Operator's Manual

MODEL WSP-MC350

(3inch Mobile Printer)

Rev. 1.0

http://www.woosim.com

■ Copyright

WSP-MC350 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-MC350** is the ideal solution for Mobile banking system , Retail, point of sales, Credit card Transaction, other traveling and mobile computing etc.

The general features of **WSP-MC350** printer are as follows:

- Compact size (114.1 X 143.0 X 55.4mm)
- Light weight (347g) for true mobility.
- Very silent printing thru direct thermal printing method.
- High speed(80mm/sec, MAX)
- High resolution(203dpi : 8dots/mm)
- USB, Bluetooth Ver3.0 Interface
- Intuitive LED's indicate Power(on/off),Error, Bluetooth status, Battery status
- Support Magnetic Stripe Reader
- Support Smart Card Reader [option]
- Support text and graphic printing.
- Easier paper loading by CLAMSHELL design.
- One touch paper cover
- Printer door open & Paper-out sensor
- Easier maintenance with self-diagnostics.
- In field programming – Update Firmware, Download Fonts and Logos
- Microsoft Windows/Windows CE, Linux, Android, iOS compatible
- Flow control : Software (XON/XOFF)

  ※ Hardware flow control not supported in printer.

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 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.

CE WARNING

- Changes and modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- It is desirable that it be installed and operated with at least 20cm or more between the radiator and person's body(excluding extremities hand, wrists, feet, and ankles)

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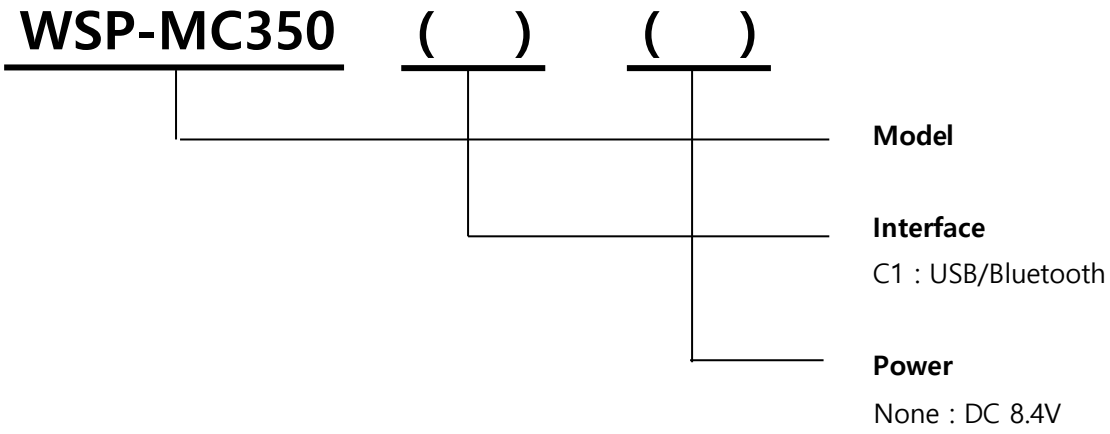
1. Outline

1.1. Model classifications



1.2 Symbol

⏻	**Standby symbol** IEC 5009, the standby symbol(line partially within a broken circle), Indicates a sleep mode or low power state.
⎓	**Direct current symbol** This symbol is found on many electronic devices that either require or produce direct current.

1.3. Product Part Number System

Model name / Interface Spec.

Model name
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.

1.4. Specifications.

Item	Specification
Printing method	Direct thermal line printing
Character size	- Font Size A: 12X24 / Font Size B : 9X24 / Font Size C : 8X16 - KOR : 24X24(16X24) / CHN, JPN : 24X24
Characters per line	- Font A : 48cpl / Font B : 64cpl / Font C : 72cpl - KOR, CHN, JPN : 24cpl
Optional Characters	Alphanumeric:95, Extended Graphics:128X50 pages, International:10, Simplified/Traditional Chinese, Japanese, Korean(optional)
Resolution	203dpi, 8dots/mm
Print width	3-inch (72mm, 576dots)
Printing speed	80mm / sec (MAX)
Dimensions	114.1 X 143.0 X 55.4mm
Weight (w/o paper)	347g
Interface	USB, Bluetooth Ver3.0 interface
Paper supplied	Thermal roll paper, Label roll (80mm wide, 50ø)
Barcode supplied	1-dimension : UPC-A, UPC-E, EAN-8, EAN-13, CODE-39, CODE-93, CODE-128, ITF, CODABAR 2-dimension : PDF417, Micro PDF417, Truncated PDF417, QR-CODE, DATA Matrix, Maxicode Etc :GS1 databar
Driver	Microsoft Windows, Linux
H/W spec.	MCU : RX-32bit, RAM : 128M bit, FLASH : 64M bit
Receive buffer size	1M bytes
Sensor	Support Cover open, Paper, Label, Gap
MSR	Triple tracks (1&2&3 Tracks Reading) *Supports 3DES & AES encryption
Smart Card Module [option]	ISO 7816 Compliant [EMV Level 1/2 Certified] / T=0, T=1 support 1 SAM [Security Application module]
Paper cutting method	Guillotine
Type of paper cutting	Full cut and Partial cut

(Continue...)

Item	Specification	
Battery	Rechargeable 7.4V DC, 1800mAh (Li-ion)	
Battery duration	1 hour continuous printing	
Battery Charger	Input (100~240V AC 50~60Hz) Output(8.4VDC/0.8A), 4hours full charge time	
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 50Km

< Table 1 >

2. Setting up the printer

2.1. Printer & Accessories

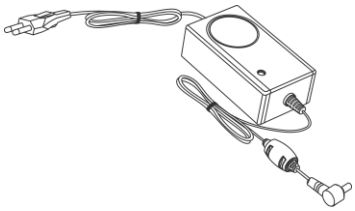
Your printer box should include these items. If any items are damaged or missing, please contact your dealer for assistance.

WSP-MC350

Battery Pack

Thermal roll paper

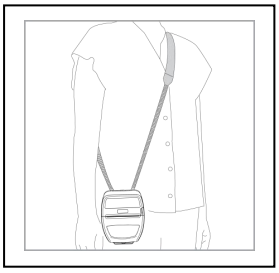
Belt Clip



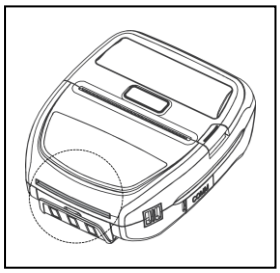
Battery charger adaptor

Communication cable

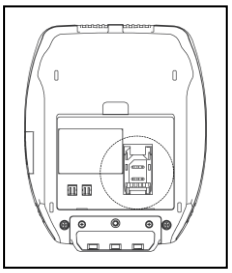
