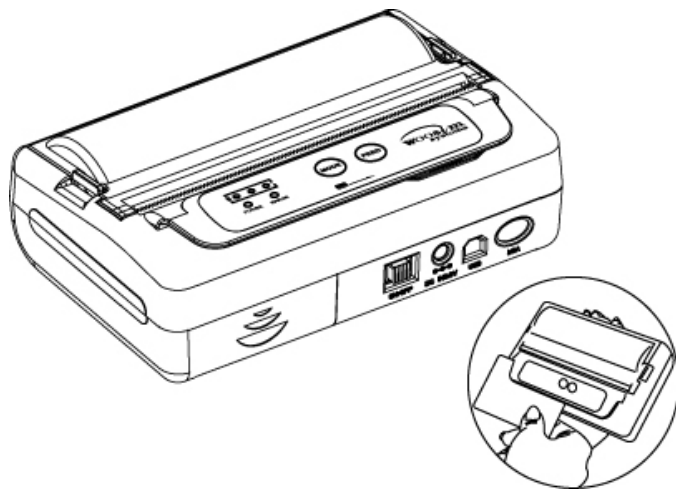


**MODEL PORTI-WC40**

**(4inch Mobile Printer)**



**WOOSIM SYSTEMS Inc.**

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All specifications are subjected to change without notice

## **Copyright**

**PORTI-WC40** portable mobile printer operator's manual.

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## **Trademark**



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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 **PORTI-WC40** is suitable designed for use with a growing variety of mobile devices Bluetooth/Serial interfaces make the PORTI-WC40 the perfect comrade for applications such as point of transaction warehousing, distribution, point of sales, hospitality, gaming and healthcare.

The general features of **PORTI-WC40** printer are as follows:

- ▶ Pocket size (138.4mm x 88.5mm x 45.7mm).
- ▶ Light weight(314g without paper) for true mobility.
- ▶ Very silent printing thru direct thermal printing method.
- ▶ High speed (50mm/sec)
- ▶ High resolution (203dpi, 8dot/mm)
- ▶ UART(RS-232C or TTL) , Bluetooth Ver2.1+EDR Interface
- ▶ Intuitive LED's indicate Power(on/off),Error and Battery status
- ▶ Smart battery management
- ▶ Printer door open & Paper-out sensor
- ▶ Support Magnetic Stripe Reader.
- ▶ Measure system for thermal print head temperature
- ▶ Easier paper roll loading by CLAMSHELL design.
- ▶ Easier maintenance with self-diagnostic.
- ▶ Microsoft Windows 98/ME/XP/2000/VISTA compatible.
- ▶ In field programming – Update Firmware, Download Fonts and Logos
- ▶ Support bit-image(logo) download.
- ▶ Flow control : Software (XON/XOFF)
  - ※ Hardware flow control not supported in printer.

## ■ Operating Precaution

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 : -20°C to 55°C
  - ◆ Relative humidity : 0% to 90% (No condensation)
- 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 cable and to close up the Infrared transmitter /receiver 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**

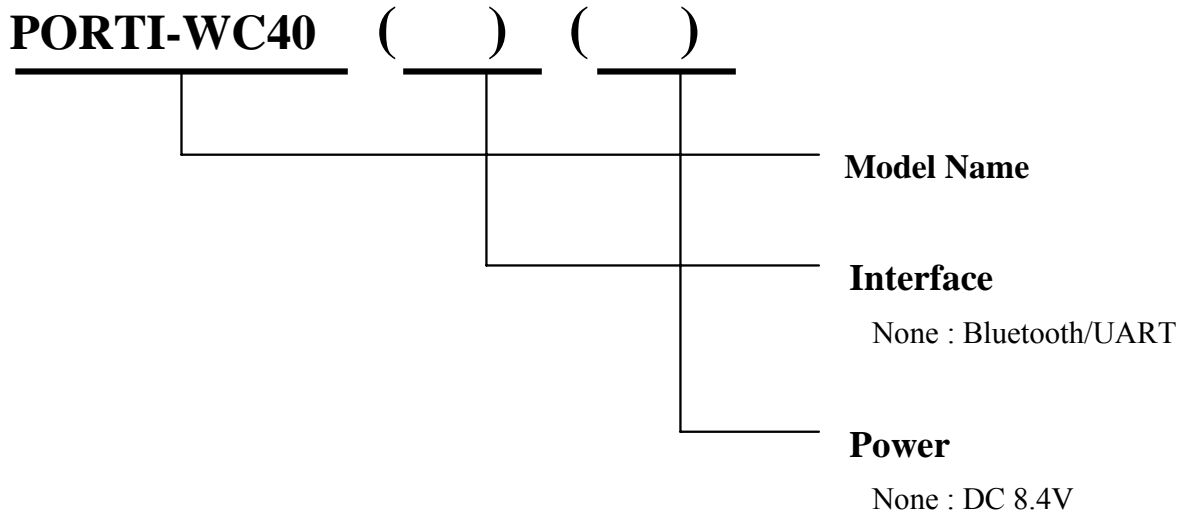
- Store the thermal paper in a cool, dry and dark place.
- Do not rub the paper with hard object.
- Do not leave the paper with hard object.
- Do not allow plastic film, erasers, or adhesive tape to touch the paper for long periods.
- Do not stack the thermal paper with diazo copies immediately after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

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# 1. Outline

## 1.1. Model classifications



## 1.2. Product Part Number System

**Model name / Interface Spec.**

S40

SC30

W25

.

.

.

Wired		Wireless	
A	UART	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

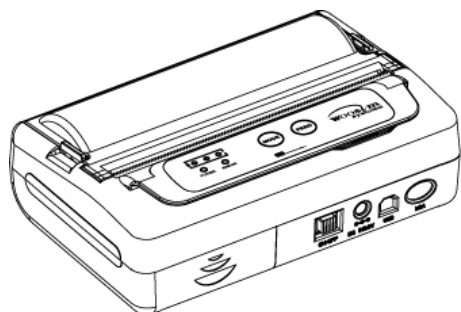
Item	Specification	
<b>Printing method</b>	Direct thermal line printing	
<b>Characters per line</b>	92cpl	
<b>Character size</b>	Eng. : 9*24dots, 12*24dots    Kor. : 16*24dots, [24*24dots]	
<b>Optional Characters</b>	Simplified/Traditional Chinese, Arabic, Cyrillic, Russian, Turkish, Greek, Japanese, Persian, Latin9 and Others upon request.	
<b>Resolution</b>	203dpi, 8dots/mm	
<b>Print width</b>	4-inch (104mm, 832dots)	
<b>Printing speed</b>	50mm /sec	
<b>Dimensions</b>	138.4*88.5*45.7	
<b>Weight</b>	418g (Including battery & roll paper)	
<b>Interface</b>	UART(RS-232C or TTL), Bluetooth Ver 2.1+EDR	
<b>Paper supplied</b>	Thermal roll paper (113mm wide, 38ø)	
<b>Barcode supplied</b>	1-dimension : Code128, EAN 128, Code39, I2/5, Code93 UPC, EAN, KAN, JAN, CODABAR 2-dimension : PDF417, QR Code, DATA Matrix	
<b>Black mark</b>	Support black mark detection	
<b>H/W Spec.</b>	MCU : 32bit RISC, FLASH : 4 Mbytes, RAM : 8 Mbytes	
<b>Receive buffer size</b>	1M bytes	
<b>Battery</b>	Rechargeable 7.4V DC, 1800mAh (Li-ion)	
<b>Battery duration</b>	1 hour continuous printing	
<b>Battery Charger</b>	Input (100~250VAC, 50~60Hz) Output(8.4VDC/0.8A), 4hours full charge time	
<b>Environment Conditions</b>	Temperature	-20°C ~ 55°C (operating)
	Humidity	0% - 90% (operating)
<b>MCBF (Mean Cycle Between failure)</b>	Mechanical	37,000,000 lines
	Head	Approximately 50 Km



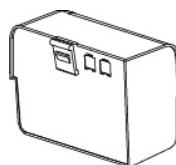
## 2. Setting up the printer

### 2.1. Printer & Accessories

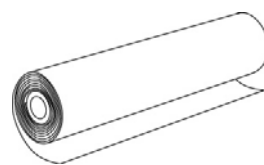
Your printer box should include these items. If any items are damaged or missing, please contact your dealer for assistance.



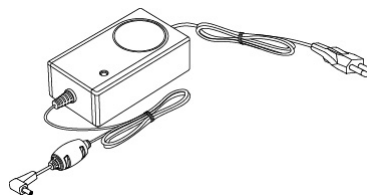
**PORTI-SWC40**



**Battery Pack**

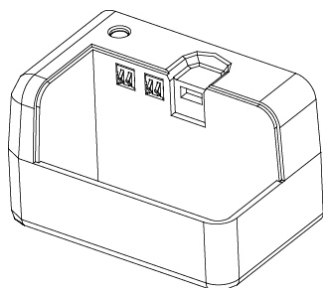


**Roll Paper**

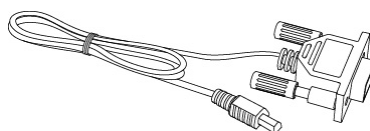


**Battery Charger**

#### ▼ OPTIONAL



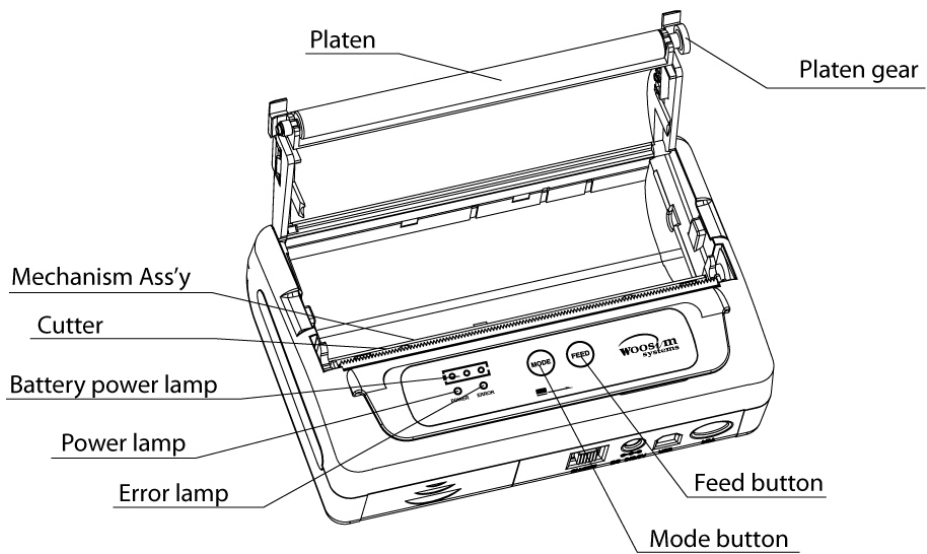
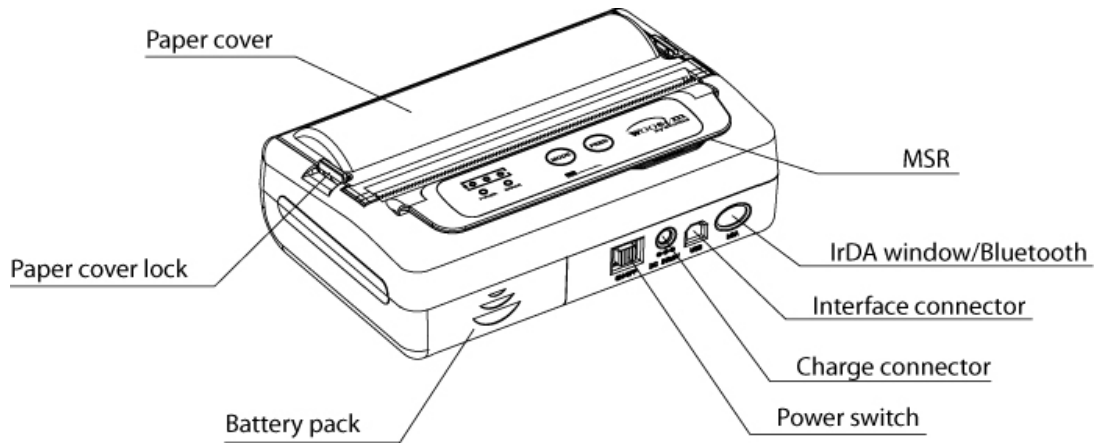
**Extra Charger**



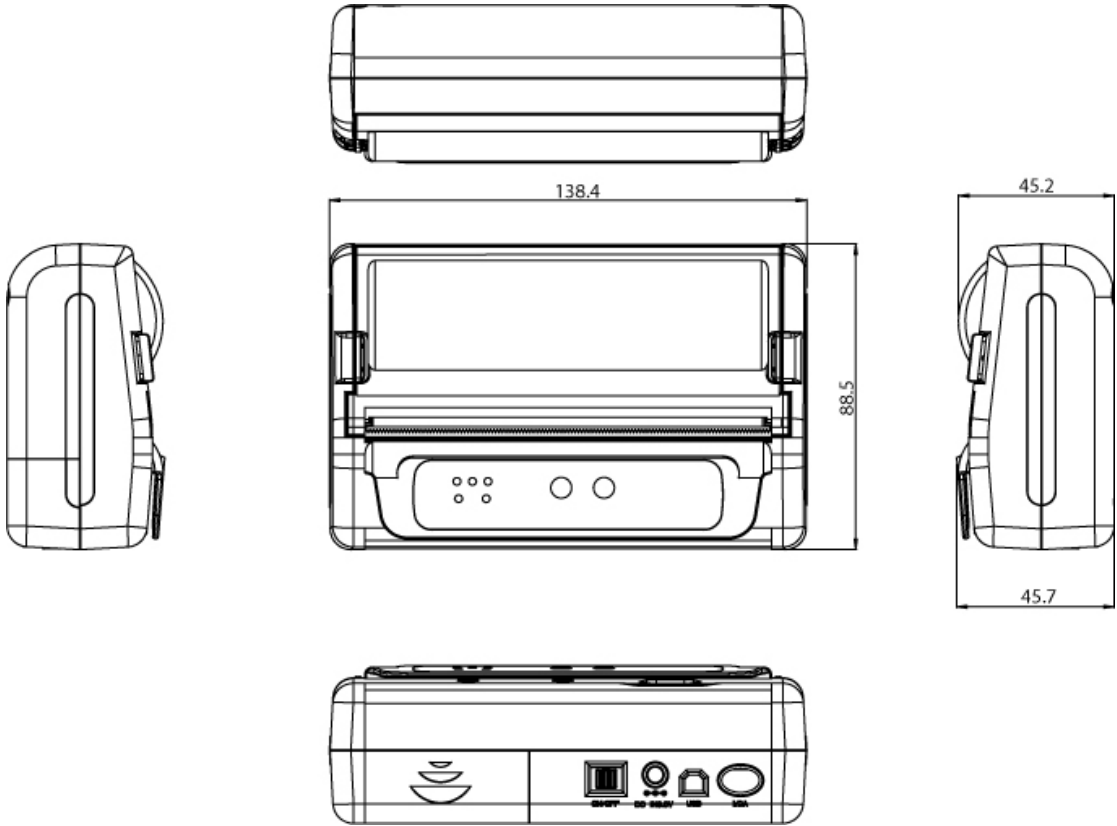
**Communication Cable**

## 2.2. Printer Features

### 2.2.1. Part name



### 2.2.2. Dimensions

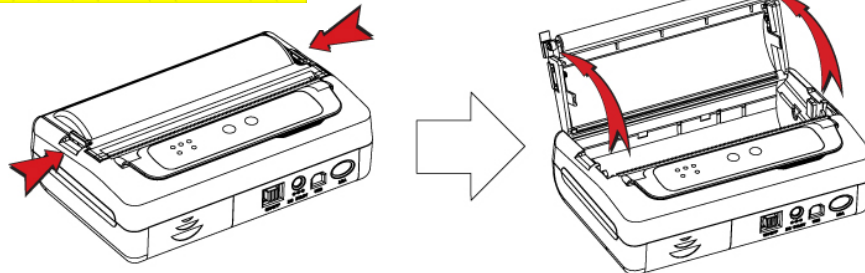


## 2.3. Replacing paper roll

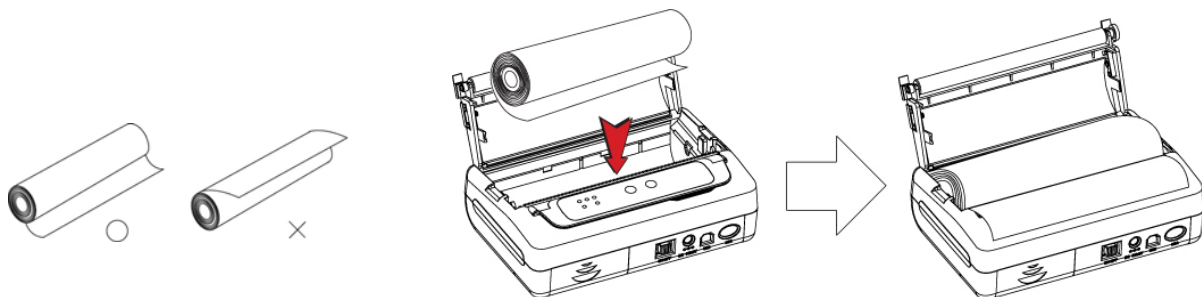
Note : Be sure to use paper rolls that meet the specifications.

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

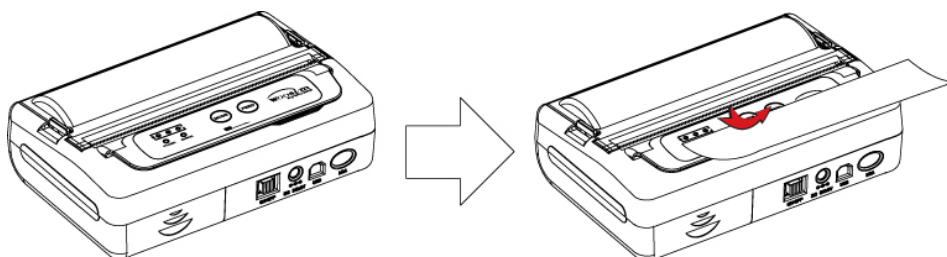
1. Make sure that the printer is not receiving data; otherwise, data may be lost.
2. Open the paper cover using finger on both side of printer, and remove the remaining paper.



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 :**

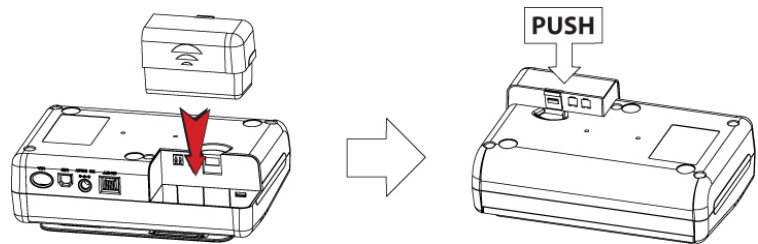
- Before installing or removing the battery pack, ensure the printer is OFF.
- If the printer is not used for long period of time, remove the battery pack from the printer.

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

**Dispose of used batteries according to the instructions.**

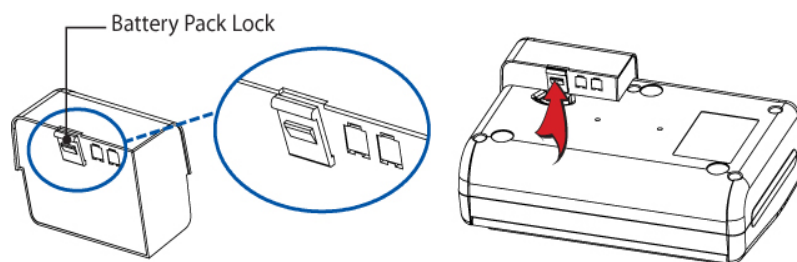
① To install battery pack, proceed as follows:

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



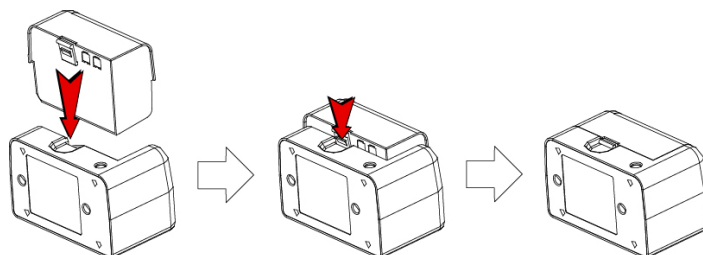
② Removing the battery pack

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



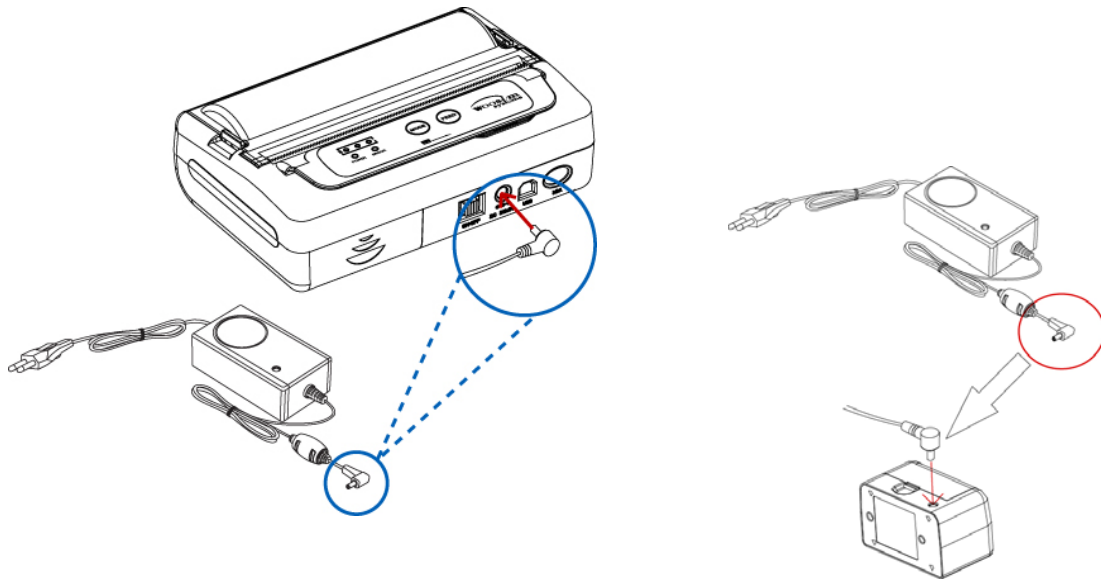
③ The battery pack install into extra charger.

- 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 extra charger. Insert the Battery Charger to the charge connector of the printer or the extra charger.



- 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, it 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

1. Press the **MODE Button** until the **Error Lamp** twinkles 5 times.
2. Change the mode and option using the **MODE Button** according to the MODE (Table1).

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

Ex) The defaults of the printer are :

**UART/ 9600 bps/ 8 data bit / No parity/ Density Low**

If a user wants to modify the defaults with :

**Bluetooth / 38400 bps / 7 data bit/ Even parity/ Density high**

- ▶ Press **MODE Button** until **Error Lamp** twinkles 5 times and release the button.
  - You will see the **Power Lamp** twinkles once and the **Error Lamp** twinkles once.
  - Press the **MODE Button** twice and the **Error Lamp** twinkles three times.  
(The interface mode has set to Bluetooth mode.)
- ▶ Press **FEED button** one time, **Power Lamp** twinkles twice and **Error Lamp** twinkles once.
  - Press the **MODE Button** twice, and the **Error Lamp** twinkles three times.  
(The baud rate has set to 38,400 bps)
- ▶ Press **FEED Button** once, **Power Lamp** twinkles three times and **Error Lamp** twinkles twice.
  - Press **MODE Button** one time, **Error Lamp** twinkles one time.  
(The Data Bit has set to 7 Data bit)
- ▶ Press **FEED Button** one time, **Power Lamp** twinkles four times and **Error Lamp** twinkles once.
  - Press **MODE Button** one time, **Error Lamp** twinkles two times.  
(The Parity bit has set to Odd parity bit)

▶ Press **FEED Button** two time, **Power Lamp** twinkles six times and **Error Lamp** twinkles once.

→ Press **MODE Button** one time, **Error Lamp** twinkles twice after then press **MODE Button** again, the **Error Lamp** will twinkle three times.  
( The Density has set to High)

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 / 38400 bps/ 7 Data bit/ Odd parity/ 1 Stop Bit/Density high/Mark No Use)**

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

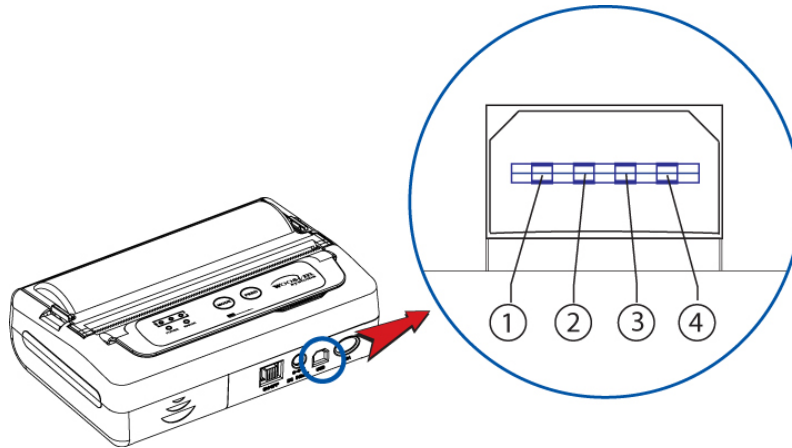


	<b>POWER Lamp (Green)</b>	<b>ERROR Lamp (Red)</b>	<b>Option</b>
<b>Communication Port</b>	1	1	UART
		2	Protocol UART
		3	Bluetooth
		4	Protocol Bluetooth
<b>Baud Rate</b>	2	1	9600 bps
		2	19200 bps
		3	38400 bps
		4	57600 bps
		5	115200 bps
<b>Data Bit</b>	3	1	7 Data bit
		2	8 Data bit
<b>Parity Bit</b>	4	1	No Parity
		2	Odd Parity
		3	Even Parity
<b>Stop Bit</b>	5	1	1 Stop bit
		2	2 Stop bit
<b>Density</b>	6	1	Density Low
		2	Density Medium
		3	Density High
<b>Mark</b>	7	1	No use
		2	Use
<b>Sensor</b>	8	1	Low
		2	Medium1
		3	Medium2
		4	High

	POWER Lamp (Green)	ERROR Lamp (Red)	Option
<b>Power Down</b>	9	1	No use
		2	1 minute
		3	2 minute
		4	3 minute
		5	4 minute
		6	5 minute

### 3. Interface

#### 3.1. UART(RS-232C or TTL)



The PORTI-WC40 printer has an UART interface and is connected by means of a 4 pin mini USB socket. In the following table, the signals present on the Mini USB socket are listed:

Pin No.	Name	Direction	Function
1	TxD	Output	Transmit Data
2	RxD	Input	Receive Data
3	CTS	-	-
4	GND	-	Ground

\* Applicable connector : SUNG KYUNG (CM-720)

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

## 3.2. Bluetooth

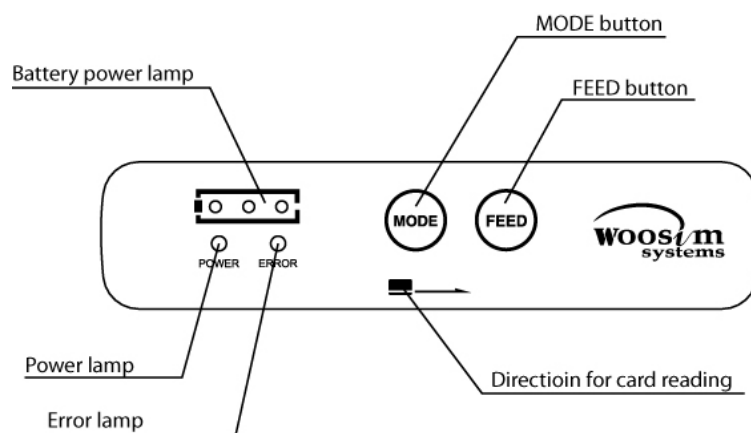
Category	Specification
Bluetooth Spec.	Bluetooth V2.1 / Class2 (10m)
Frequency Range	2.4GHz ISM BAND(2.402~2.480MHz)
Data Transmission Rate	57600bps Fixed.
Data bit	8 Data bit Fixed.
Parity bit	No parity Fixed.
Stop bit	1 Stop bit Fixed.
Output	Below 3mW/MHZ
Modulation type/rash way	GFSK SYSTEM / PLL

### 3.2.1 Bluetooth channel organized table

CH	MHz	CH	MHz	CH	MHz	CH	MHz	CH	MHz	CH	MHz	CH	MHz	CH	MHz
1	2402	11	2412	21	2422	31	2432	41	2442	51	2452	61	2462	71	2472
2	2403	12	2413	22	2423	32	2433	42	2443	52	2453	62	2463	72	2473
3	2404	13	2414	23	2424	33	2434	43	2444	53	2454	63	2464	73	2474
4	2405	14	2415	24	2425	34	2435	44	2445	54	2455	64	2465	74	2475
5	2406	15	2416	25	2426	35	2436	45	2446	55	2456	65	2466	75	2476
6	2407	16	2417	26	2427	36	2437	46	2447	56	2457	66	2467	76	2477
7	2408	17	2418	27	2428	37	2438	47	2448	57	2458	67	2468	77	2478
8	2409	18	2419	28	2429	38	2439	48	2449	58	2459	68	2469	78	2479
9	2410	19	2420	29	2430	39	2440	49	2450	59	2460	69	2470	79	2480
10	2411	20	2421	30	2431	40	2441	50	2451	60	2461	70	2471		

## 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

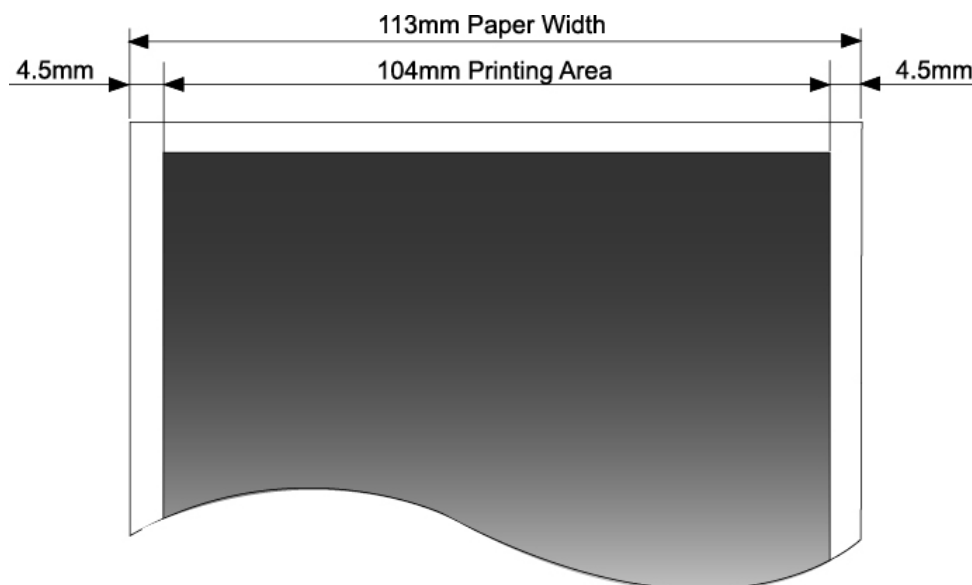
Type	: Thermal Paper
Paper width	: 113mm
Paper thickness	: $60 \pm 5 \mu\text{m}$
Outer diameter	: $\text{Ø}38\text{mm}$ or less



#### 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.  $70\text{ }^{\circ}\text{C}$ .  
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



FCC ID : QDDPORTI-WC40

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.

**CAUTION : 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.

Modifications not expressly approved by the manufacturer could void the user's authority to operated the equipment under FCC rules.



This Device has been evaluated to comply with RF exposure requirement for general use limit in portable condition. It is safe to be used in sold condition.