Alpha-4L

■ **Direct Thermal**

Moblie Barcode Printers

Series Lists:

Alpha-4L

User Manual

Copyright information

Table of Contents

1. Introduction

Thank you very much for purchasing TSC bar code printer.

Enjoy TSC's reputation for cost-efficient, high durability printers with the Alpha-4L economical receipt printer. The Alpha-4L is a comfortable, light-weight printer capable of working with any mobile receipt printing application where you need quick, simple receipts on demand.

Our Alpha-4L is designed for a rough life, inside the IP54-rated environmental case to resist dust and water and with its rubber over-mold design prepared to take up to a five foot fall and keep printing. These small and light printers can be worn comfortably for a full shift, without interfering with the user's tasks. Use USB, Bluetooth, optional Wireless or serial to connect to a mobile computer or even a smart phone and produce clear easy-to-read receipts hour after hour.

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 Product Specification

The printer offers the following standard features

Product standard feature

Direct thermal printing

Black mark reflective sensor
(center position , black mark in back side)

Gap transmissive sensor (Fixed, center of offset 2.75 mm to right from center)

Head open sensor

Peeler sensor

2 operation buttons (On/off and feed)

3 LEDs for printer status, 3 LEDs for battery status

USB 2.0 (full speed) interface

Class 2 Bluetooth 2.1 module

32 MB SDRAM memory

16 MB FLASH memory

Micro SD card reader for memory expansion up to SDHC 4G (max.)

DC 7.2V/5800 mAh Li-ion rechargeable battery

Real time clock

Powerful 32 bit 200 MHz RISC processor

Eltron® EPL and Zebra® ZPL emulation languages support

Internal 8 alpha-numeric bitmap fonts

Internal Monotype Imaging® true type font engine with one CG Triumvirate Bold Condensed scalable font

Fonts and bar codes can be printed in any one of the four directions (0, 90,180, 270 degree)

Downloadable fonts from PC to printer memory

Downloadable firmware upgrades

Text, bar code, graphics/image printing (Please refer to the TSPL/TSPL2 programming manual for supporting code page)

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

1.2 Printer Optional Featussf

The printer offers the following optional features.

Features Description	User options	Factory options
2" LCD (Liquid crystal display), 128 x 64 pixels resolution w/white LED backlight (with 4 buttons and 2 LEDs)		○
Wi-Fi module		○
Zebra® CPCL emulation language support		○
Media sensor position (position selectable – right/left/center position-factory adjustment, default – center position)		○
Linerless kit		○
Mini USB cable	○	
Mini USB to RS-232 (serial) converter cable	○	
IP54-rated environmental case with shoulder strap (for standard model)	○	
IP54-rated environmental case (for standard model)	○	
IP54-rated environmental case with shoulder strap (for linerless model)	○	
IP54-rated environmental case (for linerless model)	○	
Shoulder strap	○	
Vehicle power adaptor	○	

1.3 General Specifications

General Specifications

Physical dimensions	160 mm (W) x 191.6 mm (H) x 79 mm (D)
Mechanism	Plastic with rubber over molded
Weight	0.945 kg (w/o battery)
Power	External power adapter Input: AC 100-240V Output: DC 12V 1A
Environmental condition	Operation: -10 ~ 50˚C (14 ~ 122˚F) Storage: -40 ~ 60 ˚C (-40 ~ 140˚F) Relative humidity: 10 ~ 90% non-condensing IP54 w/ IP54-rated environmental case Drop 1.5m (5ft) Drop 1.8m (6.5ft) w/ IP54-rated environmental case
Battery Spec	・ Charging time: 5~6 hr ・ Standby mode (Bluetooth): up to 55 hr ・ Standby mode (Wi-Fi): up to 40 hr ・ Printing: one label per 2 minutes,

Condition	Endurance (hr)	4"x6" Labels
Density 3	26	780
Density 8	21	650

Charging capability	Internal charging capability (battery-in) Auto-switching AC adapter 12-24VDC automobile cigarette lighter plug External charging capability (battery-out) 1 battery charger station 4 battery charger station

1.4 Print Specifications

Print Specifications

Print head resolution (dots per inch/mm)	203 dots/inch (8 dots/mm)
Printing method	Direct thermal
Dot size (width x length)	0.125 x 0.125 mm (1 mm = 8 dots)
Print speed (inches per second)	Max. 4 ips (100 mm/sec) 2,3 ips for peeler mode
Max. print width	4.09" (104 mm)
Max. print length	90" (2286 mm)
Printout bias	Vertical: 1 mm max. Horizontal: 1 mm max.

1.5 Media Specifications

Media Specifications

Media roll capacity	Max. 2.65" (67.3 mm) OD
Media core diameter	12.7 mm ~ 25.4 mm (0.5" ~ 1") ID core
Media type	Continuous, die-cut, black mark, External fan-fold, receipt, Linerless label (w/ linerless kit)
Media wound type	Outside wound
Media width	50.8 mm ~ 112 mm
Media thickness	0.055 mm ~ 0.165 mm
Label length	12.7 mm ~ 2286 mm
Label length (peeler mode)	25.4 ~ 152.4 mm (1" ~ 6")
External fan-fold media	Stack height: 70 mm (2.75") Page length: 152 mm ~ 305 mm (6" ~ 12")
Black mark	Min. 8 mm (W) x 2 mm (H)
Gap height	Min. 2 mm

2. Operation 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
- One Li-ion rechargeable battery (5800 mAh)
- One Windows labeling software/Windows driver CD disk
- One quick installation guide
- One auto-switching AC adaptor
- One belt clip
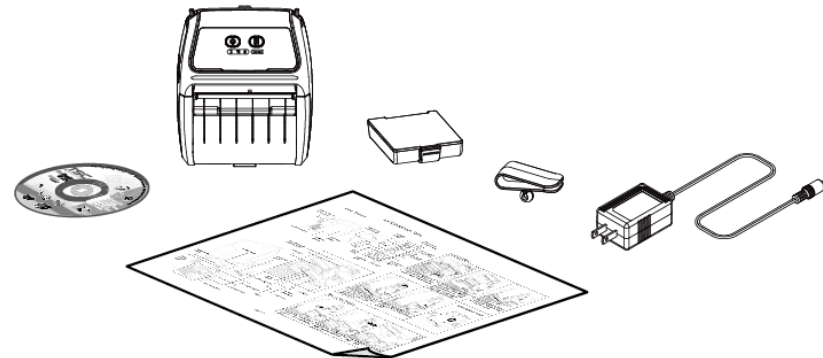
If any parts are missing, please contact the Customer Service Department of your purchased reseller or distributor.

2.2 Printer Overview

2.2.1 Front View
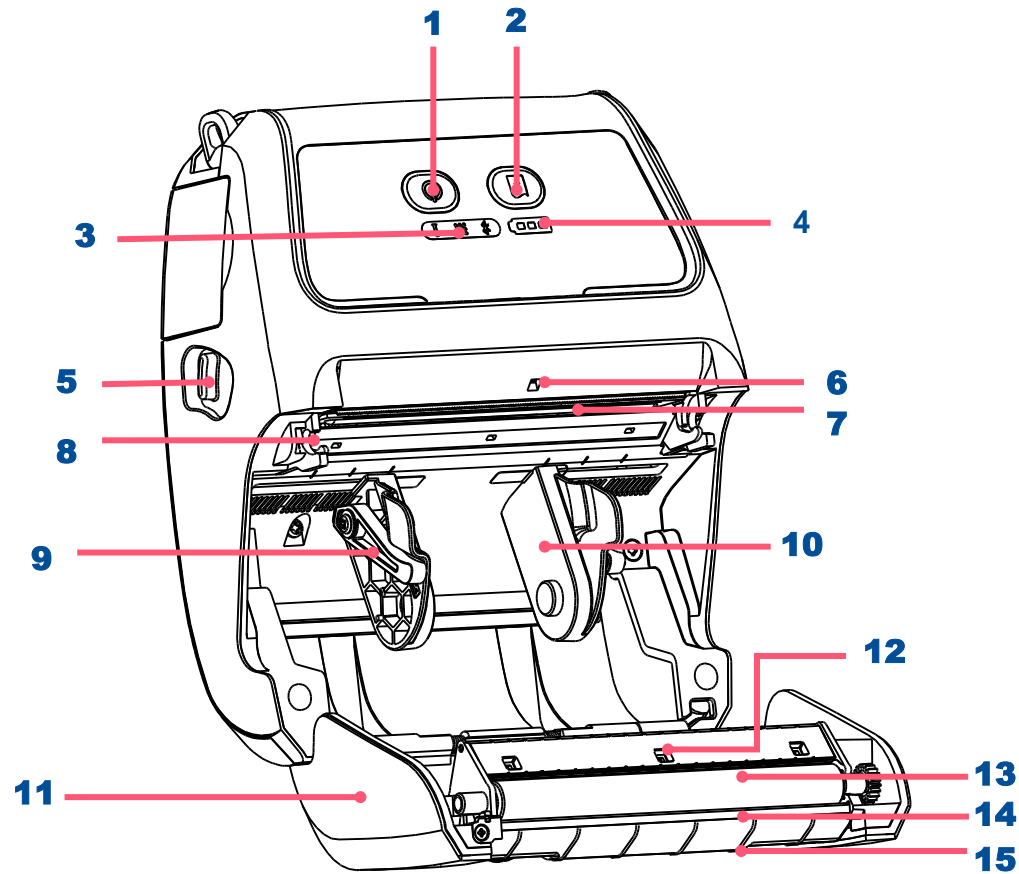
1. Power on/off button
2. Feed button
3. Printer status LED indicator
4. Battery status LED indicator
5. Media cover release button
6. Peel-off sensor (Without for linerless model)
7. Print head
8. Transmissive sensor – Gap sensor
9. Media holder lock switch
10. Media holder
11. Media cover
12. Reflective sensor – Black mark sensor
13. Platen roller
14. Tear/Peeler bar (Without for linerless model)
15. Peeler module

