Operator's Manual

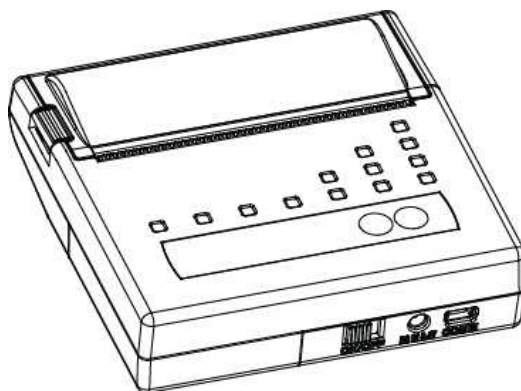# MODEL WSP-SW25/30

(3inch Mobile Printer)

Rev. 1.0

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All specifications are subjected to change without notice

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WSP-SW25/30 3inch mobile printer operator's manual.

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◨ Caution

Some semiconductor devices are easily damaged by static electricity. You should turn the printer "OFF", before you connect or removed the cable on the rear side, in order to guard the printer against the static electricity. If the printer is damaged by the static electricity, you should turn the printer "OFF".

◨ Notice

The contents of this manual are subject to change without notice.

◼ Introduction

The **WSP-SW25/30** is suitable designed for use with a growing variety of mobile devices. IrDA/Serial or Bluetooth/Serial interfaces make the WSP-SW25/30 the perfect comrade for applications such as point of transaction warehousing, distribution, point of sales, hospitality, gaming and healthcare.

The general features of **WSP-SW25/30** printer are as follows:
- ▶ Compact size (103 x 104 x 29.84mm).
- ▶ Light weight (183g) for true mobility.
- ▶ Very silent printing thru direct thermal printing method.
- ▶ High speed (60mm/sec, MAX)
- ▶ High resolution (203dpi, 8dot/mm)
- ▶ UART(RS-232C or TTL), Bluetooth Ver2.1 + EDR,
  IrDA Ver1.0(SIR) [option] Interface
- ▶ Intuitive LED's indicate Power(on/off),Error and Battery status
- ▶ Support text and graphic printing
- ▶ Easier paper roll loading by CLAMSHELL design.
- ▶ Printer door open & Paper-out sensor
- ▶ Easier maintenance with self-diagnostic.
- ▶ In field programming – Update Firmware, Download Fonts and Logos
- ▶ Microsoft Windows XP / VISTA / 7 / CE / Linux / Android compatible.
- ▶ Free fall: 1.5 meter onto concrete
- ▶ Flow control : Software (XON/XOFF)
  ※ Hardware flow control not supported in printer.
- ▶ Agency Approvals

▣ Operating Precautions

Please follow the precautions below to enjoy and maintain the full performance of the printer.

▶ Using the Printer

- Be careful not to drop or bump the printer on a hard surface.
- Do not install the printer in direct sunlight or such areas.
  Suitable environment for the use of the printer is as follows:
  - ◆ Operating temperature :-10°C to 50°C
  - ◆ Relative humidity   : 30% to 80%
- Do not install the printer near devices that generate strong
  electromagnetic fields such as a copy machine.
- Do not open the platen cover during printing .
- Do not remove or reinstall the communication cable during printing
  or transmission.
- Do not touch the connectors of the communication during printing.
- Switch the POWER OFF when not in use.
- Do not use alcohol or other solvent.
- The AC adapter, the battery charger and the battery pack may
  become warm when in use. This is normal and is not a malfunction.
- When the battery pack is used at low temperature, the length of time
  the printer can be used   may be shortened.

▶ Thermal Paper Handling

- Store the thermal paper in a cool, dry and dark place.
- Do not rub the paper with hard object.
- Do not leave the paper with hard object.
- Do not allow plastic film, erasers, or adhesive tape to touch the paper
  for long periods.
- Do not stack the thermal paper with diazo copies immediately
  after copying or wet-type copies.
- Do not use chemical glue.
- Always use the clean thermal paper.

◼ Note

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation.

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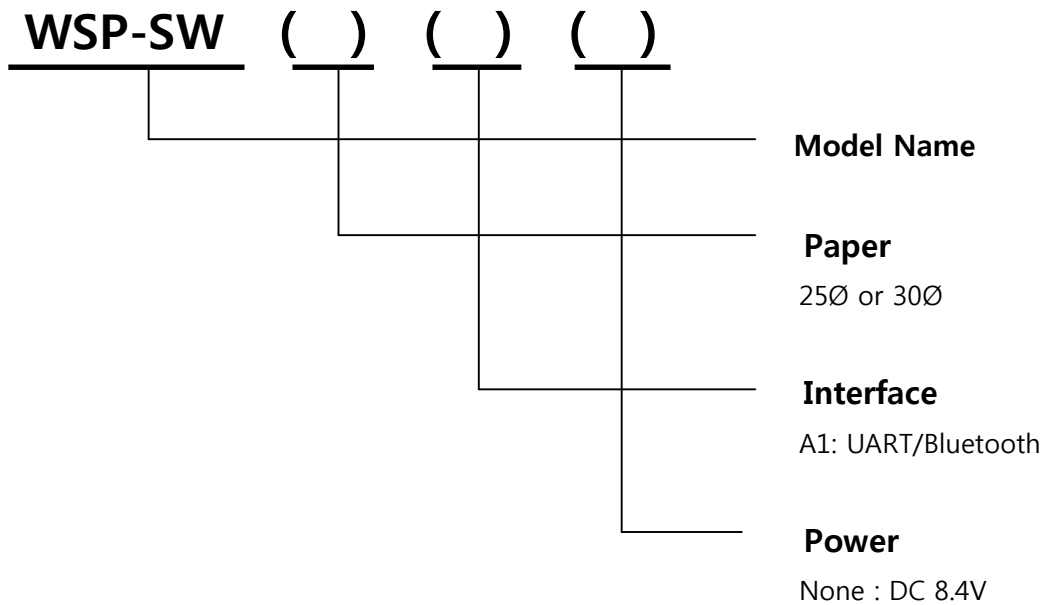
   --Reorient or relocate the receiving antenna.
   --Increase the separation between the equipment and receiver.
   --Connect the equipment into an outlet on a circuit different from that to
     which the receiver is connected.
   --Consult the dealer or an experienced radio/TV technician for help.
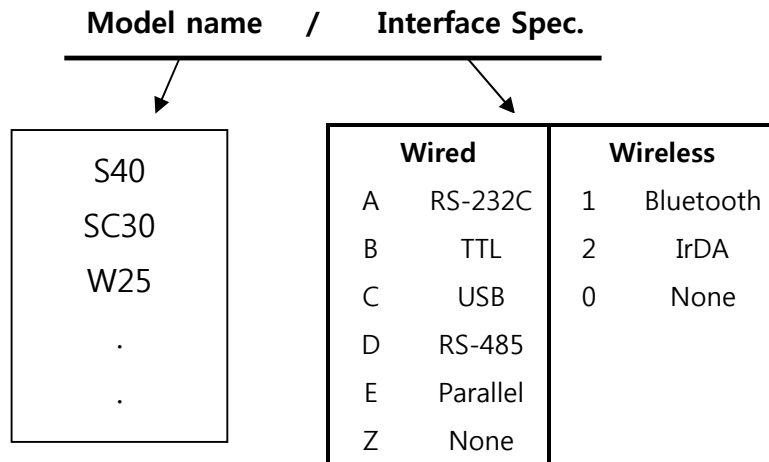
CONTENTS

1. Outline

1.1. Model classifications

$$\underline{\textbf{WSP-SW}}\ \underline{(\ \ )}\ \underline{(\ \ )}\ \underline{(\ \ )}$$

Model Name

Paper
25Ø or 30Ø

Interface
A1: UART/Bluetooth

Power
None : DC 8.4V

1.2. Product Part Number System

Model name   /   Interface Spec.

| S40 |
| SC30 |
| W25 |
| . |
| . |

	Wired			Wireless
A	RS-232C		1	Bluetooth
B	TTL		2	IrDA
C	USB		0	None
D	RS-485			
E	Parallel			
Z	None			

Example) 1. Porti-S40   UART/Bluetooth   Part No. ⇒ S40/A1
         2. Porti-SC30   Bluetooth Only   Part No. ⇒ SC30/Z1

Note)   The above table is the interface format which is supported.
      But some of the interfaces are not supported according to the product
      and please contact us, if you have any questions regarding the interface.

