Desktop Barcode Printer

DH220L/DH230L Series

Direct Thermal

Series Models

DH220L / DH320L
DH220LT / DH320LT
DH220LHC / DH320LHC
DH220LTHC / DH320LTHC

User Manual

www.tscprinters.com

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1 Introduction

Thank you very much for purchasing TSC barcode printer.

The new 2-inch DH Series 6.5-inch OD direct thermal printers support larger media rolls, ideal for high-volume wristband printing in industries such as healthcare and entertainment. They are available in standard and healthcare-grade versions, with the option of an LED or LCD display. Healthcare models inherit TH DH Series features, including disinfectant-ready plastic, easy-to-clean surfaces, and sealed button interfaces—perfect for clinical environments. They are fully compatible with existing upgradable accessories in the 2-inch DH Series for maximum versatility.

The printers are equipped with a Save Labels feature, which automatically aligns media to the vertical starting point for printing. This does away with manual label alignment and feeding after installation, reducing setup time and eliminating wasted labels associated with printing position alignment.

2-inch DH Series 6.5-inch OD printers can also be equipped with HF RFID functionality by adding a HF RFID upgrade kit. HF RFID enables short-range identification—enhancing traceability while ensuring data security. It is ideal for applications such as blood bag labels, patient wristbands, and wristbands for the entertainment industry.

Two HF RFID upgrade kits will be available—one with a tear configuration and one with a cutter configuration. The kits comply with ISO/IEC 15693, ISO/IEC 14443 Type A, and ISO/IEC 18092 standards, and incorporate TSC Auto ID’s signature RFID features: Encode During Print and Auto Calibration, boosting efficiency. They can be added to standard 6.5-inch OD printers, reflecting the series’ future-proof design and ability to expand in functionality without requiring printer replacement.

This document provides an easy reference for operating this printer. TSC printers include the Windows labeling software for creating your label template. For system integration, the TSPL/TSPL2 printer programming manual or SDKs can be found on TSC website at: https://www.tscprinters.com.

1.1 Specifications

Standard Models

Model	DH220L	DH320L	DH220LT	DH320LT
Resolution	8 dots / mm (203 dpi)	12 dots / mm (300 dpi)	8 dots / mm (203 dpi)	12 dots / mm (300 dpi)
Print Method	Direct Thermal			
Max. Print Speed	203 mm (8”) / second	152 mm (6”) / second	203 mm (8”) / second	152 mm (6”) / second
Max. Print Width	54 mm (2.13”)	56.9 mm (2.24”)	54 mm (2.13”)	56.9 mm (2.24”)
Max. Print Length	25,400 mm (1,000”)	11,430 mm (450”)	25,400 mm (1000”)	11,430 mm (450”)
Enclosure	Clamshell with double-walled plastic			
Dimension	146 mm (width) x 206 mm (height) x 264 mm (depth) 5.75” (width) x 8.11” (height) x 10.39” (depth)			
Weight	2.0 kg (4.41 lbs.)			
Label Roll Capacity	165 mm (6.5”) OD			
Processor	32-bit RISC CPU			
Memory	▪ 512 MB Flash memory ▪ 256 MB SDRAM ▪ microSD card reader for Flash memory expansion, max. 512 GB; supported format: FAT32 and exFAT only			
Interface	▪ USB 2.0 ▪ RS-232 ▪ USB Host ▪ Ethernet LAN port (10/100 Mbps) ▪ 802.11 a/b/g/n/ac Wi-Fi with Bluetooth 5.0 combo module (dealer option) ▪ Bluetooth 5.3 (dealer option) ▪ MFi Bluetooth 5.3 (factory option)			

Model	DH220L	DH320L	DH220LT	DH320LT
Power	External universal switching power supply: ▪ Input: AC 100-240V, 1.5A, 50-60Hz ▪ Output: DC 24V, 2.5A, 60W			
LCD Display	Not available		3.5” color touch display (resolution 480 x 320)	
Operation Switch, Button, LED	▪ Power switch x1 ▪ Feed button x1 ▪ Pause button x1 ▪ Reprint button x1 ▪ Status indicator x1 ▪ Intuitive icon indicator x3		▪ Power switch x1 ▪ Feed button x1 ▪ Pause button x1 ▪ Reprint button x1	
Sensor	▪ Transmissive gap sensor ▪ Black mark reflective sensor (The position is adjustable.) ▪ Printhead open sensor ▪ Save Labels sensor			
Real Time Clock (RTC)	Standard			
Built-in Fonts	▪ 8 alpha-numeric bitmap fonts ▪ Monotype Image® true type font engine with one CG Triumvirate Bold Condensed scalable font ▪ ARIALUNI.TTF Unicode true type font			
Supported Barcode Formats	▪ 1D Barcode Code 39, Code 93, Code128UCC, Code128 subsets A.B.C, Codabar, Interleaved 2 of 5, EAN 8, EAN 13, EAN 128, UPC-A, UPC-E, EAN and UPC 2(5) digits add-on, MSI, PLESSEY, POSTNET, China post, ITF14, EAN14, Code 11, TELEPEN, TELEPENN, PLANET, Code 49, Deutsche Post Identcode, Deutsche Post Leitcode, LOGMARS ▪ 2D Barcode TLC39, CODABLOCK F mode, PDF-417, Maxicode, DataMatrix, QR code, Aztec, Micro PDF 417, GS1 DataBar (RSS barcode), rMQR code			
Font & Barcode Orientation	0 / 90 / 180 / 270 degree			
Printer Language	TSPL-EZD (compatible with EPL, ZPL, ZPL II, and DPL)			

Model	DH220L	DH320L	DH220LT	DH320LT
Media Type	Continuous, die-cut, black mark, fanfold, notch (outside wound), linerless media (for linerless option), and wristband			
Media Width	10 mm – 60 mm (0.59” – 2.36”)			
Media Thickness	0.06 mm – 0.19 mm (2.36 mil – 7.48 mil)			
Media Core Diameter	25.4 mm – 38.1 mm (1” – 1.5”)			
Label Length	5 mm – 25,400 mm (0.20” – 1,000”)	5 mm – 11,430 mm (0.20” – 450”)	5 mm – 25,400 mm (0.20” – 1,000”)	5 mm – 11,430 mm (0.20” – 450”)
Environment Condition	▪ Operation: 0°C to 40°C (32 to 104°F), 25% to 85% (non-condensing) ▪ Storage: -40°C to 60°C (-40 to 140°F), 10% to 90% (non-condensing)			
Accessories	▪ Quick start guide x1 ▪ USB cable x1 ▪ Power cord x1 ▪ External universal switching power supply x1			
HF RFID	Not available		▪ In compliance with ISO/IEC 15693, ISO/IEC 14443 Type A, ISO/IEC 18092 ▪ External fixed antenna (located under media) ▪ Minimum 1-inch overstrike area for encoding failures ▪ Supported printer language: TSPL (standard) and SBPL (downloadable)	
Factory Options	MFi Bluetooth 5.3			
Dealer Options	▪ Peel-off module ▪ Guillotine cutter (full cut and partial cut) ▪ 802.11 a/b/g/n/ac Wi-Fi with Bluetooth 5.0 combo module ▪ Bluetooth 5.3 module ▪ Linerless with cutter (full cut) ▪ Linerless with tear ▪ HF RFID tear-off upgrade kit ▪ HF RFID cutter upgrade kit			

Model	DH220L	DH320L	DH220LT	DH320LT
User Options	▪ External label roll mount ▪ KP-200 Plus keyboard display unit ▪ PDF print dongle ▪ BP-4000 smart battery station			

Healthcare Models

Model	DH220LHC	DH320LHC	DH220LTHC	DH320LTHC
Resolution	8 dots / mm (203 dpi)	12 dots / mm (300 dpi)	8 dots / mm (203 dpi)	12 dots / mm (300 dpi)
Print Method	Direct Thermal			
Max. Print Speed	203 mm (8”) / second	152 mm (6”) / second	203 mm (8”) / second	152 mm (6”) / second
Max. Print Width	54 mm (2.13”)	56.9 mm (2.24”)	54 mm (2.13”)	56.9 mm (2.24”)
Max. Print Length	25,400 mm (1,000”)	11,430 mm (450”)	25,400 mm (1000”)	11,430 mm (450”)
Enclosure	▪ Clamshell with double-walled plastic ▪ Disinfectant-ready, designed with an easy-to-clean surface and a sealed button interface ▪ Antibacterial enclosure			
Dimension	146 mm (width) x 206 mm (height) x 264 mm (depth) 5.75” (width) x 8.11” (height) x 10.39” (depth)			
Weight	2.0 kg (4.41 lbs.)			
Label Roll Capacity	165 mm (6.5”) OD			
Processor	32-bit RISC CPU			
Memory	▪ 512 MB Flash memory ▪ 256 MB SDRAM ▪ microSD card reader for Flash memory expansion, max. 512 GB; supported format: FAT32 and exFAT only			
Interface	▪ USB 2.0 ▪ RS-232 ▪ USB Host ▪ Ethernet LAN port (10/100 Mbps) ▪ 802.11 a/b/g/n/ac Wi-Fi with Bluetooth 5.0 combo module (dealer option) ▪ Bluetooth 5.3 (dealer option) ▪ MFi Bluetooth 5.3 (factory option)			

Model	DH220LHC	DH320LHC	DH220LTHC	DH320LTHC
Power	External universal switching power supply: ▪ IEC 60601-1 certified power supply ▪ Input: AC 100-240V, 2.0A, 50-60Hz ▪ Output: DC 24V, 2.5A, 60W			
LCD Display	Not available		3.5” color touch display (resolution 480 x 320)	
Operation Switch, Button, LED	▪ Power switch x1 ▪ Feed button x1 ▪ Pause button x1 ▪ Reprint button x1 ▪ Status indicator x1 ▪ Intuitive icon indicator x3		▪ Power switch x1 ▪ Feed button x1 ▪ Pause button x1 ▪ Reprint button x1	
Sensor	▪ Transmissive gap sensor ▪ Black mark reflective sensor (The position is adjustable.) ▪ Printhead open sensor ▪ Save Labels sensor			
Real Time Clock (RTC)	Standard			
Built-in Fonts	▪ 8 alpha-numeric bitmap fonts ▪ Monotype Image® true type font engine with one CG Triumvirate Bold Condensed scalable font ▪ ARIALUNI.TTF Unicode true type font			
Supported Barcode Formats	▪ 1D Barcode Code 39, Code 93, Code128UCC, Code128 subsets A.B.C, Codabar, Interleaved 2 of 5, EAN 8, EAN 13, EAN 128, UPC-A, UPC-E, EAN and UPC 2(5) digits add-on, MSI, PLESSEY, POSTNET, China post, ITF14, EAN14, Code 11, TELEPEN, TELEPENN, PLANET, Code 49, Deutsche Post Identcode, Deutsche Post Leitcode, LOGMARS ▪ 2D Barcode TLC39, CODABLOCK F mode, PDF-417, Maxicode, DataMatrix, QR code, Aztec, Micro PDF 417, GS1 DataBar (RSS barcode), rMQR code			
Font & Barcode Orientation	0 / 90 / 180 / 270 degree			
Printer Language	TSPL-EZD (compatible with EPL, ZPL, ZPL II, and DPL)			

