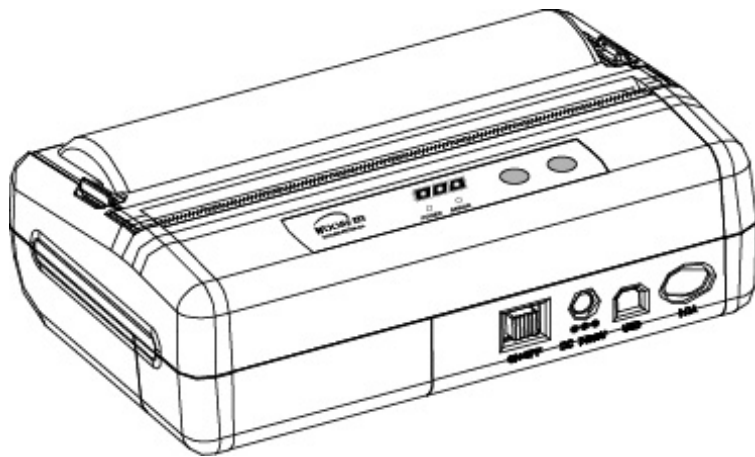# MODEL **PORTI-W40**

(Mobile Printer)

WOOSIM SYSTEM Inc.
#501, Daerung Technotown 3th,
448, Gasan-Dong, GeumChun-Ku,
Seoul, Korea
Tel : +82-2-2107-3700
Fax : +82-2-2107-3707
URL: http://www.woosim.com

All specifications are subjected to change without notice

Copyright

PORTI-W40 mobile printer operator's manual.

Copyright ⓒ2005 by Woosim System Inc.

All rights reserved.

The information contained in this manual is the property of Woosim System Inc. and may not be reproduced in whole or in part without the prior written permission of Woosim System Inc.

Trademark

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".

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

Notice

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

◘ Introduction

The **PORTI-W40** is suitable designed for use with a growing variety of mobile devices. IrDA/Serial or Bluetooth/Serial interfaces make the PORTI-W40 the perfect comrade for applications such as point of transaction warehousing, distribution, point of sales, hospitality, gaming and healthcare.

The general features of **PORTI-W40** printer are as follows:

▶ Pocket size (138mm x 88.5mm x 45.2mm).

▶ Light weight(446g) for true mobility.

▶ Very silent printing thru direct thermal printing method.

▶ High speed (40mm/sec)

▶ High resolution (203dpi, 8dot/mm)

▶ Serial(RS-232C) , IrDA Ver1.0(SIR)[Bluetooth(optional)] interface

▶ Easier paper roll loading by CLAMSHELL design.

▶ Easier maintenance with self-diagnostic.

▶ Microsoft Windows 98/ME/XP/2000 compatible.

▶ 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 :-10°C to 40°C
  - ◆ Relative humidity : 10% 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.
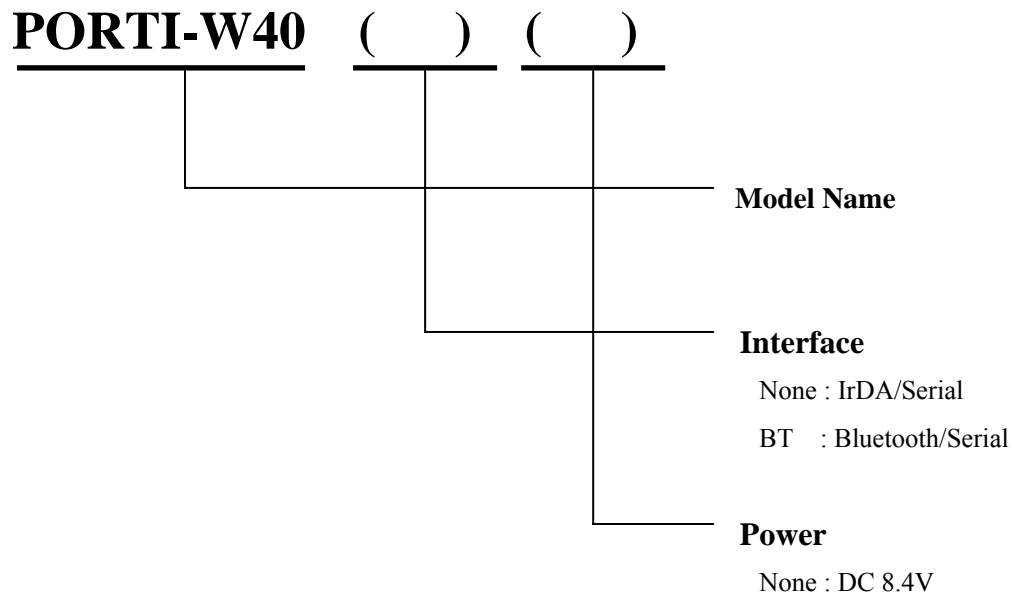
▶ Thermal Paper Handling

- ● 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.