2.2.2 Rear View
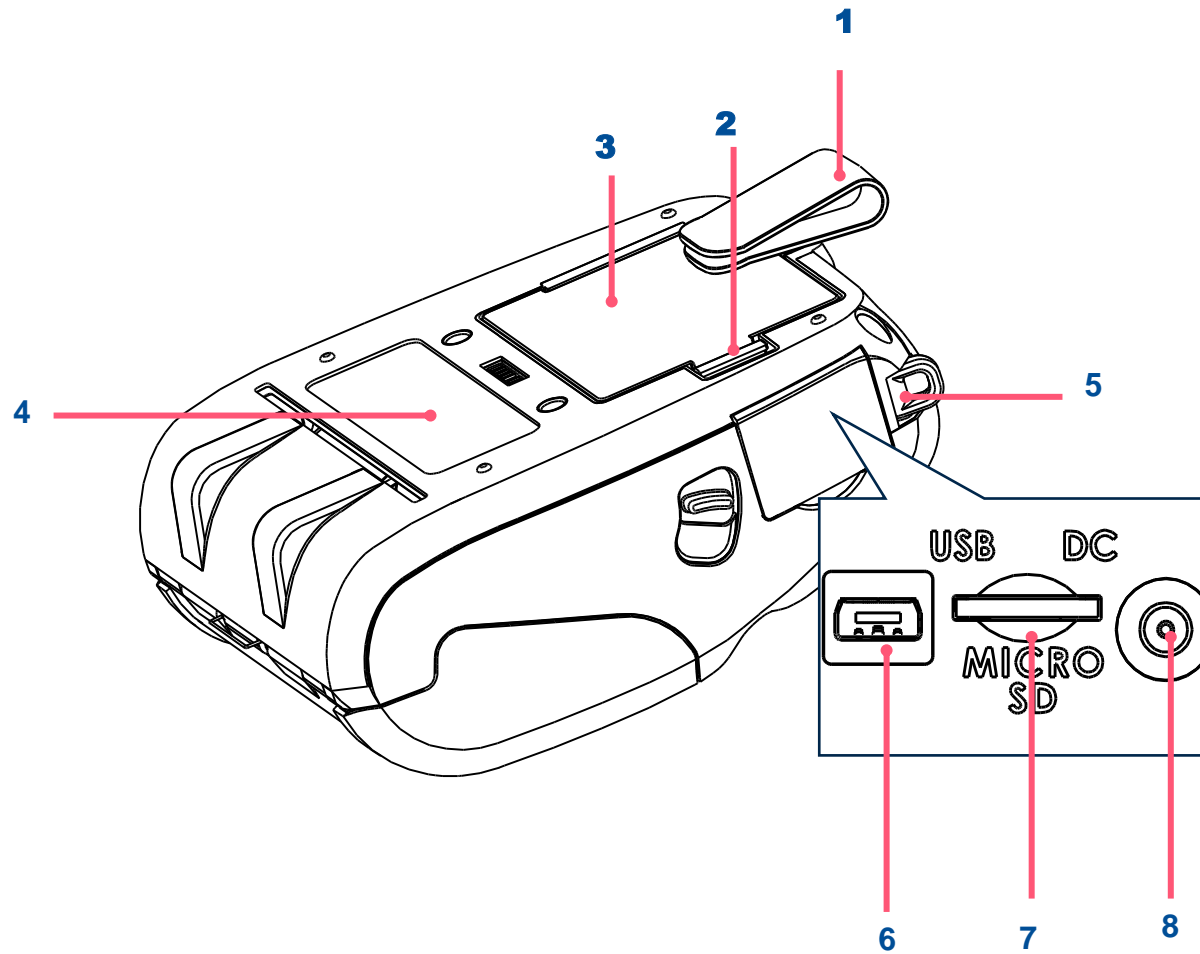
1. Belt chip
2. Battery open clasp
3. Li-ion battery
4. External label entrance chute
5. Hanger for shoulder strap
6. USB interface
7. * MicroSD card socket
8. Power jack

2.3 Operator Control

2.3.1 Led Indication and Keys
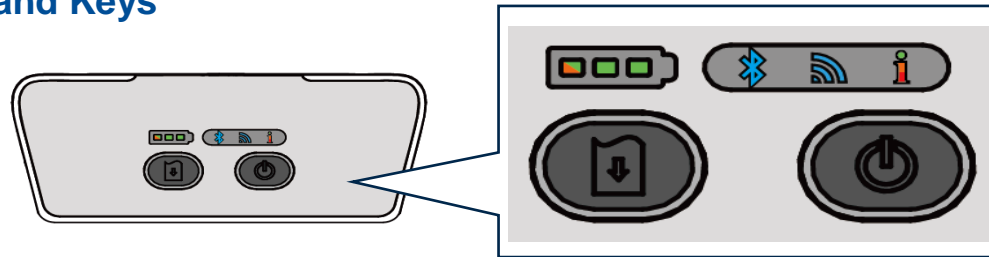
Keys	Function
⏻	– Press and hold for 2-3 seconds to turn on the printer – Press and hold for 2-3 seconds to turn off the printer
(feed icon)	– Ready status: Feed one label – Printing status: Pause the print job
LEDs	**Status**		**Indication**
(battery icon)	(battery full)	Green (solid)	Full charged
	(battery 2/3)		2/3 charged level
	(battery 1/3)	Green (solid)	1/3 charged level
		Green (blinking)	Low battery
		Amber (solid)	Battery is charging
≯ (Bluetooth)	Blue (solid)		Bluetooth device is ready
	Blue (blinking)		Bluetooth device is communicating
(Wi-Fi)	Blue (solid)		Wi-Fi device is ready
	Blue (blinking)		Wi-Fi device is communicating
	Note: Wi-Fi device is optional.		
ℹ (info)	Off		Printer is ready
	Green (blinking)		– Printer is paused – Printer is downloading data
	Red (solid)		– Media cover is open – Out of memory
	Red (blinking)		– No paper – Paper jam
	Amber (solid)		– Clean data, Printer is busy

2.3.2 LED Indication and Keys for LCD (Option)

Keys	Function
ⓘ	– Display the printer information – Button for LCD setting menu
Ⓜ	– Enter the printer setting menu – Button for LCD setting menu
⏻	– Press and hold for 2-3 seconds to turn on the printer – Press and hold for 2-3 seconds to turn off the printer – Button for LCD setting menu
🔽	– Ready status: Feed one label – Printing status: Pause the print job – Button for LCD setting menu

LEDs	Status	Indication
Error	Off	Printer is ready
	Red (solid)	– Media cover is open – Out of memory – Clean data – Printer is busy
	Red (blinking)	– No paper – Paper jam
	Off	Printer power is turned off

Power	Green (solid)	– Printer power is turned on – Battery is full charged
	Green (blinking)	Low battery
	Amber (solid)	Battery is charging
LCD	**Indication**	
⇄	Printer has been connected with cable	
(Bluetooth icon)	Bluetooth devices have been paired	
(Wi-Fi icon)	Wi-Fi device has been connected	
(battery icon)xx	Battery capacity %	

2.3.2 Power-on Utilities

Power-on Utilities provides the basic functions and can be activated by below procedures:

Turn off the power > **Hold** the Feed button ( ) > **Open** the power > **Release** the button depending on the the color of the LED.

Sequences of the settings standard panel:

Functions \ LED Colors	(5 blink)	(5 blinks)	(5 blinks)
1. Media sensor calibration	Release		
2. Self-test and enter dump mode		Release	
3. Printer initialization			Release

Sequences of the settings for LCD panel (Option):

Power on utilities for LCD panel	The LCD will be changed as following.		
LCD	Calibrate….. (5 dots)	Self Test….. (5 dots)	Initialize….. (5 dots)
Release FEED button ( ) for different functions	Media sensor calibration	Media sensor calibration, self-test and enter dump mode	Printer initialization

3. Setup

3.1 Install the Belt Clip and Battery
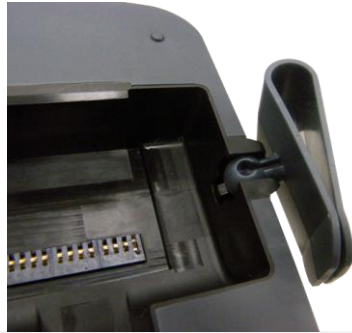
1. Insert the belt clip first.

2. Insert the left side to install the battery at the rear of the printer.

PUSH

3. Push the right side of the battery.
Battery safety warning:
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.

3.2 Charge the Battery

3.2.1 Charge the Battery

It takes 5 to 6 hours to fully charge the battery before the first time usage. The lifetime of the battery is 300 times for charge/discharge cycles.

1. The battery is installed into the printer.

2. Open the interface cover and plug the power cord to the power jack.

3. Plug the power cord into a properly power outlet.
Note:
-Please switch OFF printer power prior to plug in the power cord to printer power jack.
-When the battery is charging, please do not remove the battery from the printer, otherwise, please re-plug the power cord into a power outlet.

Standard panel:

LCD panel: (option)

4. When the battery is changing, the color of battery status LED indicator is solid amber.
Note:
-The battery is completely charged and the amber of LED indicator will turn to green.

3.3 Loading the Media

3.3.1 Loading Media

1. Open the printer media cover by pressing the media cover release button.

2. Pull the media holders apart to fit the label roll width.

3. Place the roll between the media holders and close them onto the core. Place the paper, printing side face up, and pull out enough paper over the print head.
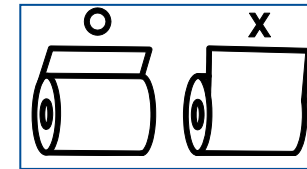
4. Press each side of media cover to close the media cover and make sure the media cover closed correctly.

   Note:
   -Please calibrate the gap/black mark sensor when changing media. Turn on the printer and open/close the media cover then it will calibrate the sensor automatically.

3.3.2 Loading Media in Peel-off Mode

1. Plug the power cord to the power jack on the charger station.
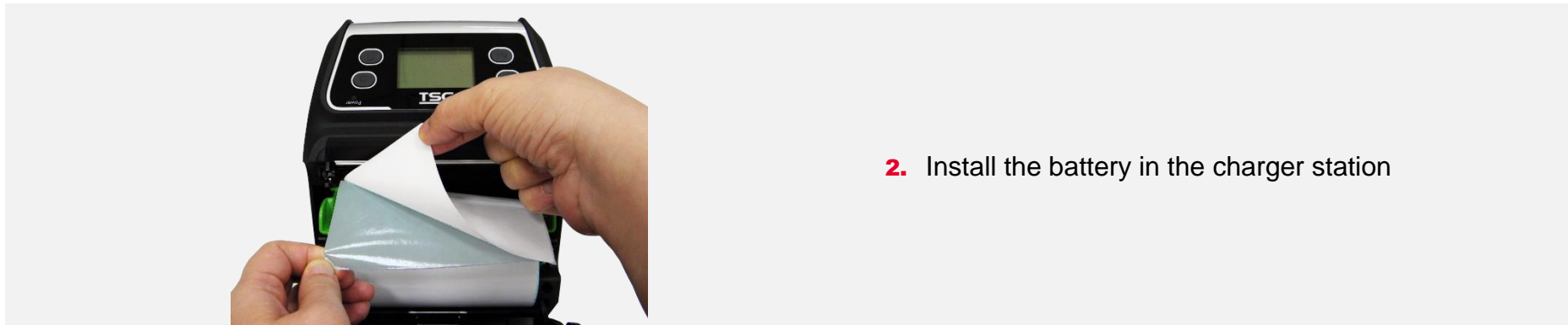
2. Install the battery in the charger station

3. Press each side of media cover to close the media cover and make sure the media cover closed correctly.

4. Feed the liner go through the peeler module. (as figure shown)

5. Pull the liner tightly.

6. Move the peeler module to near the peeler bar by pushing each side of peeler module. (cover the platen roller)

7. Press down the peeler module to lock it.

Loose the peeler module in the reverse procedures:
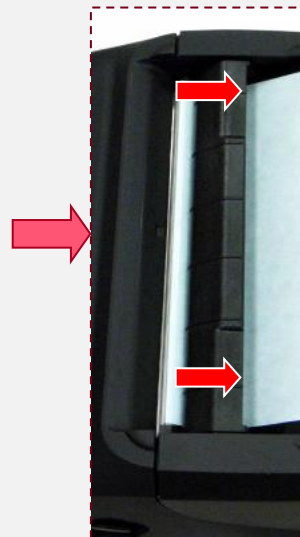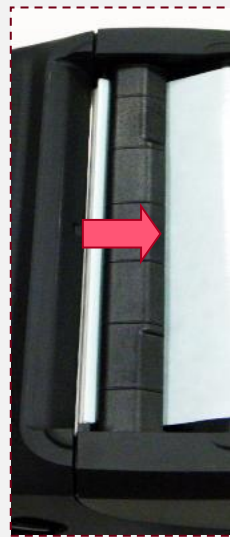
3.3.3 Loading the Fan-fold/External Media

1. Open the printer media cover by pressing the media cover release button. Pull the media holders apart to fit the media width.

2. Push down each side of media holder lock switch to fix the media holder..

3. Feed the media through the rear external label entrance chute. Place the paper, printing side face up.
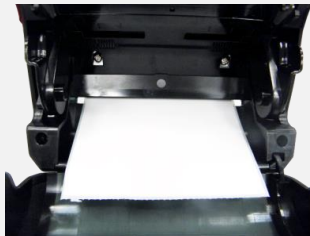
4. Press each side of media cover to close the media cover and make sure the media cover closed correctly.

5.
   Note:
   -Please calibrate the gap/black mark sensor when changing media. Turn on the printer and open/close the media cover then it will calibrate the sensor automatically.

3.3.4 Loading the Linerless Media (Option)
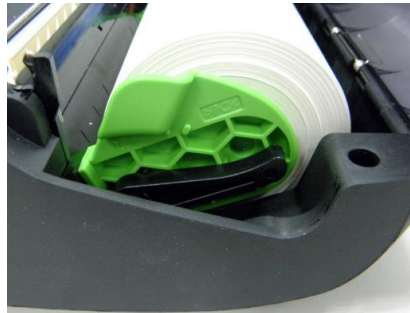
1. Please refer to subsection 3.3.1 to loading the media roll into the printer.
2. Push down each side of media holder lock switch to fix the media holder for using linerless media.
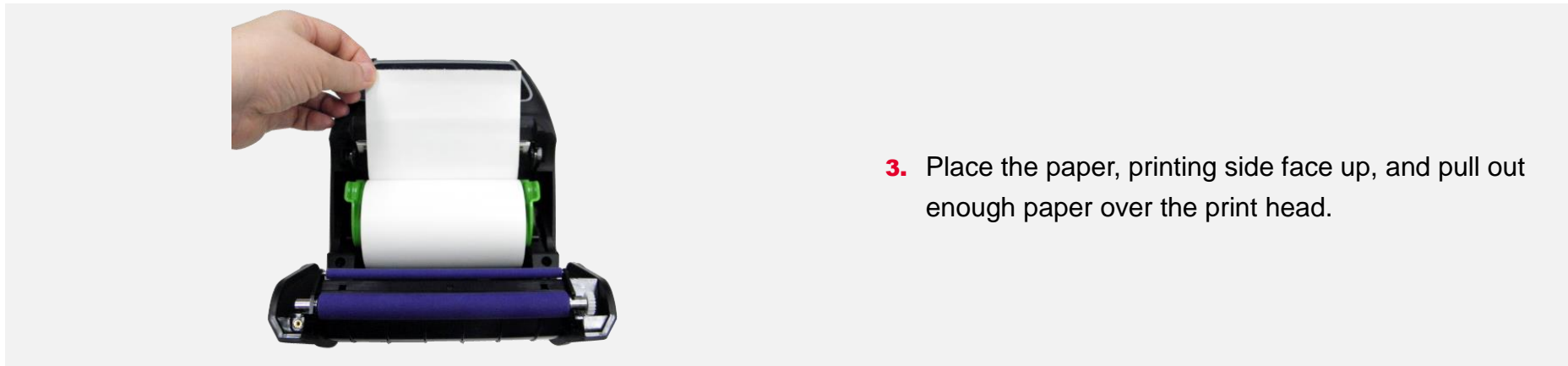
3. Place the paper, printing side face up, and pull out enough paper over the print head.

4. Press each side of media cover to close the media cover and make sure the media cover closed correctly.

   Note:
   -Please calibrate the gap/black mark sensor when changing media. Turn on the printer and open/close the media cover then it will calibrate the sensor automatically.

3.4 Connecting the Printer

The printer must establish communication with a host terminal which sends the data to be printed. There are three ways to connect for Alpha-4L series,

- By a cable between the printer and its host terminal
- By a Bluetooth short-range radio
- By a Wireless LAN (Option)

3.4.1 Connecting with the Communication Cable

USB to USB Cable (Optional)
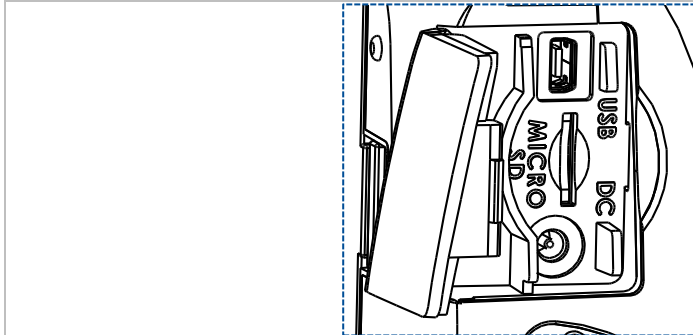
	■ Open the interface cover and connect the printer to the computer with USB cable.

3.4.2 Wireless Communications with Bluetooth

1. Turn on the printer.
2. Open the Bluetooth device for host terminal to scan for printer's Bluetooth device.
3. Connect the Bluetooth devices. The Bluetooth LED will turn on blue (the Bluetooth icon will be shown for LCD panel) if devices have been paired.

Printer Bluetooth default

Address	You can find this info from configuration (self-test) page, please refer to section 2.3.2 for how to print out the self-test.
Name	BT-SPP
PIN	0000

3.4.3 Wireless Communications with Bluetooth Wireless Communications with Wi-Fi (Option)

You should set the WLAN settings via the cable for first using. Please refer to Chapter 5 to set the Wi-Fi module. If your printer supports the LCD, please refer the section 6.3.4 to set the WLAN settings.

4. Accessories

4.1 Install the IP54-rated Environmental Case with Shoulder Strap (Option)

1. Open the case top cover.

2. Put the printer into the case.

3. Close the case top cover. The outside cover should be opened while printing.

4.2 Install the Adapter for 0.75" and 1" Paper Core (Option)
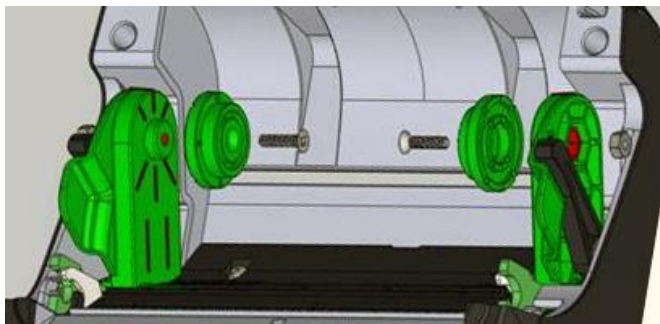
1. Open the case top cover.

   Check the parts:

   - Adapter x 2
   - Screw x 2
   - Nut x 2

2. Put the nut on the media holder.

3. Make the arrow direction is as fig. to install the adapter

4. Pull the media holders apart. Push down another side of media holder lock switch to keep the media holder in max width.

5. Tighten the screw on nut for fixing the adapter on media holder.

Note: Press the nut with hand when tighten the screw.

4.3 Install the Belt Strap (Option/ Standard for linerless model)

	1. Tighten 2 screws on the printer. **For linerless model** **For standard model**
	2. Put the nut on the media holder. Pull up the belt strap to lock it on the screws.

3. Open the belt strap for using.

5. TSC Console

TSC Console is a management tool combining the Printer Management, Diagnostic Tool, CommTool and Printer Webpage settings, which enables you to adjust printer's settings/status; change printers' settings; download graphics, deploy fonts, graphics, label templates or upgrade the firmware to the group of printers, and send additional commands to printers at the same time.

※ **Printer firmware version before A2.12 will only use 9100 Port as command port; Printer firmware after A2.12 will use 6101 Port as command port.**

5.1 Start TSC Console

1. Double click TSC Console icon to start the software.
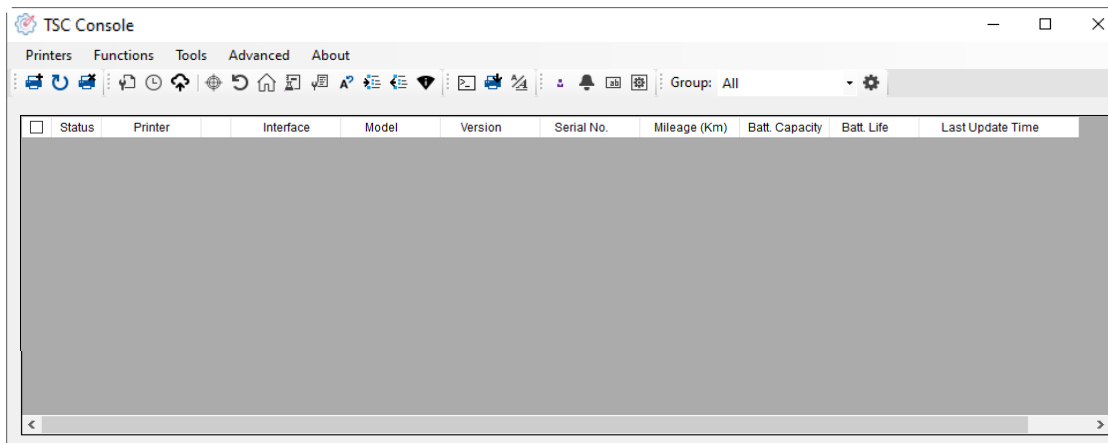
2. Manually add the devices by clicking **Printer > Add Printers**.

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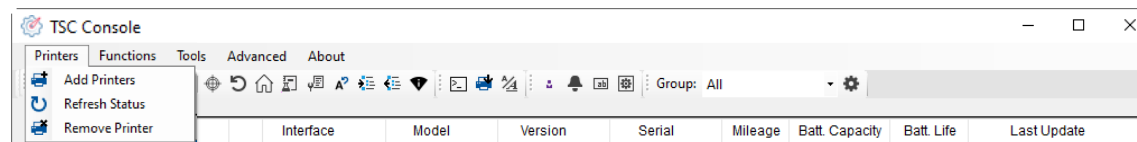
3. Select the current interface of the printer.
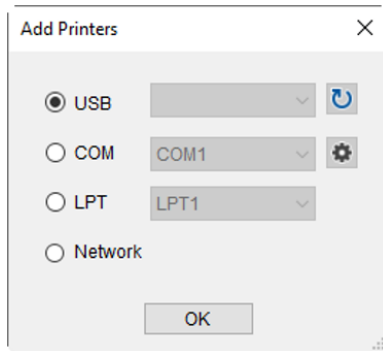
4. The printer will be added to **TSC Console**'s interface.