1.3. Specifications

| Item	Specification
Printing method	Direct thermal line printing
Characters per line	64cpl (MAX)
Character size	Eng. : 9*24dots, 12*24dots Kor. : 16*24dots, [24*24dots]
Optional Characters	Simplified/Traditional Chinese, Arabic, Cyrillic, Russian, Tukish, Greek, Japanese, Persian, Latin9 and Others upon request.
Resolution	203dpi, 8dots/mm
Print width	3-inch (72mm, 576dots)
Printing speed	60mm / sec (MAX)
Dimensions	103 x 104 x 29.84mm
Weight	183g (Exculde battery & roll paper)
Interface	UART(RS-232C or TTL), Bluetooth Ver2.1 + EDR, IrDA Ver1.0 (SIR) [option]
Paper supplied	Thermal roll paper (80mm wide, 25ø or 30ø)
Barcode supplied	1-dimension : Code128, Code39, I2/5, Code93 UPC, EAN, KAN, JAN, CODABAR 2-dimension : PDF417, QR Code, DATA Matrix, Micro PDF417, Truncated PDF417
Driver	Microsoft Widows XP / VISTA / 7 Windows CE, Linux, Android OS driver compatible
Black mark	Support black mark detection
H/W Spec.	MCU : 32bits RISC, FLASH : 4Mbytes, RAM : 8Mbytes
Receive buffer size	1M bytes
Battery	Rechargeable 7.4V DC, 1800mAh (Li-ion)
Battery duration	1 hour continuous printing
Battery Charger	Input (100~250VAC, 50~60Hz) Output(8.4VDC/0.8A), 4hours full charge time

(Continue...)

Item	Specification	
Environment Conditions	Temperature	-10°C ~ 50°C (operating) -10°C ~ 70°C (storage)
	Humidity	30% - 80% (operating) 10% - 90% (storage)
MCBF (Mean Cycle Between failure)	Mechanical	37,000,000 lines
	Head	Approximately 50 Km

< Table 1 >

2. Setting up the printer

2.1. Printer & Accessories

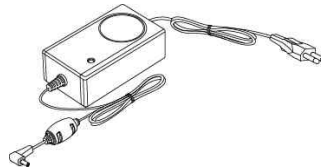   Your printer box should include these items. If any items are damaged or missing, please contact your dealer for assistance.
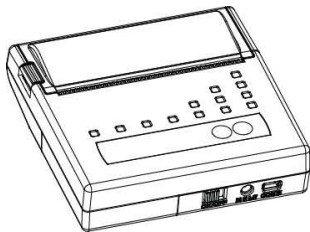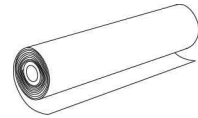
Battery pack

Communication cable

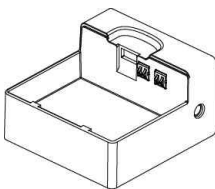**WSP-SW25/30**
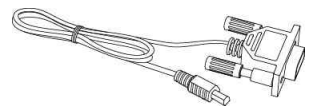
Battery charger adaptor