CONTENTS

1. Outline

1.1. Model classifications

PORTI-W40 ( ) ( )

Model Name

Interface

  None : IrDA/Serial

  BT   : Bluetooth/Serial

Power

  None : DC 8.4V

1.2. Specifications

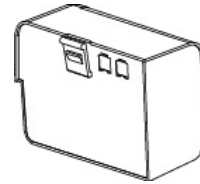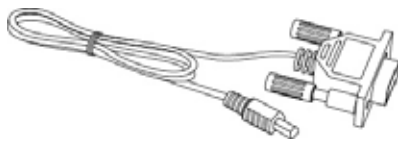| Item	Specification		
Printing method	Direct thermal line printing		
Characters per line	92cpl		
Character size	Eng. : 9*24dots, 12*24dots Kor. : 16*24dots, [24*24dots]		
Resolution	203dpi, 8dots/mm		
Print width	4-inch (104mm, 832dots)		
Printing speed	40mm / sec		
Dimensions	138 * 88.5 * 45.2 mm (Standard model)		
Weight	446g (Including battery & roll paper)		
Interface	Serial(RS-232C), IrDA Ver1.0 (SIR) (Standard Model) Bluetooth(option)		
Paper supplied	Thermal roll paper (113mm wide, 38ø)		
Barcode supplied	PDF417(2-dimension), Code128, Code39, I2/5, Code93 UPC, EAN, KAN, JAN, CODABAR		
Receive buffer size	10K bytes		
Note	Printing speed may be slower, depending on the data transmission speed and the combination of control commands.		
Battery	Rechargeable 7.4V DC, 1400mAh(Li-ion)		
Battery duration	1 hour continuous printing		
AC adapter	Input (100~250VAC, 50~60Hz) Output(8.4VDC/0.8A), 4hours full charge time		
Environment Conditions	Temperature	-10°C ~ 40°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	

2. Setting up the printer

2.1. Unpacking

When unpacking your printer box make sure it contains the printer and all accessories.

If any accessories are missing or damage, please contact your dealer for assistance.

