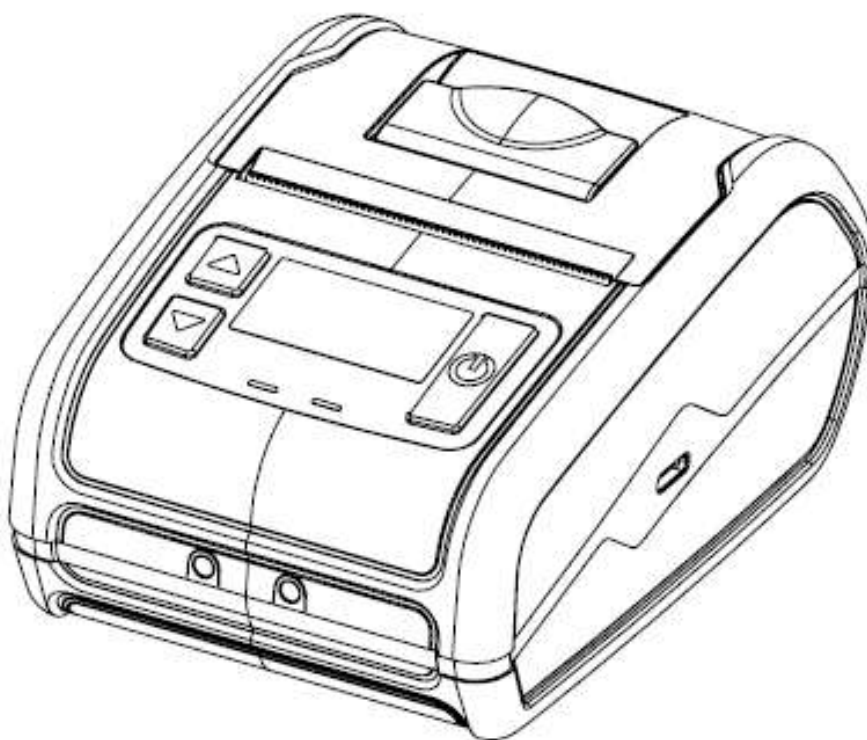




Technical Guide

Mobile 2-inch Printer

WPP-250





History of revision of this manual

Revision	Date	Description of revision
Rev1.0	JAN 8, 2021	Release of 1st edition

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Version: January, 2021



General notice

- * The specifications may be changed for product improvement without notice.
- * Updated information listed on our website <https://www.datecs.bg/>
- * Datecs Ltd. shall not be responsible for any damages attributable to incorrect operation, handling or improper operation environments, except those specified in this manual.
- * Datecs Ltd. shall not be responsible for any claim of infringement or alleged infringement of patents, designs, trademarks, copyrights or other rights brought by a third party in relation to its products.
- * Operate this printer only in the manner described in the Technical guide. Otherwise, accidents or problems could possibly occur.
- * Data is basically temporary; it cannot be stored or saved either for a long time or permanently. Please note that Datecs Ltd. shall not be responsible for any damages or lost profits resulting from the loss of data attributable to accidents, repairs, tests, and so on.
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- * Please note that Sanei Electric shall not be responsible for any results or effects resulting from operation of this Printer even if the information is in the Technical guide.

Declaration of conformity

This is a Class B product conforms to the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI).

If this equipment is used in home environments close to Radio or Television, radio disturbance may arise.

When such trouble occurs, the user may be required to refer to the user's manual to take corrective actions.

This Bluetooth wireless device stores a specific wireless device which was approved by Construction Type Certification

Frequency	2.4GHz
Interference distance	$\leq 10\text{m}$
Frequency change	Not Available



Regulatory

FCC ID: YRW-WPP250

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

NOTE: 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.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment. This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Specific Absorption Rate (SAR) information:

This WPP-250 meets the government's requirements for exposure to radio waves. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons regardless of age or health. FCC RF Exposure Information and Statement the SAR limit of USA (FCC) is 1.6 W/kg averaged over one gram of tissue. Device types: WPP-250 has also been tested against this SAR limit. This device was tested for typical body-worn operations with the back of the WPP-250 kept 10mm from the body. To maintain compliance with FCC RF exposure requirements, use accessories that maintain an 10mm separation distance between the user's body and the back of the WPP-250. The use of belt clips, holsters and similar accessories should not contain metallic components in its assembly. The use of accessories that do not satisfy these requirements may not comply with FCC RF exposure requirements, and should be avoided.

Precautions

Symbol display

To use this equipment safely, or to protect the equipment from damage, the following symbols are used throughout this manual to highlight safety information

 Warning	The symbol indicates that failure to observe these instructions or mishandling of this equipment could lead to severe injury or death
 Caution	The symbol indicates that failure to observe these instructions or mishandling of this equipment could lead to injury or only property damage.

Samples of symbol

	The symbol indicates caution(including DANGER or WARNING).
	The symbol indicates the action is prohibited.
	The symbol indicates a required operation that must be performed.

When using the printer

	Do not subject the printer to strong shocks by dropping or hitting it.
	Avoid using the printer at the following location. It may cause failure. ◆ Locations with much dust, particles, water or oil. ◆ Locations with slanted surfaces or strong vibration. ◆ Locations with direct sunlight. near heating/warming equipment, or temperature over 50°C. ◆ Locations with temperatures of below -10°C, a relative humidity of 80%or more, dew condensation caused by extreme temperature change. ◆ Location with electromagnetic noise or corrosive gas.
	Do not touch the dot line on the thermal head and driver IC with metal and sandpaper etc. There is a possibility for damage of those parts.
	Do not touch the dot line on the thermal head with your fingers. The contamination may reduce the printing quality.
	Do not use the printer if there is condensation occurs on the thermal head. If the condensation occurs, keep the power off until condensation evaporates completely.
	Do not block the paper exit of the printer.
	Do not use a volatile chemical such as thinner or benzene for maintenance work.

	Do not pull the paper end from the exit forcibly when the printer cover is closed.
	Turn off the printer power when trouble such as a paper jam occurs.
	Do not use loose paper. It may cause paper jam.
	Be careful of handling the thermal head to prevent heat elements and driver IC from exposure to static electricity.

Handling printer unit

 Warning	
	◆ Never disassemble or repair the printer by yourself. ◆ Do not bend the USB cable or place heavy objects on it. Doing so may damage the cable and cause fire or electric shock. ◆ Never use a damaged USB cable. It may cause fire or electric shock.
	◆ Do not drop any metallic objects nor spill coffee, water or any other liquid. ◆ Do not use the printer in a places where it will be exposed to excess moisture or water spray. It may result in electric shock, short circuit and failure. ◆ Do not connect or disconnect the USB cable with wet hands. It may result in electric shock, short circuit and failure.

 Caution	
	As the thermal head may be very hot immediately after printing, do not touch it to avoid burning your fingers. Be sure that the thermal head is cool before replacing a paper or cleaning the thermal head.
	Do not open the paper cover while printing.
	Do not pull the paper when the cover is closed.
	◆ In the following cases, turn the printer power OFF and unplug the USB cable. ▪ Smoke, unusual noises or odd smells are emitted by the printer. ▪ When metallic objects is dropped or any liquid is spilled inside the printer. ◆ Continuous use may lead to printer failure, fire and electric shock. ◆ Make sure the fault does not continue and contact dealers for further assistance.
	Remove the USB cable from the connector or the receptacle by gripping the connector. Never pull the cable itself. Doing so may damage the USB cable.

Handling Paper Roll

	Use the specified paper or equivalent. Use of other paper may reduce life of the thermal head and cause a decrease in printing quality Especially sodium(Na+), potassium(K+) and chlorine(Cl-) containing substances can remarkably reduce the life of the thermal head.
	Store the paper in a dry, cool and dark place.
	When pasting printed pages, use water-based glue. (starch glue, synthetic glue, etc.)
	The surface of thermal paper has been specially treated with a chemical agent to produce coloring by thermal chemical reaction. ◆ Do not expose the paper for a long time under bright light. ◆ Avoid storing in high temperature, high humidity, damp area and direct sunlight. ◆ Do not rub the paper with hard objects. ◆ Keep the paper away from organic solvents. ◆ Do not let the paper touch vinyl chloride film, erasers or adhesive tapes for hours. ◆ Do not place the paper on diazo print paper or wet, freshly made paper copies. ◆ Do not touch the paper with wet hands. It may cause fingerprint to be marks on the paper or smudges.

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1. General Outlines

1-1. Product Outlines

WPP-250 series are the mobile printer for mobile use with a feature of 2 inch paper width, splash proof and tough body, with a compact and light weight body.

Compatible to various Tablet devices such as Windows, Android and etc., suitable product for uses of mobile system which supports Bluetooth / Wireless LAN connection as well as USB connection.

1-2. Features

- Max 80 mm/sec high-speed printing
- Compact and light weight design for mobile use
- Max. ϕ 45mm paper roll as standard specifications
- 1D and 2D Barcode printing
- Robust body design
 - Damage-resistant to multiple drops 1.5 meter.
 - Water and Dust resistant complying to IP54
- Wide operating environment
- Windows Driver & SDK /Android SDK /iOS SDK available
- Battery charging directly from USB Interface
- Equips OLED screen

<Other functions>

- Capable of HEX dump printing and self-test printing.
- Various settings of characters, such as enlarged and upside-down characters
- Adjustable for printing line space.
- Graphic printing by bit image.
- Downloaded characters and user-defined characters can be printed.
- Adjustable for paper feed amount.
- With Ruled Line command, table layouts can be easily printed.
- Page Mode allows erect/inverse images, clockwise 90 degrees/counterclockwise 90 degrees and overlapping printing
- With the Printing Density command, the printing density can be changed.
- Graphic data can be registered.
- The command system conforms to ESC/POS.
- A lot of character codes are supported.



1-3. Classification

The product is classified according to the Product Number as follows.

WPP-250

Series: WPP-250

USB / Bluetooth BLE / Wireless LAN
standard equipment

2. Handling Method

2-1. Accessories

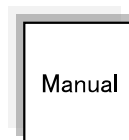
When unpacking the printer, make sure the following components are provided, beside Printer Unit.



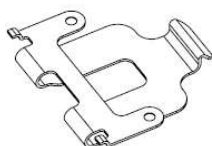
■ Printer unit
(Built-in battery pack)



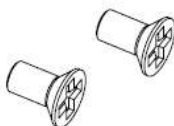
■ Paper Rolls



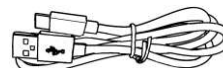
■ Manual



■ Belt Clip



■ Belt clip screw
(2 pieces)



■ USB-C to A Cable
(SYI-0108)

2-2. Options

This Series provides the following parts as options:

(These parts can be purchased through the stores/shops you have purchase, and the details of the optional parts can be inquired to the stores/shops and/or distributors.)

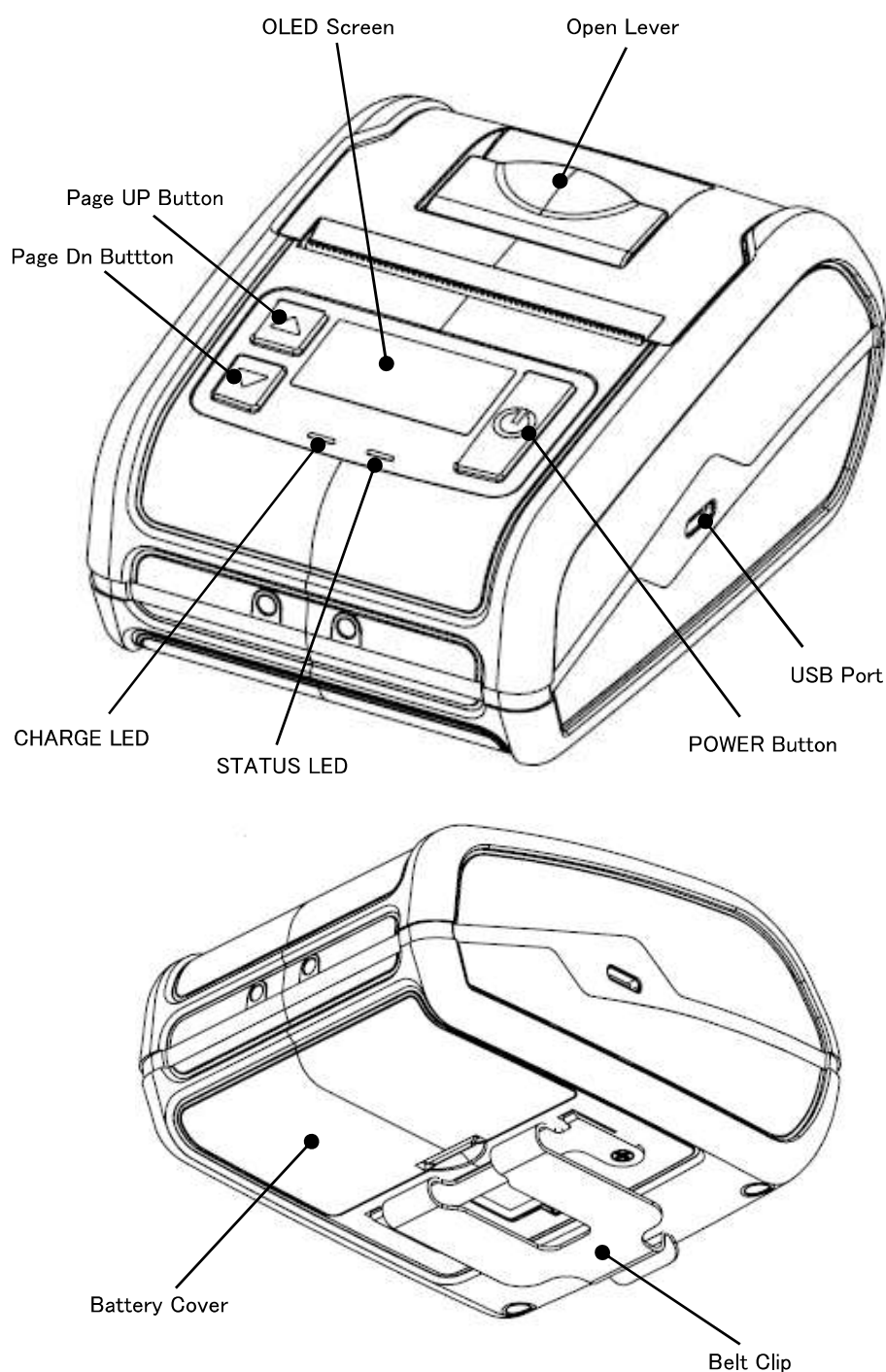
(1) Paper Rolls

Specifications	P-58-45A
Part No.	TF50KS-EY (Nippon Paper Industries)
Sensitivity	Standard
Paper width	57mm (+1.0mm, -0mm)
Thickness	64±5um
Roll diameter	φ 45mm
Roll inner diameter	φ 8.0mm (Core less)
Thermal paper side	External
Internal paper end	No adhesion•No fold
External paper front	Cut straight and put a seal
End mark	A red stripe on one side of the paper. End mark Length: 500±100mm

(2) Printer options

Option contents	Name	Specifications
Battery pack	PL-220	Rating: DC 3.7V, 2100mAh
Carry case	CA-SM421	Carrying case of WPP-250

2-3. Appearance



POWER Button	: Turn power ON or OFF.
Page Up Button	: Please refer to the button operation list.(next page)
Page Dn Button	: Please refer to the button operation list.(next page)
CHARGE LED	: Indicate charging state of battery.
STATUS LED	: Indicate status of printer.
OLED Screen	: This is a screen that displays the status of the printer with icons and text.
USB Port	: USB interface port.
Open Lever	: Open paper cover.
Battery Cover	: Cover for battery.
Belt Clip	: A clip for attaching to a belt.

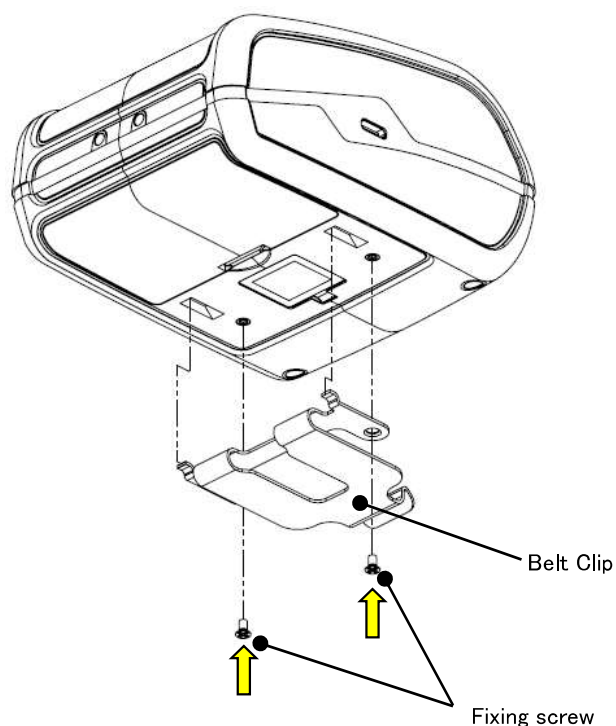
2-4. Button operation list

Button operation list

Function	Printer Status	Operation details	Button operation
Turn ON	Turn OFF	Initialization	Press POWER button
Test Print	Turn OFF	Test Print	Hold POWER button while pressing Page Up button
Function Setting mode	Turn OFF	Mode change	Hold POWER button while pressing Page Dn button
	During function setting mode	Select	Press Page Up button
		Scroll to next item	Press Page Dn button
HEXDUMP mode	Turn OFF	Mode change	Hold POWER button while pressing Page Dn button
	During HEXDUMP mode	Print remaining buffer	Press Page Dn button
Offline reset	Error reset waiting	Return to Printing stand-by status	Press Page Dn button
Changes USB communication valid / invalid.	Printing stand-by status at USB connection	USB Icon switching	Hold Page Dn button and Page Up button at the same time
Display IP address	Printing stand-by status	Screen display	Press Page Dn button and Page Up button at the same time
Black mark detection (BLACK MARK MODE = ON)	Printing stand-by status	Paper feed by blackmark	Press Page Up button
Mark sensor auto control (BLACK MARK MODE = ON)	Printing stand-by status	Paper feed for certain amount	Hold Page Dn button
Paper Feed	Printing stand-by status	Paper feed while pressing	Press Page Up button

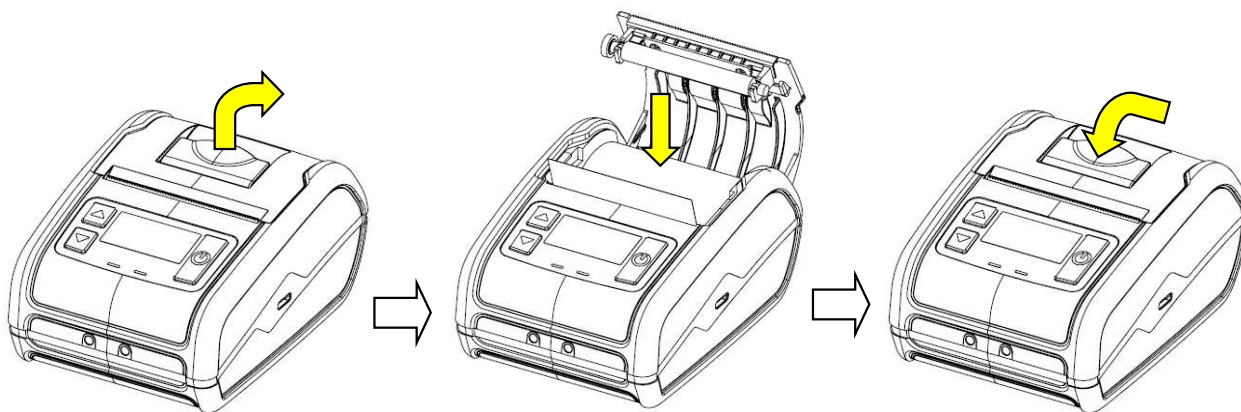
2-5. How to equip belt clip

Put screws through the holes of belt clip and fix it by screwdriver.



2-6. Setting Paper Roll

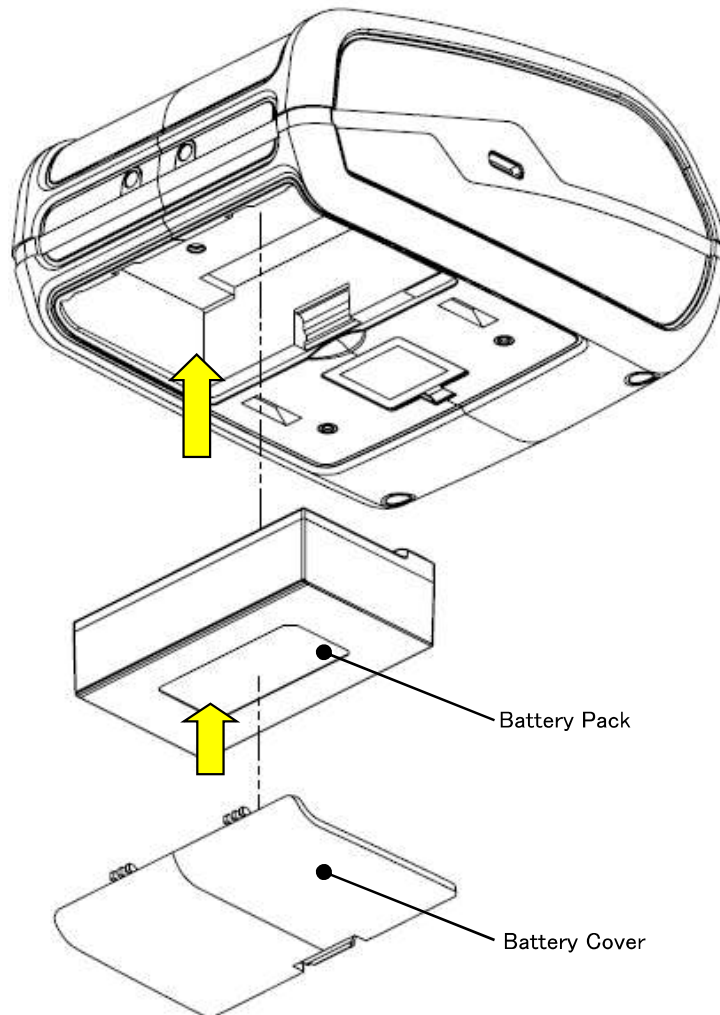
- (1) Pull the open lever up and open the paper cover.
- (2) Place the paper roll as shown in the picture
- (3) Close the paper cover.
- (4) Push the PageDn Button.



- Handle the paper cutter carefully so as not to injure fingers or a hand.
- As the thermal head may be very hot immediately after printing, do not touch it to avoid burning your fingers.
- Be sure that the thermal head is cool before replacing a paper.

2-7. How to equip battery pack

- ① Open battery cover.
- ② Eject battery.
- ③ Put battery pack in battery holder, and close battery cover.



* Disposal of battery pack

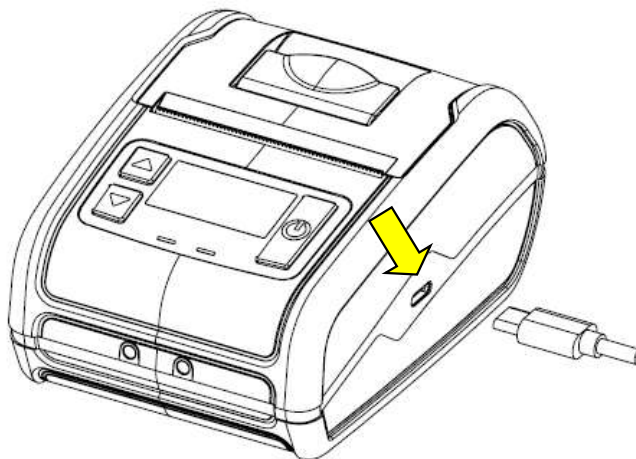


This symbol indicates a disposal that must be done separately from domestic waste by the law regulation of collecting and recycle of used battery pack. In order to prevent environmental or health damage from the waste of electric device, please dispose them collect according to a recycle law in your region with your own responsibility.

2-8. How to charging

1) Start charging when connecting USB to PC or USB power supply.

Battery charge status is shown by an icon at the top of display screen.



An estimated charging times.

It takes 4.5 hours from 10% remaining to full charge.