▼ **OPTIONAL**



Shoulder strap



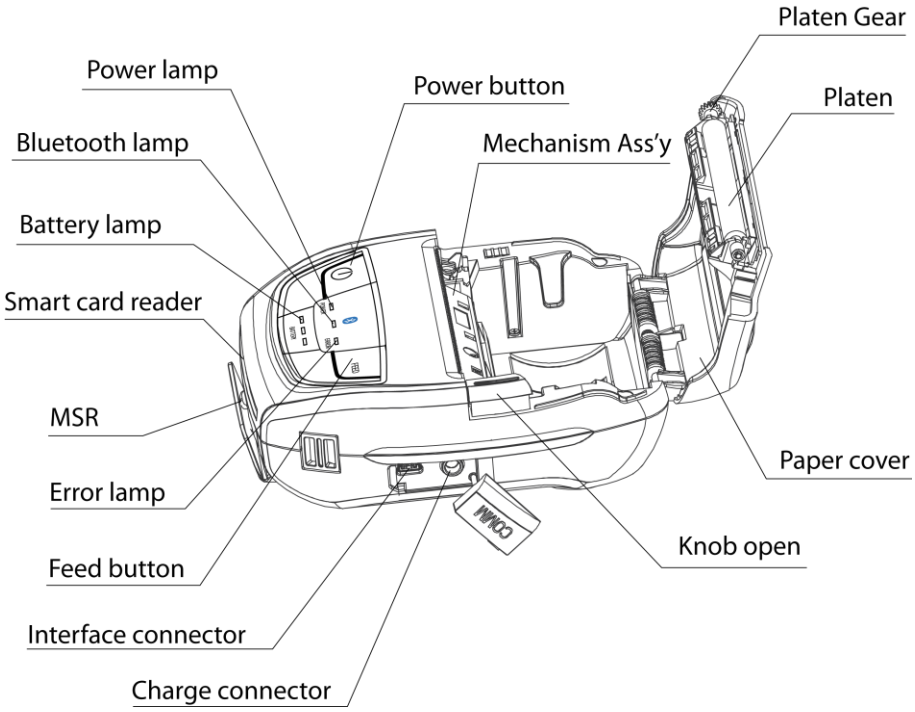
SCR

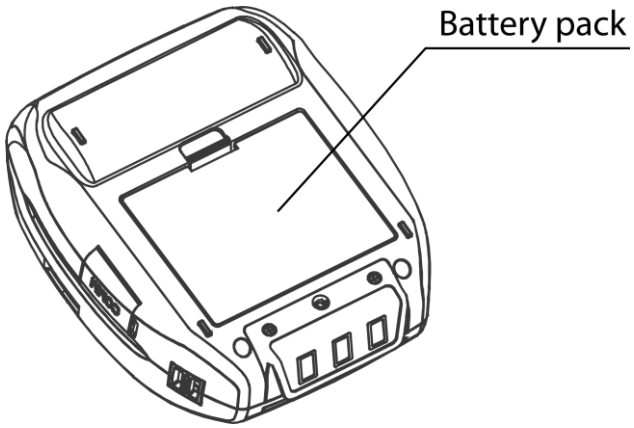


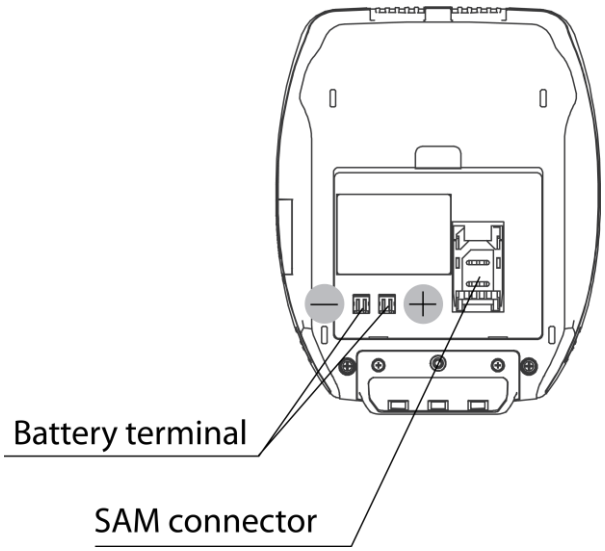
1 SAM

2.2. Printer Features

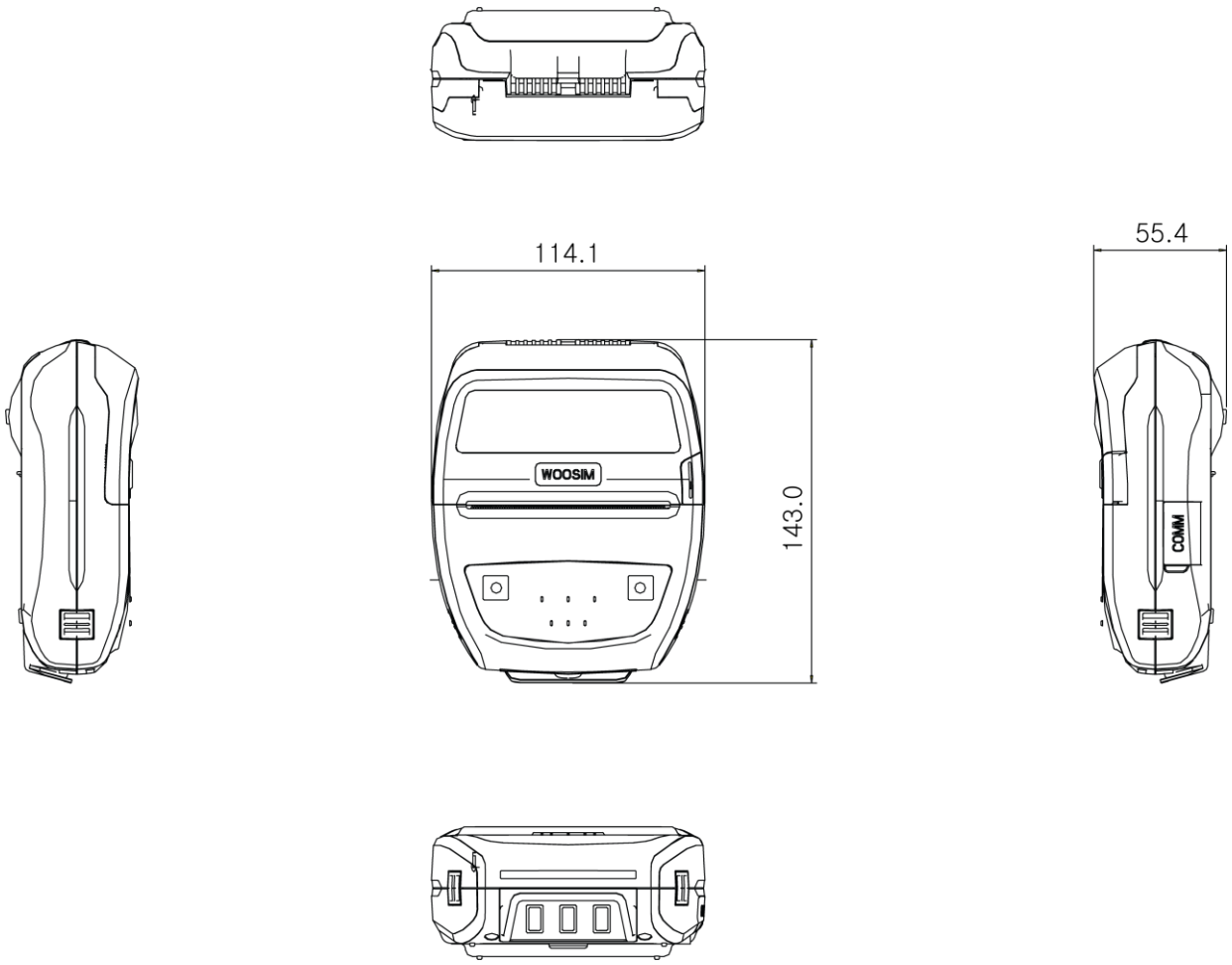
▶ Part Name







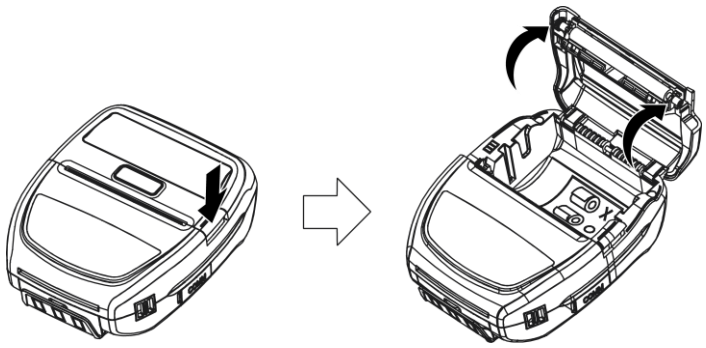
2.3. Dimensions



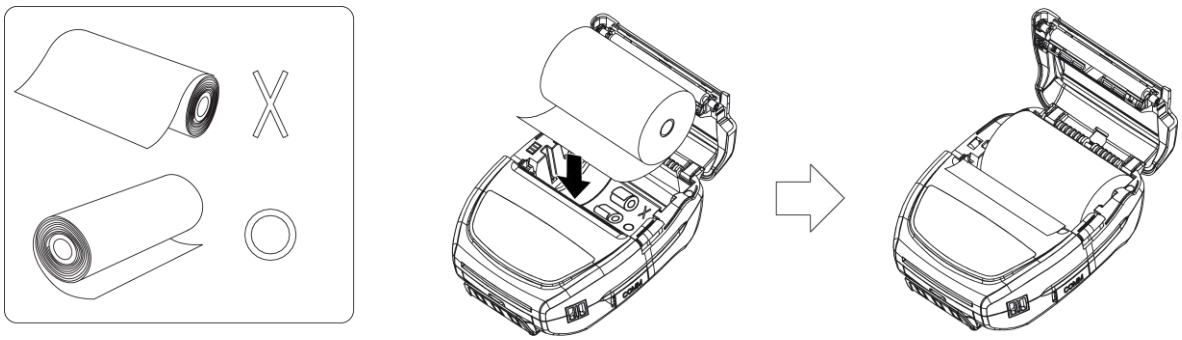
2.4. Replacing the paper roll

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 can not detect the paper end correctly.

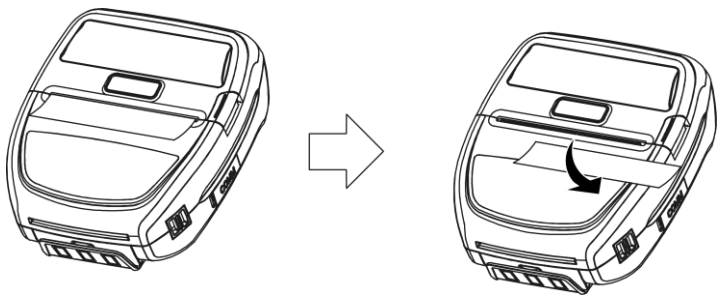
1. Make sure that the printer is not receiving data; otherwise, data may be lost.
2. Open the paper cover as the "One-Touch" way by pressing the button in the arrow direction like the picture.



