



# EM420, SPP-R400

## Mobile Printer User Manual



Made for  
[iPod icon] iPod [iPhone icon] iPhone [iPad icon] iPad

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### **FCC Compliance Statement**

NOTE: This equipment has been tested and found to comply with the limits of 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 with 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 the receiver.
- Connect the equipment to an outlet or circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING: Exposure to Radio Frequency radiation. To conform to FCC RF exposure requirements this device shall be used in accordance with the operating conditions and instructions listed in this manual.

NOTE: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.

Changes or modifications to this unit not expressly approved by Zebra Technologies Corporation could void the user's authority to operate this equipment.

**Canadian Compliance Statement**

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

"IC:" before the equipment certification number signifies that the Industry Canada technical specifications were met. It does not guarantee that the certified product will operate to the user's satisfaction.

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## ■ Introduction to the EM Series

Thank you for choosing the EM420 Mobile Printer. Zebra's ultra-small EM420 mobile printer delivers convenient receipt printing wherever you need it. The EM420 combines optional Bluetooth® 3.0 wireless connectivity and a magnetic card reader with straightforward operation for simple mobile receipt printing and credit card transactions.

This user's guide gives you the information you will need to operate the EM420 series printer. For a list of supplemental manuals provided with the EM420, please refer to the Manual Information section.

### **Unpacking and Inspection**

Inspect the printer for possible shipping damage:

- Check all exterior surfaces for damage.
- Open the media cover (refer to "Loading the Media" in the Getting Ready to Print section) and inspect the media compartment for damage.
- In case shipping is required, save the carton and all packing material.

### **Reporting Damage**

If you discover shipping damage:

- Immediately notify and file a damage report with the shipping company. Zebra Technologies Corporation is not responsible for any damage incurred during shipment of the printer and will not cover the repair of this damage under its warranty policy.
- Keep the carton and all packing material for inspection.
- Notify your authorized Zebra re-seller.

## ■ Manual Information

This user's manual contains basic information for product usage as well as for emergency measures that may be required when using the EM420 printer.

For additional information on the EM420, please refer to the following supplemental manuals:

### **1. