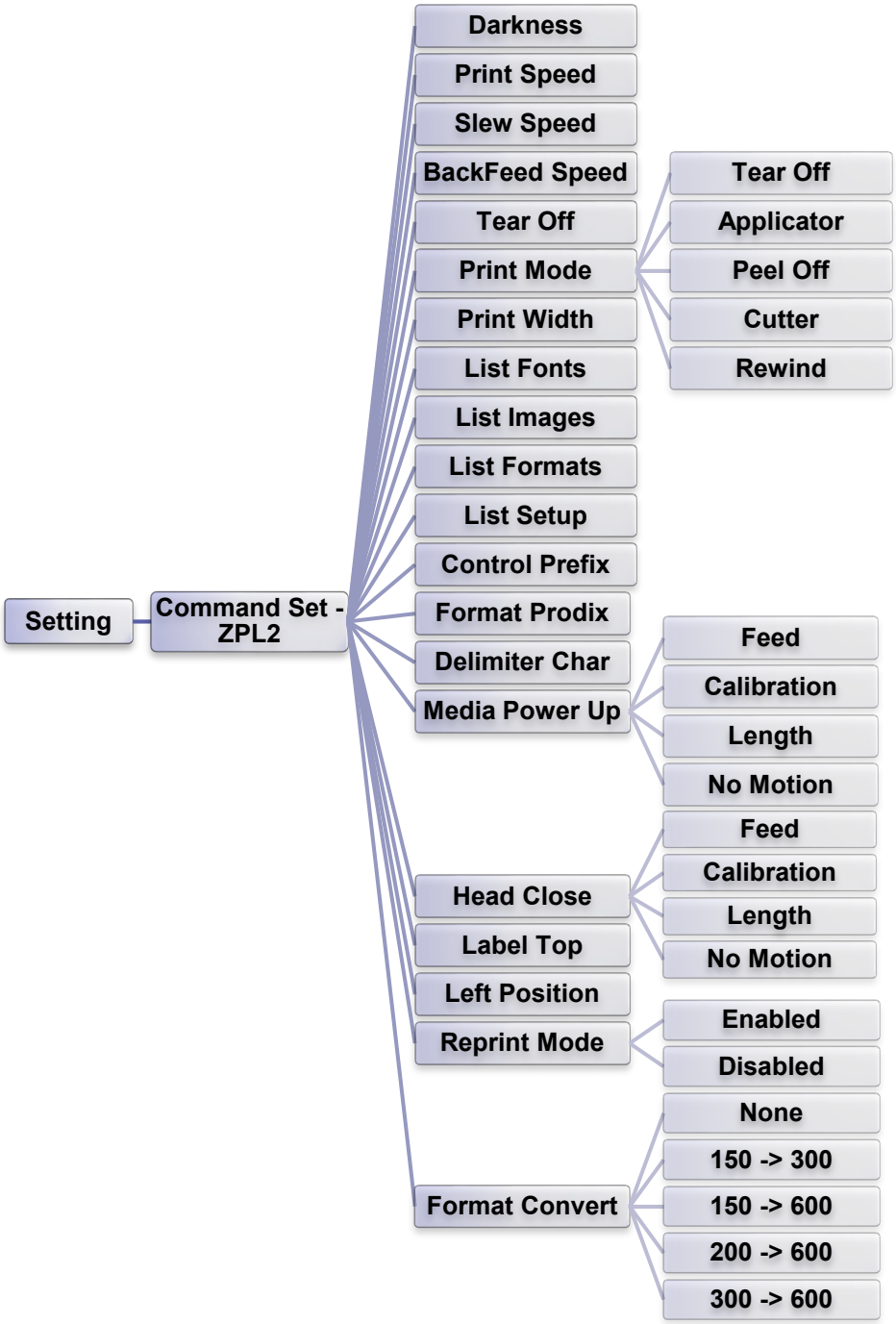
Item	Description	Default
Speed	Use this item to set print speed. The each increase or decrease is 1 ips.	**203dpi: 6** **300dpi: 4**

<table>
<tr><td>Slew Speed</td><td>Use this item to set feed speed. The each increase or decrease is 1 ips.</td><td>203dpi: 6
300dpi: 4</td></tr>
<tr><td>Back Speed</td><td>Use this item to set back speed. The each increase or decrease is 1 ips.</td><td>2</td></tr>
<tr><td>Density</td><td>Use this option to setup printing 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.</td><td>8</td></tr>
<tr><td>Direction</td><td>The direction setting value is either 1 or 0. Use this item to setup the printout direction.
 
</td><td>0</td></tr>
<tr><td>Print mode</td><td>This item is used to set the print mode as below,
<table>
<tr><th>Printer Mode</th><th>Description</th></tr>
<tr><td>None</td><td>Next label top of form is aligned to the print head burn line location. (Tear Off Mode)</td></tr>
<tr><td>Batch Mode</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>Peeler Mode</td><td>Enable the label peel off mode.</td></tr>
<tr><td>Cutter Mode</td><td>Enable the label cutter mode.</td></tr>
<tr><td>Cutter Batch</td><td>Cut the label once at the end of the printing job.</td></tr>
<tr><td>Rewinder Mode</td><td>Enable the label rewind mode</td></tr>
<tr><td>Applicator</td><td>The printer prints a label when it receives a signal from the applicator.</td></tr>
</table></td><td>Batch Mode</td></tr>
<tr><td>Offset</td><td>This item is used to fine tune media stop location. Available setting value is from “+” to “-” or “0” to “9”.</td><td>0 dot</td></tr>
<tr><td>Shift X</td><td rowspan="2">This item is used to fine tune print position. Available setting value is from “+” to “-” or “0” to “9”.</td><td>0 dot</td></tr>
<tr><td>Shift Y</td><td>0 dot</td></tr>
<tr><td>Reference X</td><td rowspan="2">This item is used to set the origin of printer coordinate system horizontally and vertically. Available setting value is from “0” to “9”.</td><td>0 dot</td></tr>
<tr><td>Reference Y</td><td>0 dot</td></tr>
<tr><td>Code page</td><td>Use this item to set the code page of international character set.</td><td>850</td></tr>
<tr><td>Country</td><td>Use this option to set the country code.</td><td>001</td></tr>
</table>

Note: If printing from enclosed software/driver, the software/driver will send out the commands, which will overwrite the settings set from the panel.

5.3.2 ZPL2

This “ZPL2” category can set up the printer settings for ZPL2.