3. Insert the paper roll as shown.



4. Tear the excess paper off using the edge of paper door as a tear bar.



2.5. Power supply

2.5.1. 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.

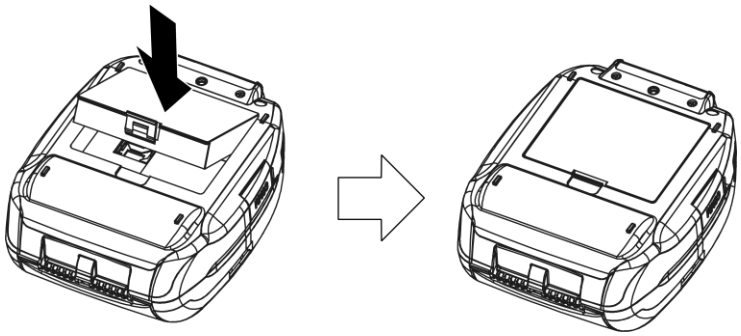
2.5.2. Installing the Battery

Warning :

- 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.
- Risk of explosion if battery is replaced by an incorrect type.
  Dispose of used batteries according to the instructions.
- Batteries are provided not being charged. Please charge the battery before use.

① To install battery pack, proceed as follows:

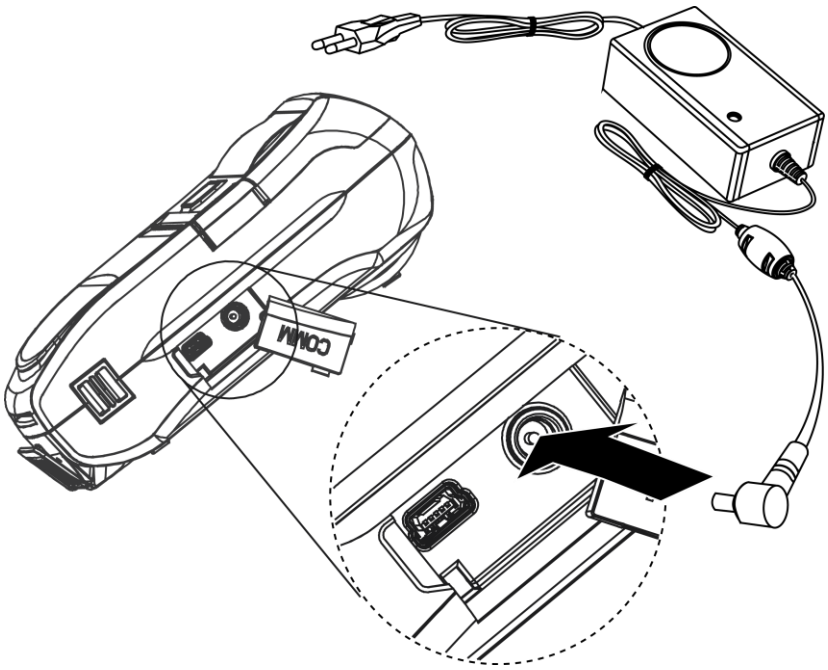
-Insert the Battery Connector in the direction of the arrow.