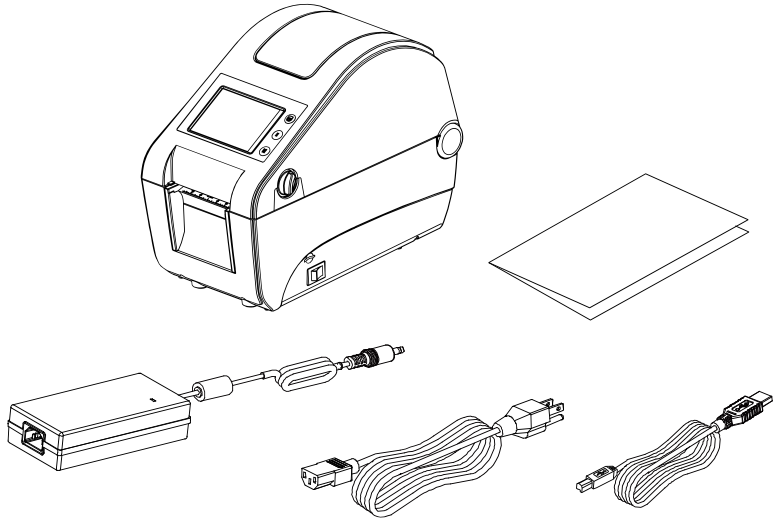
Model	DH220LHC	DH320LHC	DH220LTHC	DH320LTHC
Media Type	Continuous, die-cut, black mark, fanfold, notch (outside wound), linerless media (for linerless option), and wristband			
Media Width	10 mm – 60 mm (0.59” – 2.36”)			
Media Thickness	0.06 mm – 0.19 mm (2.36 mil – 7.48 mil)			
Media Core Diameter	25.4 mm – 38.1 mm (1” – 1.5”)			
Label Length	5 mm – 25,400 mm (0.20” – 1,000”)	5 mm – 11,430 mm (0.20” – 450”)	5 mm – 25,400 mm (0.20” – 1,000”)	5 mm – 11,430 mm (0.20” – 450”)
Environment Condition	▪ Operation: 0°C to 40°C (32 to 104°F), 25% to 85% (non-condensing) ▪ Storage: -40°C to 60°C (-40 to 140°F), 10% to 90% (non-condensing)			
Accessories	▪ Quick start guide x1 ▪ USB cable x1 ▪ Power cord x1 ▪ External universal switching power supply x1			
HF RFID	Not available		▪ In compliance with ISO/IEC 15693, ISO/IEC 14443 Type A, ISO/IEC 18092 ▪ External fixed antenna (located under media) ▪ Minimum 1-inch overstrike area for encoding failures ▪ Supported printer language: TSPL (standard) and SBPL (downloadable)	
Factory Options	MFi Bluetooth 5.3			
Dealer Options	▪ Peel-off module ▪ Guillotine cutter (full cut and partial cut) ▪ 802.11 a/b/g/n/ac Wi-Fi with Bluetooth 5.0 combo module ▪ Bluetooth 5.3 module ▪ Linerless with cutter (full cut) ▪ Linerless with tear ▪ HF RFID tear-off upgrade kit ▪ HF RFID cutter upgrade kit			

Model	DH220LHC	DH320LHC	DH220LTHC	DH320LTHC
User Options	▪ External label roll mount ▪ KP-200 Plus keyboard display unit ▪ PDF print dongle ▪ BP-4000 smart battery station			

2 Unpacking and Inspecting

The printer has been specially packaged to withstand damage during shipment. Retaining the packaging materials is recommended in case you need to ship the printer. When unpacking, ensure that you have received all the following items:

- Barcode printer x1
  (The image for the printer is used for reference only.
  The product appearance is based on the model you purchase.)
- Auto switch power adapter x1
- Power cord x1
- USB interface cable x1
- User Setup Guide x1



NOTE: If anything is missing or damaged, please contact the customer service department of your reseller or distributor.

3 Getting to Know Your Printer

3.1 Front View

Models featuring LCD panel

1. Media window
2. LCD panel
3. Reprint button
4. Pause button
5. Feed button
6. Cover release lever
7. microSD card slot
8. Power switch

Models featuring LED panel

1. Status LED x3
2. LED Indicator
3. Media window
4. Reprint button
5. Pause button
6. Feed button
7. Cover release lever
8. microSD card slot
9. Power switch

3.2 Inner View

1. Printhead
2. Black mark sensor
3. Media holder
4. Platen roller
5. Save Labels Sensor
6. Front panel cover
7. Top cover lock
8. Media holder lock
9. Black mark sensor

3.3 Rear View

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

4 Setting up the Printer

4.1 Connecting the Power Cable and Adapter

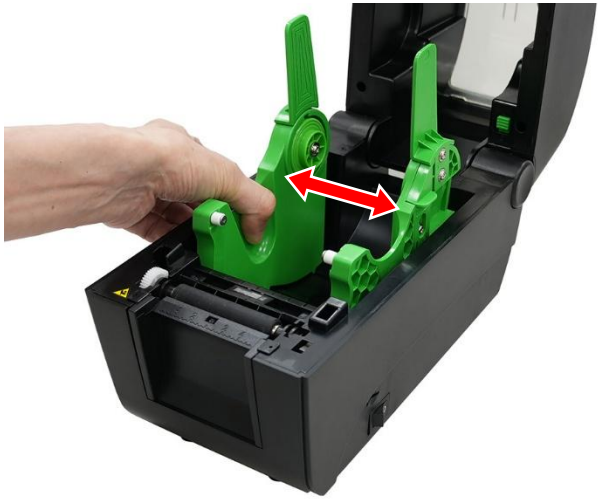
1. Place the printer on a flat surface.
2. Set the power switch for the printer to **OFF**.
3. Connect the printer to your computer using the supplied USB cable.
4. Connect the power cord to the power adapter.
5. Connect the power adapter to the DC-in port on the rear side of the printer.

   IMPORTANT: Make sure that the power switch for the printer is set to OFF before connecting the power adapter to the printer.
6. Fully insert the power cord plug into the power outlet socket.

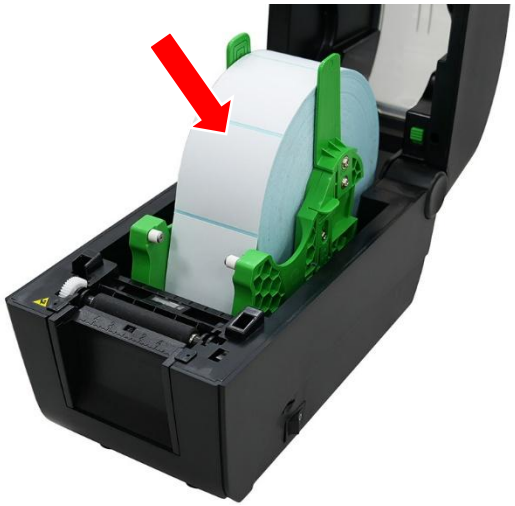
4.2 Loading the Media

1. Pull the cover release levers to open the printer’s top cover.

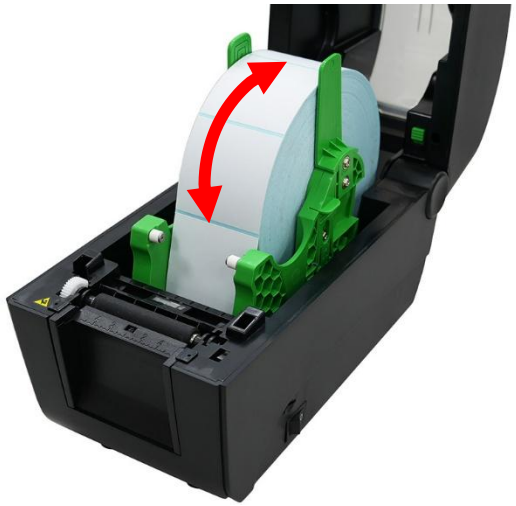
2. Slightly pull to separate the media holders.



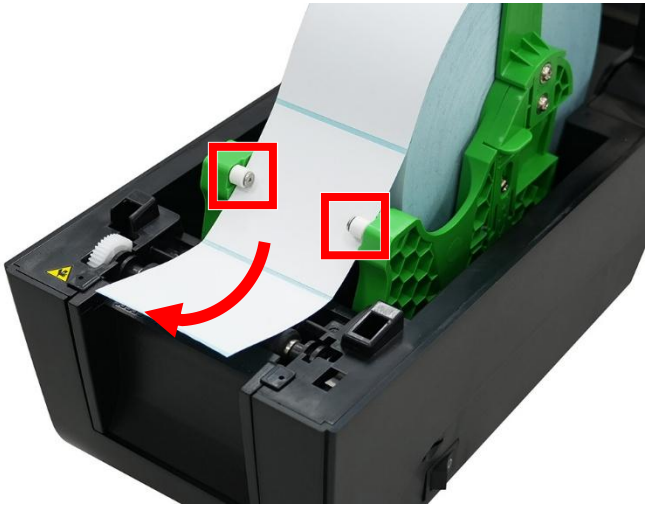
3. Load the media roll into the printer ensuring that the printable side of the media faces up.



4. Release the media holders ensuring that the media is properly secured and rolls smoothly.



5. Thread the media through under the media guides.



6. Gently close the top cover until it clicks into place.

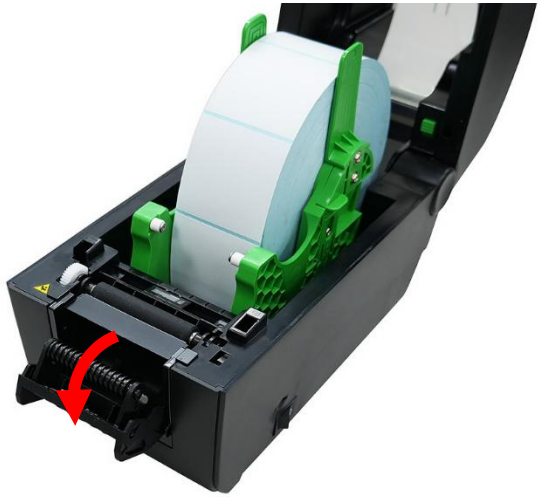
7. Perform a media calibration for the media in use. For how to perform a media calibration, refer to 7.2 Sensor.

4.3 Loading the Media in Peel-off Mode (optional)

1. Install the media and perform a media calibration for the media in use. For information about how to install the media and perform the calibration, refer to 4.2 Loading the Media and 7.2 Sensor.

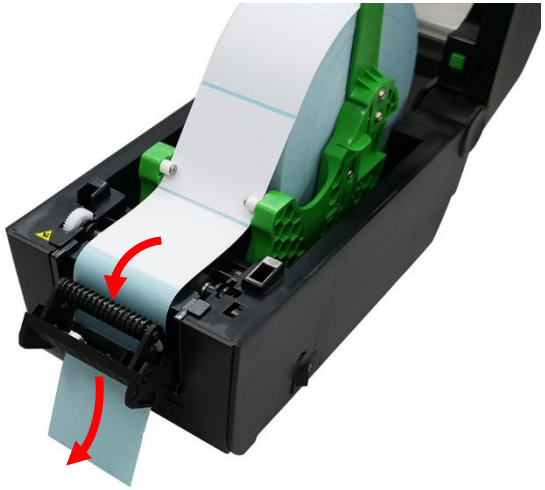
2. Open the printer’s top cover.

3. Open the panel for the peel roller.

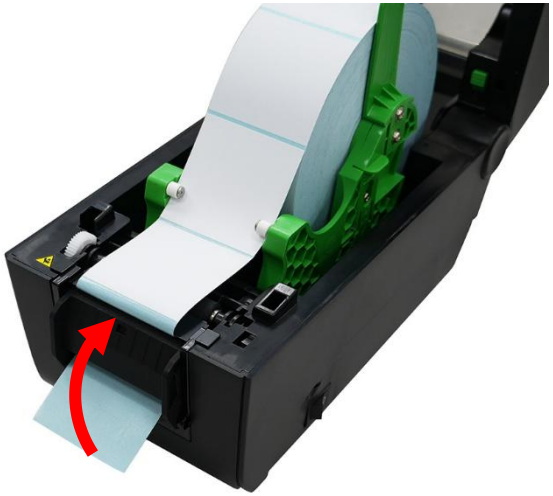


4. Remove some pieces of labels from the release liner.

5. Thread the media through the opening on the peel module.



6. Close the peel roller.

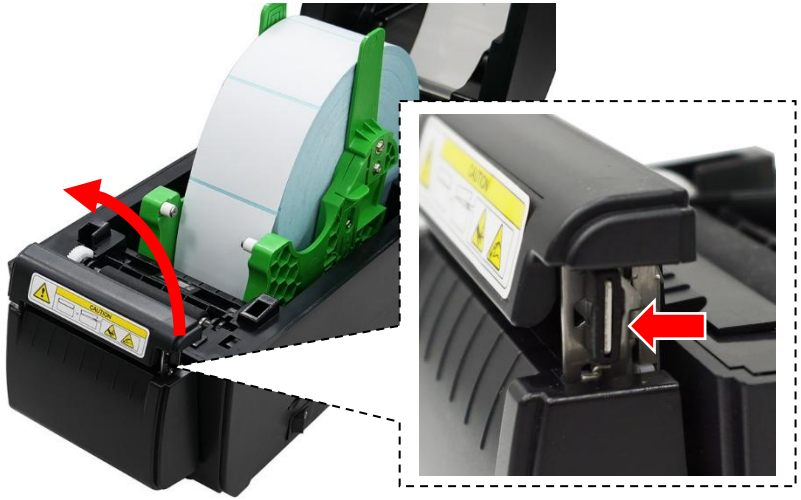


7. Close the printer’s top cover. Set the print mode to Peeler Mode and then print a label to check if the peel module works well. For how to set the print mode to Peeler Mode, refer to 7.1.1 TSPL.