PORTI-W40

BATTERY PACK

Communication Cable
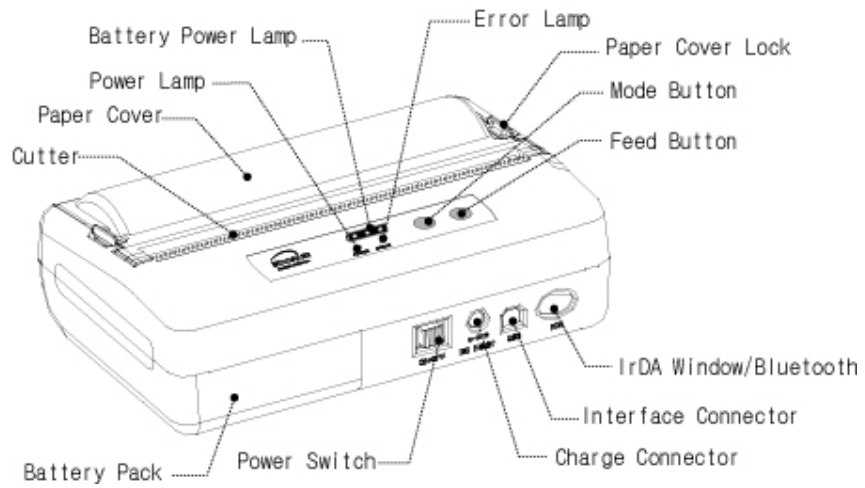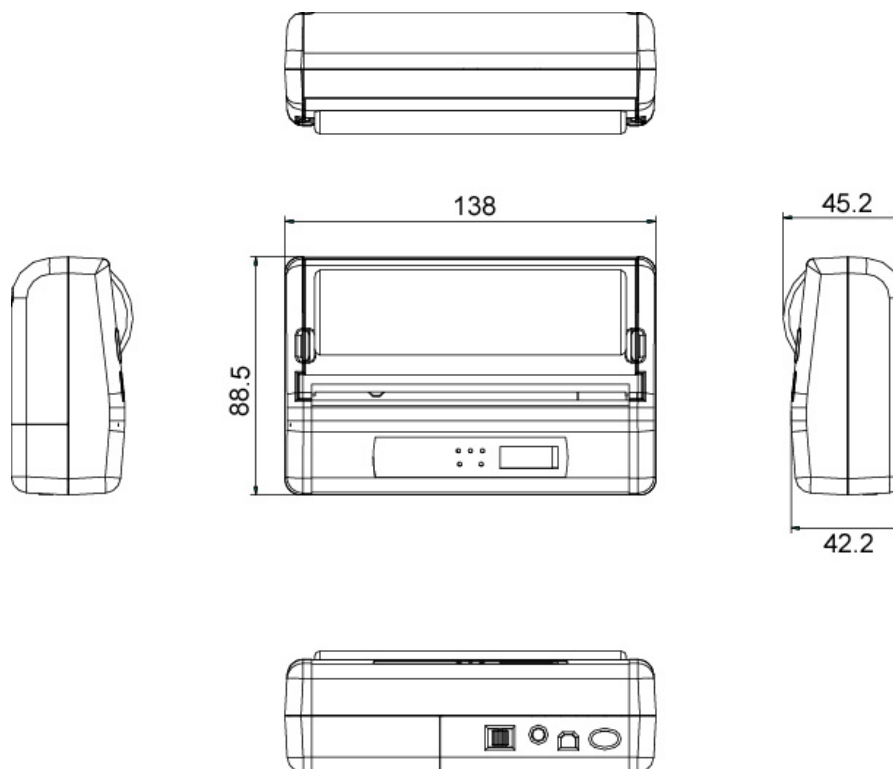
AC adapter for Battery Charge

shaft 116mm

shaft 84mm

SHAFT

ROLL PAPER

2.2. Part name and Outer appearances
2.2.1. Part name

Battery Power Lamp
Power Lamp
Paper Cover
Cutter
Error Lamp
Paper Cover Lock
Mode Button
Feed Button
IrDA Window/Bluetooth
Interface Connector
Charge Connector
Battery Pack
Power Switch

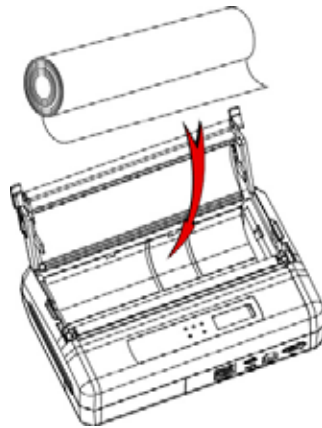### 2.2.2. Dimensions

138
88.5
45.2
42.2

2.3. Replacing the 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
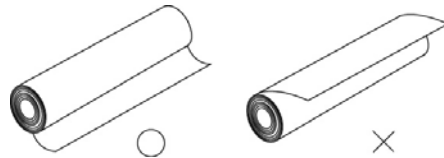core because the printer cannot detect the paper end
correctly.**

1. Make sure that the printer is not receiving data; otherwise, data may be lost.

2. Open the paper roll cover by applying your finger on both side of printer, push it up when the lock is released as shown in the drawing.

3. Remove the used paper roll core if there is one.
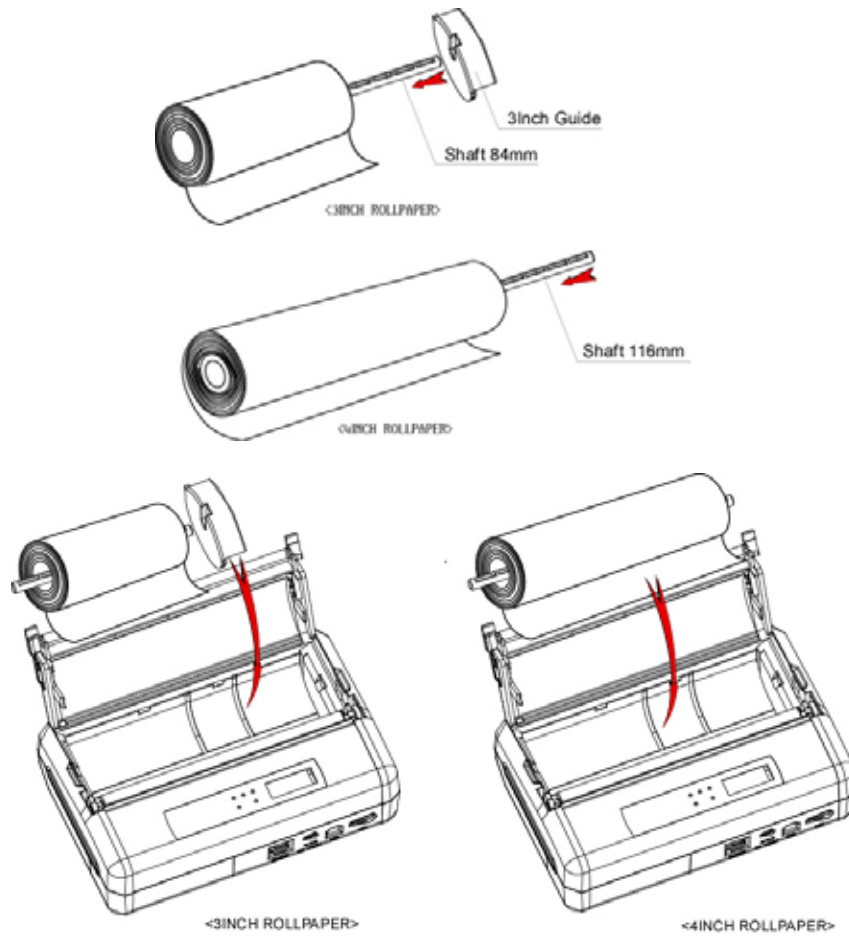

4. Insert the paper roll as shown.

5. Be sure to note the correct direction that the paper comes off the roll.
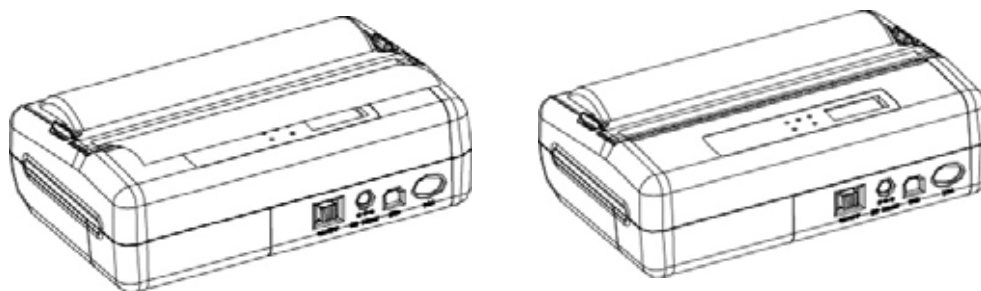
6. We could be use 3inch Rollpaper with the 3inch Guide, as shown.

   That will make use the Shaft, portable printer is so much better for stability.

3Inch Guide

Shaft 84mm

<3INCH ROLLPAPER>

Shaft 116mm

<4INCH ROLLPAPER>

<3INCH ROLLPAPER>

<4INCH ROLLPAPER>

7. Pull out a small amount of paper and then close the cover and tear off the paper, as shown.

2.4. Power connection

2.4.1. Specified power supply

The following specifications is requested for Power supply.

Input : DC 8.4V Standby 80mA and Max 2.5A (Standard model)

Avoid using power supply which its power capacity of power current is extremely high.
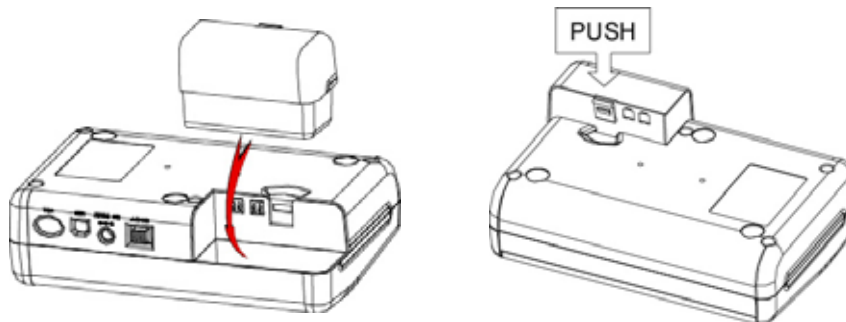
2.4.2. Installation / Remove the battery pack.

> **NOTE :** ● **Before installing or removing the battery pack, turn the printer**
>   **power off.**
>
>   ● **If the Printer is not used for a long time, remove the battery**
>   **pack from the printer**

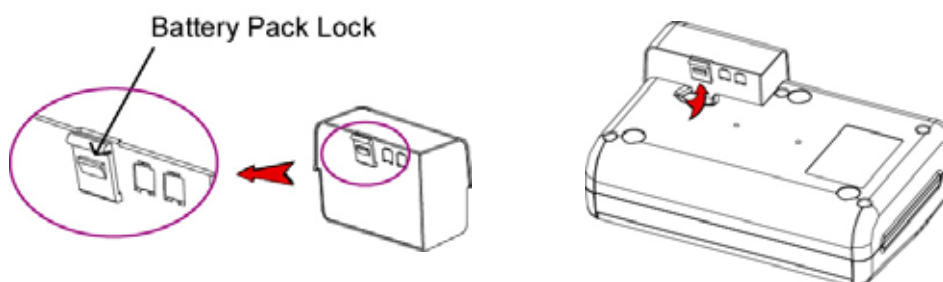① To install the battery pack, proceed as follows:

- Insert the Battery pack in the direction of the arrow and . Push the top of the battery pack.

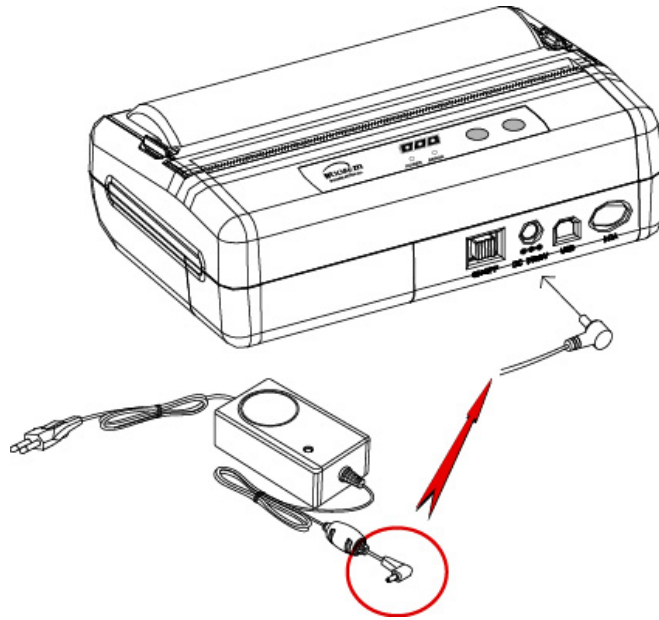② Removing the battery pack

Turn the printer power off.

Push the battery pack lock and to lift up the direction of the arrow.

2.4.3. Recharging the battery pack

For recharging the battery pack, install the battery pack in the printer.

Insert the AC adapter for Battery Charge to the power connector of the printer.

NOTE : ● **Before installing or removing the AC adapter, turn the printer power off.**

● **If the printer is not used for a long time, unplug the AC cable from the printer and outlet.**

● **Do not remove the battery during charging.**

● **Remove the communication cable from the connector during charging.**

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

2.5. Adjustment and setting

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 : RS-232C/ 9600 bps/ 8 data bit / No parity
       / Density Low
       If a user wants to modify the defaults with Protocol IrDA / 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 one time and the Error Lamp
         twinkles 1 time.
      → Press the **MODE Button** one time and the Error Lamp twinkles twice.
         (The interface mode has set to Protocol IrDA mode)

   ▶ Press **FEED button** one time, Power Lamp twinkles twice and Error Lamp
      twinkles 4 times
      → Press **MODE Button** one time, Error Lamp twinkles 5 times and press
         the **MODE Button** one more time, the Error Lamp twinkles 6 times
         (The baud rate has set to 38,400 bps)

▶ Press **FEED Button** one time, Power Lamp twinkles 3 times and Error Lamp twinkles 2 times.

→ 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 4 times and Error Lamp twinkles 1 time.

→ Press **MODE Button** one time, Error Lamp twinkles 2 times.

(The Parity bit has set to even parity bit)

▶ Press **FEED Button** one time, Power Lamp twinkles 5 times and Error Lamp twinkles 1 time.

→ Press **MODE Button** one time, Error Lamp twinkles 2 times after then press **MODE Button** again, the Error Lamp will twinkle 3 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.

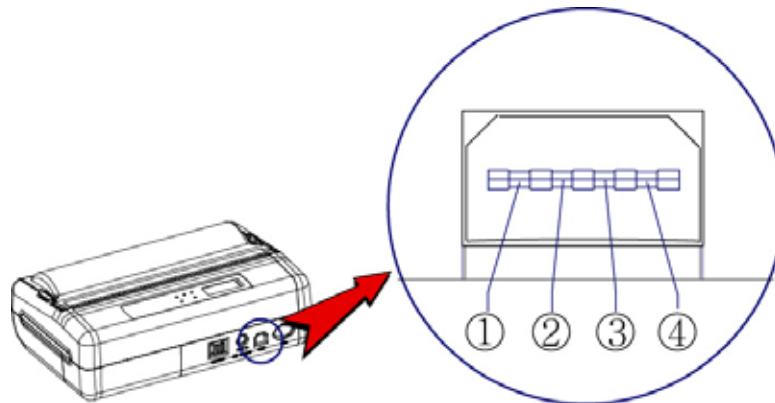The printer will print out the mode status which has modified.

(PROTOCOL IrDA/ 38,400 BAUD/ 7 DATA BIT/ EVEN PARITY/ DENSITY HIGH)

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

MODE	POWER Lamp (Green)	ERROR Lamp (Red)	Option
Communication Port	1	1	RS-232C
		2	Protocol IrDA / Protocol Bluetooth
		3	Standard IrDA / Bluetooth
Baud Rate	2	1	1200 bps
		2	2400 bps
		3	4800 bps
		4	9600 bps
		5	19200 bps
		6	38400 bps
		7	57600 bps
		8	9600 bps
Data Bit	3	1	7 Data bit
		2	8 Data bit
Parity Bit	4	1	No Parity
		2	Even Parity
		3	Odd Parity
Density	5	1	Density Low
		2	Density Medium
		3	Density High
Protocol	6	1	Default Protocol
		2	Lotte Protocol
Mark	7	1	No use
		2	Use

3. Interface

3.1. RS-232C Serial

The PORTI-W40 printer has a RS-232C serial interface is connected by means of a 4 pin male connector. In the following table, the signals present on the connector are listed:
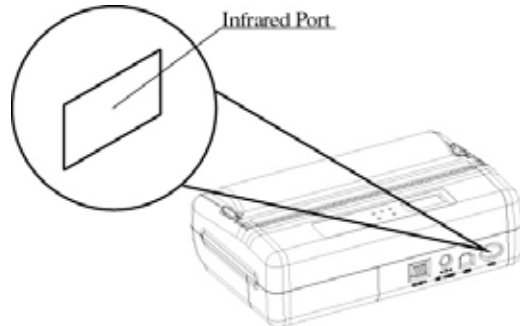
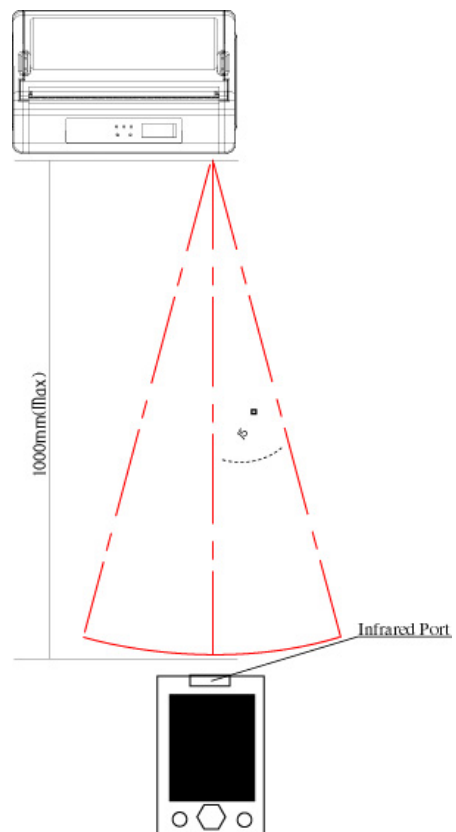| Pin No.	Name	Direction	Function
1	TxD	Output	Transmit Data
2	RxD	Input	Receive Data
3	CTX	-	-
4	GND	-	Ground

<CN7 : CM-722>

* Applicable connector : SUNG KYUNG (CM-720)

3.2. Infrared data communication

The PORTI-W40 has a serial interface for bi-directional data exchange. The infrared port is the right side of the front part.