② To remove battery pack, proceed the above order reverse.

2.5.3. Recharging the battery

For recharging the battery pack, install the battery pack in the printer.
Insert the Battery Charger to the charge connector of the printer.



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 hours to recharge a battery pack.
- You must use only the supplied adapter.
- Red Lamp : charging the battery.
  Green Lamp : charging is finished.

2.6. Set operation mode

In keeping on pressing the Feed and Power button simultaneously until after the ERROR lamp blinks 5 times, the printer comes out at the circumstance to change the printer mode.
(refer to Table 2)

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

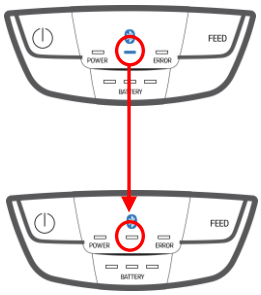
***Note**
No additional mode settings are required to connect Android or iOS devices.

** If you want to change the Bluetooth Mode of printer, you need to disconnect the Bluetooth function of the current paired Smartphone.

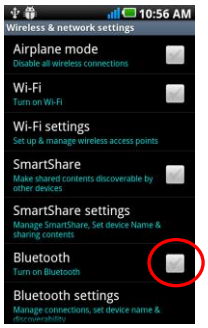
** **Methods :**

1. Turn off the Bluetooth function of the current paired Smartphone.
   (Blue LED is off.)
2. Change the printer mode.
   (Additionally, we want to recommend you to rest(OFF→ON) the printer and change mode.)

Printer LED status



Android status



iOS status

[Example] The defaults of the printer are :
USB / Density Low / Mark No Use / Sensor High / PWDN 5 min slp

If a user wants to modify the defaults with
Bluetooth / Density High / Mark Use / Sensor Low / PWDN No Use

▶ Press FEED & POWER Button during the Error Lamp flickers 5 times.
→ You will see the Power Lamp and the Error Lamp flickers once.
→ Press the **POWER 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 2 times and Error Lamp flickers once.
→ Press **POWER 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 3 times and Error Lamp flickers once.
→ Press **POWER Button** once, Error Lamp flickers twice.
And then the mark has set to **Mark use**.
▶ When you press **FEED Button** once again, Power Lamp flickers 4 times and Error Lamp flickers 4 times.
→ Press **POWER Button** once, Error Lamp flickers once.
And then the sensor has set to **Sensor Low**.
▶ When you press **FEED Button** once again, Power Lamp flickers 5 times and Error Lamp flickers 6 times.
→ Press **POWER Button** 6 times, Error Lamp flickers once
And then the power down has set to **Power down no use**.

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

Bluetooth / Density High / Mark Use / Sensor Low / PWDN No Use

2.6.1. GAP/HOLE SENSOR SETTING

1. Set Mark as GAP / HOLE on mode setting.
2. If feed button keeps being pressed during self "SENSOR SETTING" appears on LCD window and paper keeps coming out "SENSOR SETTING".
3. If feed button is not pressed after printing more than 3 pages of label
4. Setting is completed as Green and Red LED flash and "COMPLETE" appears on LCD window.

** Caution : Sensor setting stops if the feed button is not pressed during self test.

2.7. Memory switch table

2.7.1. USB Version

	Mode		Option	Etc.
1	Communi-cation Port	1	USB	
		2	USB(Pro)	
		3	Bluetooth	
		4	Bluetooth(Pro)	
		5	Bluetooth(iAP)	V
2	Density	1	Low	
		2	Medium	
		3	High	
3	Mark	1	No use	
		2	Use	
		3	Gap / Hole	V
		4	Back	V
4	Sensor sensitivity	1	Low	
		2	Medium1	
		3	Medium2	
		4	High	

	Mode		Option	Etc.
5	Power Down	1	No use	V
		2	1min Sleep	
		3	2min Sleep	
		4	3min Sleep	
		5	4min Sleep	
		6	5min Sleep	
		7	1min Off	
		8	2min Off	
		9	3min Off	
		10	4min Off	
		11	5min Off	