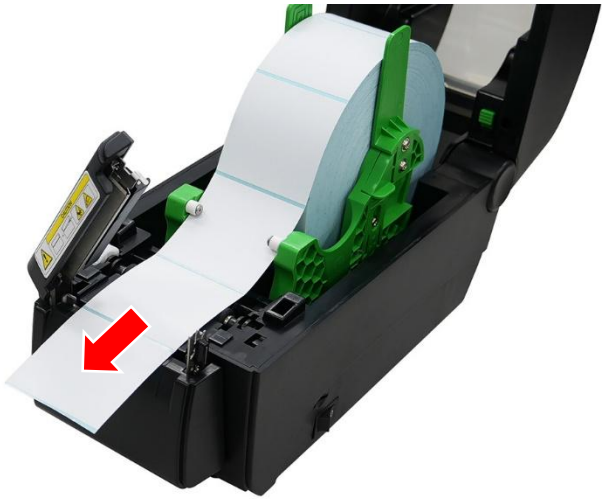
4.4 Loading the Media in Cutter Mode (optional)

1. Open the printer's top cover and then load the media. For information about how to install the media and perform the calibration, refer to 4.2 Loading the Media and 7.2 Sensor.

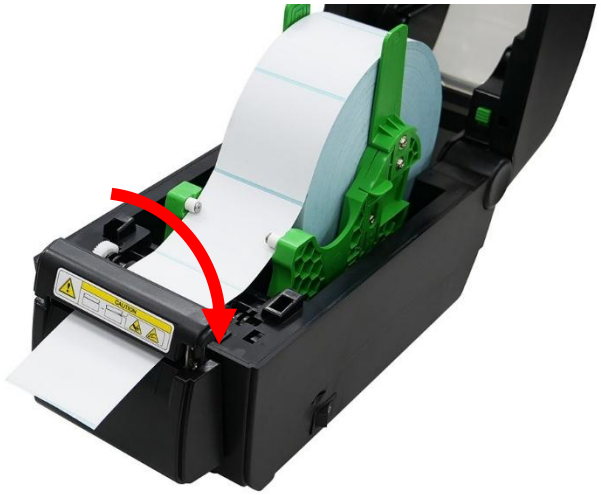
2. Push the release latch to open the cutter gate as indicated.



3. Pull the media until it extends out of the cutter gate.



4. Close the cutter gate.



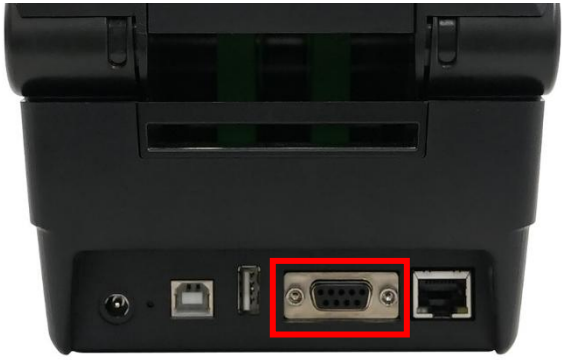
5. Close the printer’s top cover.

6. Set the printer to Cutter Mode. For how to set the print mode to Cutter Mode, refer to 7.1.1 TSPL.

4.5 Using the PDF Print Dongle (for models with RS-232 interface / optional)

Follow the process below to install and use the PDF print dongle.

1. Insert the PDF print dongle into the RS-232 interface on the rear side of the printer ensuring that the dongle is properly connected.



NOTE:

- The PDF print dongle is hot-swappable. You can install or remove the dongle when the printer is powered on.
- The image is for reference only. The location of the RS-232 port may vary based on the models.

2. Rotate the thumb screws clockwise to secure the dongle in place.

3. The PDF icon will be displayed on the LCD control panel as shown below.

4. Select the connection interface through which you can directly send the PDF files to the printer using the utility tool and execute the print job. You do not need to install any PDF management middleware or conversion software.

NOTE:

- The PDF print dongle only supports printers featuring the RS-232 interface.
- The PDF print dongle requires a supported printer firmware.
- Supported PDF version: PDF 1.0, 1.1, 1.2, 1.4, 1.5, 1.6, 1.7 (non-interactive PDF features)
- You can send the PDF files to your printer via any of the available interfaces (except RS-232), such as USB, Ethernet, Wi-Fi, or Bluetooth.

4.6 Loading the HF RFID Media (for models with HF RFID module installed only)

Please follow the steps described in Loading the Media to load the RFID media.

After loading the RFID media, perform an RFID calibration. For how to perform the RFID calibration, please refer to TSC HF RFID Manual for more information. Alternatively, you can scan the QR code below to have access to the TSC HF RFID Manual.

4.7 Using BP-4000 Smart Battery Station (optional)

TSC also offers BP-4000 Smart Battery Station, which can be used with this printer. For more information, you may refer to BP-4000 Battery Station User Manual, or scan the QR code to access this manual.

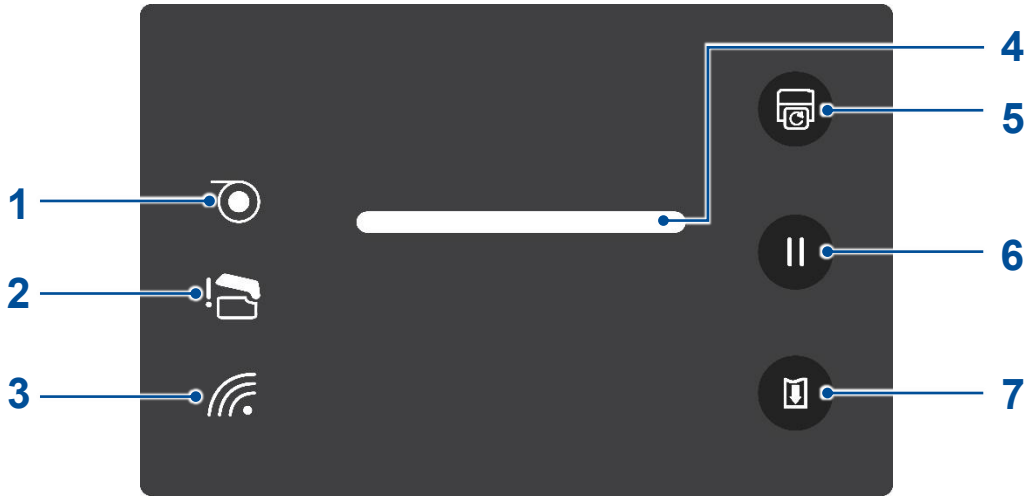
For how-to video, please refer to How-to Video for DH TH Battery Station.

5 Operator Interface

Two operator interface options are available on the printers: **LED User Interface** and **LCD User Interface**. In addition to the two physical user interfaces, you can also use **Web User Interface** to control and manage the printers.

5.1 LED User Interface

5.1.1 Control Panel



No.	Name	Description
1	Paper Out Indicator	Indicates the media supply. **ON**: The media is used up. **Blinking**: Paper is stuck in the printer.
2	Printhead Open Indicator	Indicates if the printhead is correctly closed. **ON**: The printhead is open.
3	Wi-Fi Connection Indicator	Indicates the Wi-Fi connection status. **ON**: The wireless connection is active.

No.	Name	Description
4	LED Indicator	Please refer to 5.1.2 LED Indicator for detailed information about the LED indicator and its behavior.
5	Reprint Button	Reprints the last label.
6	Pause Button	Stops the print activities. Press the button to resume the print activities.
7	Feed Button	Feeds one piece of media.

5.1.2 LED Indicator

Color		Description
	Green	**ON**: The printer is ready for accepting the print job. **Blinking**: The system is downloading data or the printer is in pause mode.
	Amber	The system is busy.
	Red	**ON**: The printer's top cover is open or cutter error. **Blinking**: Other errors, such as paper jam, paper empty, memory error etc.

5.1.3 Power-on Utilities

LED User Interface features a set of utilities which provides quick access to the printer's mostly used functions.

Follow the procedures below to launch the power-on utilities and select the function you need.

1. Turn off the printer.
2. Press and hold **Feed** and then turn on the printer. Keep holding **Feed**. The LED indicator on the control panel will start blinking in a sequence of patterns that indicates which function is going to be activated.
3. When the LED indicator blinks in the pattern which indicates the function you need, release **Feed**. The Power-on Utilities will run the function you select.

The table below describes the sequence of the patterns and their corresponding functions.

LED Color & Pattern / Sequence & Function		Red (5 blinks)	Amber (5 blinks)	Green (5 blinks)	Green & Amber (5 blinks)	Red & Amber (5 blinks)	Green (ON)
1	**Sensor Calibration** (Gap / Black Mark Sensor)	release					
2	**Self-Test** (Enters Dump Mode)		release				
3	**Factory Default**			release			
4	**Black Mark Calibration**				release		
5	**Gap Calibration**					release	
6	**Ready** (Skips AUTO.BAS)						release

LED User Interface also provides two shortcuts to the **Factory Default** and **Sensor Calibration** function respectively.

To run **Factory Default**:

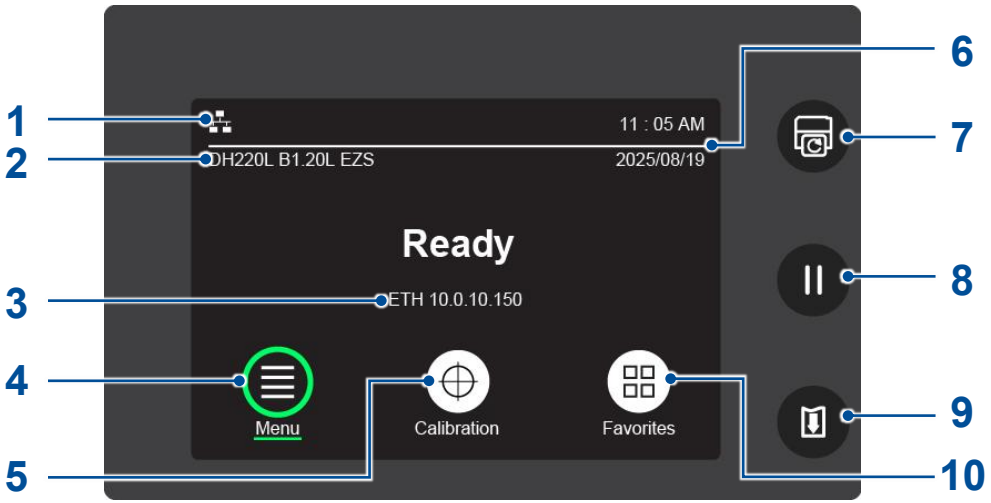
1. Turn off the printer.
2. Press and hold **Feed + Pause** and then turn on the printer. When the printer beeps twice, release the two buttons. All printer's configurations will be reset to factory default.

To run **Sensor Calibration**:

1. Turn off the printer.
2. Press and hold **Pause** and then turn on the printer. When the printer beeps twice, release **Pause**. The printer will automatically start calibrating sensor.

5.2 LCD User Interface

5.2.1 LCD Panel



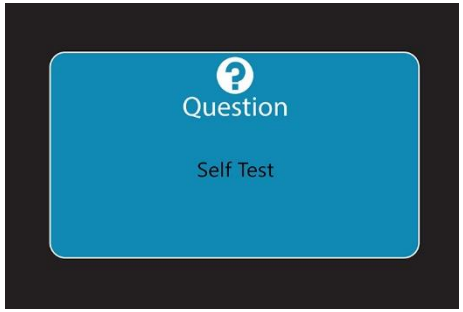
No.	Name	Description
1	Icon Indicators Area	Displays icons to indicate the printer's status. Refer to 5.2.3 Icon Indicators for more information.
2	Model Name & Firmware	Displays the printer's model name and firmware version.
3	Ethernet & Wi-Fi Address	Displays the Ethernet or Wi-Fi IP address when connecting to the Ethernet or Wi-Fi network.
4	Menu	Includes more setting options. Refer to 7 Main Screen for more information.
5	Calibration	Calibrates the printer based on what kind of media you want to use. Refer to **Auto Calibration** in 7.2 Sensor for more information.
6	Date & Time	Displays the date and time. Refer to 7.4 Advanced for how to configure the date and time for the printer.
7	Reprint Button	Reprints the last label.
8	Pause Button	Stops the print activities. Press the button to resume the print activities.
9	Feed Button	Feeds one piece of media.
10	Favorites	Adds and removes your mostly used functions into the favorites list. Refer to 7.7 Favorites for how to add and remove your mostly used functions into the favorites list.