5. Select the printer and set the settings.
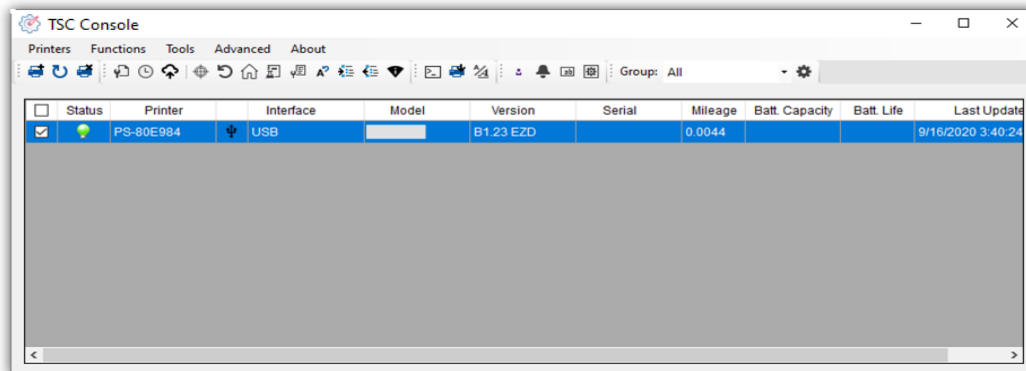
For more information, please refer to TSC Console User Manual.

5.2 Set WiFi and Add to TSC Console Interface

1. Use **USB** or **COM Port** to set up the interface. (refer to chp.5.1)
2. Double click to enter the printer configuration page.
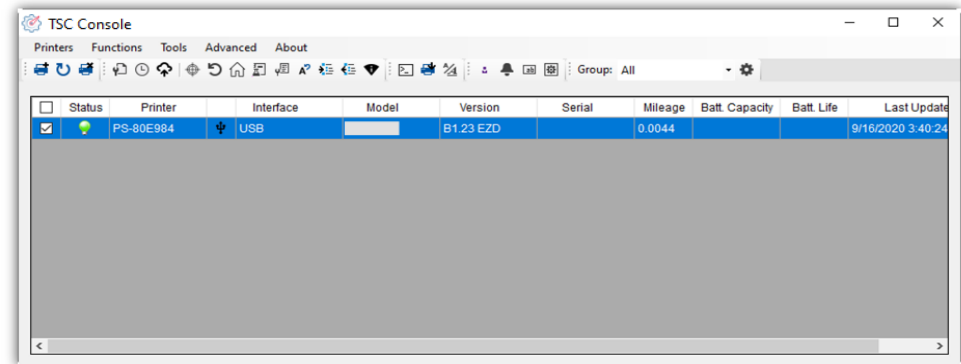
3. Click **Get** to receive printer's information.
4. Click **Wi-Fi** to the wi-fi setting page.
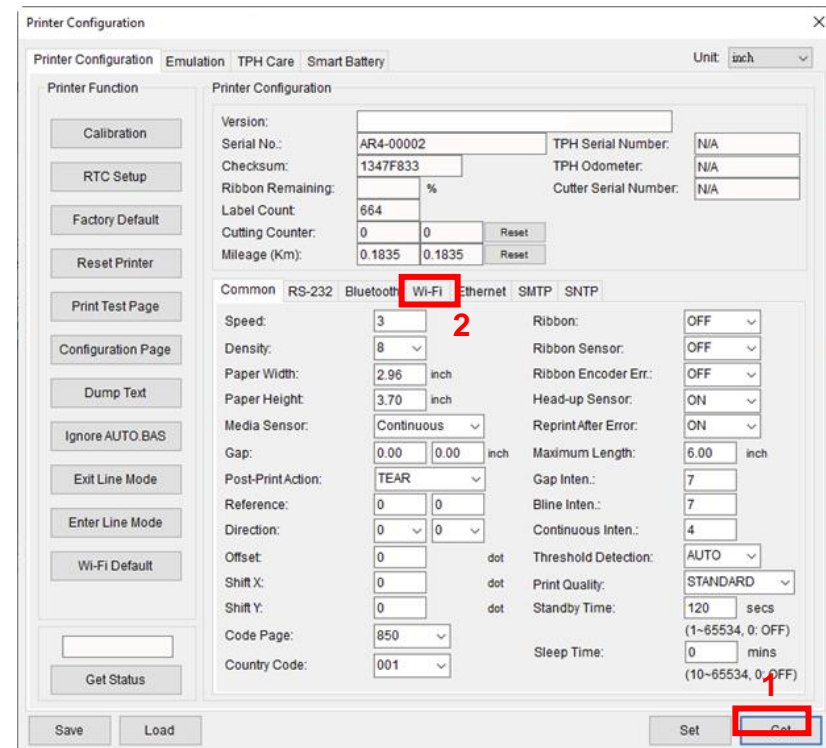
For WPA-Personal

I. Fill-in the **SSID**.

II. Select the Encryption option to **WPA-Personal.**

III. Fill-in the Key.

IV. Select **DHCP** to **ON**. (For **OFF** option, please fill-in the IP Address, Subnet Mask and Gateway)

V. After setting, click the **Set** button.

Note:
Before setting, the entered field will be shown in yellow for reminding.
On DHCP, user can change the printer name by another model name in "Printer Name" field.
User also can change the raw port in "Raw Port" field.

For WPA-Enterprise

I. Fill-in the **SSID**.

II. Select the Encryption option to **WPA2-Enterprise**.

III. Select DHCP to **ON** (For **OFF** option, please fill-in the IP Address, Subnet Mask and Gateway)

IV. Select the **EAP Type** option. (For **EAP-TLS** option, please upload the CA and Key for mutual authentication, integrity-protected cipher suite negotiation, and key exchange between two endpoints.)

V. After setting, click the **Set** button.
Note:
Before setting, the entered field will be shown in yellow for reminding.
On DHCP, user can change the printer name by another model name in "Printer Name" field.
User also can change the raw port in "Raw Port" field.

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5. After clicking **Set** button, it'll pop-up the window tip as below shown.	**Please Wait** Please wait as this may take a few seconds...
6. Remove the cable between the computer and the printer. **7.** Go to main page, click **Add Printer** to add the printer via **Network**. **8.** Select the printer and enter the setting page by double clicking the printer. **9.** Click the **Print Test Page** button to print the test page via Wi-Fi interface.	Add Network Printers ✕ ○ Broadcast: ◉ IP Address: 0.0.0.0 ❓ ○ Subnet: First IP Address Last IP Address + 10.0.10.1 10.0.10.10 - Discover Printer firmware version before A.12 and Alpha-2R/3R/4L, TDM series can only be discovered through "IP Address" option.
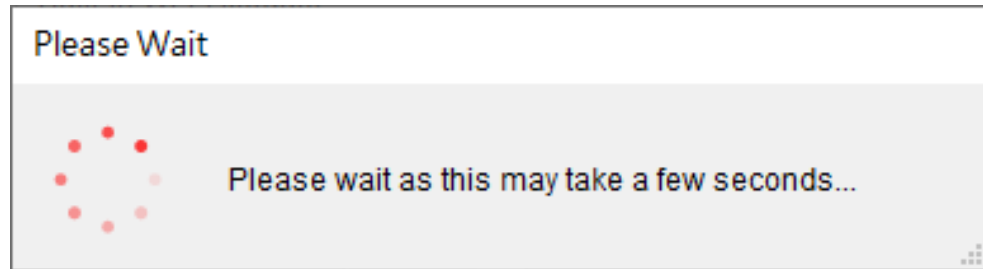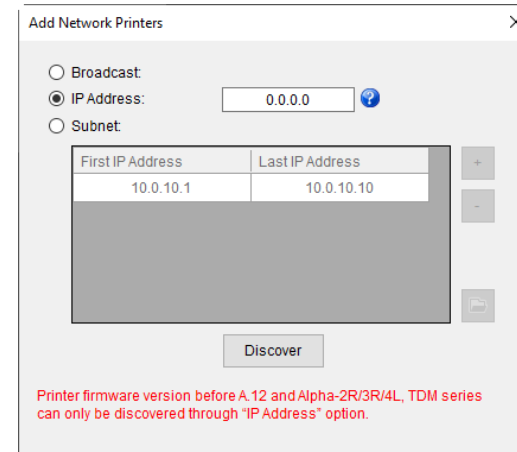
5.3 Initialize the Printer WiFi Setting

1. Return to the main page of TSC Console.
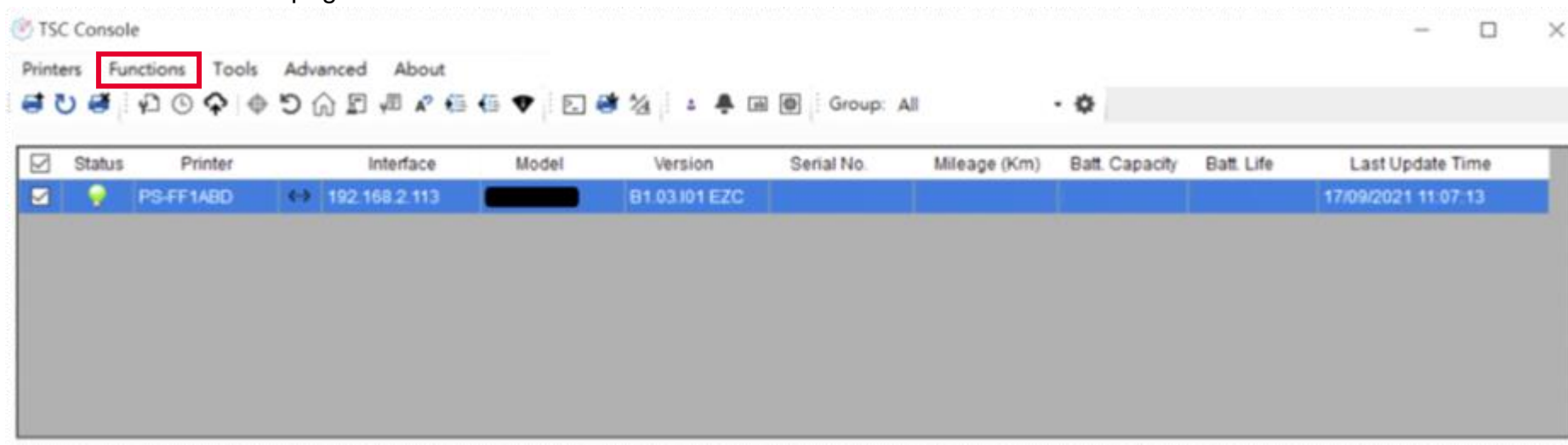
2. Click **Functions** to expand the page.