Battery status display

Charge Status	LED Pattern Ⓔ: Green Ⓕ: Red ●: Turn off	Icon display contents
Charging completed	CHARGE LED Ⓔ	
Charging	CHARGE LED Ⓕ	
Not Charged	CHARGE LED ●	

Battery status display and power voltage

Battery charge status (%)	Battery charge voltage (V)
100	4.0
75	3.9
50	3.8
25	3.7

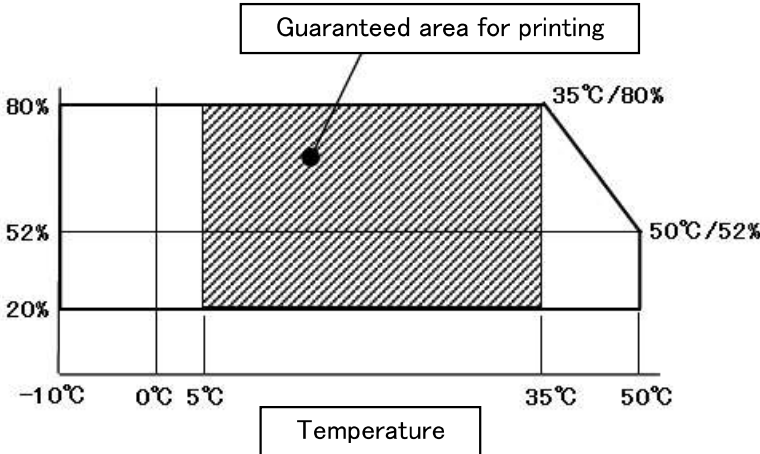


- Use USB battery charger that meets output more than 5V/1A
- Battery charging from USB port such as PC and etc. takes more time.
- The batteries are not fully charged at shipment so please charge the batteries before the use.
- After charging the battery, please repeat recharge as checking the battery status.
- Power is always supplied from the battery even when the battery is charged through USB connection.
- **Charge the battery once in every 3 months** when it is not used for long time.
- If the battery life became extremely shorter, it has reached the end of its charging life so please change the battery.
- Constantly charging the battery via USB may result in shorter battery life due to the storage at a full charge condition over a long period of time.

3. General specifications

3-1. Specifications

Model		WPP-250
Printing method		Direct line thermal
Resolution		203dpi (8dot/mm)
Print width		Max 384dot / 48mm
Paper	Width	58mm
	Thickness	Receipt 59 to 85um
	External dimensions	Max ϕ 45mm
Maximum printing speed		Max 80mm/s *note1
Interface		USB, Bluetooth BLE, Wireless LAN
Characters	ASCII	Katakana, PC437/850/852/857/858/863/865/866/860/862/864/737 WPC1252/1252_2/1254/1250/1251/CP1253
	Download	Available
Font/Dots	ASCII 16 dot	9 x 16 dots
	ASCII 24 dot	12 x 24 dots
Sensor		Paper end sensor, Thermistor
Buffer Size		Input buffer: 8k byte Print buffer: 32k byte User memory: 33k byte
Barcode		UPC-A/E, JAN13/8, CODE39/93, ITF, CODABAR, CODE128 GS1 Databar Omni-directional, Truncated, Limited, Stacked, Stacked Omni-directional
2D barcode		QR, MicroQR, MaxiCode, MicroPDF417, PDF417, DataMatrix
Command systems		ESC/POS (MODE-A) *note2
Software		Android SDK, iOS SDK, Windows Driver & SDK
Regulation		VCCI/CE/FCC Class-B
Printing life		Pulse activation: 100 million pulses or more *note3 Abrasion resistance: 50 km or more
Power supply		Battery Pack: Rating DC 3.7V, 2100mAh Battery Charging (Recommended ratings): DC5.0V, 1.0A or more (USB Port)

Model	WPP-250																		
Current consumption	Idle: 300uA or less (Turn off) Standby: 80mA or less (Graphic screen turn off) Paper feed: 500mA or less Printing: 1.5A or less (peak approx 3.5A)																		
Battery life	60m or more *note4																		
Operating environment	Temperature: -10℃ to +50℃ *Guaranteed area for printing: +5℃ to +35℃ Humidity: 20%RH to 80%RH (No condensation) However, on the premise that 80% RH is up to 35℃.																		
Guaranteed area of acceptable temperature and humidity																			
Humidity Guaranteed area for printing  Temperature																			
Storage environment	Temperature: -20℃ to +60℃ Humidity: 10%RH to 90%RH (No condensation)																		
Weight	Approx. 260g (with battery pack, without Paper roll and Belt clip)																		
Dimensions	82.5mm (W) x 112mm (D) x 57.5mm (H) (With elastomer)																		
Drop impact robustness	1.5m *note5																		
Water and Dust resistant	IP54 *note5																		
Paper roll	Recommended paper: TF50KS-EY (E2D) (Nippon Paper Industries) Standard of print density: <table><tr><td>Part No</td><td>Thickness</td><td>Print Density</td></tr><tr><td>TF50KS-E2D</td><td>59um</td><td>1.0</td></tr><tr><td>TF50KS-EY</td><td>64um</td><td>1.0</td></tr><tr><td>F220VP</td><td>65um</td><td>1.0</td></tr><tr><td>P220AB</td><td>75um</td><td>1.0</td></tr><tr><td>PD150</td><td>75um</td><td>1.05</td></tr></table>	Part No	Thickness	Print Density	TF50KS-E2D	59um	1.0	TF50KS-EY	64um	1.0	F220VP	65um	1.0	P220AB	75um	1.0	PD150	75um	1.05
Part No	Thickness	Print Density																	
TF50KS-E2D	59um	1.0																	
TF50KS-EY	64um	1.0																	
F220VP	65um	1.0																	
P220AB	75um	1.0																	
PD150	75um	1.05																	

*note1 : DC4.2V, printing ratio 12.5%, temperature 40°C, standard paper

*note2: ESC/POS is registered trade mark of Seiko Epson Corporation.

*note3: DC4.2V, printing ratio 12.5%, at room temperature, standard paper

*note4: Average with a condition of Battery fully charged, continuous print of printing ratio 12.5%, number of charges less than 100 times

*note5: All figures are results based on our internal test and are not guaranteed data.

3-2. Sensor

(1) Paper empty sensor

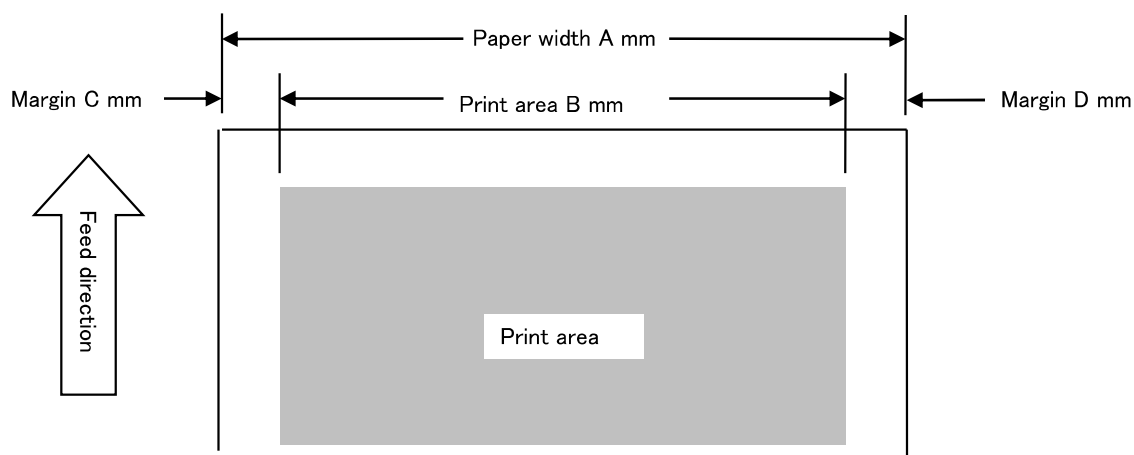
The paper empty sensor is installed into the paper path and the photo-interrupter detects the paper in the printer.
When the paper runs out, the red LED lights up and the printer goes into error mode and stops in the printing process.
After change the paper roll, printer resumes to an error reset waiting mode.
It is recommended to replace the paper roll following the paper end mark which is printed on the paper roll.

(2) Thermistor

The thermistor built in the print head detects the temperature of the print head.
If printing at a high printing rate for a long time, the print head temperature rises and the head may become overheated.
To prevent overheating, the printer stops printing when the temperature is beyond a certain level, and blinks the red Error LED.