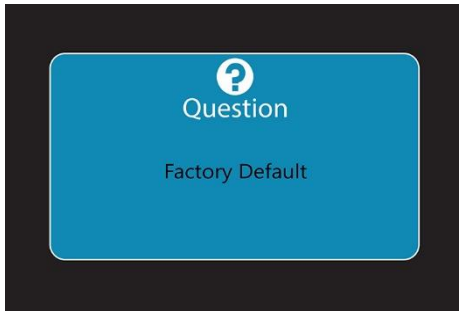
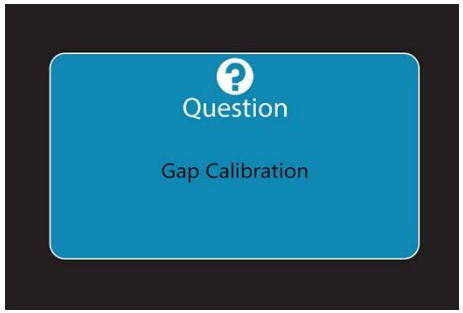
5.2.2 Power-on Utilities

LCD User Interface features a set of utilities which provides quick access to the printer's mostly used functions. Follow the procedures below to launch the power-on utilities and select the function you need.

1. Turn off the printer.
2. Press and hold **Feed** and then turn on the printer. Keep holding **Feed**. The display will start playing a series of images in the following sequence that indicates which function is going to be activated.
3. When the image that indicates the function you need appears on the display, release **Feed**. The Power-on Utilities will run the function you select.

The table below describes the sequence of the images and their corresponding functions.

Sequence & Function		Image
1	**Sensor Calibration** (Gap / Black Mark Sensor)	
2	**Self-Test** (Enters Dump Mode)	

Sequence & Function		Image
3	**Factory Default**	
4	**Black Mark Calibration**	
5	**Gap Calibration**	
6	**Ready** (Skips AUTO.BAS)	Main screen will appear on the display if users do not select any of the abovementioned functions.

5.2.3 Icon Indicators

NOTE: Icon indicators only apply for models shipped with **LCD User Interface**.

Icon	Description
	Indicates that the printer is connected to the wireless network.
	Indicates that the printer is connected to the Ethernet network.
	Indicates that the printer is paired with an external device via Bluetooth or the printer is receiving data via Bluetooth.
	Indicates that users need to clean the printhead.
	Indicates that the printer features HF RFID function. (optional)
	Indicates that users need to clean the cutter when using the linerless media.
	Indicates that the printer can directly print labels in pdf format.

5.3 Web User Interface

Web User Interface enables users to control and manage one or several printers using a remote device over network.

NOTE: To ensure compliance with the European Radio Equipment Directive (RED) requirements, the printer is shipped with all network connectivity interfaces disabled. Consequently, network connectivity must be explicitly enabled by the user prior to establishing the printer's initial network connection. To activate standard network functionality, follow the steps below:

USB setup (recommended in Europe):

1. Connect the printer to a computer via USB.
2. Open **TSC Console** and go to **Functions > PRTSecure > Security Mode**.
3. Set **Security Mode** to **Standard**.

Printers with an LCD:

1. On the printer, go to **Menu > Advanced > PRTSecure**.
2. Set **Security Mode** to **Standard**.

For more information, please refer to TSC Console Utility and the Advanced section.

5.3.1 Opening the Web User Interface

Follow the steps below to open the web user interface for the printer:

1. Open your web browser.
2. Enter the printer's IP address inside the browser's address bar and then press "Enter".

   NOTE: For how to know the printer's IP address, you may refer to 6 TSC Console for detailed information or contact your IT department for further assistance.

   NOTE:

   - Due to regional regulations, users logging in for the first time in specific areas will be prompted to set a new username and password. Follow the steps to log in.

     (1) Set a new username and password.

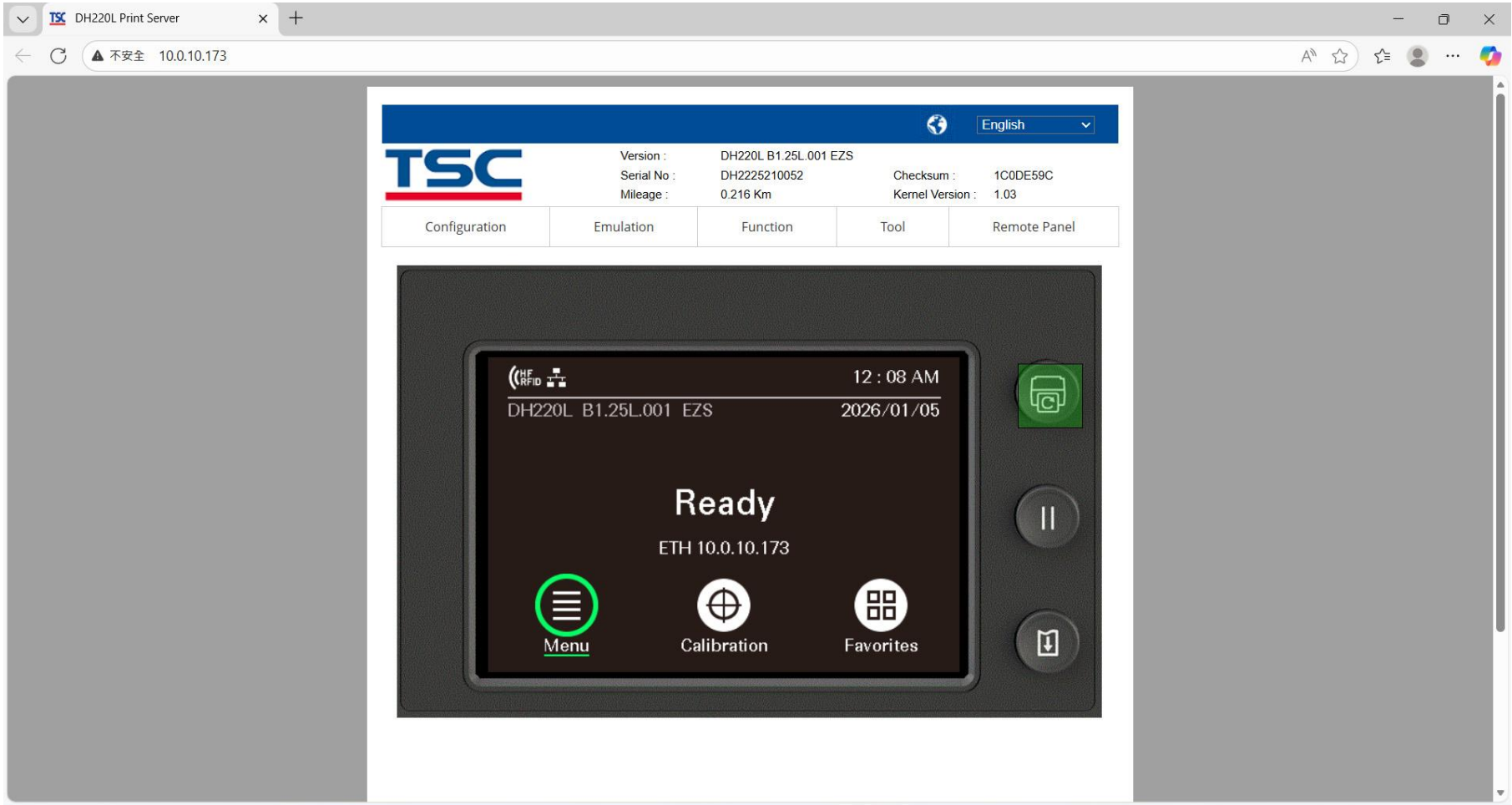
     (2) Set the administrator name and password.

     (3) Enter "admin" in the "Enter the current administrator password" field. The default password is "admin".

     (4) Click "Set" button.

   - The password setting rules are as follows: the length is limited to 8 to 15 characters, it must contain at least one uppercase and lowercase letter and a number. The content can be English letters, numbers, or symbols, but does not support double-byte characters.
   - To consider security, the printer will restart if you enter an incorrect password 5 times.

3. When the screen appears, you can start using the web user interface to manage the printer.



5.3.2 Introduction to Web User Interface

No.	Description	No.	Description
1	Refer to 5.3.2.1 Configuration for more information.	4	Refer to 5.3.2.3 Function for further information.
2	Refer to 5.3.2.2 Emulation for more information.	5	Opens the visualized control panel. Refer to 5.3.2.4 Visualized Control Interface for further information.
3	Refer to 5.3.2.4 Visualized Control Interface for more information.	6	Refer to 5.3.2.6 Tool for further information.

5.3.2.1 Configuration

Item		Description
Print	**Common**	Configures the printer using the TSPL command set. Refer to 7.1.1 TSPL for more information.
	Adjust	Adjusts the print and stop location. Refer to 7.1.1 TSPL for more information.
	Media	Configures the parameters that relate to the media type and sets the media sensor. **NOTE:** When using the upper black mark sensor, you must shift the bottom black mark sensor to the left or right side of the printer to prevent interference and ensure better calibration result.
	Calibration	Configures the parameters that affect the media calibration.
RS232		Configures the settings for RS-232.
Bluetooth		Configures the settings for Bluetooth.
Ethernet		Configures the settings for Ethernet.
802.1X		Sets the 802.1X authentication.
Wi-Fi		Configures the settings for Wi-Fi.
Raw Port Filter		Configures the settings for RAW port filter.
RTC Setup		Sets the date and time for the printer.

5.3.2.2 Emulation

Item	Description
Z	Emulates Zebra printer language and allows users to configure the printer.
D	Emulates Datamax printer language and allows users to configure the printer.

5.3.2.3 Function

Item	Description
SOTI settings	Sets the MQTT server and manages the CA certificate files.
TPH Care	Monitors the printhead's health status.
Email	Sets the SMTP server.
SNTP	Sets the SNTP server.
SNMP	Configures the SNMP (Simple Network Management Protocol) for the printer.
Web Password	Sets the user/administrator name and its corresponding password.
Log	Records the printer's activities.
Function	Provides quick access to the following functions: • **Reset Printer** • **Configuration Page** • **Sensor Calibration** • **Factory Default** • **Ignore AUTO.BAS** • **Preferred Wi-Fi / Preferred Ethernet** • **Send File to Printer**

5.3.2.4 Visualized Control Interface

The visualized control panel demonstrates the same user interface as the models shipped with an LCD display panel. This feature is also applicable to the models that do not feature an LCD display panel. For how to use the buttons and setting options on the control panel, you can refer to 5.2.1 LCD Panel.

5.3.2.5 Remote Panel

It allows users to open the visualized control panel. Refer to 5.3.2.4 Visualized Control Interface for more information.

5.3.2.6 Tool

Item	Description
File Manager	Manages the files saved in the built-in memory.
Communication Tool	Sends command sets or instructions to the printer.
Update Firmware	Updates the printer’s firmware.
Clear Browsing Record	Clears the browsing record.
Classic Webpage	Switches to the classic user interface.

6 TSC Console Utility

TSC Console (PC Version) is an all-in-one management tool that integrates printer management, diagnostic tool, commtool, and printer settings, designed specifically for a wide range of TSC printers.

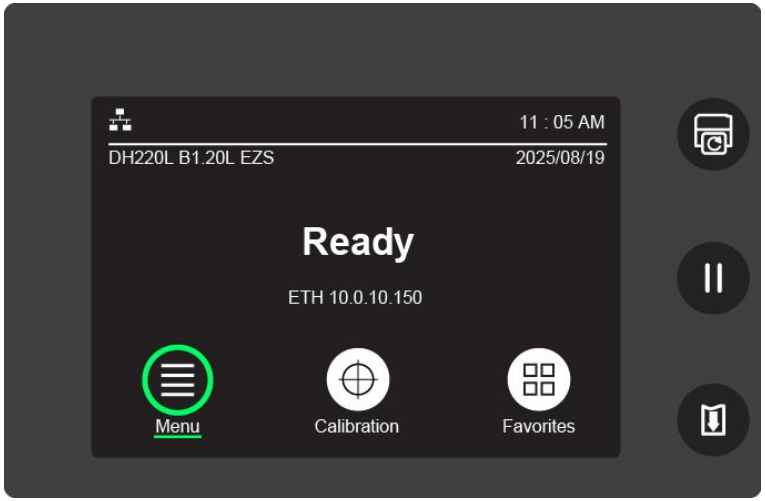
It enables IT personnel to easily deploy, manage, monitor, and troubleshoot both wired and wireless connections for single or multiple printers. Users can adjust printer settings and status, download graphics, deploy fonts, images, and label templates, upgrade firmware, and send additional commands to multiple printers simultaneously.