Thermal roll paper
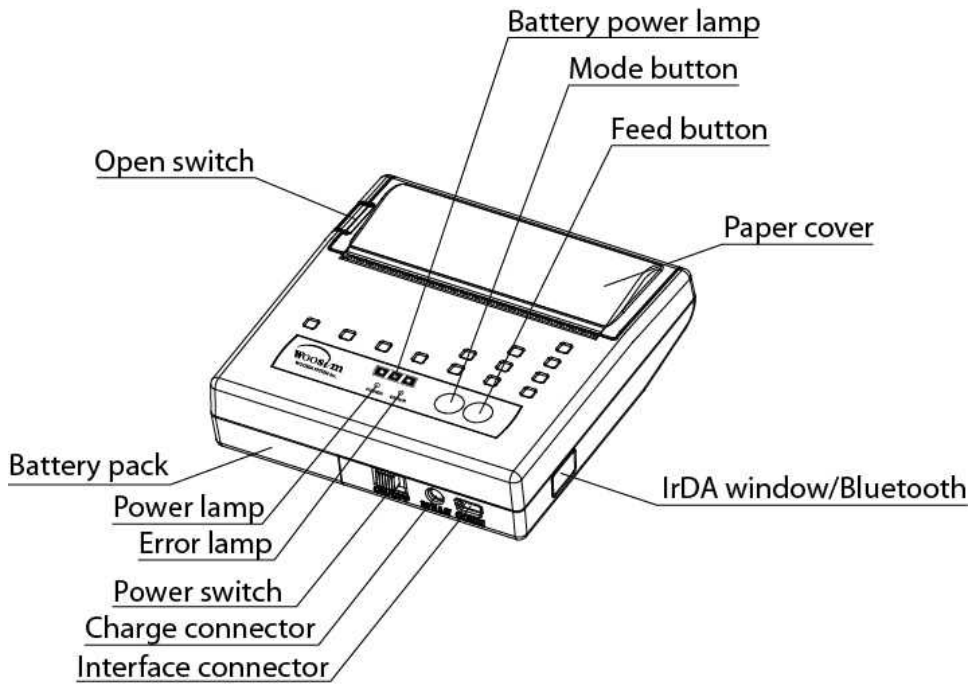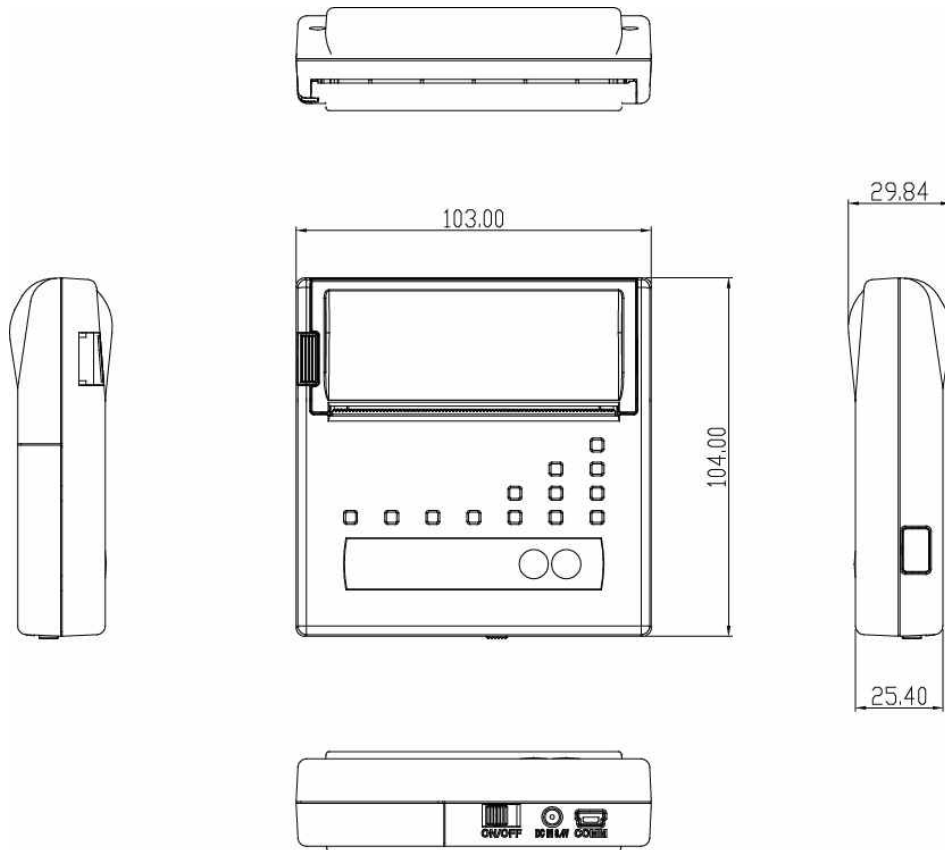
▼ **OPTIONAL**

External Battery Cradle

2.2. Printer Features

### 2.2.1. Part name

2.2.2. Dimensions

2.3. Replacing paper roll

Note : Be sure to use paper rolls that meet the specifications.

Do not use paper rolls that have the paper glued to the core because the
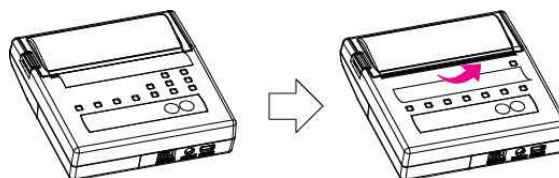
printer can not detect the paper end correctly.

1. Make sure that the printer is not receiving data; otherwise, data may be lost.
2. Open the paper cover as the "One-Touch" way by pressing the button in the arrow
   direction like the picture
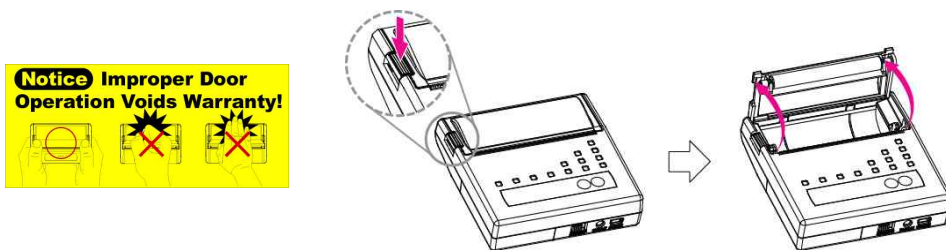
3. Insert the paper roll as shown.
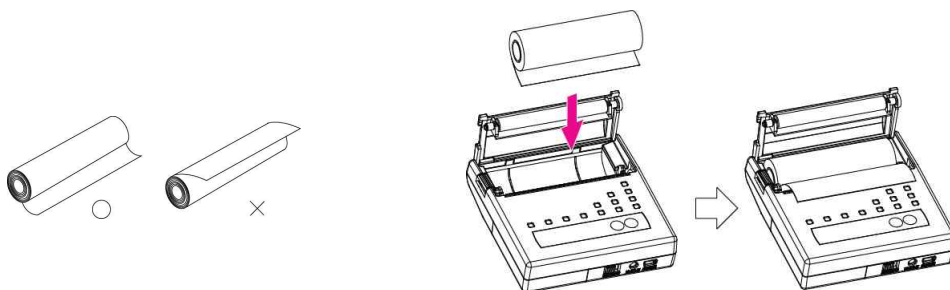
4. Tear the excess paper off using the edge of paper door as a tear bar.

2.4. Power supply

2.4.1. Internal power supply

The following specification is requested for Power supply.

Battery Charger : DC 8.4V/0.8A

Avoid using power supply which its power capacity of power current is extremely high.

2.4.2. Installing the Battery

> **NOTE :** ● Before installing or removing the battery pack, ensure the
> printer is OFF.
>
> ● If the printer is not used for long period of time, remove the
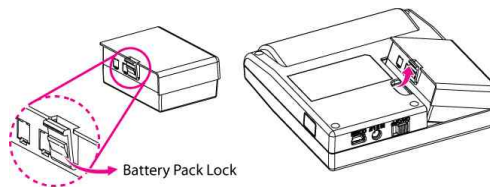> battery pack from the printer.

① To install battery pack, proceed as follows:

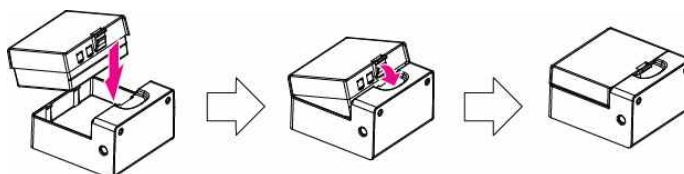- Insert the battery pack in the direction of the arrow.
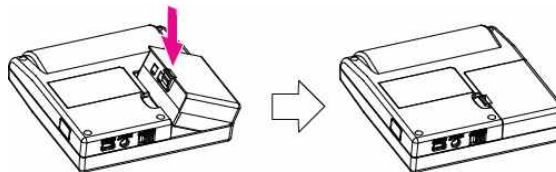
② Removing the battery pack

- Turn the printer power off and push the battery pack lock and to lift up.

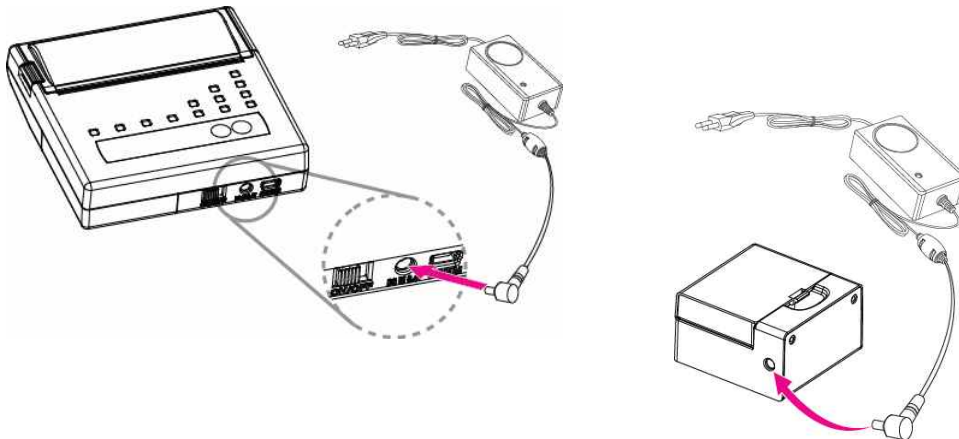③ The battery pack install into External Battery Cradle.

- Insert the battery pack in the direction of the arrow.

2.4.3. Recharging the battery pack

For recharging the battery pack, install the battery pack in the printer or the External battery cradle.

Insert the battery charge adaptor to the charge connector of the printer or the External battery cradle.

NOTE : ● While charging the printer, turn off the printer power.

● Do not remove the battery during charging.

● The battery is consumable parts and when purchasing, compared to the use hour is gradually decreases. (Warranty 6 month)

● If the printer is not used for a long time, unplug the power cord from the printer and outlet.

● The recharging time depends on the voltage level and ambient temperature of the battery. Normally, if takes about 4 to 5 hours to recharge a battery pack.

● You must use only the supplied adapter.

● Red Lamp   : charging the battery.
Green Lamp: charging is finished.

2.5. Set operation mode

Change the mode and option using the MODE Code.

- **MODE button** : use for changing OPTION status. (Error Lamp)
- **FEED button** : use for changing MODE status.   (Power Lamp)

[Example] The defaults of the printer are :

RS-232C / 9600 bps / 8 data bit / No parity / 1 stop bit / Density low
/ Mark use / Sensor low / Power down 5 minute
If a user wants to modify the defaults with
Bluetooth / 57600 bps / 7 data bit / Odd parity / 2 stop bit / Density high
/ Mark no use / Sensor medium1 / Power down no use

▶ Press **MODE Button** during the Error Lamp flicking 5 times.
→ You will see the Power Lamp and the Error Lamp flickers once.
→ Press the **MODE Button** twice and the Error Lamp flickers 3 times.
And then, interface mode has set to **Bluetooth** mode.

▶ When you press **FEED button** once again, Power Lamp flickers twice and the Error Lamp flickers once.
→ Press **MODE Button** 3 times, Error Lamp flickers 4 times.
And then, baudrate has set to **57,600 bps**.

▶ When you press **FEED Button** once again, Power Lamp flickers 3 times and the Error Lamp flickers twice.
→ Press **MODE Button** once, Error Lamp flickers once.
And then Data Bit has set to **7 data bit**.

▶ When you press **FEED Button** once again, Power Lamp flickers 4 times and the Error Lamp flickers once.
→ Press **MODE Button** once, Error Lamp flickers twice.
And then the Parity bit has set to **Odd parity bit**.

▶ When you press **FEED Button** once again, Power Lamp flickers 5 times and Error Lamp flickers once.
→ Press **MODE Button** once, Error Lamp flickers twice.
And then the density has set to **2 stop bit**.

▶ When you press **FEED Button** once again, Power Lamp flickers 6 times
 and Error Lamp flickers once.

→ Press **MODE Button** twice, Error Lamp flickers 3 times.
  And then the density has set to **Density high**.

▶ When you press **FEED Button** once again, Power Lamp flickers 7 times
 and Error Lamp flickers twice.

→ Press **MODE Button** once, Error Lamp flickers once
  And then the mark has set to **Mark no use**.

▶ When you press **FEED Button** once again, Power Lamp flickers 8 times
 and Error Lamp flickers once.

→ Press **MODE Button** once, Error Lamp flickers twice
  And then the sensor has set to **Sensor medium1**.

▶ When you press **FEED Button** once again, Power Lamp flickers 9 times
 and Error Lamp flickers five times.

→ Press **MODE Button** once, Error Lamp flickers once
  And then the power down has set to **Power down no use**.

 If all the mode have set, press the **MODE Button** and the **FEED Button** at the same time after then release the buttons at the same time.