Item	Description	Default
Darkness	Use this item to setup printing darkness. The available setting is from 0 to 30, and the step is 1. You may need to adjust your density based on selected media.	**16**

<table>
<tr><td>Print Speed</td><td>Use this item to set print speed. The each increase or decrease is 1 ips.</td><td>203dpi: 6
300dpi: 4</td></tr>
<tr><td>Slew Speed</td><td>Use this item to set feed speed. The each increase or decrease is 1 ips.</td><td>203dpi: 6
300dpi: 4</td></tr>
<tr><td>BackFeed Speed</td><td>Use this item to set back feed speed. The each increase or decrease is 1 ips.</td><td>2</td></tr>
<tr><td>Tear Off</td><td>This item is used to fine tune media stop location. Available setting value is from “+” to “-” or “0” to “9”.</td><td>0 dot</td></tr>
<tr><td>Print Mode</td><td>This item is used to set the print mode. There are 3 modes as below,

<table><tr><th>Printer Mode</th><th>Description</th></tr><tr><td>Tear Off</td><td>Next label top of form is aligned to the print head burn line location.</td></tr><tr><td>Peel Off</td><td>Enable the label peel off mode.</td></tr><tr><td>Rewind</td><td>Enable the label rewind mode</td></tr><tr><td>Applicator</td><td>The printer prints a label when it receives a signal from the applicator.</td></tr><tr><td>Cutter</td><td>Enable the label cutter mode</td></tr></table></td><td>Tear Off</td></tr>
<tr><td>Print Width</td><td>This item is used to set print width. The available value is from “0” to “9”.</td><td>1800 dot</td></tr>
<tr><td>List Fonts</td><td>This feature is used to print current printer available fonts list to the label. The fonts stored in the printer’s DRAM, Flash or optional memory card.</td><td>N/A</td></tr>
<tr><td>List Images</td><td>This feature is used to print current printer available images list to the label. The images stored in the printer’s DRAM, Flash or optional memory card.</td><td>N/A</td></tr>
<tr><td>List Formats</td><td>This feature is used to print current printer available formats list to the label. The formats stored in the printer’s DRAM, Flash or optional memory card.</td><td>N/A</td></tr>
<tr><td>List Setup</td><td>This feature is used to print current printer configuration to the label.</td><td>N/A</td></tr>
<tr><td>Control Prefix</td><td>This feature is used to set control prefix character.</td><td>7E(~)</td></tr>
<tr><td>Format Prefix</td><td>This feature is used to set format prefix character.</td><td>5E(^)</td></tr>
<tr><td>Delimiter Char</td><td>This feature is used to set delimiter character.</td><td>2C(,)</td></tr>
<tr><td>Media Power Up</td><td>This option is used to set the action of the media when you turn on the printer.

<table><tr><th>Selections</th><th>Description</th></tr><tr><td>Feed</td><td>Printer will advance one label</td></tr><tr><td>Calibration</td><td>Printer will calibration the sensor levels, determine length and feed label</td></tr><tr><td>Length</td><td>Printer determine length and feed label</td></tr><tr><td>No Motion</td><td>Printer will not move media</td></tr></table></td><td>No Motion</td></tr>
</table>

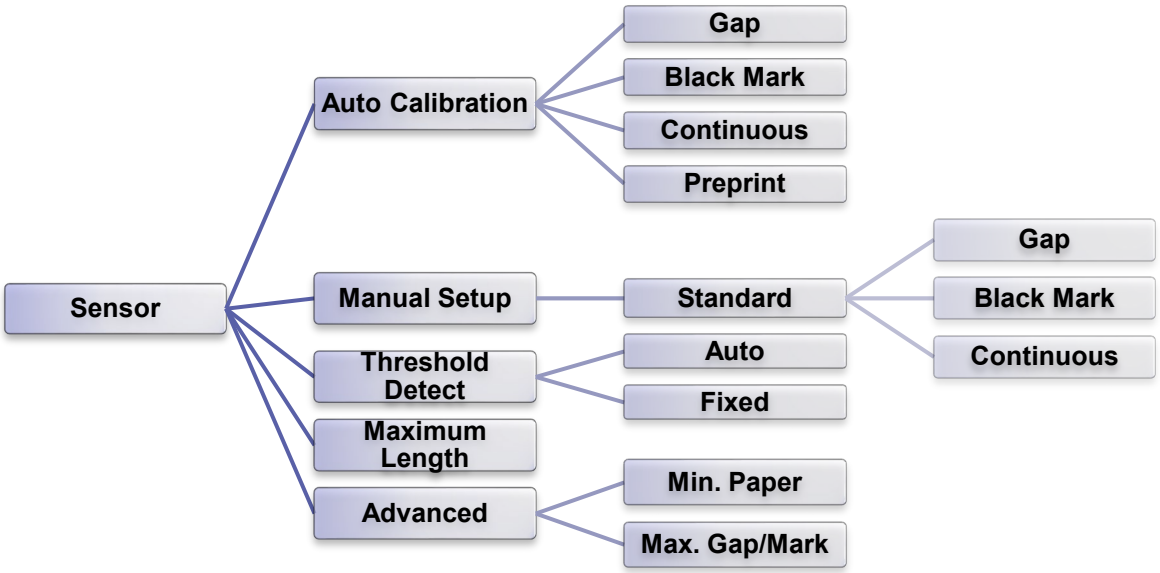
<table>
<tr>
<td>Head Close</td>
<td>This option is used to set the action of the media when you close the print head.

<table>
<tr><th>Selections</th><th>Description</th></tr>
<tr><td>Feed</td><td>Printer will advance one label</td></tr>
<tr><td>Calibration</td><td>Printer will calibration the sensor levels, determine length and feed label</td></tr>
<tr><td>Length</td><td>Printer determine length and feed label</td></tr>
<tr><td>No Motion</td><td>Printer will not move media</td></tr>
</table>
</td>
<td>No Motion</td>
</tr>
<tr><td>Label Top</td><td>This option is used to adjust print position vertically on the label. The range is -120 to +120 dots.</td><td>0 dot</td></tr>
<tr><td>Left Position</td><td>This option is used to adjust print position horizontally on the label. The range is -9999 to +9999 dots.</td><td>0</td></tr>
<tr><td>Reprint Mode</td><td>When reprint mode is enabled, you can reprint the last label printer by pressing △ button on printer’s control panel.</td><td>Disabled</td></tr>
<tr><td>Format Convert</td><td>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.</td><td>None</td></tr>
</table>

Note: If printing from enclosed software/driver, the software/driver will send out the commands, which will overwrite the settings set from the panel.

5.4 Sensor

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

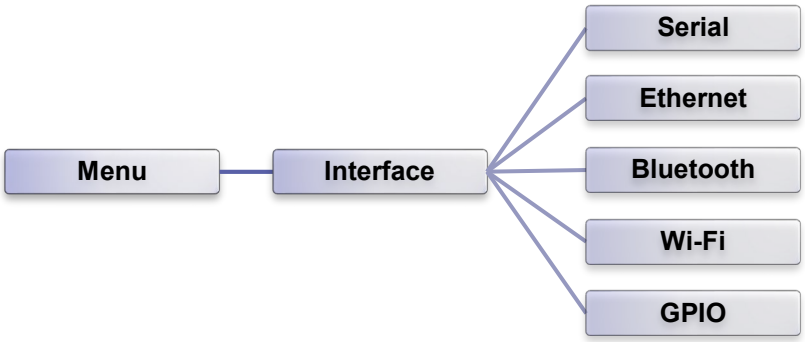


Item	Description	Default
Auto Calibration	This option is used to set the media sensor type and calibrate the selected sensor automatically. Printer will feed 2 to 3 gap labels to calibrate the sensor sensitivity automatically.	**N/A**
Manual setup	In case “Automatic” cannot apply to the media, please use “Manual” function to set the paper length and gap/bline size then scan the backing/mark to calibrate the sensor sensitivity.	**N/A**
Threshold Detect	This option is used to set sensor sensitivity in fixed or auto.	**Auto**
Maximum Length	This option is used to set the maximum length for label calibration.	**762 mm**
Advanced	This function can set the minimum paper length and maximum gap/bline length for auto-calibrate the sensor sensitivity.	**N/A**

5.5 Interface

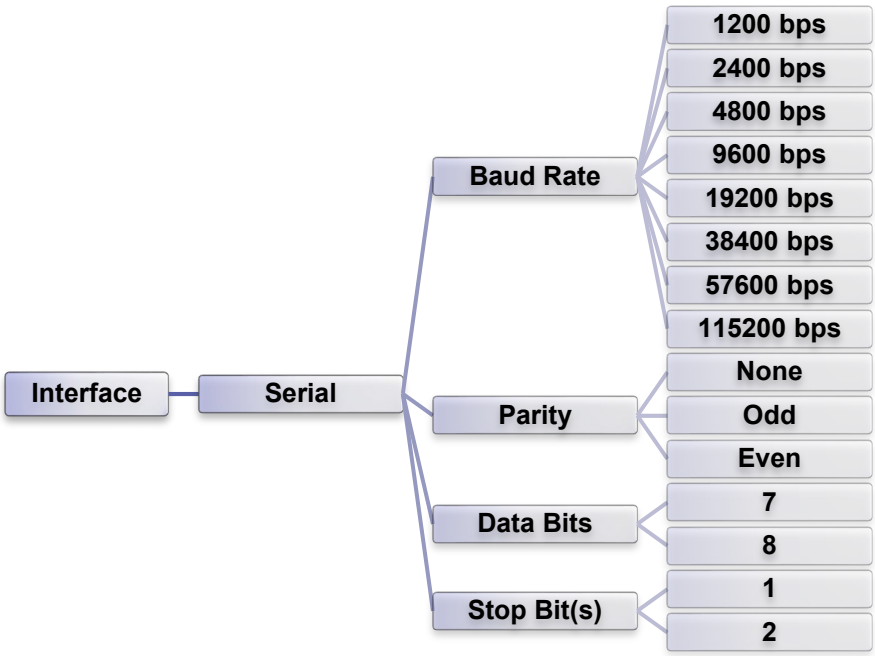
This option is used to set the printer interface settings.

Note: This subsection will only be visible when the option installed.



5.5.1 Serial Comm.

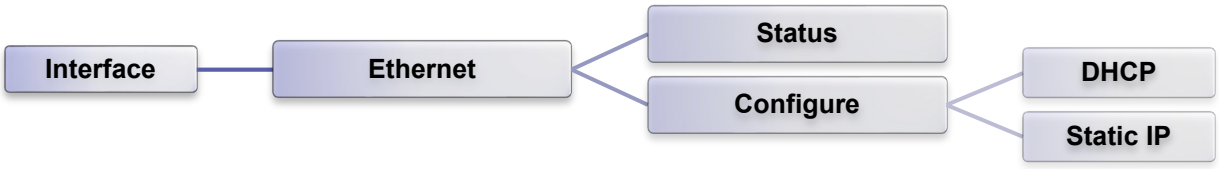
This option is used to set the printer RS-232 settings.



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

5.5.2 Ethernet

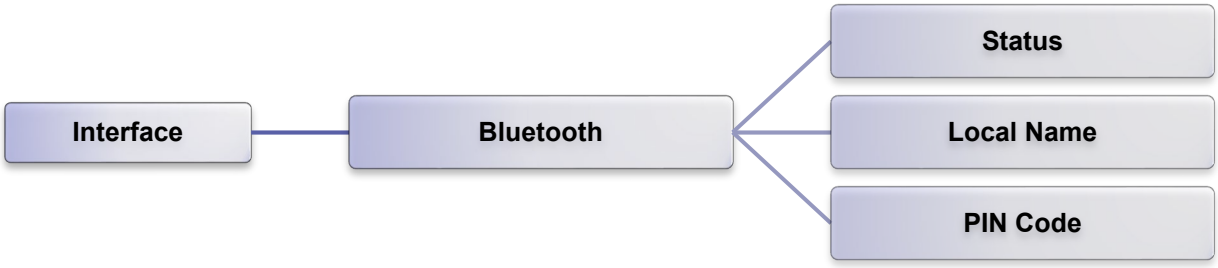
Use this menu to configure internal Ethernet configuration check the printer's Ethernet module status, and reset the Ethernet module.



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

5.5.3 Bluetooth

Use this menu to check the Bluetooth status and to set the PIN code.

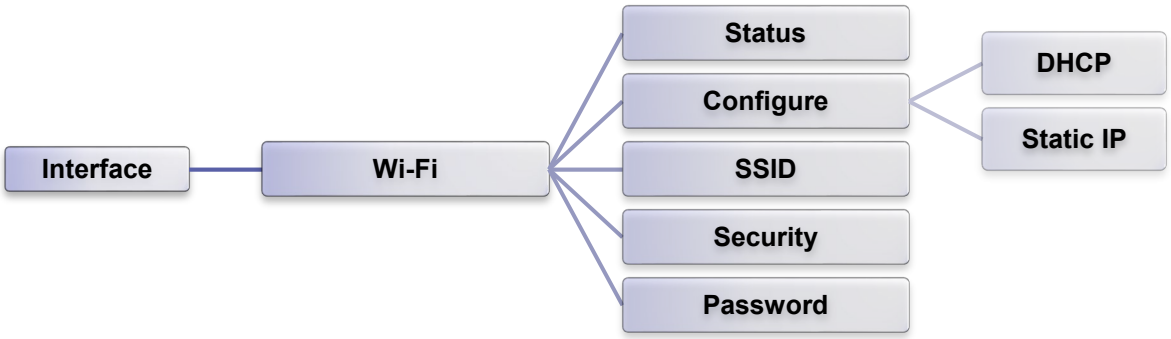


Note: This subsection will only be visible when the Bluetooth option installed.

Item	Description	Default
Status	This item is used to check the Bluetooth status	**N/A**
Local Name	This item is used to set the local name for Bluetooth	**N/A**
PIN Code	This item is used to set PIN code for Bluetooth	**0000**

5.5.4 Wi-Fi

Use this menu to check the status and to set the Wi-Fi settings.