3. Click **Wi-Fi Default** to initialize the printer Wi-Fi module setting to factory default setting.
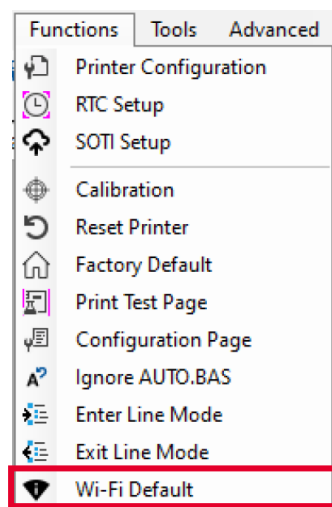
5.4 Setting Post-Print Action

When the printer is equipped with other opton kits, ex: cutter, peeler, rewinder, please select the mode after finishing the calibration.

Follow below procedure to set the post action for the printing:

Refer Chp 5.1 to Connect the printer with TSC Console > Double click the printer > The Printer Configuration Page will pop up > Click Get to load information > Go to Common Tab > Find Post-Print Action > Select the mode depends on users' application > Click Set.

5.5 Printer Function

Printer Function could be found in **Printer Configuration**. "**Printer Function**" will be shown on the left side of the window.
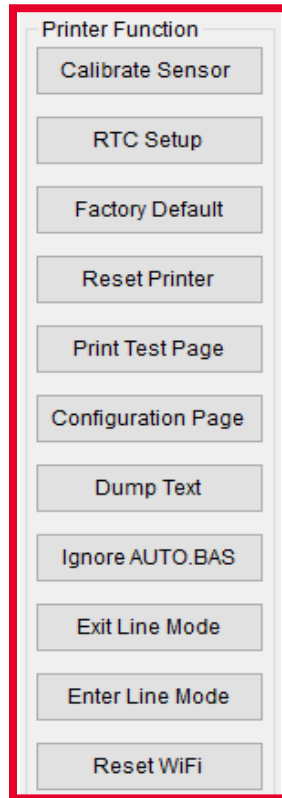
Functions	Description
Calibrate Sensor	Detect media types and the size of the label
RTC Setup	Synchronize printer with Real Time Clock on PC
Factory Default	Initialize the printer to default settings
Reset Printer	Reboot printer
Print Test Page	Print test page according to the specified label size and sensor type.
Configuration Page	Print printer configurations
Dump Text	Activate the printer to dump mode
Ignore AUTO.BAS	Ignore AUTO.BAS file when printer boot up.
Exit Line Mode	Exit the line mode to page mode
Enter Line Mode	Leave page mode and enter line mode
Reset WiFi	Restore the WiFi settings to defaults.

6. LCD Menu Function (Option)

The Alpha-4L series offer the LCD panel for selection to further enhance its capabilities to meet the demands of a wide range of printing solutions. This option feature includes LCD control panel, 4 buttons and 2 LED display. Please press the "M" button to enter the setting menu.

6.1 How to use the LCD to set the printer

Press the "M" button to display the function menu screen as following shown.
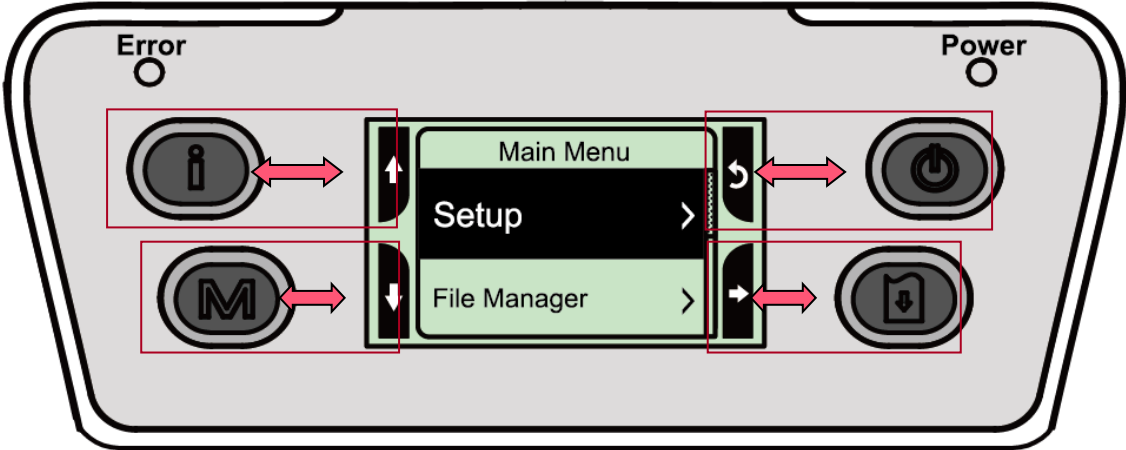
You can use this 4 buttons to scroll, select, enter or return the menu, depend on the icons from 4-sides of LCD. It was selected if the item with the black ground on the screen. The icon function is listed as below,

Icon	Function
i	Display printer information
⚐	Enter setting menu
⏻	Power switch

↑	Scroll up
↓	Scroll down
↺	Return to previous menu
→	Enter to next menu
⤓	Enter setting mode
⤒	Exit setting mode
H	Save the selected settings and return to previous menu
✓	Select
O	Alter to OFF
⏻	Alter to ON

For example:

Change the speed setting, please following steps as below:

1. Press "M" button to enter the setting menu. Press ⬇ button to enter the "Setup" item.

2. Press ⬇ button to enter the "Print Setup" item. Select the "TSPL2" item. Enter the "Speed" setting mode.
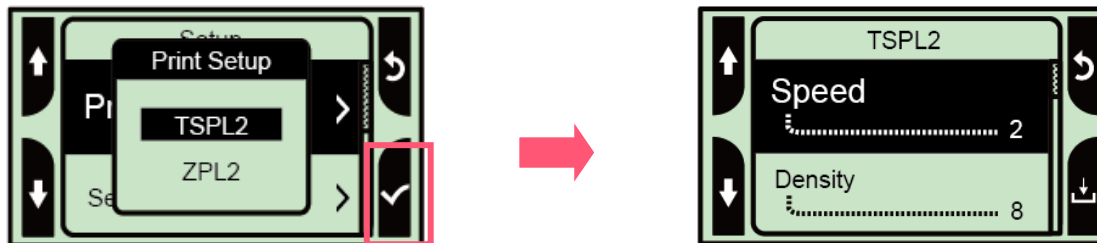
3. At this status, you can scroll up or scroll down to select the value of print speed. Then press the ⬇ button to save the selected value into the printer. Press "⏻" butter to back to "Ready mode".
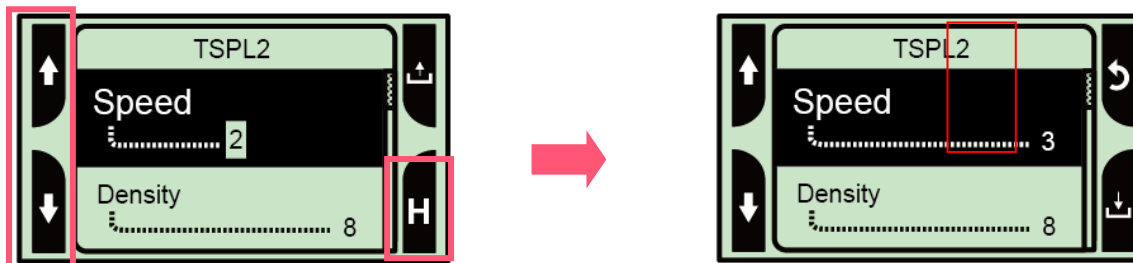
6.2 Main Menu Overview

There are 5 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.

```
                          ┌──────────────┐
                          │  Main Menu   │
                          └──────────────┘
       ┌───────────┬───────────┼───────────┬───────────┐
  ┌─────────┐ ┌────────────┐ ┌───────────┐ ┌─────────┐ ┌─────────┐
  │  Setup  │ │File Manager│ │Diagnostics│ │Language │ │ Service │
  └─────────┘ └────────────┘ └───────────┘ └─────────┘ └─────────┘
       │            │             │             │            │
  ┌─────────┐ ┌──────────┐ ┌─────────────┐ ┌─────────┐ ┌──────────────┐
  │ Printer │ │  DRAM    │ │Print Config.│ │ English │ │Initialization│
  │ Setup   │ └──────────┘ └─────────────┘ └─────────┘ └──────────────┘
  └─────────┘      │             │
       │      ┌──────────┐ ┌─────────────┐
  ┌─────────┐ │  FLASH   │ │ Dump Mode   │
  │ Sensor  │ └──────────┘ └─────────────┘
  └─────────┘                    │
       │                  ┌─────────────┐
  ┌─────────┐             │  Battery    │
  │ Serial  │             └─────────────┘
  │ Comm    │                    │
  └─────────┘             ┌─────────────┐
       │                  │ Print Head  │
  ┌─────────┐             └─────────────┘
  │ Wireless│
  │ LAN     │
  └─────────┘
       │
  ┌─────────┐
  │Bluetooth│
  └─────────┘
       │
  ┌─────────┐
  │Date Time│
  └─────────┘
       │
  ┌─────────┐
  │ Display │
  └─────────┘
```
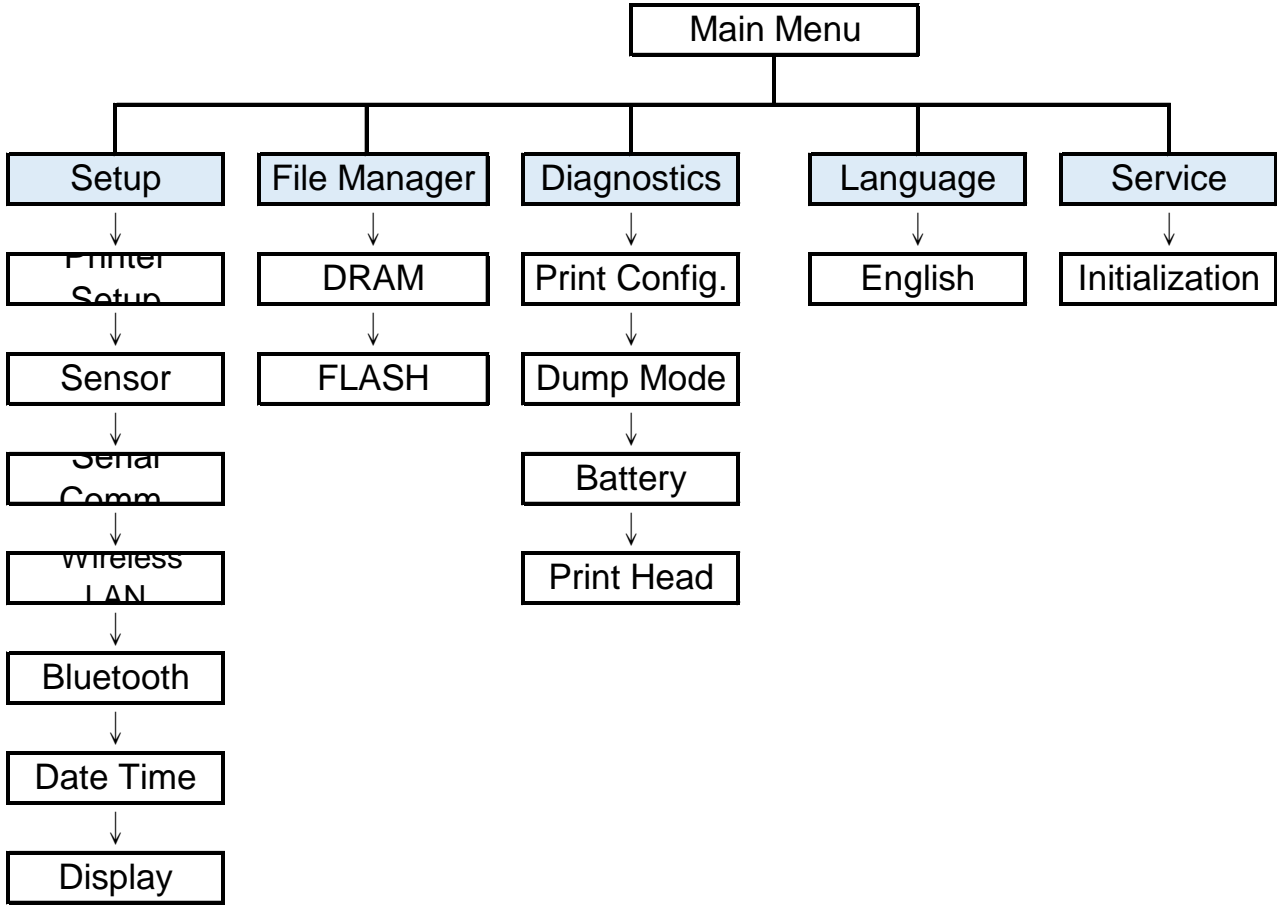
Note:

* The Wireless LAN function is optional for Alpha-4L series.

6.3 TSPL2

TSPL2 選項可以設定印表機 TSPL 中的設定值。

```
                                                        ┌─────────────┐
                                                        │    Speed    │
                                                        └─────────────┘
                                                        ┌─────────────┐
                                                        │   Density   │
                                                        └─────────────┘
                                                        ┌─────────────┐
                                                        │  Direction  │
                                                        └─────────────┘
                                                        ┌─────────────┐
                                                        │ Print mode  │
                                                        └─────────────┘
                                                        ┌─────────────┐
                                                        │   Offset    │
                                                        └─────────────┘
  ┌──────────┐      ┌──────────┐      ┌──────────┐      ┌─────────────┐
  │Main Menu │──────│  Setup   │──────│  TSPL2   │──────│   Shift X   │
  └──────────┘      └──────────┘      └──────────┘      └─────────────┘
                                                        ┌─────────────┐
                                                        │   Shift Y   │
                                                        └─────────────┘
                                                        ┌─────────────┐
                                                        │ Reference X │
                                                        └─────────────┘
                                                        ┌─────────────┐
                                                        │ Reference Y │
                                                        └─────────────┘
                                                        ┌─────────────┐
                                                        │  Code Page  │
                                                        └─────────────┘
                                                        ┌─────────────┐
                                                        │   Country   │
                                                        └─────────────┘
```

Item	Description	Default
Speed	Set the print speed.	**N/A**
Density	Set the printing darkness.	8
Direction	Set the printout direction. Setting Value: 0 and 1. Direction 0: [Direction] Direction 1: [uoıʇɔǝɹıp]	0
Print mode	Set the print mode. There are 5 modes in total: **None:** Next label top of form is aligned to the print head burn line location. (Tear Off Mode) **Batch Mode:** Once finishing the printing process, label will be fed to the tear plate location. **Peeler Mode:** Enable the label peel off mode.	Batch Mode
Offset	Adjust media stop location. Available value setting range: -999 dots to 999 dots.	0 dot
Shift X	Adjust print position. Available value setting range: -999 dots to 999 dots.	0 dot
Shift Y		0 dot
Reference X	Set the origin of printer coordinate system horizontally and vertically. Available setting range: 0 dot to 999 dots.	0 dot
Reference Y		0 dot
Code page	Set the code page of international character set.	850
Country	Set the country code. Available setting value range: 1 to 358.	001

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

6.4 ZPL2

This "ZPL2" category can set up the printer settings for ZPL2.

```
Menu — Setup — ZPL2
                    ├── Darkness
                    ├── Print Speed
                    ├── Tear Off
                    ├── Print Mode
                    ├── Print Width
                    ├── List Fonts
                    ├── List Images
                    ├── List Formats
                    ├── List Setup
                    ├── Control Prefix
                    ├── Format Prefix
                    ├── Delimiter Char
                    ├── Media Power Up ── Feed
                    │                     Calibration
                    │                     Length
                    │                     No Motion
                    ├── Head Close ── Feed
                    │                 Calibration
                    │                 Length
                    │                 No Motion
                    └── Left Position
```
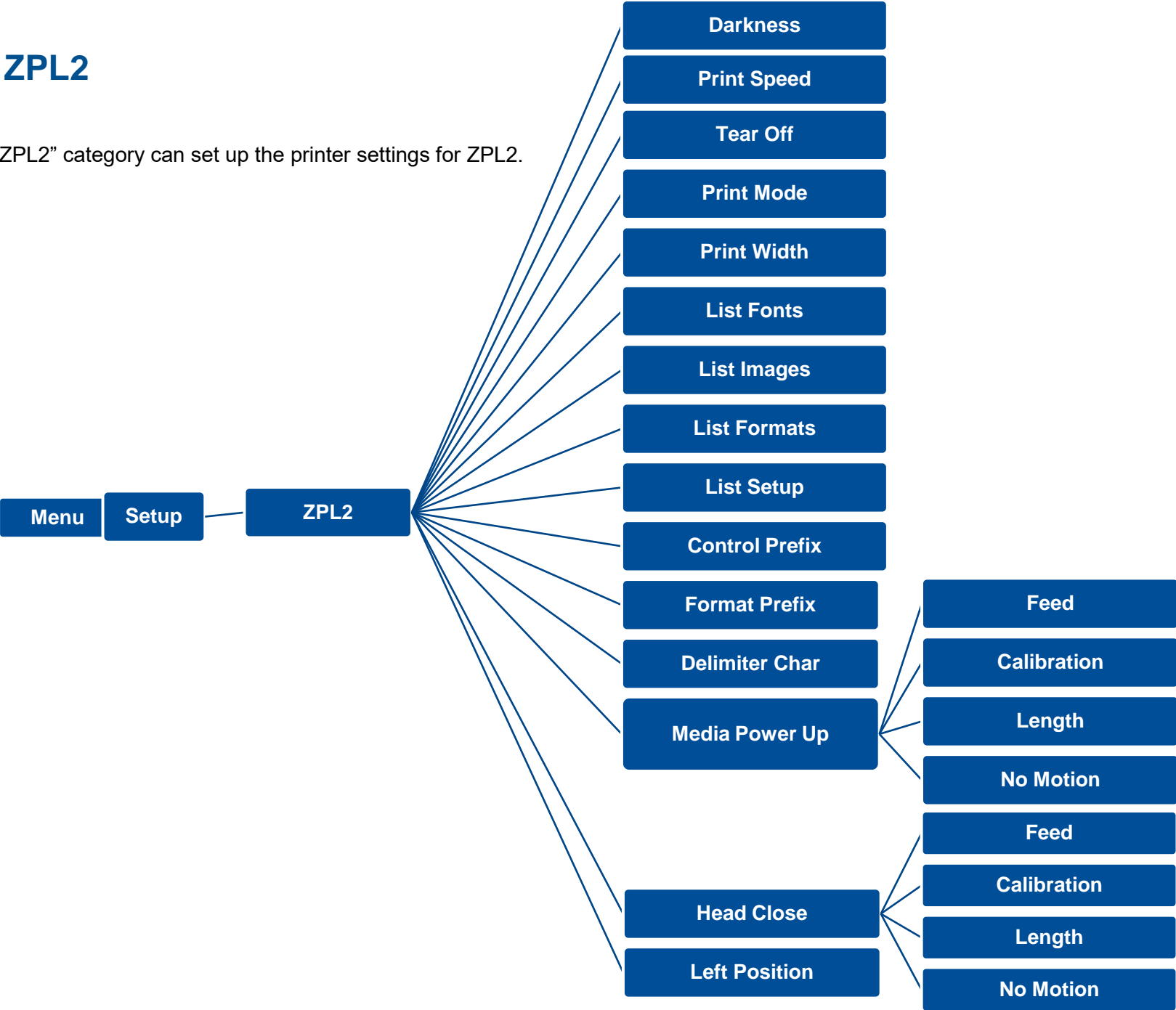
Item	Description	Default
Density	Set the printing darkness. Available setting range: 0 to 30.	16
Print Speed	Set the print speed.	**2**
Tear Off	Adjust media stop location. Available setting value range: -120~120 dots.	0 dot
Print mode	Set the print mode. There are 4 modes: **Tear Off:** Next label top of form is aligned to the print head heating line location. **Peeler Off**: Enable the label peel off mode.	Tear Off
Print Width	Set the print width. Available setting range: 2 ~ 999 dots.	812
List Fonts	Print the current fonts list from the memory devices to the label.	N/A
List Images	Print current printer available images list stored at the memory device to the label.	N/A
List Formats	Print current printer available formats list from the memory devices to the label.	N/A
List Setup	Print current printer configuration to the label.	N/A
Control Prefix	Set control prefix character.	N/A
Format Prefix	Set format prefix character.	N/A
Delimiter Char	Set delimiter character.	N/A

Media Power Up	Set the action of the media when turning on the printer. **Feed:** Printer will advance one label. **Calibration:** Printer will make calibration. **Length:** Printer determine length and feed label. **No Motion:** Printer will not move media.	No Motion
Head Close	Set the action of the media when closing the print head. **Feed:** Printer will advance one label. **Calibration:** Printer will make calibration. **Length:** Printer determine length and feed label. **No Motion:** Printer will not move media.	No Motion
Label Top	Adjust print position vertically on the label. Value range: -120 to +120 dots.	0
Left Position	Adjust print position horizontally on the label. Value range:-9999 to +9999 dots.	0