 The printer will print out the mode status which has modified.
 (Bluetooth / 57600 bps / 7 data bit / Odd parity / 2 stop bit / Density high / Mark no use / Sensor medium1 / Power down no use)

 If the status is not correct, please try it again according to the procedure.

MODE	POWER Lamp (Green)	ERROR Lamp (Red)	Option	
			IrDA	**Bluetooth**
Communication Port	1	1	UART(RS-232C)	UART
		2	Protocol UART (RS-232C)	Protocol UART (RS-232C)
		3	Raw IrDA	Bluetooth
		4	Protocol IrDA	Protocol Bluetooth
		5	Standard IrDA	
Baud Rate	2	1	9600 bps	
		2	19200 bps	
		3	38400 bps	
		4	57600 bps	
		5	115200 bps	
Data Bit	3	1	7 Data bit	
		2	8 Data bit	
Parity Bit	4	1	No Parity	
		2	Odd Parity	
		3	Even Parity	
Stop Bit	5	1	1 Stop bit	
		2	2 Stop bit	
Density	6	1	Density Low	
		2	Density Medium	
		3	Density High	
Mark	7	1	No use	
		2	Use	

(Continue...)

MODE	POWER Lamp (Green)	ERROR Lamp (Red)	Option
Sensor	8	1	Low
		2	Medium1
		3	Medium2
		4	High
		5	AUTO
Power Down	9	1	No use
		2	1 minute
		3	2 minute
		4	3 minute
		5	4 minute
		6	5 minute

< Table 2 >

3. Interface

## 3.1. UART(RS-232C or TTL)
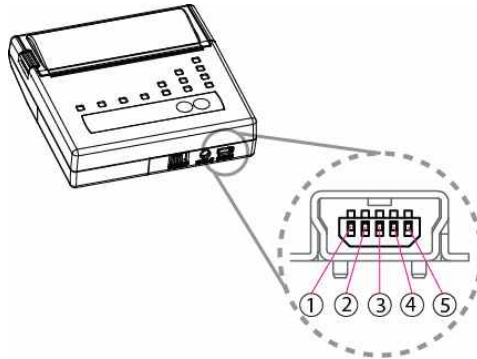
    The WSP-SW25/30 printer has an UART(RS-232C or TTL) interface and is connected by means of a 5 pin mini USB socket. In the following table, the signals present on the Mini USB socket are listed:

| Pin no	Signal Name	Direction	Function
1	TxD	Output	Transmit Data
2	RxD	Input	Receive Data
3	CTS	-	-
4	NC.	-	-
5	GND	-	Ground

NOTE : ●   When data receiving, when it removes the communication cable, it loses a data.

3.2. Infrared data communication

The WSP-SW25/30 has a serial interface for bi-directional data exchange.
The infrared port is the right side of the front part.
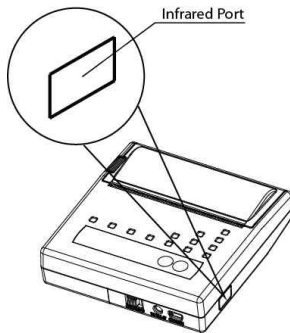
1. To use the WSP-SW25/30's infrared port by
   a Computer or a Personal Digital Assistant
   (PDA) with IR port is required.
2. Position a PDA conforming to the specifications
   in point not more than 50 centimeter away from
   the printer's infrared port. Make sure the two ports
   are in front of each other with an angle of not more
   than 15° on the four sides.
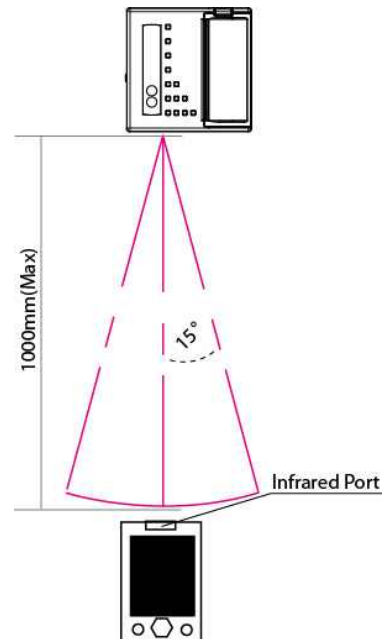
NOTE : ● When infrared ray communication
        doing, directness it does not see
        the IrDA window roll up.
        Eye damage there is a danger.