3-3. Printing area

Printing area



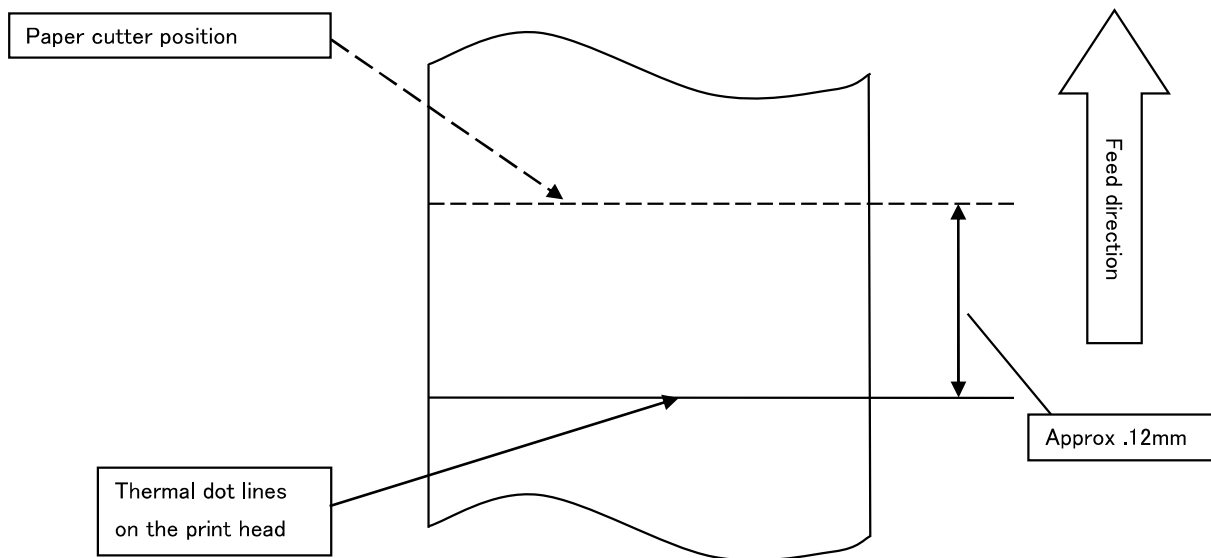
Inch width	Paper width / Printing width	A	B	C	D
2 inches	58mm / 48mm	58	48	5	5



▪ The left and right margins are approximate distance from paper edge and will shift about ± 1 mm depending on the paper path, paper position and tolerances.

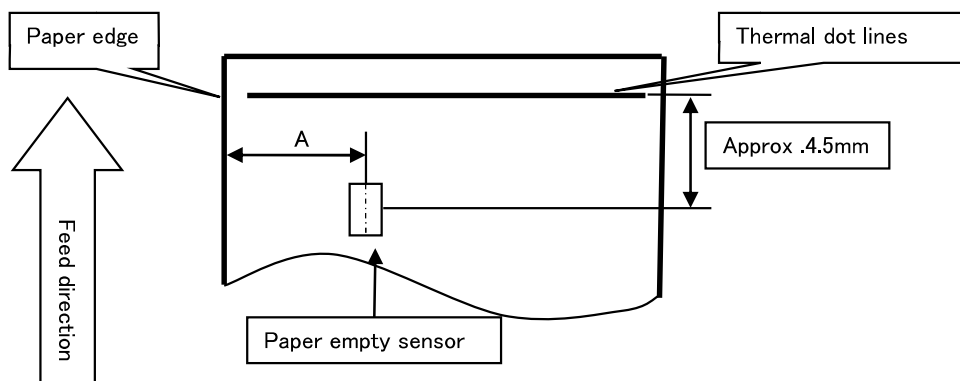
3-4. Print head and paper cutter position

Print head and paper cutter position



▪ The numeric values in the figure are nominal center values. Leave enough margin for the cutting position to account for paper flex or variability.

3-5. Paper sensor position



Sensor	Distance from paper edge (A) ($\pm 1.0\text{mm}$)
Paper empty sensor	16.5 mm

3-6. Paper feeding

(1) Avoid deterioration by backlash feeding

Backlash in the paper feed mechanism may lead to under feeding and crowding of characters on adjacent lines.

Be sure to always turn the paper feed motor 24 line steps (3mm) at the start printing and initialization, and after opening and closing the thermal head.

(2) Note on graphic printing

If the printer must wait for data from host systems while printing, it will temporarily stop printing and feeding paper.

After the printer receives new data and resumes printing, the paper feeding of 1 to 3 lines may become irregular, especially if it is printing a bit image.

In graphic printing, you may see irregular printing if the single lines of data are specified for Raster bit images.

Specify a minimum of 16 lines or more when graphic data is printed.

4. Functions

4-1. Self-test printing

The printer prints characters and barcodes at self-test printing.

● Printing method

- (1) Hold down the Page Up button and press the POWER button to turn on the power.
- (2) After the STATUS LED lights red, release the Page Up button.
- (3) After completing the self-test printing, the printer goes to Standby mode.

[Printing sample]

WPP-250
Ver 1.08.00
WLAN:V1.7.3.0
Ver 1.08.00
CGROM:V1.01
Battery Voltage: 4.0V

TEST PRINT

!"#\$%&'()*+,-./0123456789:;<=>?
@ABCDEFGHIJKLMNPQRSTUVWXYZ[\]^_
`abcdefghijklmnopqrstuvwxyz{|}~
€ ,f,,...t†`%S<(E♦Z♥♠'""•—~"§)e žŸ
i¢£¤¥¦§¨©ª«¬®¯°±²³´µ¶·¸¹º»¼½¾
ÀÁÂÃÄÅÆÇÈÉÊËÌÍÎÏÐÑÒÓÔÕÖ×ØÙÚÛÜÝÞ
àáâãäåæçèéêëìíîïðñóôõö÷øùúûüýþ



4-2. HEX Dump mode

Data entered from the computer is printed in hexadecimal numbers and characters.

- How to operate until entering HEX dump mode.
 - (1) Hold down the Page Dn button and press the POWER button to turn on the power.
 - (2) After printing the following, push the Page Dn button.

```

HEX DUMP or FUNCTION SETTING
HEX DUMP(Dn)/SETTING(Up)

```

- (3) After printing "HEX DUMP MODE", it operates in HEX dump mode.
- (4) Print data input from the interface with hexadecimal characters.
- (5) Turn on the power again to exit HEX dump mode.

[Example of HEX dump printing]

```
[ HEX DUMP MODE ]
```

```

20 21 22 23 24 25 26 27  !"#%&'
28 29 2A 2B 2C 2D 2E 2F  ()*+, -./
0A 30 31 32 33 34 35 36  .0123456
37 38 39 3A 3B 3C 3D 3E  789:;<=>
3F 0A 40 41 42 43 44 45  ?.@ABCDE
46 47 48 49 4A 4B 4C 4D  FGHIJKLM
4E 4F 0A 50 51 52 53 54  NO.PQRST
55 56 57 58 59 5A 5B 5C  UVWXYZ[¥
5D 5E 5F 0A 60 61 62 63  ]^_`abc
64 65 66 67 68 69 6A 6B  defghijk
6C 6D 6E 6F 0A 70 71 72  lmno.pqr
73 74 75 76 77 78 79 7A  stuvwxyz

```

4-3. Function setting mode

There is a function setting mode to switch register functions in the memory manually.

Functions are called up by the Page Dn button and Page Up button and the printer prints registered functions.

● Function setting method

(1) Hold down the Page Dn button and press the POWER button to turn on the power.

(2) After printing the following, push the Page Up button.

HEX DUMP or FUNCTION SETTING
HEX DUMP(Dn)/SETTING(Up)

(3) Print a list of memory switch settings.

(4) After that, proceed by sequentially selecting in accordance with [4-4. Setting the memory switch].

```

WPP-250
Ver 1.07.00
BLE:V7.32
WLAN:V1.7.0.0
Ver 1.07.00
INTERFACE           =USB/BT/WLAN
EMULATION MODE       =MODE-B
ENABLE SOUND         =Enabled
BLACK MARK MODE      =OFF
ENABLE WLAN          =Enabled
ENABLE USB           =Enabled
EXECUTE <CR> AS <LF> =NO
DISABLE <LF>         =NO
DISABLE <LF> AFTR <CR>=NO
DEFAULT SMALL FONT   =Font-A
PROTOCOL MODE        =Protocol
PRINT DENSITY        =100 %
MECHANISM SPEED      =80 mm/s
DENSITY TYPE         =3
CHARACTER TABLE     =UPC1252
AUTO OFF TIME        =10 min
USB DEVICE CLASS     =SERIAL
STANDBY TIME         =Disabled

BT NAME              =WPP-250
WLAN IP ADDRESS      =192.168.123.123
WLAN SUBNET MASK     =255.255.255.0
WLAN DEFAULT GATEWAY =192.168.123.1
WLAN PORT            =9100
WLAN IBSS            =BSS
WLAN IBSS CHANNEL    =01
WLAN DHCP            =ENABLE
WLAN SSID            =Flax
Registration number   =0000000000
BATTERY              =4.1V 100%
Reflection           =0.8V
    
```

Common functions

Bluetooth/Wireless LAN

Printer information

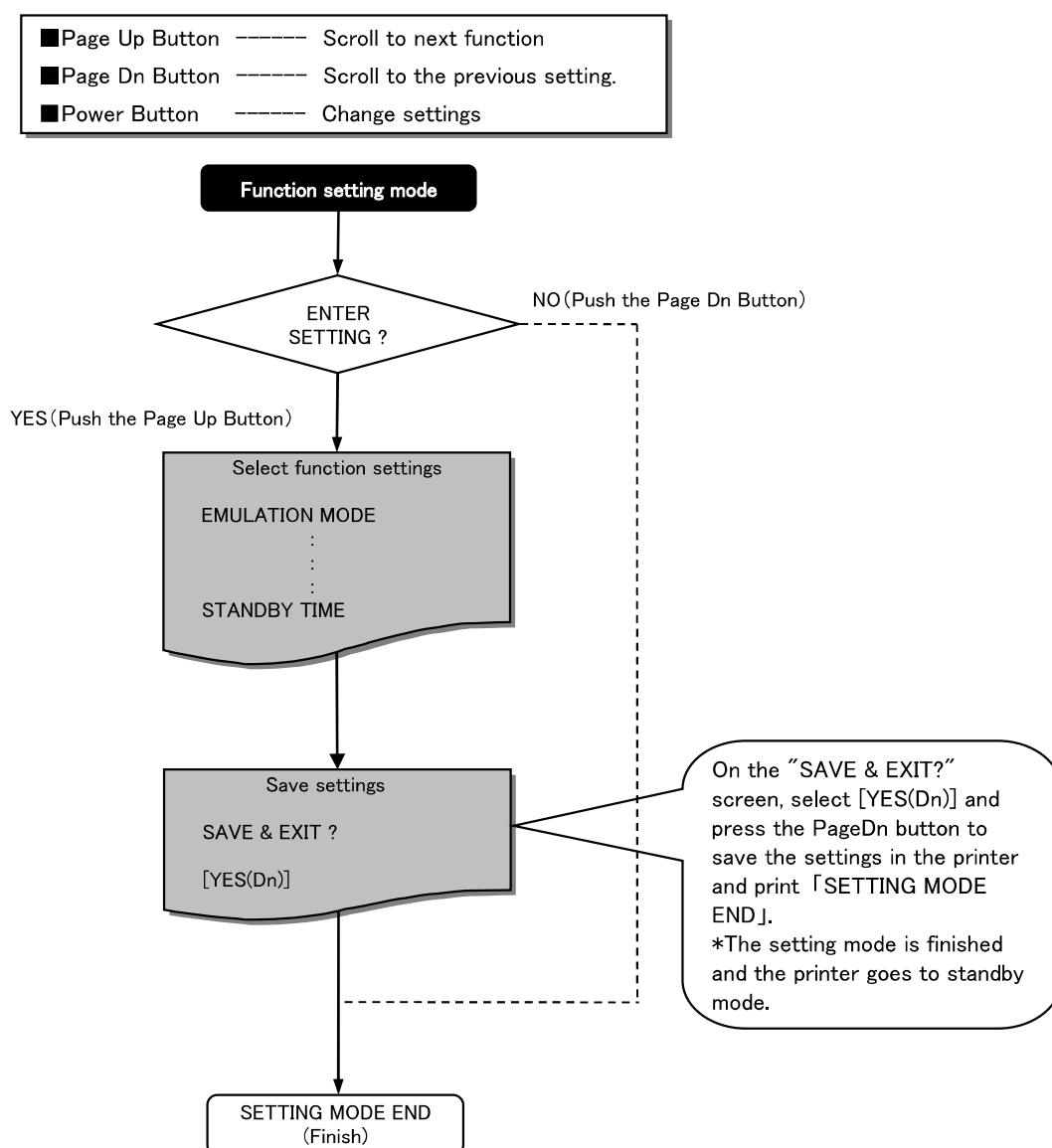
4-4. Setting the memory switch

Printer goes into memory switch setting mode by pressing the Page Up button after starting the function setting mode and printing the following printout.

```
ENTER SETTING ?
[YES(Up)/NO(Dn)]
```

Follow the flowchart below to set up the memory switches.

Use the Page Up and Page Down buttons to select the setting items displayed on the graphics screen, and press the Power button to change the settings.



4-5. Memory switch setting menu

1. Setting menu

Menu	Default	Value	Description
EMULATION MODE	MODE-A	MODE-A MODE-B	Select the emulation mode. MODE-A: ESC/POS mode MODE-B: Extended command mode
ENABLE SOUND	Enabled	Enabled Disabled	Select enable / disable of the buzzer sound.
BLACK MARK MODE	OFF	OFF ON	Enable/disable the Black mark sensor functions. <Selecting OFF> Not detecting black mark sensor. <Selecting ON> Detecting black mark sensor.
ENABLE WLAN	Enabled	Enabled Disabled	Select enable / disable of the Wireless LAN interface.
ENABLE USB	Enabled	Enabled Disabled	Select enable / disable of the USB interface.
PAPER FEED	OFF	OFF ON(10mm)/ON(20mm) ON(30mm)/ON(40mm) ON(50mm)/ON(60mm)	Enable/disable paper feed after closing the paper cover. • When paper feed is ON, the printer feed the paper as specified (Xmm) length after closing the print cover. • When paper feed is OFF, the paper is not fed.
OFFLINE BUSY	ON	OFF ON	Enable/disable OFFLINE BUSY when an error occurs. <At selecting ON> • The communication becomes OFF-LINE when an error occurs. The printer stops printing and maintained the receiving data until the error is cleared. <At selecting OFF> • The communication becomes ON-LINE when an error occurs. Receiving data during an error are continuously processed and printing data are not stored.
ACT FOR DRIVER	INVALID	INVALID VALID	Set driver's activity.

Menu	Default	Value	Description
PRINT DENSITY	100%	60% 75% 90% 100% 120% 140% 160%	Specify the printing density.
MECHANISM SPEED	80mm/s	25mm/s 37mm/s 50mm/s 80mm/s	Select maximum printing speed
CHARACTER TABLE	KATAKANA	PC437 KATAKANA PC850/PC852 PC857/PC858 PC863/PC865 PC866/WPC1252 PC860/WPC1252_2 PC862/WPC1254 WPC1250/WPC1251 PC864/PC737 WPC1253 USER	Select the characters.
AUTO OFF TIME	10min	Disabled 2min / 5min 10min / 15min 20min / 30min 45min / 60min	Select power off time. Turns off the main power automatically when no operation continues for the specified time.
USB DEVICE CLASS	PRINTER	PRINTER SERIAL	Selects device operation mode of USB
STANDBY TIME	100sec	Disabled 10sec 30sec 100sec 120sec 180sec 300sec 600sec 1800sec	Select standby time for turning off screen. Shifts to the screen off when no operation continues for the specified time and returns to print waiting status by any operations (pressing the button, receiving data, etc).

4-6. Adjusting printing density

Paper sensitivity varies by type of thermal paper. Choose the right density to realize best printing quality and reliable printing.
(The excess heating of the thermal head may cause the reduction of head life and contamination)

Allows setting density from 60 to 160%. The default value from the factory is 100% for maintaining proper printing quality.

However, if you set printing density higher than required, it may stink a dust and shorten the life of printer head.

Please refer to the coefficient figure of the paper to use when setting the density.

4-7. Icon display

Information on network status of printer, battery status are displayed by icon.

Example display of icon refers to below.

Icon display	Icon meaning
	USB connected
	Bluetooth connected
	Wireless LAN communication
	Connecting to wireless router
	Button locked *1
	Indicates remaining battery is full
	Indicates remaining battery is extremely low
	Battery charging

*1. Button lock is set by command. (See the details on the command reference attached.)