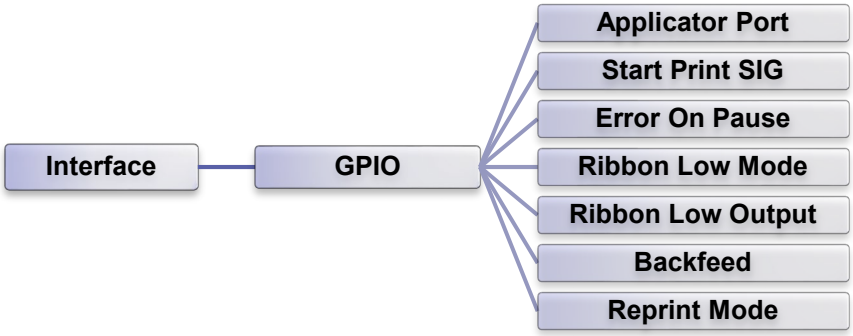


Note: This subsection will only be visible when the Wi-Fi option installed.

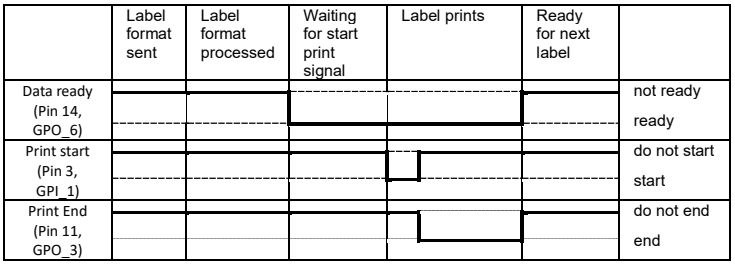
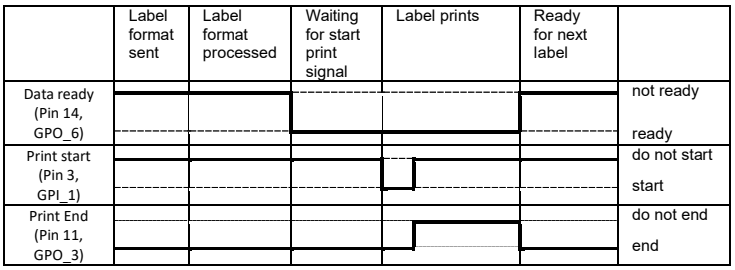
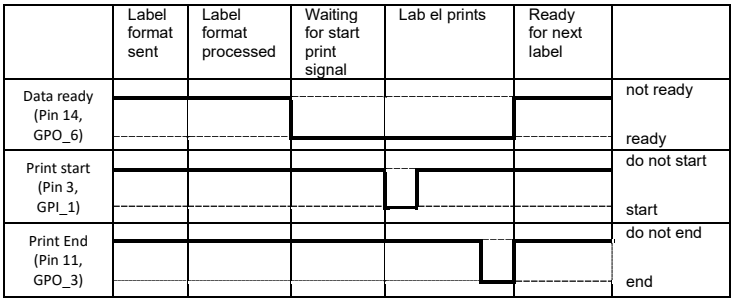
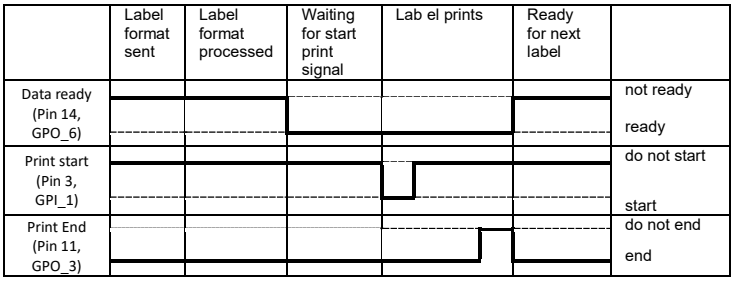
Item	Description	Default
Status	This item is used to check the Wi-Fi status	**N/A**
Configure	This item is used to set the Wi-Fi configure	**DHCP**
SSID	This item is used to set the SSID	**N/A**
Security	This item is used to set the security	**Open**
Password	This item is used to set the security key	**N/A**

5.5.5 GPIO

This option is used to set the print engine GPIO settings.



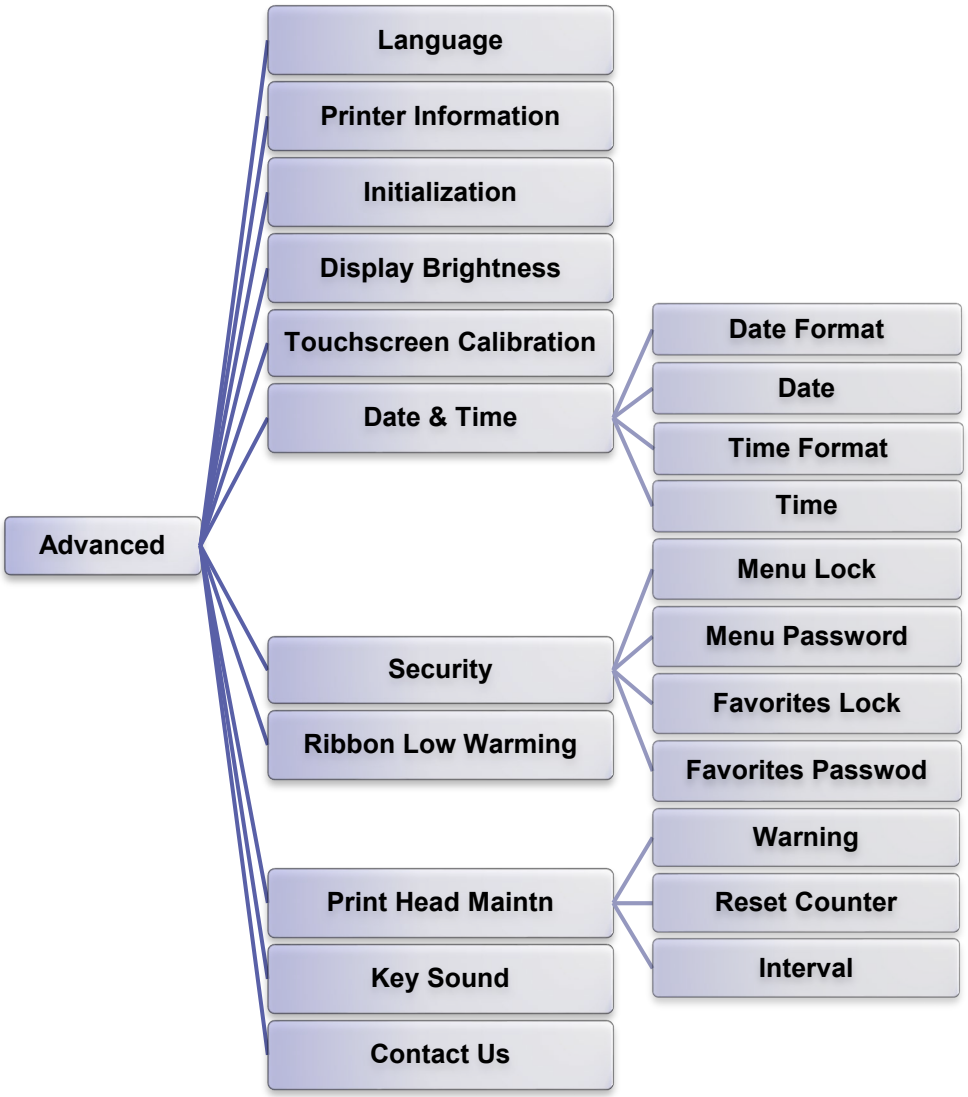
Note: This subsection will only be visible when the GPIO option installed.