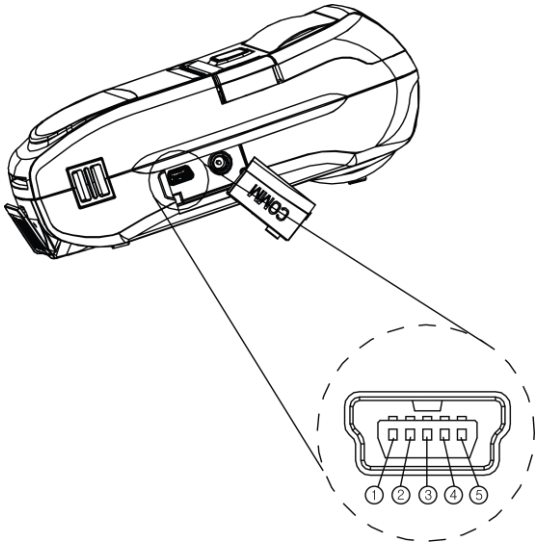
< Table 2 >

Notice : Bluetooth(iAP) is the mode which is used in iPod, iPhone and iPad Whole aspect.

Etc. (V): no function due to the specification of the product.

3. Interface

3.1. USB



The WSP-MC350 printer has a USB 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.	Name	Function
1	VCC	+5V
2	DM	DATA "-"
3	DP	DATA "+"
4	NC.	-
5	GND	Ground

NOTE :

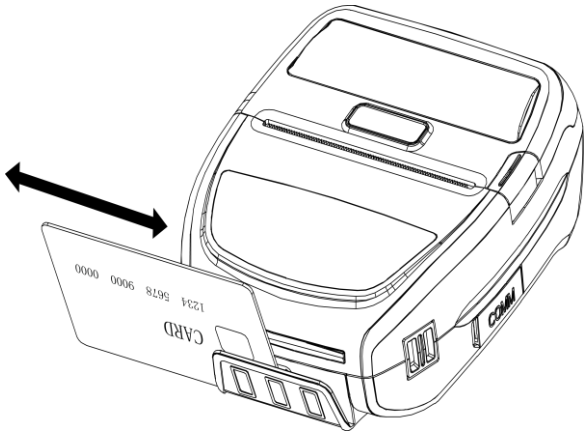
- If you connect the printer interface cable is converted to USB mode.
- When data receiving, when it removes the communication cable, it loses a data.

3.2. Bluetooth

Category	Specification
Bluetooth Spec.	Bluetooth Ver3.0 / Class2 (10m)
Frequency band	2402~2480 MHz
Protocol	L2CAP, RFCOMM, SDP
Profile	GAP, SDAP, SPP

3.3. Read a magnetic stripe card

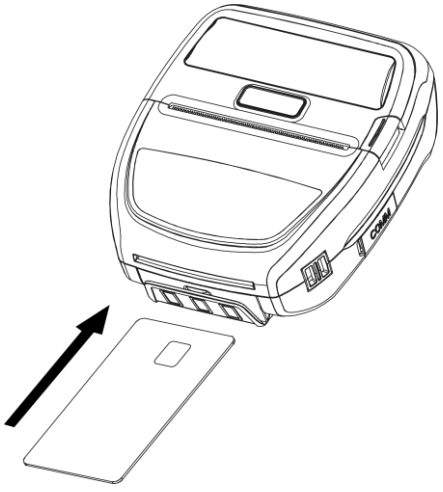
Please take notice that magnetic stripe card should be swapped in direction of arrow.
Card can be read in both.



- ▶ Check the direction of the magnetic stripe and read the card.
- ▶ Holding the card as shown above,
  please pass at a steady speed (check the direction of the arrow).
- ▶ When the card reading is successful, buzzer sound one time.
  If it fails, buzzer sounds three times.

3.4. Insert a IC Card

Insert the Smart Card into slot with micro chip facing down.



4. Smart Card Module

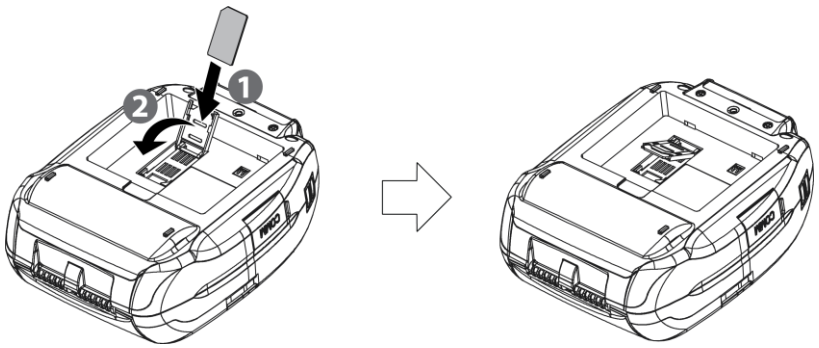
4.1. General Spec.