Infrared Port

1. To use the PORTI-W40'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.

1000mm(Max)
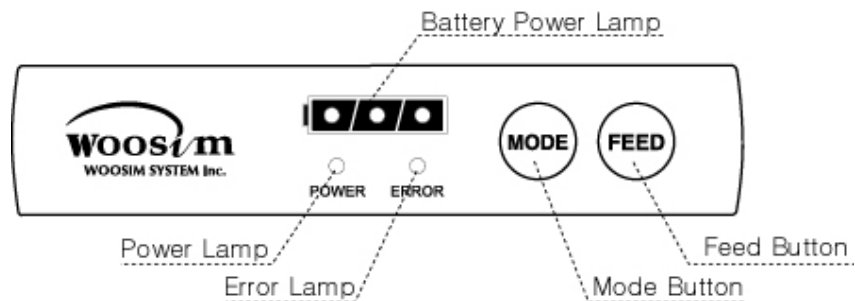Infrared Port

3.3. Bluetooth

Category	Specification
Bluetooth Spec.	Bluetooth V1.1 / 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.

Notice

If the quantity of data what printed at once is more than 20K byte on Bluetooth communication,
it would cause the buffer to overflow and the data to get damaged.

4. Using the printer

4.1. Control panel

▶ **Button**

  - MODE Button

   MODE Button is for use to change communication mode.

   (Refer to **2.5. ADJUSTMENT AND SETTING** for details about mode conversion)

   If you want to set to RS-232C Mode, just connect the communication cable to connector of

   the printer and then the mode will be changed automatically.

  - FEED Button

   Press the FEED Button once to advance paper one line. You can also hold down the FEED

   Button to feed paper continuously.

▶ **Panel lamp**

 - Power : This lamp(Green) is on whenever the printer is on.

 - Error : This lamp(Red) indicated an error such as paper end, or cover open, or

      mode conversion ,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 adapter.

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.

4.3. Driver installation

The driver installation instruction were written for the printer to be used with the Infrared port and serial port(RS-232C).
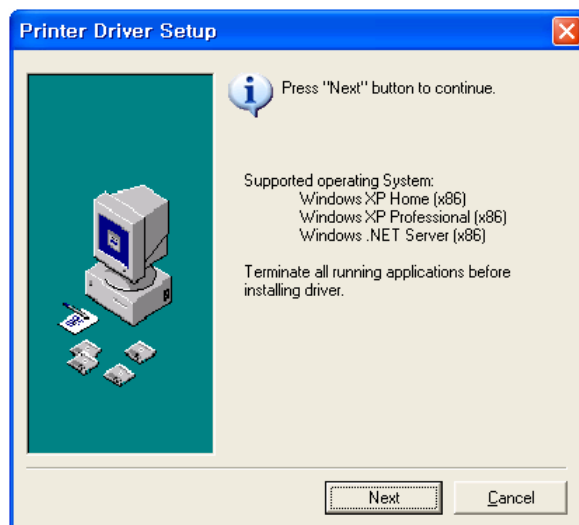
Make sure that your PC has built-in infrared device(IrDA Ver1.0).

Printer driver can download by Internet(http://www.woosim.com).

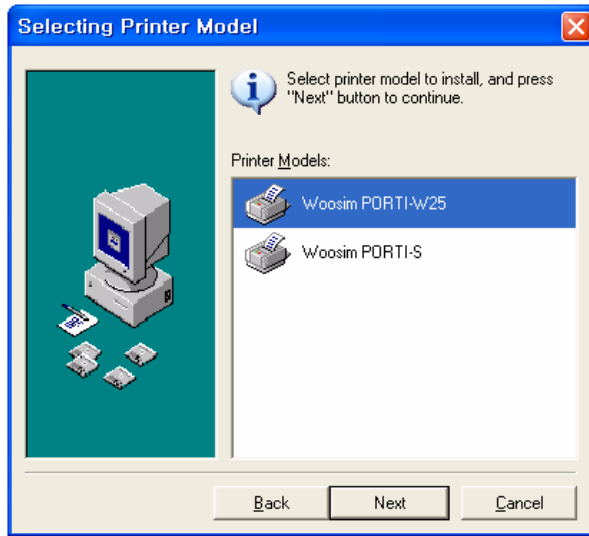Installing the PORTI-W Printer Driver on Windows 98/ME/2000/XP.

1) You must install new driver after deleting old driver.
   - Delete the old driver
   - Reboot the computer

   * If there is not any installed driver, you can install new driver immediately.