<table>
<tr><th>Item</th><th>Description</th><th>Default</th></tr>
<tr><td>Applicator Port</td><td>This option is used to set the GPO_3 signal when PRINT END.
<table>
<tr><th>Selections</th><th>Description</th></tr>
<tr><td>Off</td><td>The applicator port is off.</td></tr>
<tr><td>Mode 1</td><td> 
</td></tr>
<tr><td>Mode 2</td><td> 
</td></tr>
<tr><td>Mode 3</td><td> 
</td></tr>
<tr><td>Mode 4</td><td> 
</td></tr>
</table></td><td>Off</td></tr>
<tr><td>Start Print SIG</td><td>This determines the trigger conditions for the printer to control GPI 1 and GPI4.</td><td>Level mode</td></tr>
<tr><td>Error On Pause</td><td>When this option is enabled and the printer is paused, the error signal (GPO_2) is LOW.</td><td>Enable</td></tr>
<tr><td>Ribbon Low Mode</td><td>When this option is enabled and the printer is Low Ribbon (GPO_1), the printer will generate a warning.</td><td>Enable</td></tr>
<tr><td>Ribbon Low Output</td><td>When the Ribbon Low Mode feature is enabled, this parameter determines if the output signal on Pin 9 (GPO_1) is HIGH or LOW.</td><td>Active High</td></tr>
</table>

Backfeed	This determines the timing of pullback.	**Default**
Reprint Mode	When this option is disabled, the printer reprint function (GPI_4) will be invalid.	**Disable**

5.6 Advanced

This feature is used to set the printer advanced settings.

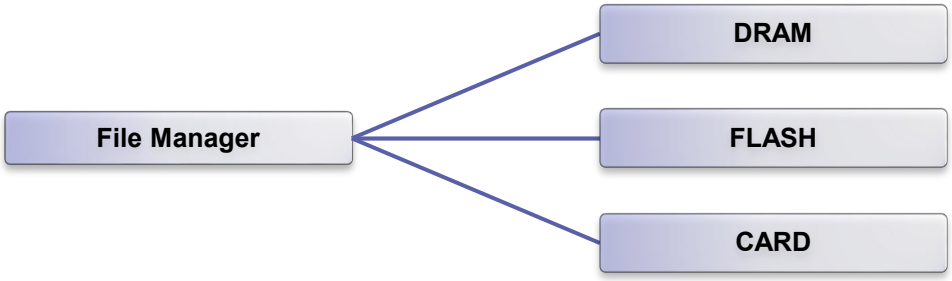


Item	Description	Default
Language	This item is used to setup the language on display.	**English**
Printer Information	This feature is used to check the printer serial number, printed mileage (m), printed labels (pcs), etc.	**N/A**
Initialization	This feature is used to restore printer settings to defaults.	**N/A**
Display Brightness	This item is used to setup the brightness for display. (Range 0~100)	**50**
Touchscreen Calibration	This feature is used to calibrate the touchscreen for best result.	**N/A**
Date & Time	This item is used to setup the date and time on display.	**N/A**

<table>
<tr><td>Security</td><td>This feature is used to set the password for locking the menu/favorites. The default password is 8888.</td><td>Disable</td></tr>
<tr><td>Ribbon Low Warning</td><td>This item is used to set the warning for ribbon low. For example, if setting value is 30 m, when ribbon capacity was lower than 30m, the will be shown in red.</td><td>30 m</td></tr>
<tr><td>Printer Head Maintn</td><td>This item is used to check print head status and to set the settings for print head care.
<table><tr><th>Item</th><th>Description</th></tr><tr><td>Warning</td><td>This item is used to enable/disable the print head clean warning. If enable this feature, once print head has been reached the setting mileage then the warning icon will be shown on printer UI for reminding user to clean the print head. The default setting is disable.</td></tr><tr><td>Reset Counter</td><td>This item is used to reset the print head clean warning mileage after cleaned print head.</td></tr><tr><td>Interval</td><td>This item is used to set the expected mileage for reminding user to clean the print head. You have to enable the “TPH warning lock” for use. The default setting is 1 km.</td></tr></table></td><td>Disable</td></tr>
<tr><td>Key Sound</td><td>This feature is used to ON/OFF the printer key sound</td><td>ON</td></tr>
<tr><td>Contact us</td><td>This feature is used to check the contact information for tech support service.</td><td>N/A</td></tr>
</table>

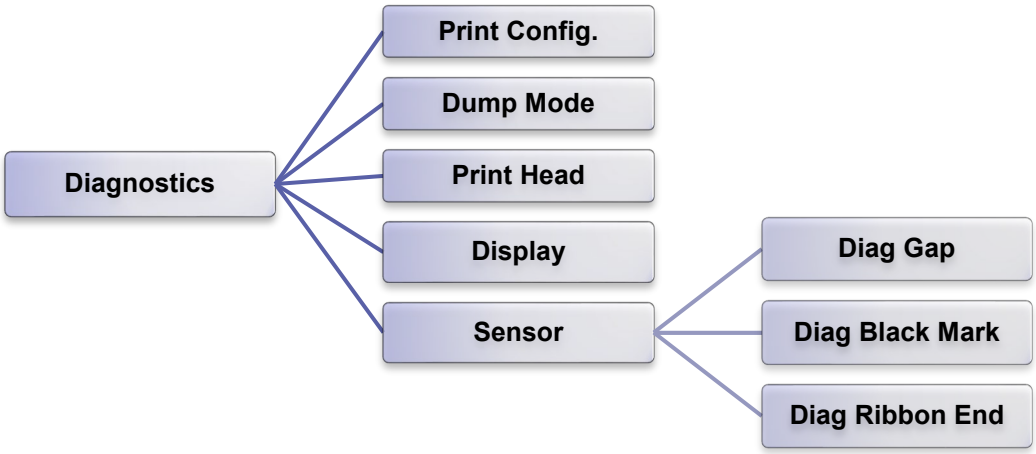
5.7 File Manager

This feature is used to check the printer available memory, show the files list, delete the files or run the files that saved in the printer DRAM/Flash/Card memory.