- Contact Smart Card Reader Module for ISO/IEC-7816
- Support Asynchronous Protocol T=0,T=1
- Smart Card Connection
  - Short Circuit Current Limitation
  - 6KV ESD Protection on whole Smart Card Interface
  - Connector : Friction Type with Smart Card presence detection
- 1 SAM (Security Application Module)
- EMV Level 1/2 Certified

4.2. Inserting the SAM card

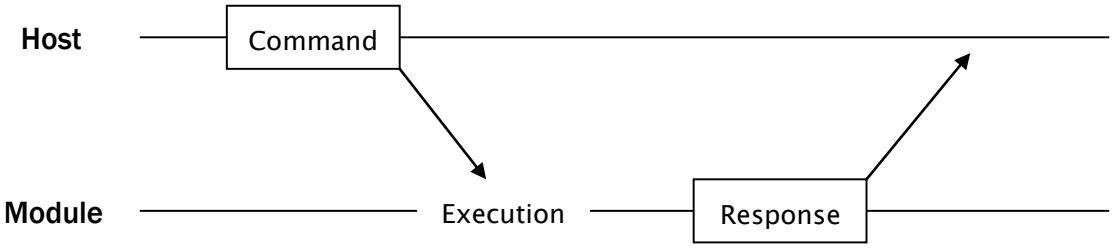
To install SAM card, proceed as follows:

-Insert the SAM card in the direction of the arrow.

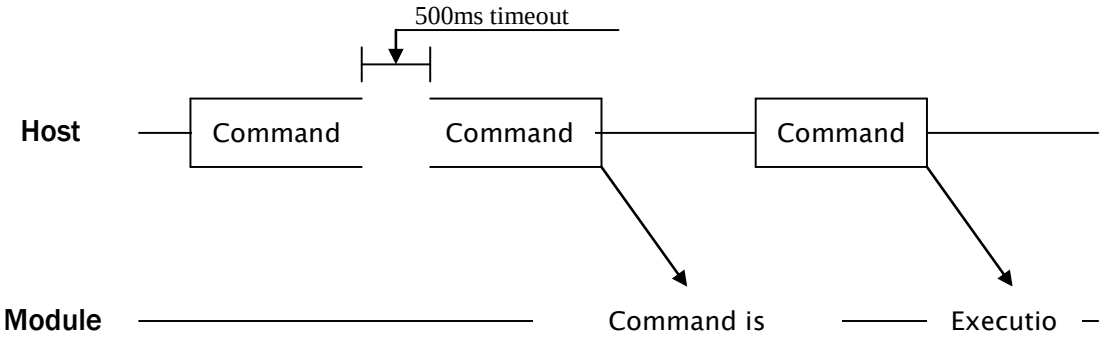


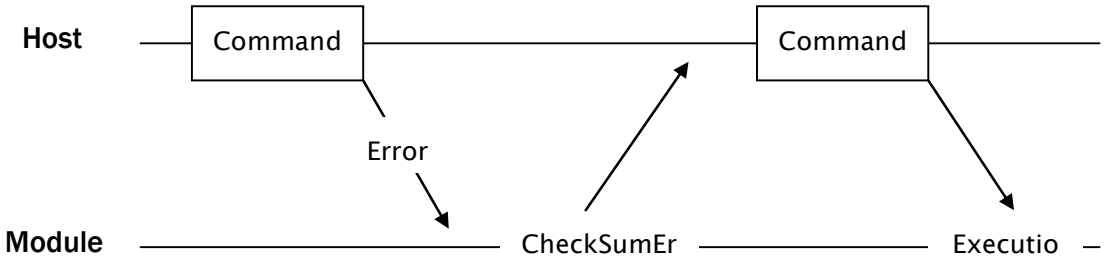
4.3. Communication Protocol Sequence

4.3.1. Regular Operation



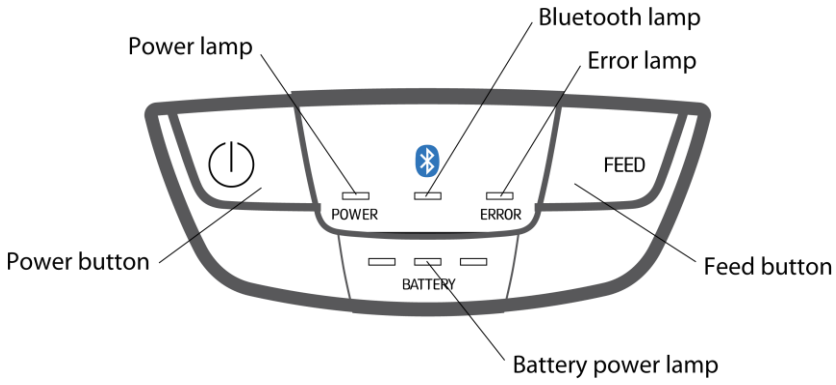
4.3.2. Irregular Operation (Communication Error)





5. Using the printer

5.1. Control panel



(Fig.4.1)

▶ Button

- **FEED Button** : Use feed button to feed the paper continuously.
- **POWER Button** : This button is used to power on/off.
  When of 5 or more seconds presses and power comes to on or off.

: In keeping on pressing the **Feed and Power button** simultaneously until after the **ERROR lamp** blinks 5 times, the printer comes out at the circumstance to change the printer mode.
(Refer to **2.6. Set operation mode** for details about mode conversion)

▶ LAMP

- **Power** (**GREEN**) : Printer is ON and ready to receive data.
- **Error** (**RED**) : Indicates a fault condition or a printer error.
  (details: no paper, paper cover opened. etc.)
- **Bluetooth** (**BLUE**) : Indicates a Bluetooth connection status.
- **Battery Power** (**GREEN**) : 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.