4-8. Printer Status

Printer status is displayed on the LED or graphic screen.

1. No error signal is detected.

- Standby

It is possible to print and the printer waits for printing data by ONLINE.

- Initialization

Initialize printer memories. The printer goes OFFLINE during initialization.

After completing initialization, the printer goes standby.

- Error reset waiting status

Move to this status when a cause of error, for instance out of paper etc., has removed.

OFF-LINE status and STATUS LED will kept remain their status.

Resume to printing standby status by pressing Page Dn button.

- Battery low

Move to this status when remaining battery is low (below 10%)

It is possible to print and the printer waits for printing data by ONLINE.

Battery charging is recommended when this status occurs.

2. Error detected status

- Temperature error

The print head temperature is increased when heavy-duty printing is continuous.

If the print head temperature exceeds 70 degrees C, operation of the print head is automatically stopped to prevent overheating.

The status LED blinks and the printer goes OFFLINE.

The printer resumes printing when the head temperature falls to 60 degrees C or lower.

- Paper empty

After the paper runs out and the printer detects paper empty, the status LED turns on and the printer goes OFFLINE.

- Paper cover open

When the paper cover is open, the status LED turns ON and the printer goes OFF-LINE.

- Voltage error

STATUS LED lights up and turns to OFF-LINE when battery becomes empty.

Resume when the battery is charged.

3. Display contents of LED and graphic screen

3-1. Printer Status

Printer Status	LED pattern Ⓜ: white, Ⓜ: red, ●: turn off	Graphic screen
Standby	STATUS LED Ⓜ	Printer Ready Standby
Printing	STATUS LED Ⓜ	Printer Ready Printing
Initialization	STATUS LED Ⓜ	Initializing...
Error reset waiting	STATUS LED Ⓜ	Printer offline Push Pg Dn key
Temperature error (Exceeds 70 degrees)	STATUS LED ●Ⓜ (red blink)	Printer Error Overheat
Battery low	STATUS LED Ⓜ	Printer Error Battery Low
Voltage Error	STATUS LED Ⓜ	Printer Error Voltage Error
Paper empty	STATUS LED Ⓜ	Printer Error No Paper

3-2. Charge Status

Charge Status	LED Pattern Ⓜ: Green Ⓜ: Red ●: Turn off	Icon display contents
Charging completed	CHARGE LED Ⓜ	
Charging	CHARGE LED Ⓜ	
Not Charged	CHARGE LED ●	



4-9. Memory

(1) Input buffer

Buffer memory stores input data from the interface.

Buffer size: 32k byte

(2) User memory

User memory is used to store external characters, download characters and bit images.

Total memory of 33K bytes is prepared.

Each allocation is shown below.

User memory

No	Memory	Size (Unit: byte)
1	Download character	10704
2	Download bitimage	16400
3	External Character	6768
Total		33,872

These user memories are available to manipulate the area freely.

Calculate the available memory size due to the limited amount of memory available.

If there is no available memory, erase the used memory to free up enough space.

5. Interfaces

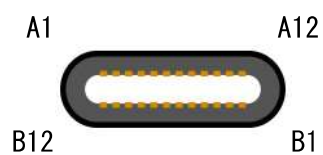
5-1. USB

(1) Pin layout

Connector: USB Type-C

This printer is equipped with USB version 2.0 for high speed data transfer.

Supportable device class are "Printing Device"(MSE: USB DEVICE CLASS = PRINTER) and "Communication Device"(MSE: USB DEVICE CLASS = SERIAL).



Pin	Signal	Direction	Function
A4, A9 B4, B9	VBUS	-	Detection of USB connection
A7, B7	D-	I/O	USB Data (-)
A6, B6	D+	I/O	USB Data (+)
A1, A12 B1, B12	GND	-	GND

5-2. Bluetooth

The Bluetooth function equipped in this printer is supportable for the BLE version 4.2.

Item	Specification
Spec	Bluetooth Low Energy, version 4.2
Power class	Class-2

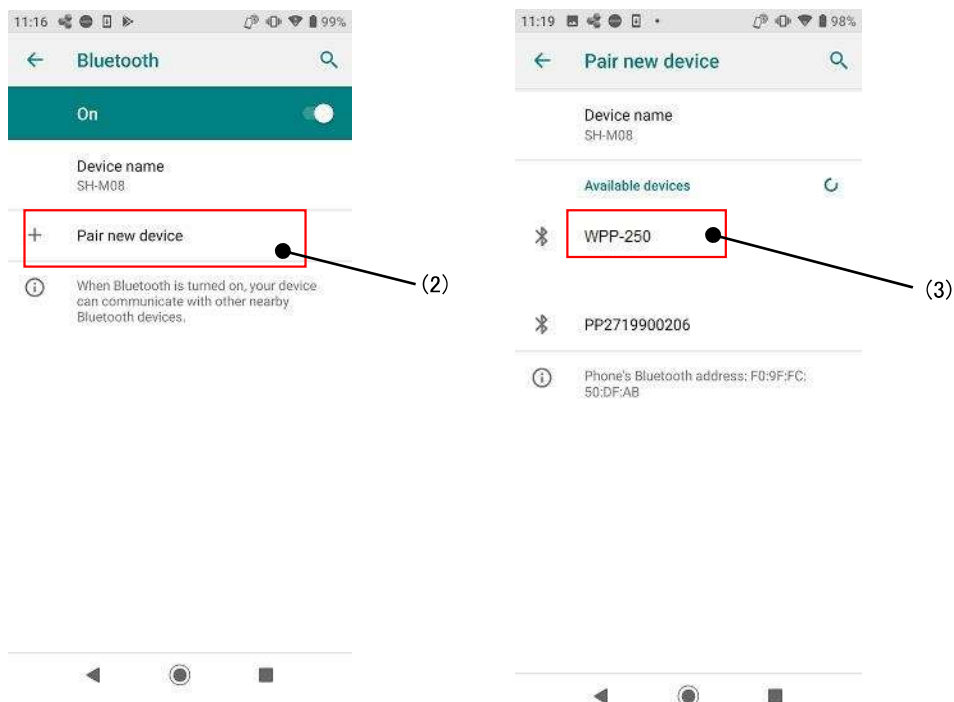
	In case of interference occurred at the circumstance, turn off the power of interrupted devices or move the place where is not influenced.
---	--

Bluetooth connection example:

The connection example using the Android SDK (Android OS version 9.0) is shown.

Setting of the Bluetooth pairing

- (1) Open "Bluetooth" from the setting menu of your Android terminal.
- (2) Tap "Pair new device".
- (3) Tap the Bluetooth name (WPP-250) from the "Available devices" and the pairing is completed.



5-3. Wireless LAN (W model)

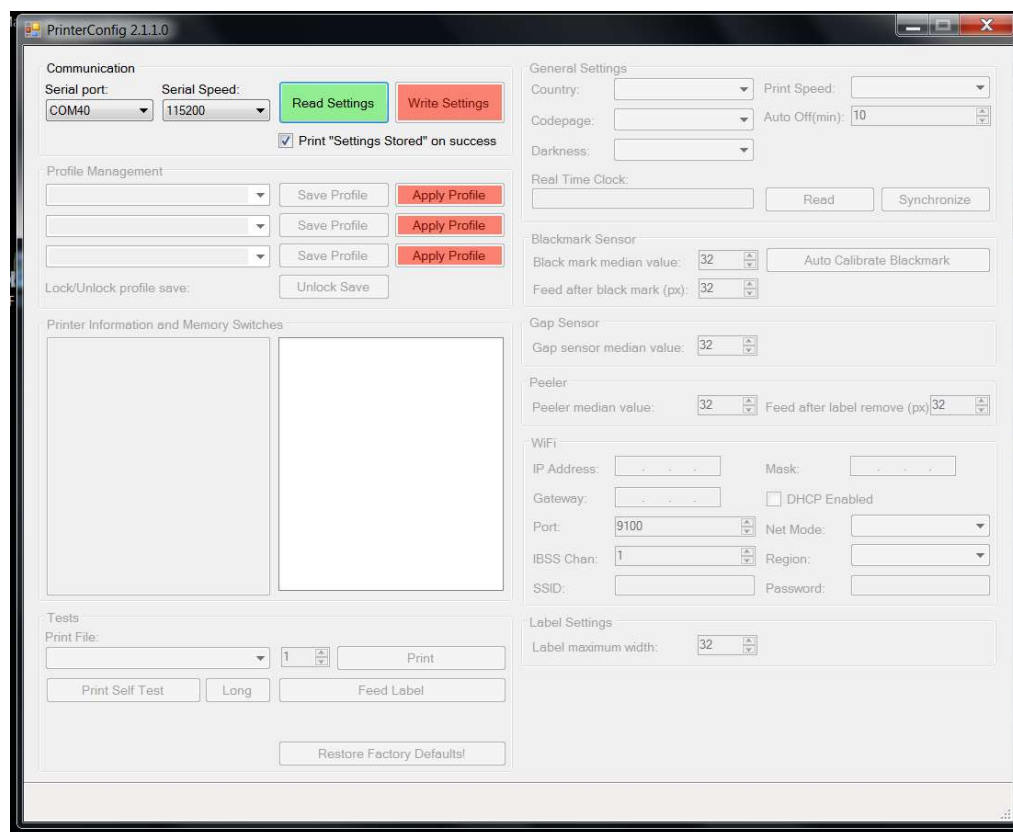
Item	Specification
WLAN Protocols	IEEE 802.11b/g/n
Security/Encryption	WEP, WPA-PSK, WPA2-PSK
Network Protocols	IPv4, TCP/UDP/HTTP/FTP
Port Number	Max. 9999 (Default 9100)
Network mode	Infrastructure mode
SSID	Max 32 characters (Available to specify with alphanumeric characters and Space).
DHCP	Available
IP Address	0.0.0.0 to 255.255.255.255
Subnet mask	0.0.0.0 to 255.255.255.255
Gateway	0.0.0.0 to 255.255.255.255

WLAN setting example:

The connection example using the PrinterConfig_2.1.1.0 is shown.

(For PrinterConfig_2.1.1.0, please download it by our website.)

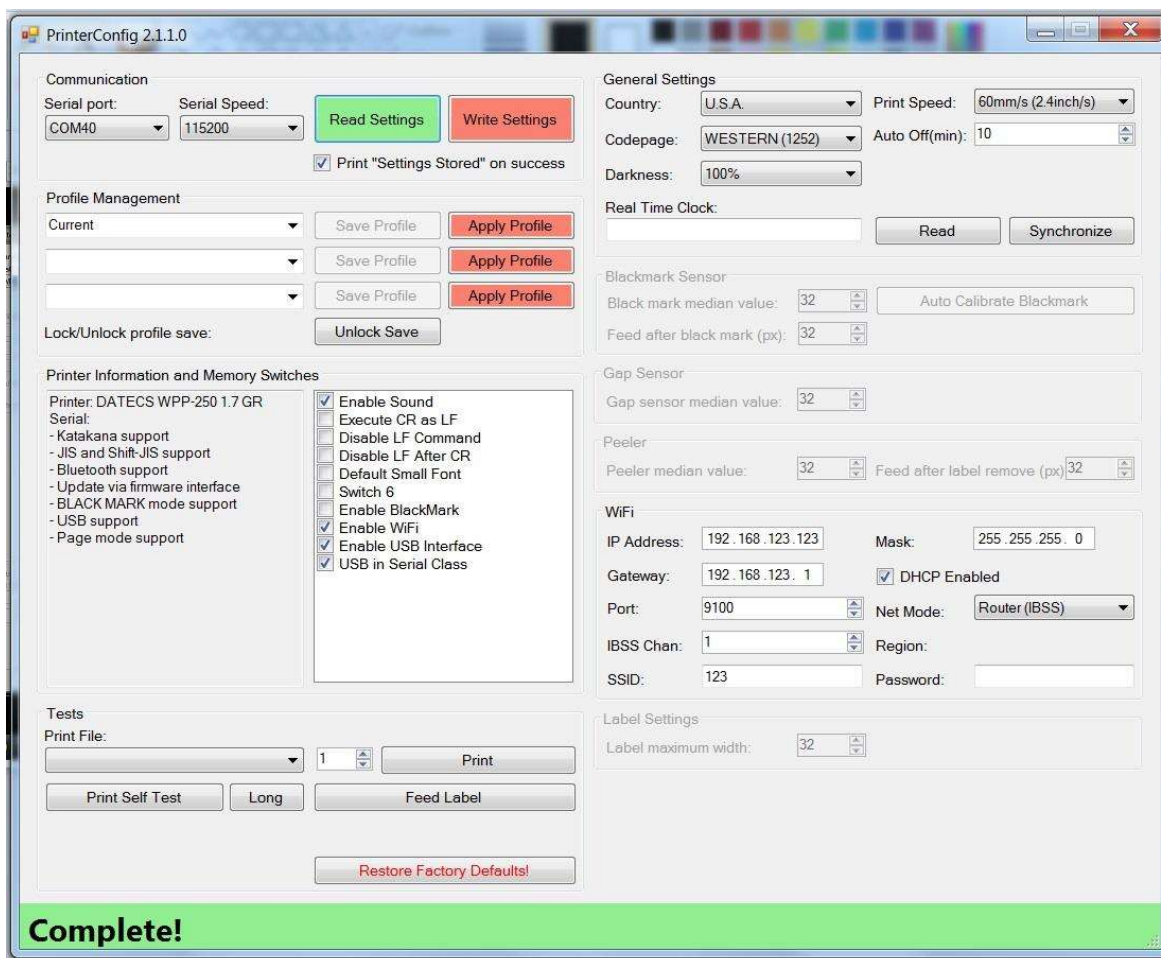
- (1) Start application PrinterConfig_2.1.1.0.exe



- (2) Select serial port and speed communication
- (3) Click "Read Settings"



In case of interference occurred at the circumstance, turn off the power of interrupted devices or move the place where is not influenced.



(4) Input your WLAN information and press

Write Settings

*This is completed the WLAN setting. (This setting information is stored all in the printer's memory)

WLAN connection example:

- (1) Check the connection with the wireless router.

When connecting, the following ICON is displayed on the printer screen.



- (2) Check the assigned IP address.

When assigning the IP address, pressing, and holding the "PageUP and PageDn" buttons, the IP address is displayed on the printer screen.

- (3) Set this IP address to the Port on the utility driver and send any document (print data).

When communicating data, the following ICON is displayed on the printer screen.



6. Maintenance

6-1. Maintenance

Periodically clean the printer to maintain the printing quality and avoid failures. It is recommended to maintain the printer every 6 months or 1 million lines of printing.

(1) Print thermal head

When cleaning the thermal dot line on the print thermal head, use a cotton swab with alcohol (Ethanol, methanol, or Isopropyl alcohol) and wipe off stains and dust.

(2) Platen roller

When cleaning the platen roller, use a dry soft cloth and wipe off the stain with rotating the roller.

(3) Sensor and peripherals

Clean the stain, dust, and paper powder on the paper empty sensor.



- Prior to maintenance work, be sure to turn OFF the printer.
- Avoid cleaning the print head immediately because the print head is hot. Start maintenance work after the thermal head becomes cool.
- Do not touch the print head with fingers directly. It may cause damage by electrostatic discharge and contamination.
- Do not touch the thermal head dot line with bare hands or metal objects.
- Do not use volatile chemical agents, such as thinner and benzene.
- Do not get moisture or spill liquids inside of the printer.
- Turn ON the printer only after alcohol is completely dried.

6-2. Service for trouble shooting

For maintenance and service, please contact your Datecs local distributors or the following address.

SERVICE

Address: 115A Tsarigradsko shose blvd., Sofia 1784, Bulgaria

Phone: +359 2 973 35 45

Website: www.datecs.bg

E-mail: service@datecs.bg

FCC Warning

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

NOTE: 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.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment. This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Specific Absorption Rate (SAR) information:

This WPP-250 meets the government's requirements for exposure to radio waves. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons regardless of age or health. FCC RF Exposure Information and Statement the SAR limit of USA (FCC) is 1.6 W/kg averaged over one gram of tissue. Device types: WPP-250 has also been tested against this SAR limit. This device was tested for typical body-worn operations with the back of the WPP-250 kept 0mm from the body. To maintain compliance with FCC RF exposure requirements, use accessories that maintain an 0mm separation distance between the user's body and the back of the WPP-250. The use of belt clips, holsters and similar accessories should not contain metallic components in its assembly. The use of accessories that do not satisfy these requirements may not comply with FCC RF exposure requirements, and should be avoided.