Item	Description
DRAM	Use this menu to show, delete and run (.BAS) the files saved in the printer DRAM memory.
FLASH	Use this menu to show, delete and run (.BAS) the files saved in the printer Flash memory.
CARD	Use this menu to show, delete and run (.BAS) the files saved in the SD card on printer. **Note:** **This subsection will only be visible when the SD card installed.**

5.8 Diagnostics



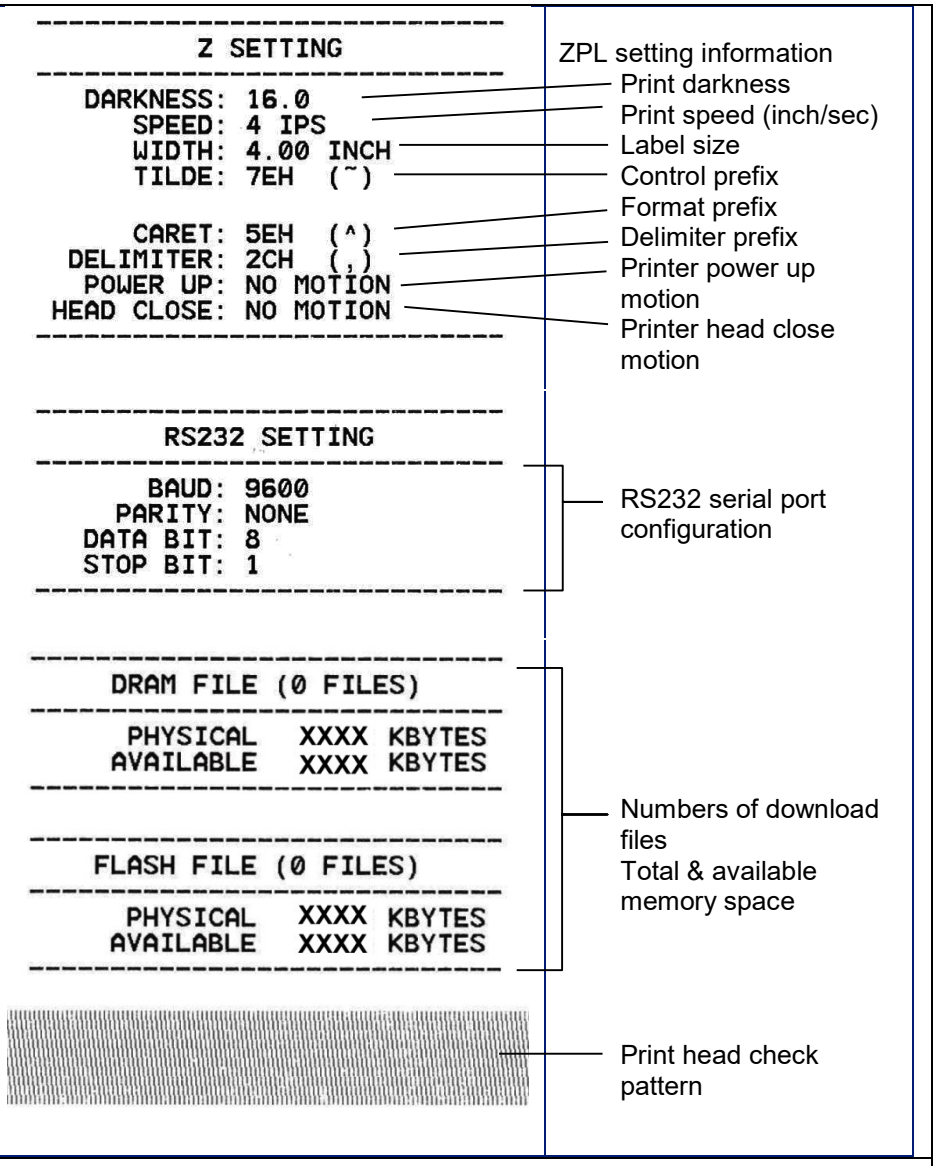
Item	Description
Print Config.	This feature is used to print current printer configuration to the label. On the configuration printout, there is a print head test pattern, which is useful for checking if there is any dot damage on the print head heater element. ***Note:*** ***Checking dot damage requires 6" wide paper width.*** **Self-test printout**

```
------------------------------
     SYSTEM INFORMATION
------------------------------
       MODEL: XXXXXX
    FIRMWARE: X.XX
    CHECKSUM: XXXXXXXX
         S/N: XXXXXXXXXXX
         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
------------------------------
```

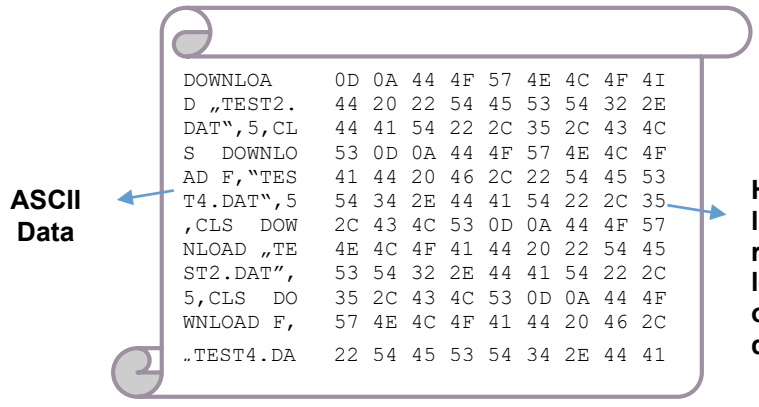
Model name
F/W version
Firmware checksum
Printer S/N
TSC configuration file
System date
System time
Printed mileage (meter)
Cutting counter

Print speed (inch/sec)
Print darkness
Label size (inch)
Gap distance (inch)
Gap/black mark sensor intension
Code page
Country code



Dump Mode

Captures the data from the communications port and prints out the data received by 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.



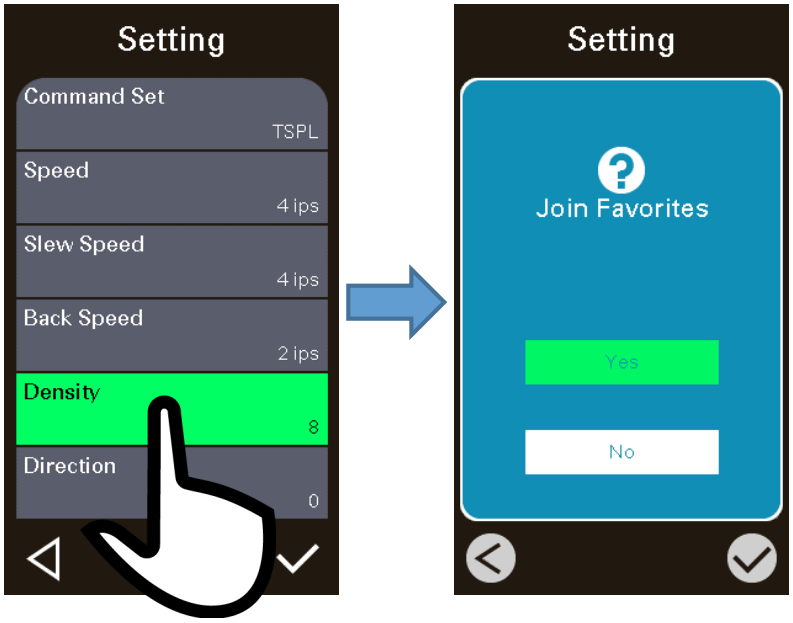
Print Head	This feature can check the temperature, resistance and bad dots for print head.
Display	This feature can check the display for printer.
Sensor	This feature can check the intension & reading values for printer sensors.