3.3. Bluetooth

Category	Specification
Bluetooth Spec.	Bluetooth Ver2.1 + EDR / Class2 (10m)
Frequency Range	2.4GHz ISM BAND
Data Transmission Rate	57600bps Fixed.
Data bit	8 Data bit Fixed.
Parity bit	No parity Fixed.
Stop bit	1 Stop bit Fixed.

4. Using the printer

4.1. Control panel
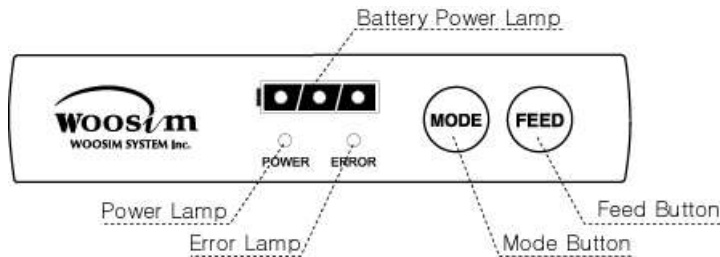
▶ **Button**

   - FEED :

   When the printer is on, paper can be feed manually by pressing and holding the
   FEED button for more than one second.

   - MODE :

   MODE Button is for use to change communication mode.
   Do not operate the mode button without instructions.

▶ **Panel lamp**

- Power :   Printer is ON and ready to receive data.

- Error   :   Indicates a fault condition or a printer error.

   (i.e : no paper, paper cover opened. etc.)

- **Battery Power :** These lamps(Green) indicated the battery power remaining.

   The battery gain in quantity and these lamps are on the decrease.

   If so, you must recharge the battery by using the battery charger.

4.2. Self test

The Self-Test checks whether the printer has any problems. If the printer does not function properly, contact your dealer. For Self-Test, turn on the power while holding down the FEED Button. The Self-Test checks the following :

1) Make sure paper roll has been installed properly.
2) The Self-Test prints the current printer status, which provides the control ROM version and the communication method setting.
3) After printing the current printer status, Self-Test will print a pattern using the built-in character set.
4) The Self-Test automatically ends.

The printer is ready to receive data as soon as it complete the Self-Test.

5. Consumable parts

5.1. Recommended paper

Type   : Thermal Paper
Paper width   : 80mm
Paper thickness : 60±5μm
Outer diameter : Ø25mm or less, Ø30mm or less
Recording side : Outside of roll

⚠ Cautions

1. Do not paste the paper to the core, and the roll paper which has near end mark printing on its near end is recommended.

2. Chemicals or oil may change the color of paper, or printed characters may fade.

3. Change of paper color starts from approx. 70 ℃.
   Pay attention to heat, humidity and sun light.

4. Color of paper may be changed by being scratched by nail or hard metal, etc.

5.2. Printing position
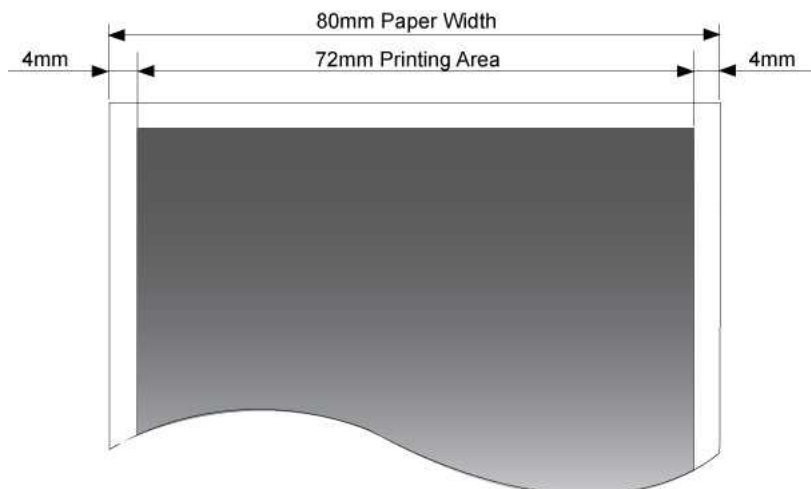
6. Revision History

Date	Version	Comments
Aug. 23. 2011	1.0	Initialize