5.2. The self test

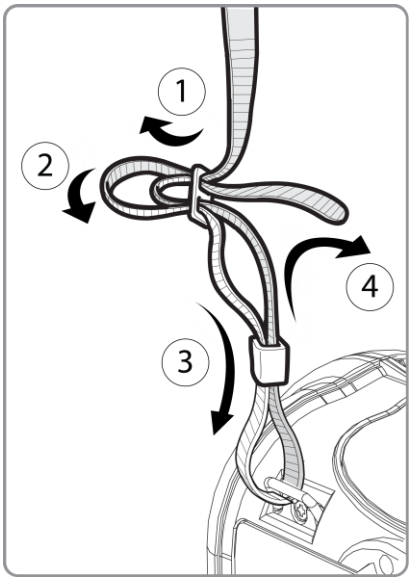
Self-Test prints out the current setting value of printer. The way of self-test is as follows.

1. Insert proper paper into the printer.
2. Power on while pressing feed button to start self-test.
3. Printer will print out the current status. (F/W version and set contents)
4. And then pattern of characters will be printed out.
5. Self-test will be finished automatically and turned to the standby status.

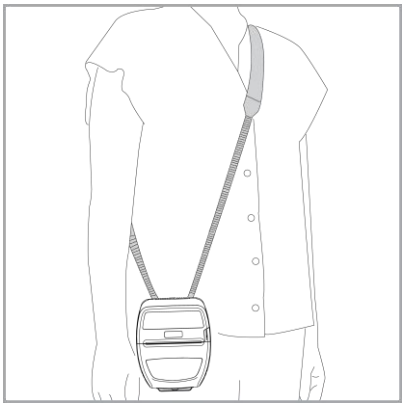
※ In case printer does not work properly, please contact Woosim customer service center.

5.3. Using the Accessory

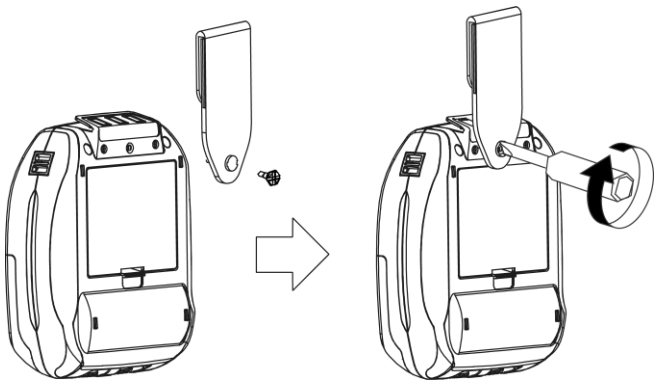
5.3.1. Using the Shoulder strap



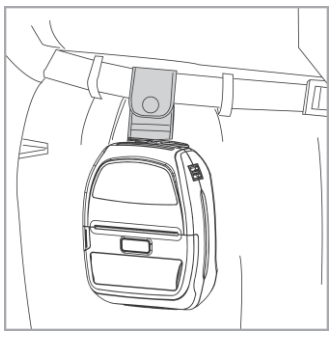
Please sling it over your shoulder after fixing the shoulder strap to the printer in the order of the illustration.



5.3.2. Using the Belt clip



Following the instruction of the arrow, please put the belt clip in the hole and turn and fix the screw to the right by using a thing like a screwdriver.
Afterward, you can use it like the picture below



6. Consumable Parts

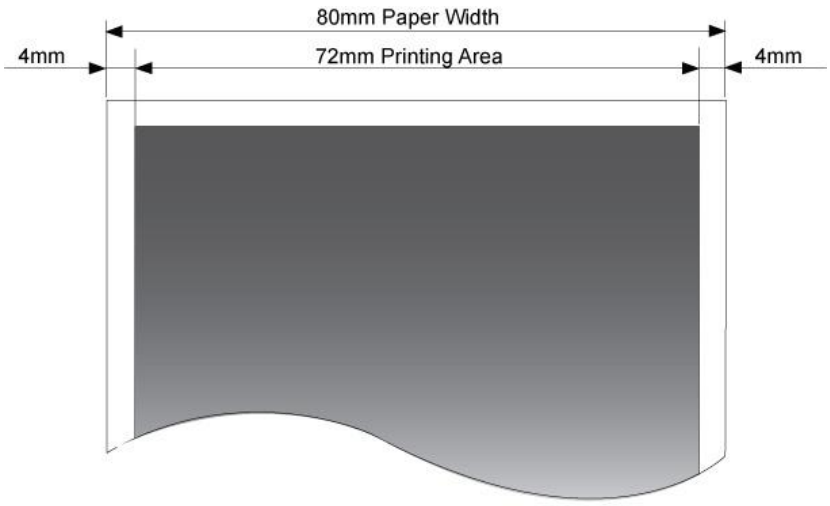
6.1. Recommended paper

Type	: Thermal Paper
Paper width	: 80mm
Paper thickness	: 60±5㎛
Outer diameter	: Ø50mm 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

6.2. Printing position



7. Revision History

Date	Version	Comments
Jan. 04. 2018	1.0	Initialize