5.9 How to Organize the “Favorites”

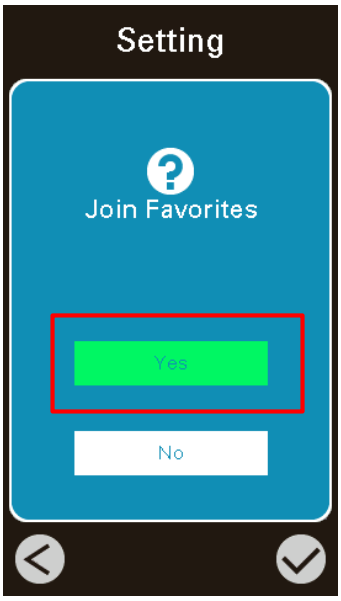
This “Favorites” feature can create customized menu. You can organize the commonly used setting options to the Favorites.

Please follow the steps below to organize,

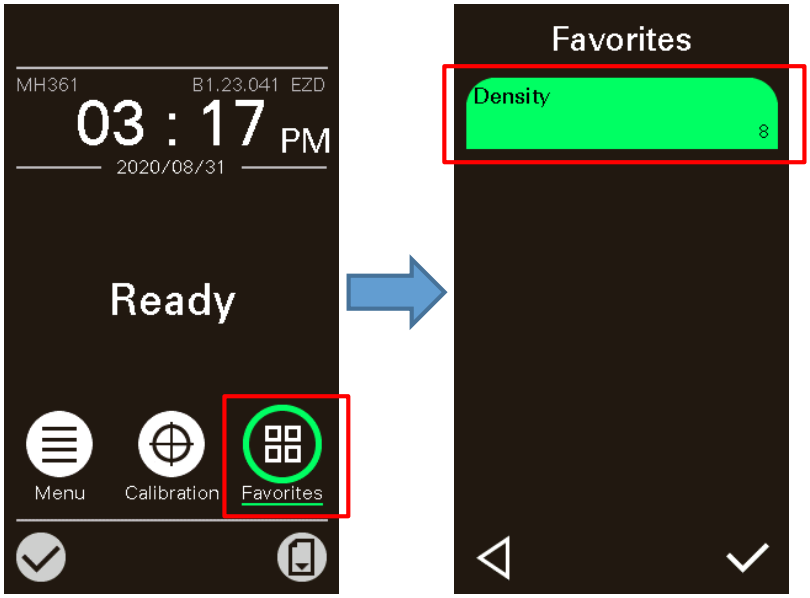
1. Select the menu option that will be added in “Favorites”. (be selected in green)
2. Tap and hold the option that on touch panel, unit “Join Favorites” setting screen pop up.



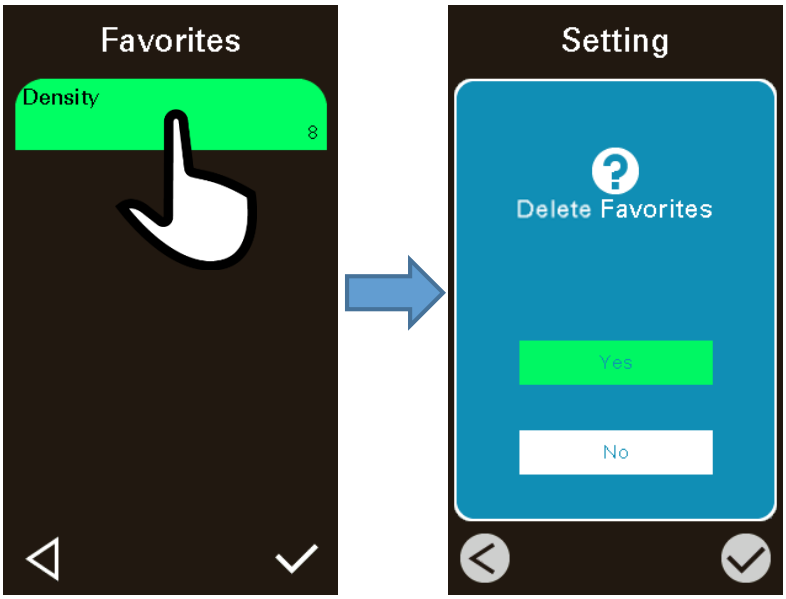
3. Select “Yes” to join this “Density” option to “Favorites”.



4. Tap icon to enter the “Favorites” menu to check if it be added into the “Favorites”.



Note:
Tap and hold the on the option of favorite, unit “Delete Favorites” setting screen pop up. Select “Yes” to delete this setting option item on “Favorites”.

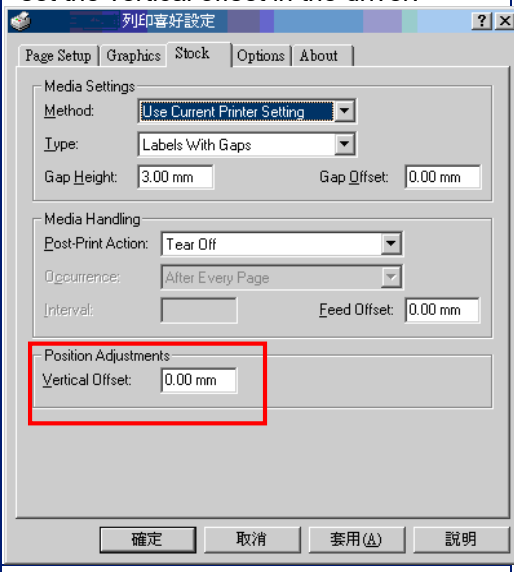


6 Troubleshooting

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
Power indicator does not illuminate	* The power cord is not properly connected.	* Plug the power cord in printer and outlet. * Switch the printer on.
Carriage Open	* The printer carriages are open.	* Please close the print carriages.
Not Printing	* Check if interface cable is well connected to the interface connector. * Check if wireless or Bluetooth device is well connected between host and printer. * The port specified in the Windows driver is not correct.	* Re-connect cable to interface or change a new cable. * Please reset the wireless device setting. * Select the correct printer port in the driver. * Printhead's harness connector is not well connected with printheat. Turn off the printer and plug the connector again. * Check your program if there is a command PRINT at the end of the file and there must have CRLF at the end of each command line.
No print on the label	* Label or ribbon is loaded not correctly. * Use wrong type paper or ribbon * The print density setting is incorrect.	* Follow the instructions in loading the media and ribbon. * Ribbon and media are not compatible. * Verify the ribbon-inked side. * Reload the ribbon again. * Clean the printhead. * Set the correct density with media
No Ribbon	* Running out of ribbon. * The ribbon is installed incorrectly.	* Supply a new ribbon roll. * Please refer to the steps in user's manual to reinstall the ribbon.
No Paper	* Running out of label. * The label is installed incorrectly. * Gap/black mark sensor is not calibrated.	* Supply a new label roll. * Please refer to the steps in user's manual to reinstall the label roll. * Calibrate the gap/black mark sensor.
Paper Jam	* Gap/black mark sensor is not set properly. * Make sure label size is set properly. * Labels may be stuck inside the printer mechanism.	* Calibrate the media sensor. * Set media size correctly. * Remove the stuck label inside the printer mechanism.
Take Label	* Peel function is enabled.	* If the peeler module is installed, please remove the label. * If there is no peeler module in front of the printer, please switch off the printer and install it. * Check if the connector is plugging correctly.