2) Run the setup.exe

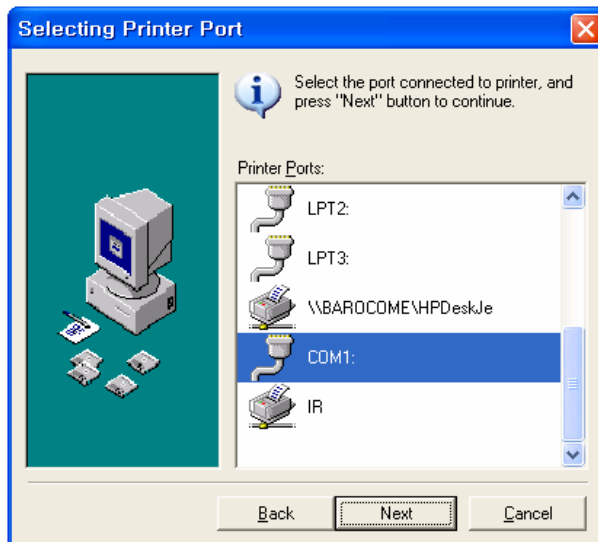   Press the "Next" after checking the supported Operating System.

(Fig.4.3.1)
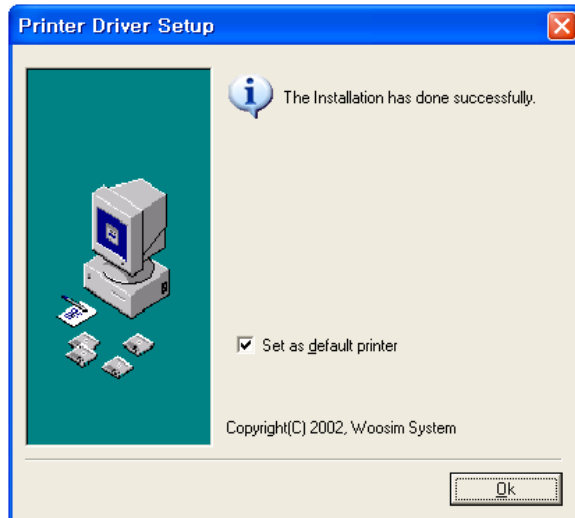
3) Select printer model to install, and press "Next".

(Fig.4.3.2)

4) Select the port connected to printer, and press "Next"

(Fig.4.3.3)

5) If the installation has done successfully, press "OK".

(Fig.4.3.4)

4.4. Bit-image download

The PORTI-W40 Printer supports bit image download to the internal Flash ROM.

The bit image download require the Porti_Download application and PCX file.

- Porti_Download Application : The Porti_Download application can download by
  internet(http://www.woosim.com).
- PCX file : The picture must be black or white PCX file and the width of picture must
  be x8 pixel.

Refer to Porti_Download manual for details about bit-image download.

You can print out the downloaded picture with referred **ESC f** command. (See sec. 6.6)

4. 5. Troubleshooting

Check the following points before you make a request for repair.

▶ **The power does not turn on.**

● AC adapter or battery pack being used?

● AC cable and AC adapter or batter pack is connected.

● AC adapter is connected to the printer correctly?

● Battery pack is fully recharged?

▶ **The printer does not print.**

● Interface cable is connected correctly?

● Interface cable that meets the Communication Connector
specification list on page 15 of the Operator's Manual being used?

● IrDA transmission status is good? (To close up between Infrared
Transmitter / Receiver and the host computer?)

● Transmission conditions of the host computer is correct?
(IrDA port is activated and set-up correctly?)

● Paper is not inserted?

● Paper orientation(top/bottom) is correct?

► **Error Lamp of the power Lamp is blinks.**

● Paper end or cover open ?

● Battery is almost exhausted? (Recharge the battery by using the power supply.)

► **The battery pack is not installed.**

● Battery pack correctly oriented?

● Correct battery pack being used?

● Battery pack case damaged?

► **The battery runs out soon even if recharged.**

● Battery been recharged correctly?

● If the battery is recharged correctly, but does not take a long time, it is almost dead.
  Replace if with a new one.

5. Consumble parts

5.1. Recommended paper

Type   : Thermal Paper
Paper width   : 113mm
Paper thickness   : 70±5 Mm
Outer diameter   : Ø38mm or less
Recording side   : Outside of roll

> **Cautions :**
> ⚠ **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 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