6.5 Sensor

This option is used to calibrate the selected sensor. We recommend calibrate the sensor before printing when changing the media.
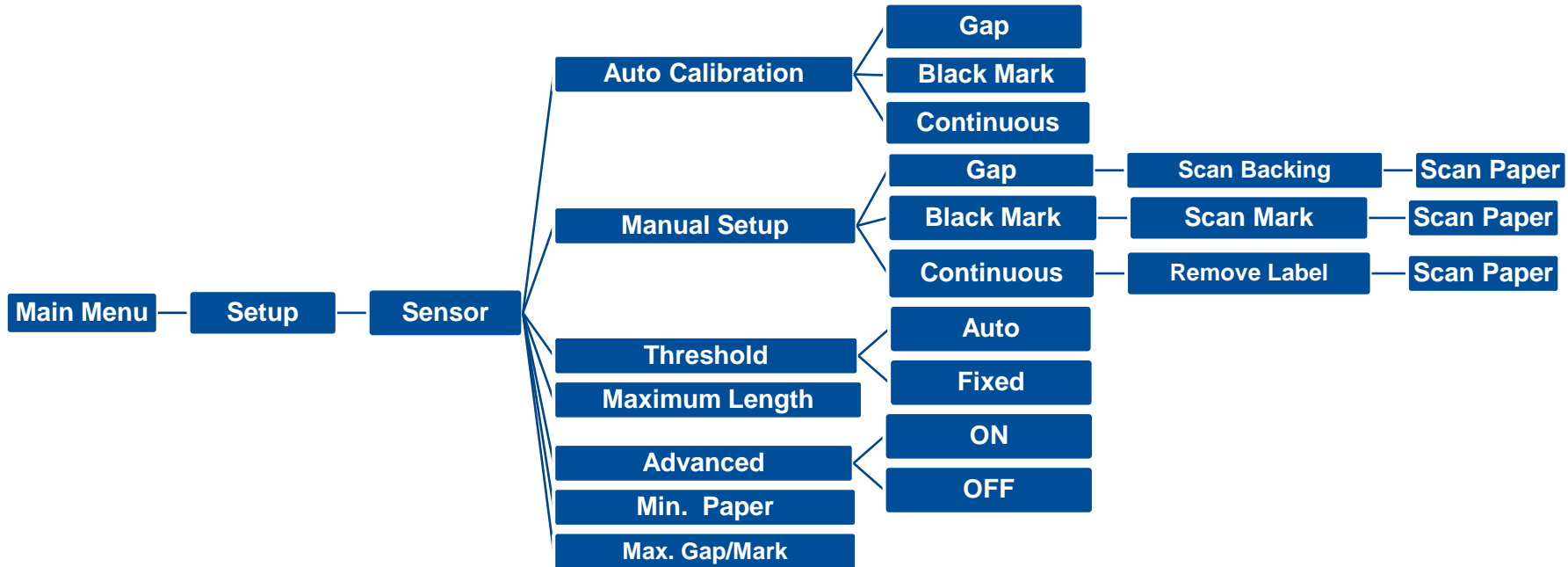
Item	Description	Default
Auto Calibration	Set the media sensor type and calibrate the selected sensor automatically.	N/A
Manual Calibration	In case Auto Calibration does not work, please use "Manual" function to set the paper length and gap/bline size to complete the calibration setting.	N/A
Threshold Detect	Set sensor sensitivity in fixed or auto.	Auto
Maximum Length	Set the maximum length for label calibration.	152
BMark Transmitter	This option is used to setupper or lower black mark sensor as the main transmitter.	OFF

6.6 Serial Comm.

```
                                                    ┌─────────────┐
                                                    │  1200 bps   │
                                                    ├─────────────┤
                                                    │  2400 bps   │
                                                    ├─────────────┤
                                                    │  4800 bps   │
                                                    ├─────────────┤
                                    ┌────────────┐  │  9600 bps   │
                                    │ Baud Rate  │──┤─────────────┤
                                    └────────────┘  │  19200 bps  │
                                                    ├─────────────┤
                                                    │  38400 bps  │
                                                    ├─────────────┤
                                                    │  57600 bps  │
                                                    ├─────────────┤
                                                    │ 115200 bps  │
                                                    ├─────────────┤
                                                    │    None     │
┌───────────┐  ┌───────┐  ┌──────────────┐  ┌──────┴──────┐├──────┤
│ Main Menu │──│ Setup │──│ Serial Comm. │──│   Parity    ││ Odd  │
└───────────┘  └───────┘  └──────────────┘  └─────────────┘├──────┤
                                                    │    Even     │
                                            ┌────────────┐ ┌───┐
                                            │ Data Bits  │─┤ 7 │
                                            └────────────┘ ├───┤
                                                           │ 8 │
                                            ┌────────────┐ ┌───┐
                                            │ Stop Bit(s)│─┤ 1 │
                                            └────────────┘ ├───┤
                                                           │ 2 │
```
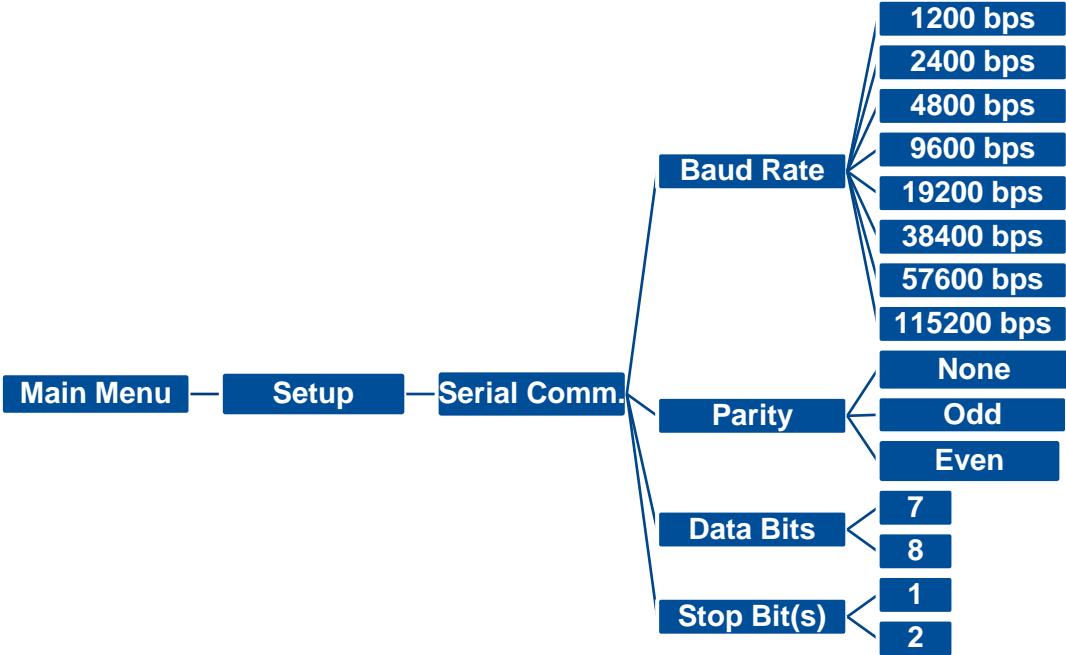
Item	Description	Default
Baud Rate	Set the RS-232 baud rate.	9600
Parity	Set the RS-232 parity.	None
Data Bits	Set the RS-232 Data Bits.	8
Stop Bit(s)	Set the RS-232 Stop Bits.	1

6.7 Wireless LAN

```
                                                              ┌─────────────────┐
                                                              │  Infrastructure │
                                          ┌──────────────┐ ┌──┴─────────────────┘
                                          │  Operating   │─┤
                                          │    Mode      │ └──┬─────────────────┐
┌───────────┐   ┌───────┐   ┌────────────┤              │    │     Ad-hoc      │
│ Main Menu │───│ Setup │───│ Wireless   │───┌──────────┐    └─────────────────┘
└───────────┘   └───────┘   │   LAN      │   │  Scan AP │ ┌──┬─────────────────┐
                            └────────────┤   └──────────┘ │  │       ON        │
                                         └────┌──────────┐┴──┴─────────────────┘
                                              │   DHCP   │   ┌─────────────────┐
                                              └──────────┘───┤      OFF        │
                                                             └─────────────────┘
```

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

6.8 Bluetooth

```
┌─────────────┐   ┌──────────┐   ┌──────────────┐       ┌──────────────┐
│  Main Menu  │───│  Setup   │───│  Bluetooth   │───────│  Local Name  │
└─────────────┘   └──────────┘   └──────────────┘       └──────────────┘
                                                         ┌──────────────┐
                                                         │   PIN Code   │
                                                         └──────────────┘
```
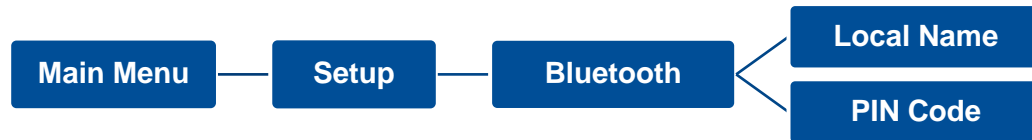
Item	Description	Default
Local Name	Set the local name for Bluetooth.	BT-SPP
PIN Code	Set the local PIN code for Bluetooth.	0000

6.9 Date Time

```
┌─────────────┐     ┌─────────┐     ┌─────────────┐     ┌─────────────┐
│  Main Menu  │─────│  Setup  │─────│  Date Time  │─────│    Date     │
└─────────────┘     └─────────┘     └─────────────┘  ╲  └─────────────┘
                                                      ╲ ┌─────────────┐
                                                        │    Time     │
                                                        └─────────────┘
```

Item	Description	Default
Date	Set the date. (ex: 2013-05-30)	**N/A**
Time	Set the time. (ex: 19:20:02)	**N/A**