With its intuitive Windows graphical interface, **TSC Console** simplifies printer setup and daily management, while its integrated management capabilities enhance system stability—ensuring printers remain operational, reliable, and easy to maintain.

Please visit TSC's official website to download this utility, and scan the QR code below to access the TSC Console Manual for detailed usage instructions.

7 Main Screen

All setting options for the printer can be divided into 6 sub-menus based on function. It allows users to configure the printer without connecting the printer to a computer. To open the 6 sub-menus, tap the **Menu** icon on the LCD panel.



Icon	Name	Description	Icon	Name	Description
	Setting	Configures the printer using the TSPL or ZPL2 command set. Refer to Setting for more information.		Advanced	Allows users to set the OSD language, reset the printer to factory default, set the date and time, etc. Refer to Advanced for more information.
	Sensor	Calibrates the media sensor. Refer to Sensor for more information.		File Manager	Manages the files saved in the built-in memory. Refer to File Manager for more information.
	Interface	Sets the communication interfaces. Refer to Interface for more information.		Diagnostic	Helps users to troubleshoot the problems. Refer to Diagnostic for more information.

7.1 Setting

It allows users to configure the printer using the TSPL or ZPL2 command set.

NOTE: TSPL indicates TSC printer language and ZPL2 indicates an emulation of Zebra printer language.

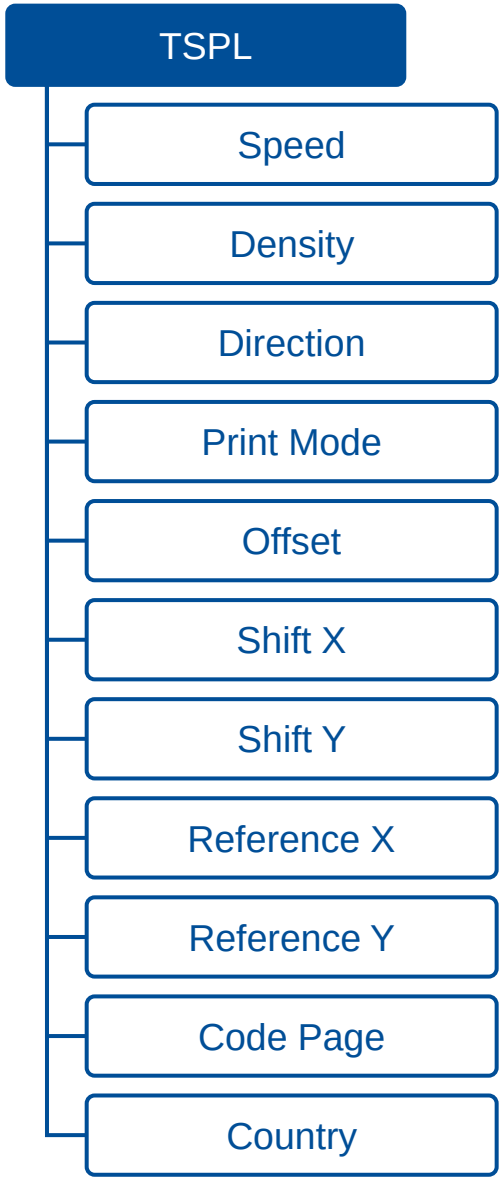
To configure the printer:

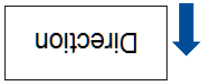
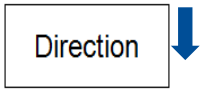
1. Tap **Command Set** to select the command set you want to use.

2. Select the item you want to configure.

7.1.1 TSPL

The following illustration and table describe the TSPL command set.



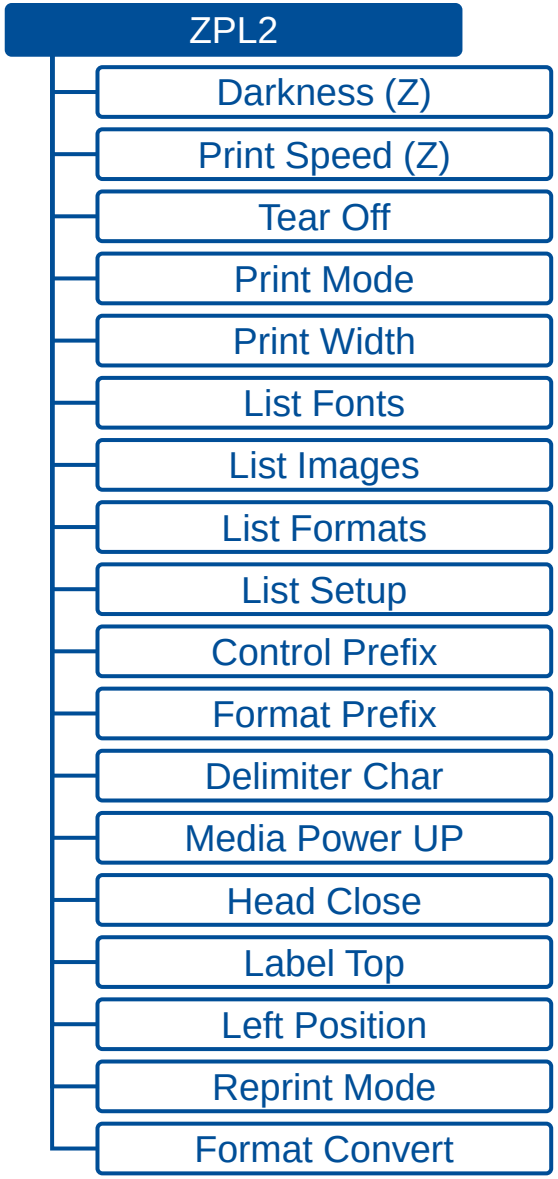
Item	Description	Default
Speed	Sets the print speed. Setting range: 1.5 to 8 ips (203 dpi), 1.5 to 6 ips (300 dpi).	5 (203 dpi) 4 (300 dpi)
Density	Sets the print darkness. Setting range: 0 to 15.	8
Direction	Sets the printout direction. Setting options: 0 or 1. Arrows below indicate the Feed direction. When set to **0**  When set to **1** 	0
Print Mode	Sets the print mode. • **Batch Mode:** When printer finishes the print job, the label will be fed to a location where allows users to tear the label. • **Cutter Batch:** Sets the printer to cut the label when the print job is finished. • **Cutter Mode:** Enables the cutter mode. • **Peeler Mode:** Enables the peel-off mode. • **None:** TOF (Top of Form, the position the printer starts printing) for the next label is aligned with the printhead's burn line.	Batch Mode
Offset	Specifies the stop position for each operation. Setting range: -203 to 203 dots.	0
Shift X	Specifies the amount to shift an image horizontally for precise print position on the label. Setting range: -203 to 203 dots.	0
Shift Y	Specifies the amount to shift an image vertically for precise print position on the label. Setting range: -203 to 203 dots.	0
Reference X	Specifies the X coordinate relative to the origin. Setting range: 0 to 999 dots.	0
Reference Y	Specifies the Y coordinate relative to the origin. Setting range: 0 to 999 dots.	0

Item	Description	Default
Code Page	Specifies the code page which is associated with the supported characters.	850
Country	Sets the country code.	001

ATTENTION: If you print using a label design software or other label printing tools, the commands from the software or tool will overwrite the printer's settings you set through the LCD display panel.

7.1.2 ZPL2

The following illustration and table describe the ZPL2 command set.



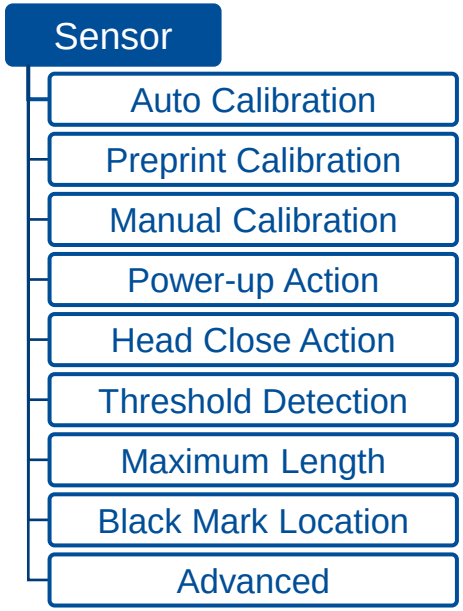
Item	Description	Default
Darkness (Z)	Sets the print darkness. Setting range: 0 to 30.	16
Print Speed (Z)	Sets the print speed. Setting range: 1.5 to 8 ips (203 dpi), 1.5 to 6 ips (300 dpi).	5 (203 dpi) 4 (300 dpi)
Tear Off	Specifies the stop position of the media after a label is printed. Setting range: -120 to 120 dots.	0
Print Mode	Sets the print mode. • **Tear Off:** Allows users to tear off a label after it is printed. • **Cutter:** Enables the cutter mode. • **Peel Off:** Enables the peel-off mode.	Tear Off
Print Width	Specifies the print width. Setting range: 2 to 432 dots.	406
List Fonts	Prints the list of all linked fonts saved in the printer's memory.	--
List Images	Prints the list of all linked images saved in the printer's memory.	--
List Formats	Prints the list of all linked label formats saved in the printer's memory.	--
List Setup	Prints the printer's configurations.	--
Control Prefix	Sets the control command prefix.	7E (~)
Format Prefix	Sets the control format prefix.	5E (^)
Delimiter Char	Sets the delimiter character to separate the command parameters.	2C (,)
Media Power Up	Configures the printer to take specific action after powering on the printer. • **No Motion:** The printer will take no action. The sensor values and media position will not be changed. • **Length:** The printer will detect the length of a label and then advance the label to the correct position. • **Calibration:** The printer will run the calibration and then advance the media to the correct position according to the calibration results. • **Feed:** The printer will advance the label to the configured position.	No Motion

Item	Description	Default
Head Close	Configures the printer to take specific action after closing the printhead. • **No Motion:** The printer will take no action. The sensor values and media position will not be changed. • **Length:** The printer will detect the length of a label and then advance the label to the correct position. • **Calibration:** The printer will run the calibration and then advance the media to the correct position according to the calibration results. • **Feed:** The printer will advance the label to the configured position.	No Motion
Label Top	Specifies the amount to shift an image horizontally for precise print position on the label. Setting range: -120 to 120 dots.	0
Left Position	Specifies the amount to shift an image vertically for precise print position on the label. Setting range: -9999 to 9999.	0
Reprint Mode	When **Reprint Mode** is enabled, users can press the **Reprint** button on the top cover of the printer to reprint the last label.	ON
Format Convert	Selects the bitmap scaling factor. The first number indicates the original dpi (dots per inch) value while the second number indicates the dpi you want to scale. • **None:** No change • **300/600** • **200/600** • **150/600** • **150/300**	None

ATTENTION: If you print using a label design software or other label printing tools, the commands from the software or tool will overwrite the printer's settings you set through the LCD display panel.

7.2 Sensor

The setting options in the **Sensor** menu allows users to calibrate the printer based on what kind of the media they want to use. It is recommended to run the sensor calibration anytime you use a different media.