Can't downloading the file to memory (FLASH / DRAM/CARD)	* The space of memory is full.	* Delete unused files in the memory.
SD card is unable to use	* SD card is damaged. * SD card doesn't insert correctly.	* Use the supported capacity SD card. * Insert the SD card again.
Poor Print Quality	* Ribbon and media is loaded incorrectly * Dust or adhesive accumulation on the print head. * Print density is not set properly. * Print speed is not set properly. * Printhead element is damaged. * Ribbon and media are incompatible. * The printhead pressure is not set properly.	* Reload the supply. * Clean the print head. * Clean the platen roller. * Adjust the print density and print speed. * Run printer self-test and check the print head test pattern if there is dot missing in the pattern. * Change proper ribbon or proper label media. * Adjust the printhead pressure adjustment knob. * Make sure the print carriage is closed properly.
Missing printing on the left or right side of label	* Wrong label size setup.	* Set the correct label size.
Gray line on the blank label	* The print head is dirty. * The platen roller is dirty.	* Clean the print head. * Clean the platen roller.
Irregular printing	* The printer is in Hex Dump mode. * The RS-232 setting is incorrect.	* Turn off and on the printer to skip the dump mode. * Re-set the Rs-232 setting.
Label feeding is not stable (skew) when printing	* The media guide does not touch the edge of the media.	* If the label is moving to the right side, please move the label guide to left. * If the label is moving to the left side, please move the label guide to right.
Skip labels when printing	* Label size is not specified properly. * Sensor sensitivity is not set properly. * The media sensor is covered with dust.	* Check if label size is setup correctly. * Calibrate the sensor by Auto Gap or Manual Gap options. * Clear the GAP/Black mark sensor by blower.
Wrinkle Problem	* Printhead pressure is incorrect. * Ribbon installation is incorrect. * Media installation is incorrect. * Print density is incorrect. * Media feeding is incorrect.	* Please refer to section 4.2. * Please set the suitable density to have good print quality. * Make sure the label guide touch the edge of the media guide.
RTC time is incorrect when reboot the printer	* The battery has run down.	* Check if there is a battery on the main board.
The left side printout position is incorrect	* Wrong label size setup. * The parameter Shift X in LCD menu is incorrect.	* Set the correct label size. * Press [Menu] → [Setting] → [Shift X] to fine tune the parameter of Shift X.

The printing position of small label is incorrect	* Media sensor sensitivity is not set properly. * Label size is incorrect. * The parameter Shift Y in the LCD menu is incorrect. * The vertical offset setting in the driver is incorrect.	* Calibrate the sensor sensitivity again. * Set the correct label size and gap size. * Press [Menu] → [Setting] → [Shift X] to fine tune the parameter of Shift X. * If using the software BarTender, please set the vertical offset in the driver. 
LCD panel is dark and keys are not working	* The cable between main PCB and LCD panel is loose.	* Check if the cable between main PCB and LCD is secured or not.
LCD panel is dark but the LEDs are light	* The printer initialization is unsuccessful.	* Turn OFF and ON the printer again. * Initialize the printer.
Ribbon encoder sensor doesn't work	* The ribbon encoder sensor connector is loose.	* Fasten the connector.
Ribbon end sensor doesn't work	* The connector is loose. * The ribbon sensor hole is covered with dust.	* Check the connector. * Clear the dust in the sensor hole by the blower.
Cutter is not working	* The connector is loose.	* Plug in the connect cable correctly.

7 Maintenance

This session presents the clean tools and methods to maintain your printer.

- **For Cleaning**

  Depending on the media used, the printer may accumulate residues (media dust, adhesives, etc.) as a by-product of normal printing. To maintain the best printing quality, you should remove these residues by cleaning the printer periodically. Regularly clean the print head and supply sensors once change a new media to keep the printer at the optimized performance and extend printer life.

- **For Disinfecting**

  Sanitize your printer to protect yourself and others and can help prevent the spread of viruses.

- **Important**
  - Set the printer power switch to O (Off) prior to performing any cleaning or disinfecting tasks. Leave the power cord connected to keep the printer grounded and to reduce the risk of electrostatic damage.
  - Do not wear rings or other metallic objects while cleaning any interior area of the printer.
  - Use only the cleaning agents recommended in this document. Use of other agents may damage the printer and void its warranty.
  - Do not spray or drip liquid cleaning solutions directly into the printer. Apply the solution on a clean lint-free cloth and then apply the dampened cloth to the printer.
  - Do not use canned air in the interior of the printer as it can blow dust and debris onto sensors and other critical components.
  - Only use a vacuum cleaner with a nozzle and hose that are conductive and grounded to drain off static build up.
  - All reference in these procedures for use of isopropyl alcohol requires that a 99% or greater isopropyl alcohol content be used to reduce the risk of moisture corrosion to the printhead.
  - Do not touch printhead by hand. If you touch it careless, please use 99% Isopropyl alcohol to clean it.
  - Always taking personal precaution when using any cleaning agent.

- **Cleaning Tools**
  - Cotton swab
  - Lint-free cloth
  - Brush with soft non-metallic bristles
  - Vacuum cleaner
  - 75% Ethanol (for disinfecting)
  - 99% Isopropyl alcohol (for printhead and platen roller cleaning)
  - Genuine printhead cleaning pen
  - Mild detergent (without chlorine)

- **Cleaning Process**

Printer Part	Method	Interval
Print Head	1. Always turn off the printer before cleaning the printhead. 2. Allow the printhead to cool for a minimum of one minute. 3. Use a cotton swab and 99% Isopropyl Alcohol or genuine print head cleaning pen to clean the print head surface.	Clean the print head when changing a new label roll.
Platen Roller	1. Turn off the printer. 2. Rotate the platen roller and wipe it thoroughly with the lint-free 99% Isopropyl Alcohol.	Clean the platen roller when changing a new label roll
Peel Bar	Use the lint-free cloth with 99% Isopropyl Alcohol to wipe it.	As needed
Sensor	Use a brush with soft non-metallic bristles or a vacuum cleaner, described above, to remove paper dust. The upper and lower media sensors should be cleaned to ensure reliable Top of Form and Paper Out sensing.	Monthly
Exterior	Clean the exterior surfaces with a clean, lint-free cloth (water-dampened cloth). If necessary, use a mild detergent or desktop cleaning solution then use the 75% Ethanol to wipe it.	As needed
Interior	Clean the interior of the printer by removing any dirt and lint with a vacuum cleaner, as described above, or use a brush with soft non-metallic bristles then use the 75% Ethanol to wipe it.	As needed

Change History

Date	Content	Editor
2020/9/25	Update troubleshooting section	Camille
2021/1/11	Update ch 1.2 Product Features	Camille

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