6.10 Display

```
                                                   ┌──────────────┐
                                                   │  Always On   │
                                                   ├──────────────┤
                                                   │  Always Off  │
                                                   ├──────────────┤
                                                   │  5 Seconds   │
                                                   ├──────────────┤
                                                   │  10 Second   │
                                  ┌──────────┐     ├──────────────┤
                                  │ Contrast │     │  30 Second   │
┌──────┐   ┌───────┐   ┌─────────┤          │     ├──────────────┤
│ Main │   │       │   │         ├──────────┤     │  1 Minute    │
│ Menu ├───┤ Setup ├───┤ Display │ Backlight │     ├──────────────┤
│      │   │       │   │         │          │     │  5 Minutes   │
└──────┘   └───────┘   └─────────┴──────────┘     ├──────────────┤
                                                   │  10 Minutes  │
                                                   ├──────────────┤
                                                   │  30 Minutes  │
                                                   ├──────────────┤
                                                   │  1 Hour      │
                                                   ├──────────────┤
                                                   │  5 Hours     │
                                                   └──────────────┘
```
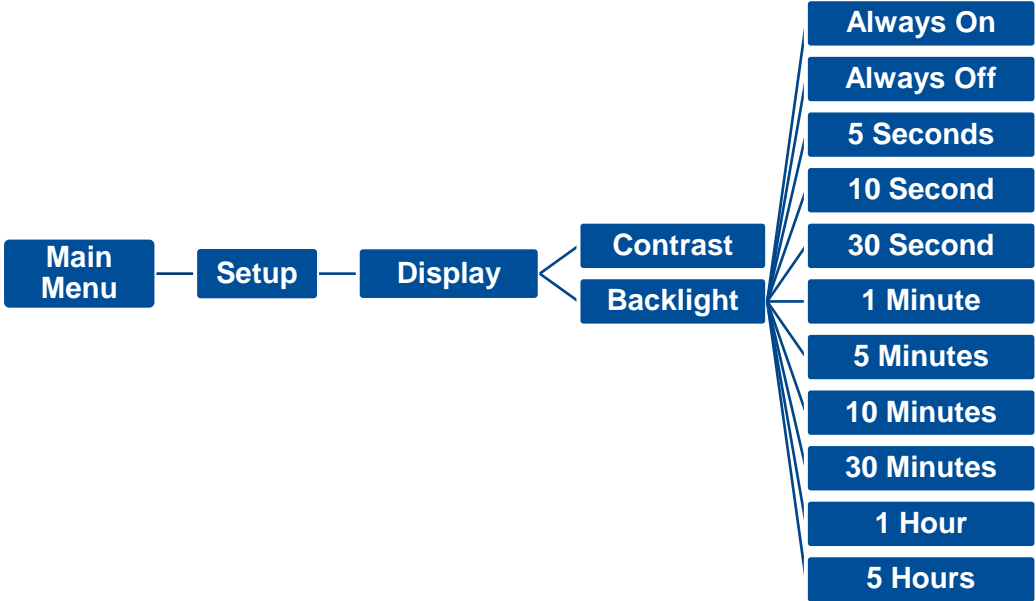
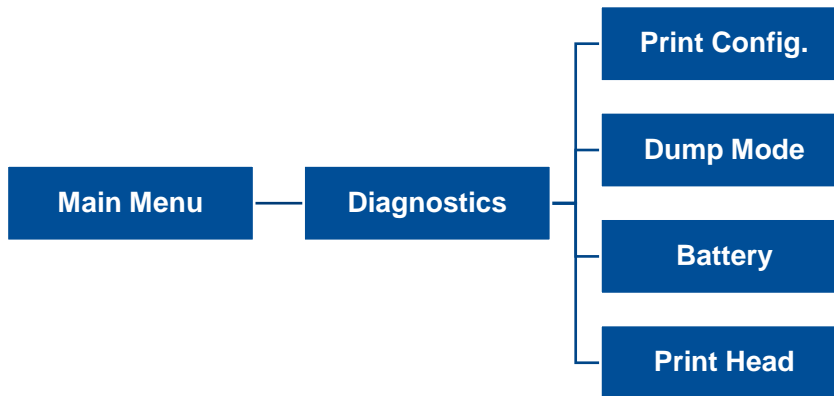| Item	Description	Default
Contrast	This item is used to set the contrast for display.	50
Backlight	This item is used to set the backlight time for display.	10 Seconds

6.11 File Manager

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

```
                                    ┌─ DRAM            ──── Saved file list
                                    │  (Available memory)
Main Menu ── File Manager ──────────┼─ FLASH           ──── Saved file list
                                    │  (Available memory)
                                    └─ CARD            ──── Saved file list
                                       (Available memory
```
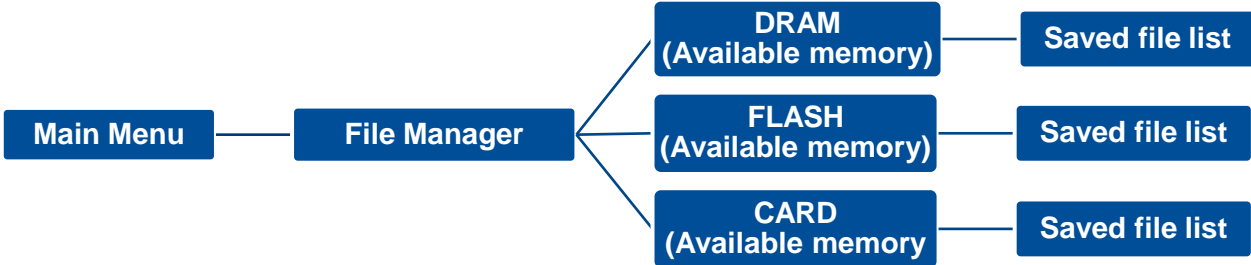
Item	Description
DRAM	Use this menu to show, delete and run (.BAS) the files saved in the printer DRAM memory.
FLASH	Use this menu to show, delete and run (.BAS) the files saved in the printer Flash memory.
CARD	Use this menu to show, delete and run (.BAS) the files saved in the SD card on printer. **Note:This subsection will only be visible when the SD card installed.**

6.12 Diagnostic

Item	Description
Print Config.	Print current printer configuration to the label. The configuration printout contains print head test pattern, which is useful for checking the dot damage on the print head heater.
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. **Dump mode requires 4" wide paper width.**
Battery	Check the battery conditions.
Print Head	Check print head's temperature and bad dots.

6.13 Language

Main Menu	—	Language	—	English

This option is used to setup the language on LCD display.

6.14 Service

Main Menu	—	Service	—	Initialization

This feature is used to restore printer settings to defaults.
Note: When printer initialization is done, please calibrate the gap or black mark sensor before printing.

7. TroubleShooting

Problem	Possible Cause	Recovery Procedure
Power indicator does not illuminate	* The battery is not properly installed. * Battery out of power. * The battery is dead.	* Reinstall the battery. * Switch the printer on. * Charge the battery. * Replace a new battery.
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. * Please reset the wireless device setting. * Select the correct printer port in the driver.
No print on the label	* Label loaded not correctly. * Use wrong type paper	* Follow the instructions in loading the media. * Use thermal type paper
The printer status shows "Head Open".	* The printer carriage is open.	* Please close the print carriage.
The printer status LCD shows "Out of Paper"..	* Running out of media roll. * The media is installed incorrectly. * Media sensor is not calibrated.	* Supply a new media roll. * Follow the instructions in loading the media to reinstall the media roll. * Calibrate the media sensor.
The printer status from LCD shows "Paper Jam".	* Media sensor is not set properly. * Make sure media size is set properly. * Label may be stuck inside the printer mechanism.	* Calibrate the media sensor. * Set media size correctly. * Remove the stuck label inside the printer mechanism.
The printer status from LCD shows "Strong light. Press FEED to print."	* Peel-off sensor can't work in strong light place.	* Remove the printer to proper place to print for peer-off mode.

Can't downloading the file to memory (FLASH / DRAM/CARD)	* The space of memory is full.	* Delete unused files in the memory. * The max. numbers of DRAM is 256 files. * The max. user addressable memory space of DRAM is 2048KB. * The max. numbers of file of FLASH is 256 files. * The max. user addressable memory space of FLASH is 14336KB.
Poor Print Quality	* Media is loaded incorrectly * Dust or adhesive accumulation on the print head. * Print density is not set properly. * Print speed is not set properly. * Print head element is damaged.	* 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 media roll.
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.	* Turn off and on the printer to skip the dump mode.

8. Maintenance

This session presents the clean tools and methods to maintain the 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	I. Always turn off the printer before cleaning the printhead. II. Allow the printhead to cool for at least one minute. III. 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	I. Turn off the printer. II. 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 brush with soft non-metallic bristles or a vacuum cleaner, to remove paper dust. Clean upper and lower media sensors 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

9. Angency Compliance and Approvals

C E	**EN 55022/24, IEC 61000-3-3, IEC 61000-3-2** **EN 300328, EN 301489**
FC	**Part 15B/C**
TÜV SÜD	**EN 60950-1**
CCC	**GB 9254** **GB 4943.1** **GB 17625.1**

SRRC

Wichtige Sicherheits-Hinweise

1. Bitte lesen Sie diese Hinweis sorgfältig durch.

2. Heben Sie diese Anleitung fűr den späteren Gebrauch auf.

3. Vor jedem Reinigen ist das Gerät vom Stromentz zu trennen. Verwenden Sie keine Flüssig-oder Aerosolreiniger. Am besten eignet sich ein angefeuchtetes Tuch zur Reinigung.

4. Die Netzanschluß-Steckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.

5. Das Gerät ist vor Feuchtigkeit zu schűtzen.

6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Beschädigungen hervorrufen.

7. Beachten Sie beim Anschluß ans Stromnetz die Anschlußwerte.

8. Dieses Gerät kann bis zu einer Außentemperatur von maximal 40℃ betrieben werden.

Battery safety warning:

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.

CAUTION

Risk of explosion if battery is replaced by an incorrect type.

Dispose of used batteries according to the instructions.
"VORSICHT"
Explosionsgefahr bei unsachgemäßen Austaush der Batterie. Ersatz nur durch denselben oder

einem vom Hersteller empfohlenem ähnlichen Typ. Entsorgung gebrauchter Batterien nach Angabren des Herstellers.

Class B:

FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT

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

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/ TV technician for help.

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.

CAUTION:

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

equipment.

RF exposure warning (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.

This device meets the government's requirements for exposure to radio waves. This device is designed and manufactured not to

exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S.

Government.

The exposure standard employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the

FCC is 1.6 W/kg. Tests for SAR are conducted using standard operating positions accepted by the FCC with the EUT transmitting at

the specified power level in different channels.

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 d'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.

Informations concernant l'exposition aux fréquences radio (RF)

La puissance de sortie émise par l'appareil de sans fil Dell est inférieure à la limite(1.6W/Kg) d'exposition aux fréquences radio d'Industry Canada (IC). Utilisez l'appareil de sans fil Dell de façon à minimiser les contacts humains lors du fonctionnement normal.

Ce dispositif a été évalué pour et démontré conforme à la Taux IC d'absorption spécifique ("SAR") des limites(1.6W/Kg) lorsqu'il est utilisé dans des conditions d'exposition portatifs. **(For Wi-Fi)**

Ce périphérique a également été évalué et démontré conforme aux limites d'exposition aux RF d'IC dans des conditions d'exposition à des appareils portables. (les antennes sont moins de 20 cm du corps d'une personne). **(For Bluetooth)**

电池安全警告：
◎ 勿将电池扔于火中。

◎ 勿将电池接点短路。

◎ 不可拆解电池。

◎ 不乱将电池当成一般废弃物处理。

◎ 打叉的垃圾桶符号表示电池不应该被放置到一般废弃堆中。

注意:

◎ 更换不正确型号类型的电池，将产生爆炸危险。

◎ 请根据使用说明处理用过的电池。

鋰電安全使用指南

注意：電池若未正確更換，可能會爆炸。請用原廠建議之同款或同等級的電池來更換。請依原廠指示處理廢棄電池。

設備名稱： 可攜式熱感條碼印表機，型號（型式）：主型號:Alpha-4L系列						
Equipment name Type designation (Type)		限用物質及其化學符號 Restricted substances and its chemical symbols				
單元 Unit	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	-	○	○	○	○	○
包材	○	○	○	○	○	○
橡膠滾輪(軸心)	○	○	○	○	○	○
橡膠件	○	○	○	○	○	○
銘版	○	○	○	○	○	○
說明書	○	○	○	○	○	○
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	○	○	○	○	○	○
車用充電器-插頭	-	○	○	○	○	○
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.

10. Revise History

Date	Content	Editor