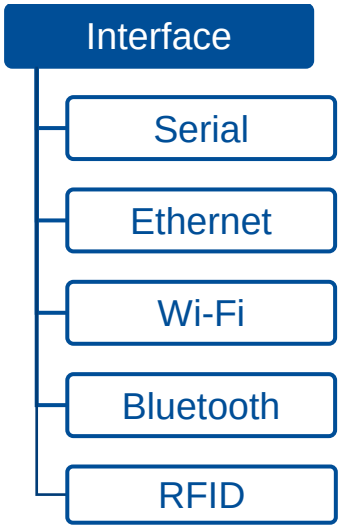
Item	Description	Default
Auto Calibration	Detects the media type and automatically runs the calibration. • **Gap** • **Black Mark** • **Continuous**	--
Preprint Calibration	Runs the calibration automatically when using the preprinted labels. • **Gap** • **Black Mark**	--

Item	Description	Default
Manual Calibration	If **Auto Calibration** cannot determine the media type and complete the calibration, it is recommended to use **Manual Calibration**. After installing the media you want to use, follow the on-screen instructions to complete the calibration. • **Gap** • **Black Mark** • **Continuous**	--
Power-up Action	Calibration activities when the printer is powered up. • **Save Labels:** The printer enters the **Save Labels** mode. • **Get Label Length:** The printer will detect the length of a label. • **Auto-Cal:** The printer will perform auto calibration and then advance the media to the correct position according to the calibration results. • **Seek TOF:** The printer assumes user has already calibrated media and used gap or mark sensor. This moves the media to the leading edge of the label at power-up • **Disable:** The printer will not take any actions at power-up.	Save Labels
Head Close Action	Selects whether the printer performs a selected action after a print head open fault condition is cleared. • **Save Labels:** The printer enters the **Save Labels** mode. • **Get Label Length:** The printer will detect the length of a label. • **Auto-Cal:** The printer will perform auto calibration and then advance the media to the correct position according to the calibration results. • **Seek TOF:** The printer assumes user has already calibrated media and used gap or mark sensor. This moves the media to the leading edge of the label at power-up • **Disable:** The printer will not take any actions.	Save Labels
Threshold Detect	Sets the sensor's sensitivity. Setting options: Auto / Fixed.	Auto
Maximum Length	Specifies the maximum length for label calibration. Setting range: 1 to 9999 mm.	--

Item	Description	Default
Black Mark Location	Specifies the black mark position. • **Back Side:** The black mark is on the opposite side of the printhead. • **Print Side:** The black mark is on the same side as the printhead.	Back Side
Advanced	Specifies the minimum label length and the maximum gap or black mark length before running Auto Calibration. • **Min. Paper** (setting range: 0 to 999 mm.) • **Max. Gap/Mark** (setting range: 0 to 999 mm.)	0

7.3 Interface

Interface menu allows users to configure the printer's I/O interfaces.



NOTE: To ensure compliance with the European Radio Equipment Directive (RED) requirements, the printer is shipped with all network connectivity interfaces disabled. Consequently, network connectivity must be explicitly enabled by the user prior to establishing the printer's initial network connection. To activate standard network functionality, follow the steps below:

USB setup (recommended in Europe):

1. Connect the printer to a computer via USB.
2. Open **TSC Console** and go to **Functions > PRTSecure > Security Mode**.
3. Set **Security Mode** to **Standard**.

Printers with an LCD:

1. On the printer, go to **Menu > Advanced > PRTSecure**.
2. Set **Security Mode** to **Standard**.

For more information, please refer to TSC Console Utility and the Advanced section.

7.3.1 Serial

The table below describes the configurable items for the printer's RS-232 interface.

Item	Description	Default
Baud Rate	Sets Baud Rate for the RS-232 interface. Setting options: 1200 / 2400 / 4800 / 9600 / 19200 / 38400 / 57600 / 115200 bps.	9600
Parity	Sets parity check for the RS-232 interface. Setting options: None / Even / Odd.	None
Data Bits	Sets the number of bits in a data frame for the RS-232 interface. Setting options: 7 / 8.	8
Stop Bit(s)	Sets the number of stop bits that mark the end of a frame for the RS-232 interface. Setting options: 1 / 2.	1

7.3.2 Ethernet

The table below describes the configurable items for the printer's Ethernet interface.

Item	Description	Default
Network Interface	Sets the network interface. Setting options: Ethernet / Wi-Fi.	--
Status	Displays information about the Ethernet connection if the printer is connected to a wired network.	--
Configure	Select to use a DHCP server or non-DHCP server. • **DHCP:** Select to use a DHCP server. • **Static IP:** Select to use a non-DHCP server. You need to manually enter the IP address, subnet mask, and default gateway.	DHCP

7.3.3 Wi-Fi

The table below describes the configurable items for the printer's Wi-Fi connection.

Item	Description	Default
Network Interface	Sets the network interface. Setting options: Ethernet / Wi-Fi.	--
Status	Displays information about the Wi-Fi connection if the printer is connected to a wireless network.	--
Configure	Select to use a DHCP server or non-DHCP server. • **DHCP:** Select to use a DHCP server. • **Static IP:** Select to use a non-DHCP server. You need to manually enter the IP address, subnet mask, and default gateway.	DHCP
SSID	Sets SSID for the Wi-Fi connection.	--
Security	Sets security type for the Wi-Fi connection.	Open
Password	Sets a password for the Wi-Fi connection.	--

7.3.4 Bluetooth

The table below describes the configurable items for the Bluetooth interface.

Item	Description	Default
Status	Displays information about the Bluetooth status.	--
Local Name	Sets the local name for Bluetooth.	PS-XXXXXX **NOTE:** XXXXXX indicates the last six digits of the MAC address. You can find the MAC address in the **Status** item.
Pair Mode	Sets the pair mode for Bluetooth. • **LEGACY** • **JUSTWORK** **NOTE:** This setting item is for MFi module only.	LEGACY
PIN Code	Sets the local pin code for Bluetooth. **NOTE:** This setting item is for MFi module only.	0000

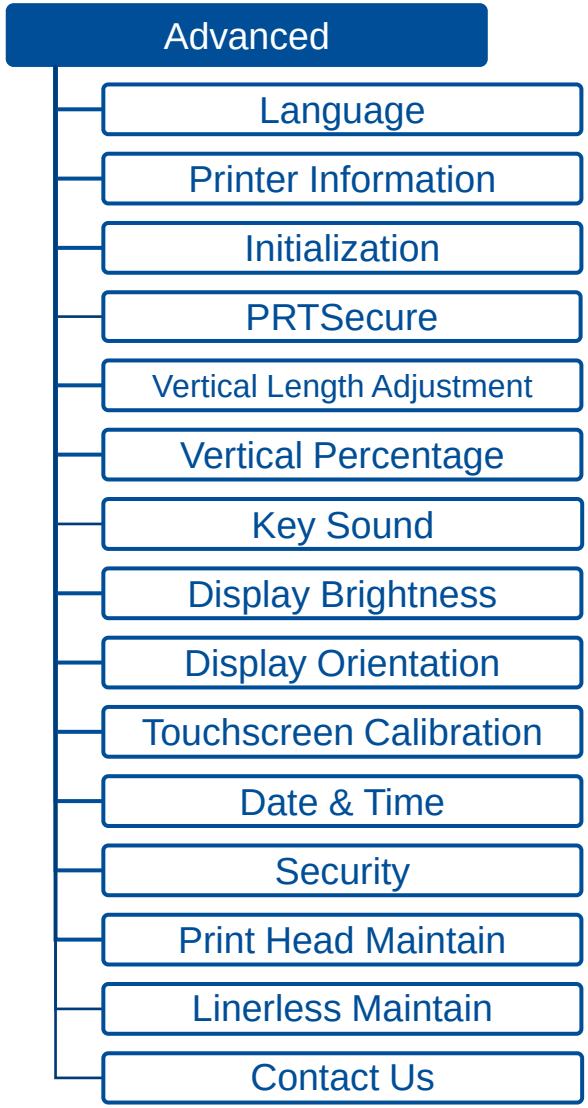
7.3.5 HF RFID (for models with HF RFID module installed only)

After loading the RFID media, perform an RFID calibration.

For how to perform the RFID calibration, please refer to TSC HF RFID Manual for more information. Alternatively, you can scan the QR code below to have access to the TSC HF RFID Manual.

7.4 Advanced

The illustration and table below describe the configurable items in the **Advanced** menu.

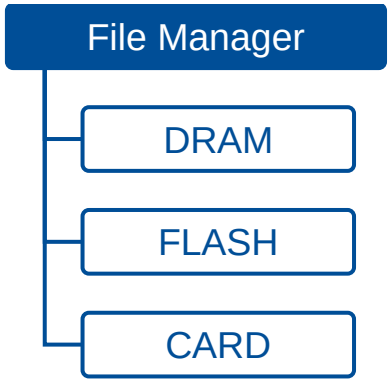


Item	Description	Default
Language	Changes the LCD menu language.	English
Printer Information	Displays printer's information, such as serial number, printhead mileage, the number of printed labels, etc.	--
Initialization	Resets the printer to factory default.	--
PRTSecure	Configures the **PRTSecure** function. • **Strict:** When selected, network setup and network configuration via network is blocked. • **Standard:** When selected, network setup and network configuration is allowed. If you want to connect to network under **Strict Mode**, please refer to TSC Network Security Manual for more details. Alternatively, you can also scan the QR code below to access the manual. 	Strict (network blocked for units shipped to the EU.)
Vertical Length Adjustment	Turns on/off the **Vertical Length Adjustment** function.	OFF
Vertical Percentage	Adjusts the label length. Setting range: 90 to 115%.	100
Key Sound	Turns on/off the sounds when tapping the touchscreen or pressing the function buttons.	ON
Display Brightness	Adjusts the brightness for the display. Setting range: 0 to 100.	50
Display Orientation	Adjusts the orientation for the display. Setting options: 0 / 180.	0
Touchscreen Calibration	Performs the touchscreen calibration.	--
Date & Time	Sets the date and time for the printer.	--
Security	Sets a password to lock the access to the printer's settings. Default password: 8888.	Disable

Item	Description	Default
Print Head Maintain	Sets how often the printhead should be cleaned. • **Warning:** Turns on/off the notification that reminds users to clean the printhead when the set amount of mileage is fulfilled. Default setting: Disable. • **Reset Counter:** Resets the mileage count after cleaning the printhead. • **Interval:** Sets mileage count for the printhead. When the set amount of mileage is fulfilled, the warning icon that reminds users to clean the printhead will appear on the display panel. Default setting: 1 km.	--
Linerless Maintain	Sets how often the linerless cutter blade should be cleaned. **NOTE:** The configurable options can also be accessed quickly from the “Favorites" section for easy setup. • **Warning**: Turns on/off notification that reminds users to clean the cutter blade if the set mileage for the cutter blade is fulfilled. (Default setting: ON) • **Interval**: Sets mileage for the cutter blade. When the set amount of mileage is fulfilled, the warning icon () that reminds users to clean the cutter blade will appear on the display panel. (Default setting: 1 km) • **Clean Cutter Blade**: Lifts up to expose the cutter blade. Select this item to lift up the cutter blade if you need to clean the blade. **NOTE:** For how to clean the linerless cutter blade, please refer to Cleaning Procedures section for more information. **CAUTION:** To avoid the risk of personal injury, keep your hands away from the cutter gate when selecting Clean Cutter Blade. Selecting this item will lift up the blade. • **Reset Counter**: Resets the mileage count after cleaning the cutter blade.	--
Contact Us	Displays the contact information about technical support.	

7.5 File Manager

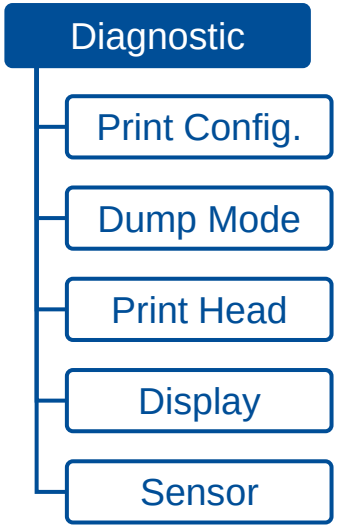
File Manager allows users to check the remaining space of the printer's built-in memory and manage or execute the files saved in the printer's DRAM/Flash memory or micro SD card.



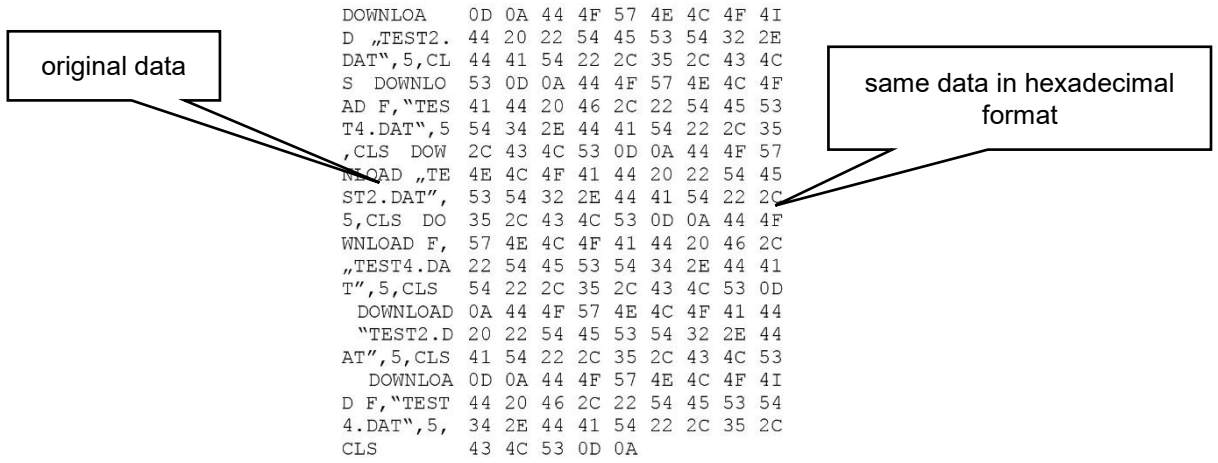
Item	Description
DRAM	Allows users to manage or execute files saved in the printer's DRAM. The executable files must be in .BAS format.
FLASH	Allows users to manage or execute files saved in the printer's Flash memory. The executable files must be in .BAS format.
CARD	Allows users to manage or execute files saved in the micro SD card. The executable files must be in .BAS format. This item will appear when inserting a micro SD card into the printer's card slot.

7.6 Diagnostic

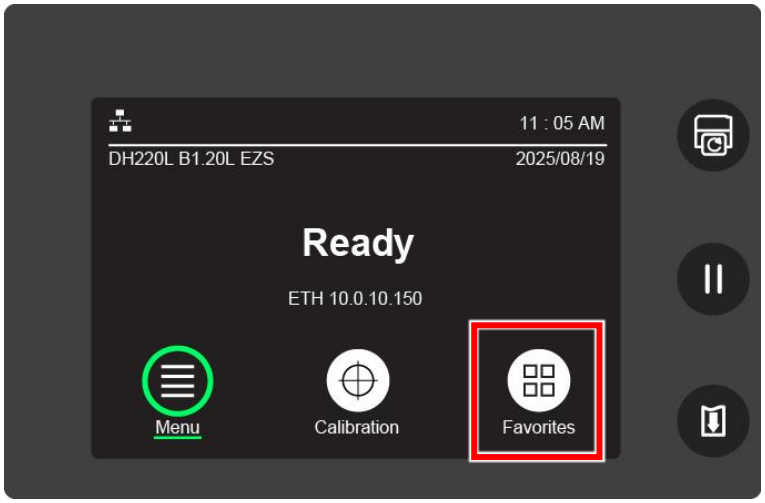
The illustration and table below describe the functions in the **Diagnostic** menu.



Item	Description
Print Config.	Prints the printer's configurations. You can use this function to check if there is a defective dot on the print heater.

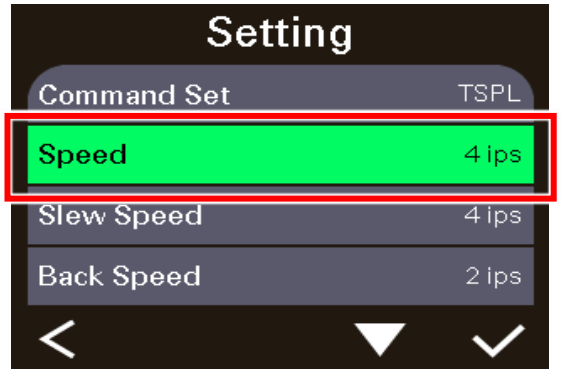
Item	Description
Dump Mode	In this mode, all received characters will be printed in a two-column format. The left column displays the data which is sent from your computer while the right column shows the same data in the hexadecimal format. This function helps engineers troubleshoot a specific problem. 
Print Head	Displays the printhead’s temperature and the amount of the defective dots.
Display	Checks the LCD’s health status.
Sensor	Configures the intensity and reading power for the gap and black mark sensor.

7.7 Favorites

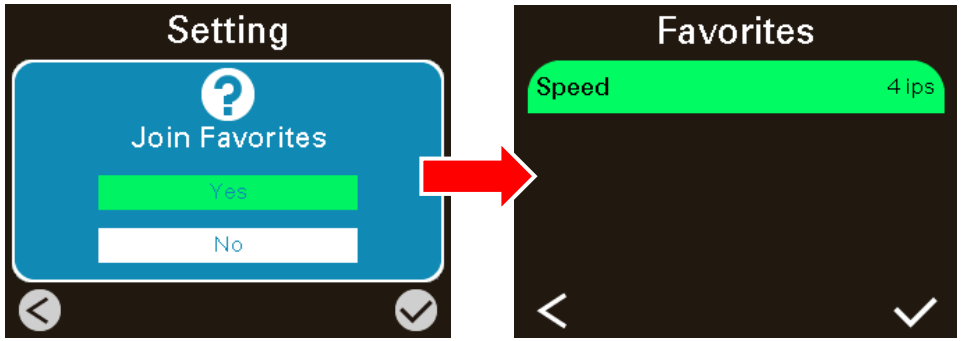


Favorites provides quick access to the mostly used functions. Follow the steps below to add your mostly used functions into the favorites list:

1. Select and hold the item you want to add into the favorites list.



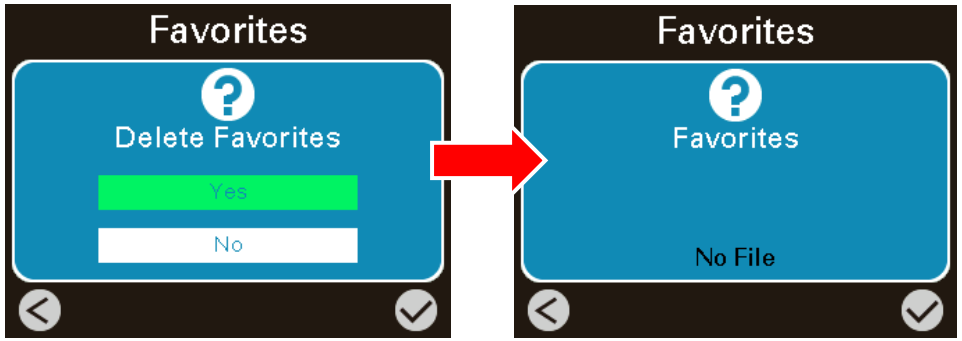
2. When the **Join Favorites** screen is displayed, select **Yes** to add the selected item into the favorites list.



To remove items from your favorites list:

1. Enter the favorites list. Select and hold the item you want to remove from the favorites list.

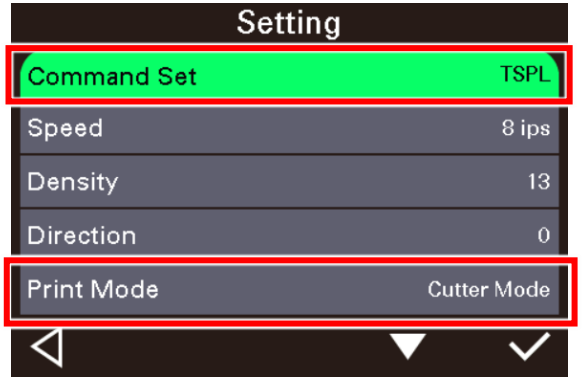
2. When the **Delete Favorites** screen is displayed, select **Yes** to remove the selected item from the favorites list.



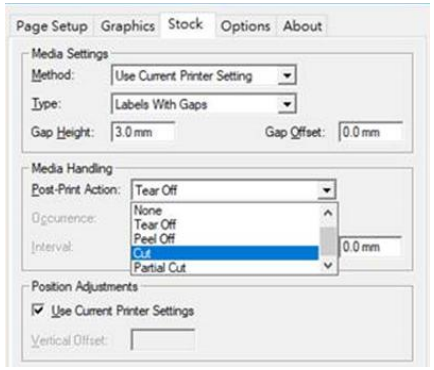
7.8 Configuring the Printer and Setting Options for the Linerless Media

1. After loading the linerless media into the printer, perform the calibration 

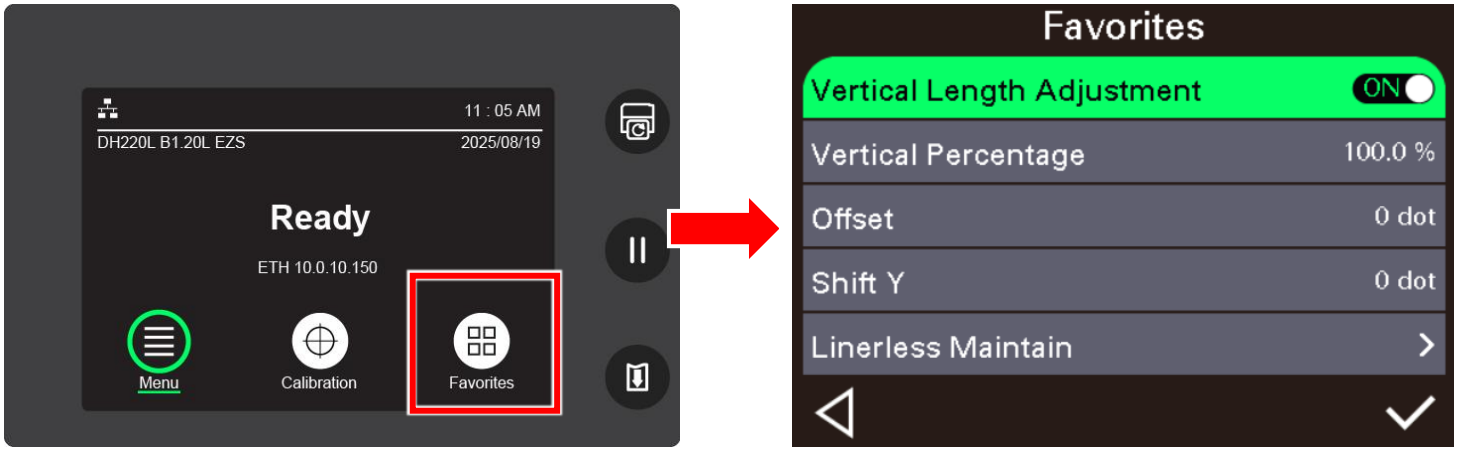
to calibrate the media sensor (**Continuous**).
2. When the calibration is finished, enter the printer LCD Menu to configure the linerless printer.
   Select **Setting**. Make sure the **Command Set** is set to **TSPL**.
   - For linerless cutter module, select **Print Mode** and set the print mode to **Cutter Mode**.
   - For linerless tear module, select **Print Mode** and set the print mode to **Peeler Mode**.



Note:
The **Print Mode** can also be set through the **Driver** or the **TSC Console**.



The following paragraph describes the setting options that help optimize the print quality when using the linerless media. The setting options will automatically appear in the **Favorites** folder after installing the linerless cutter/tear module onto the printer.



Item	Description
Vertical Length Adjustment (ON)	Turns on/off the **Vertical Length Adjustment** function. Setting option: **ON / OFF**.
Vertical Percentage	Adjusts the label length. This item will not appear if **Vertical Length Adjustment** is turned off. Setting range: 90 to 115%.
Offset	Specifies the stop position for each operation. Setting range: -203 to 203 dots.
Shift Y	Specifies the amount to shift an image vertically up or down for precise print position on the label. Setting range: -203 to 203 dots.
Linerless Maintain	Sets how often the printer should be cleaned after printing with the linerless media. **Warning:** Turns on/off notification that reminds users to clean the printer if the set mileage is fulfilled. (Default setting: ON) **Interval:** Schedules printer maintenance after printing with the linerless media. When the set amount of mileage is fulfilled, the warning icon ( ) that reminds users to clean the printer will appear on the display panel. (Default setting: 1 km)

Item	Description
	Clean Cutter Blade: Lifts up to expose the cutter blade. Select this item to lift up the cutter blade if you need to clean the blade. **NOTE: Clean Cutter Blade** will be displayed in the menu after installing the cutter module on the printer. For how to clean the linerless cutter blade, please refer to Cleaning Procedures section for more information. **CAUTION:** To avoid the risk of personal injury, keep your hands away from the cutter gate when selecting Clean Cutter Blade. Selecting this item will lift up the blade. **Reset Counter:** Resets the mileage count after cleaning the printer.

8 Troubleshooting

8.1 Common Problems

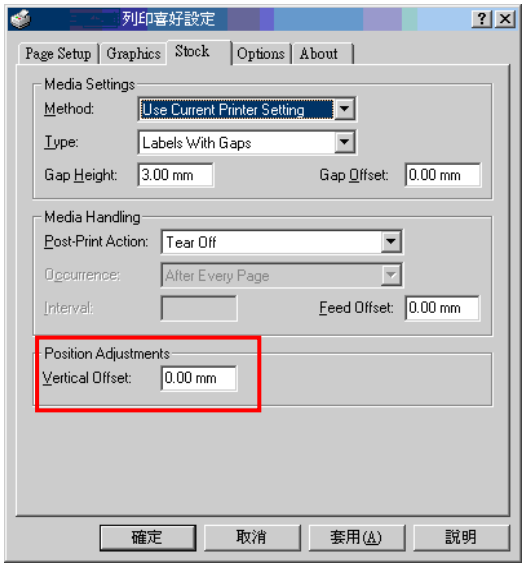
Problem	Possible Cause	Recommended Solution
Power indicator does not illuminate	The power cord is not properly connected.	• Plug the power cord in printer and outlet. • Switch the printer on. • Turn on the printer.
LED turn on (Carriage Open)	The printer head is open.	Please close the print carriages.

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.
		• If using serial cable,
		  • Please replace the cable with pin to pin connected.
		  • Check the baud rate setting. The default baud rate setting of printer is 9600, n, 8, and 1.
		• If using the Ethernet cable,
		  • Check if the Ethernet RJ-45 connector green LED is lit on.
		  • Check if the Ethernet RJ-45 connector amber LED is blinking.
		  • Check if the printer gets the IP address when using DHCP mode.
		  • Check if the IP address is correct when using the static IP address.
		  • Wait a few seconds let the printer get the communication with the server

Problem	Possible Cause	Recommended Solution
		then check the IP address setting again. • Please reset the wireless device setting. • Select the correct printer port in the driver. • Printhead's harness connector is not well connected with printhead. 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 is loaded not correctly. • Use wrong type paper.	• Follow the instructions in loading the media. • Media is not compatible. • The print density setting is incorrect. • Clean the printhead.
No Paper	• Running out of label. • The label is installed incorrectly. • Gap/black mark sensor is not calibrated.	• Supply a new label roll. • 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.

Problem	Possible Cause	Recommended Solution
Can’t downloading the file to memory (FLASH / 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 non-approved SD card manufacturer.	• Use the supported capacity SD card. • Insert the SD card again.
Poor Print Quality	• Media is not correctly loaded. • Dust or adhesive accumulation on the printhead. • Print density is not set properly. • Printhead element is damaged. • Media is not compatible. • The printhead pressure is not set properly.	• Reload the supply. • Clean the printhead. • Clean the platen roller. • Adjust the print density and print speed. • Run printer self-test and check the printhead test pattern if there is dot missing in the pattern. • Change proper label media. • The release lever does not latch the printhead 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 printhead is dirty. • The platen roller is dirty.	• Clean the printhead. • 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.

Problem	Possible Cause	Recommended Solution
Label feeding is not stable (skew) when printing	The media guides do 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. • Media installation is incorrect. • Print density is incorrect. • Media feeding is incorrect.	• Please set the suitable density to have good print quality. • Make sure the label guides 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 printer is incorrect.	Set the correct label size.
The printing position of small label is incorrect	• Media sensor sensitivity is not set properly. • Label size is incorrect. • The parameter Shift Y is incorrect. • The vertical offset setting in the driver is incorrect.	• Calibrate the sensor sensitivity again. • Set the correct label size and gap size. • Enter LCD menu (or via **TSC Console**) to fine tune the parameter of Shift Y. • If using the software BarTender, please set the vertical offset in the driver.

Problem	Possible Cause	Recommended Solution
		

9 Maintenance

This section provides cleaning and maintenance procedures.

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 printhead and supply sensors once change a new media to keep the printer at the optimized performance and extend printer life.

Disinfecting:

Disinfecting the printer helps protect yourself and other users and helps prevent virus from spreading.

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.

9.1 Cleaning Supplies

The following supplies are recommended for cleaning the printer:

- Cotton swab
- Lint-free cloth
- Brush with soft and non-metallic bristles
- Vacuum cleaner
- 75% Ethanol used for disinfection
- 99% Isopropyl alcohol used for cleaning the printhead and platen roller
- Genuine printhead cleaning pens
- Chlorine free detergents

9.2 Cleaning Procedures

Component	Method	Recommended Cleaning Schedule
Printhead	1. Power off the printer before cleaning the printhead. 2. Leave the printhead to cool down for at least one minute. 3. Wet a cotton swab with the 99% Isopropyl alcohol and then wipe across the printhead head. You can also use the genuine printhead cleaning pen to clean the printhead.	Clean the printhead when you load new media.
Platen Roller	1. Power off the printer. 2. Use a piece of 99% Isopropyl alcohol saturated lint-free cloth to wipe the platen roller while rotating the platen roller.	Clean the platen roller when you load new media.
Peel Bar	Use a piece of 99% Isopropyl alcohol saturated lint-free cloth to wipe the peel bar.	Clean as needed.
Sensor	Use the brush with soft and non-metallic bristles or vacuum cleaner to remove the dust or particles in order to optimize the print quality or sensor calibration.	Clean the sensor monthly.
Exterior	Use a piece of water-dampened lint-free cloth to wipe the surface. If necessary, you can apply the chlorine free detergent. After finishing cleaning, use the 75% ethanol to disinfect the surface.	Clean as needed.
Interior	Use the brush with soft and non-metallic bristles or vacuum cleaner to remove the dust or particles. After finishing cleaning, use the 75% ethanol to disinfect the interior.	Clean as needed.
Linerless Printer	Please refer to Linerless Cleaning Kit User Manual for more information.	◆ Clean as needed or after printing every 1 km. ◆ Please determine the maintenance intervals based on actual usage.

10 Agency Compliance and Approvals

CE	EN 55032: Class B EN 55024 EN 55035 EN 61000 EN 60950-1 EN 62368-1
FC	FCC part 15B, Class B ICES-003, Class B 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. 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. **This Class B digital apparatus complies with Canadian ICES-003** Cet appareil numérique de la classe B est conforme à la norme NMB-**003 du Canada**

	AS/NZS CISPR 32, Class B
	UL 62368-1 CAN/CSA-C22.2 NO. 62368-1
	KS C 9832 KS C 9835 KC62368-1
	GB 4943.1 GB/T9254, Class B GB 17625.1
	Energy Star for Imaging Equipment Version 3.0
	TP TC 004 TP TC 020
	CNS15598-1 CNS15936 CNS 15663
	IS 13252(Part 1)/ IEC 60950-1

備註：不同型號可能會有不同認證，一切以產品上的認證標籤為準。

Important safety instructions:

Read all of these instructions and keep them for later use.

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

重要安全說明：

閱讀所有說明，並保留以備未來使用。

- 依照產品上的所有警告和說明進行操作。
- 在清潔前或發生故障時，拔除電源插頭與交流電源插座的連接。不要使用液體或噴霧清潔劑。建議使用濕布清潔。
- 電源插座應安裝在設備附近及方便使用處。
- 本機器必須防止潮濕。
- 確保安裝設備時的穩定性，翻倒或跌落可能會導致設備損壞。
- 確保按照製造商提供的標籤上標明之正確的額定功率和電源類型進行設定。
- 請參考使用手冊以確認產品運作時環境溫度的最大值。

Informations de sécurité importantes:

Lire attentivement et conserver ces instructions pour un usage ultérieur.

- Bien respecter les avertissements et instructions sur le produit.
- Débrancher l'alimentation de l'entrée CA avant de procéder au nettoyage ou en cas de dysfonctionnement. Ne pas utiliser de nettoyant liquide ou d'aérosol. Nettoyer simplement à l'aide d'un chiffon humide.
- La prise électrique doit être installée à proximité de l'appareil et être facilement accessible.
- L'appareil doit être protégé de l'humidité.
- Assurez-vous que l'unité est installée de manière stable pour un usage et une manipulation sans risque de chute.
- Respecter le type d'alimentation et la puissance nominale indiqués par le fabricant.
- Se reporter au mode d'emploi pour vérifier les températures maximum d'utilisation recommandées.

WARNING:

Moving parts. Keep finger or body away from moving parts.

IMPORTANT:

Pièces mobiles. Maintenir vos doigts et votre corps à l'écart des pièces mobiles.

Caution: Hot surface for printhead.

Do not touch the printhead before it cooling.

警告：

可動部位。請讓手指或身體遠離可動部位。

注意：

列印頭的高溫表面。降溫之前，請勿觸碰列印頭。

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.

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

警告：

(對於帶有 RTC(CR2032)電池或可充電電池組的設備)

如果更換不正確的電池類型，會有爆炸的風險。

請依照以下說明處理廢電池：

- 請勿將電池投入火中。
- 請勿使觸點短路。
- 請勿拆解電池。
- 請勿將電池丟入都市廢棄物。
- 垃圾桶畫叉圖案表示電池不應該放置在都市廢棄物中。

ATTENTION:

(Pour les appareils équipés d’une batterie RTC (CR2032) ou de batteries rechargeables)

Risque d’explosion en cas de remplacement de la batterie par une référence non conforme.

La batterie usagée :

- NE DOIT PAS être mise au feu.
- NE DOIT PAS être mise en court-circuit.
- NE DOIT PAS être ouverte ou démontée.
- NE DOIT PAS être jetée avec les ordures ménagères.
- L'icône de poubelle barrée indique que la batterie ne doit pas être jetée avec les ordures ménagères.

Caution: Hot surface for printhead.

Do not touch the printhead before it cools down.

ATTENTION : Surface de la tête d’impression chaude.

Ne pas toucher la tête d’impression avant qu’elle ait refroidi.

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.

IMPORTANT:

Retirer l’alimentation de l’entrée CA avant d’ouvrir le capot des consommables pour procéder au nettoyage ou à la réparation de l'appareil. Après avoir effectué le nettoyage ou corrigé les dysfonctionnements, fermez le capot des consommables avant de brancher l’alimentation à l’entrée CA.

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 and your body.

All operational modes:

2.4GHz: 802.11b, 802.11g, 802.11n (HT20), 802.11n (HT40)

5GHz: 802.11a

The frequency, mode and the maximum transmitted power in EU are listed below:

2400 MHz – 2483.5 MHz: 19.88 dBm (EIRP)

5150 MHz – 5250 MHz: 17.51 dBm (EIRP)

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 is in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following internet address: https://www.tscprinters.com

RF Exposure Warning for Wi-Fi

This equipment must be installed and operated in accordance with provided instructions and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be providing with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

SAR Value: 0.736 W/kg

RF Exposure Warning for Bluetooth

The equipment complies with FCC RF exposure limits set forth for an uncontrolled environment.

The equipment must not be co-located or operating in conjunction with any other antenna or transmitter.

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.

This device has been evaluated for and shown compliant with the IC Specific Absorption Rate (“SAR”) limits when installed in specific host products operated in portable exposure conditions. **(For Wi-Fi)**

This device has also been evaluated and shown compliant with the IC RF Exposure limits under portable exposure conditions. (Antennas are less than 20 cm of a person's body). **(For Bluetooth)**

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, nota 毫米 ent les interférences qui peuvent affecter son fonctionnement.

Informations concernant l'exposition aux fréquences radio (RF)

La puissance de sortie émise par l’appareil sans fil est inférieure à la limite d'exposition aux fréquences radio de l'Industry Canada (IC). Utilisez l’appareil sans fil de façon à minimiser les contacts humains lors du fonctionnement normal.

Ce périphérique a été évalué et démontré conforme aux limites SAR (Specific Absorption Rate – Taux d'absorption spécifique) par l'IC lorsqu'il est connecté à des dispositifs hôtes spécifiques opérant dans des conditions d’utilisation mobile. **(Pour le Wi-Fi)**

Ce périphérique a également été évalué et démontré conforme aux limites d'exposition radio-fréquence par l'IC pour des utilisations par des opérateurs mobiles (les antennes sont à moins de 20 cm du corps d'une personne). **(Pour le Bluetooth)**

NCC 警語：

取得審驗證明之低功率射頻器材，非經核准，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。低功率射頻器材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。前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材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。

限用物質含有情況標示聲明書 / Declaration of the Presence Condition of the Restricted Substances Marking

設備名稱(Equipment Name)：熱感式條碼印表機 型號(Type Designation)：DH220L / DH320L 系列						
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 olybrominated diphenyl ethers (PBDE)
內外塑膠件	○	○	○	○	○	○
內外鐵件	○	○	○	○	○	○
滾輪	○	○	○	○	○	○
電路板組件	–	○	○	○	○	○
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	○	○	○	○	○	○

備註一：〝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.

備註二：〝○〞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.

備註三：〝-〞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.

Revision History

Date	Description	Editor
2026/01/20	Official release.	Peter Yao
2026/03/13	• Added the “Using BP-4000 Smart Battery Station” section. • Added “BP-4000 Smart Battery Station” to the “Specifications” section.	Peter Yao

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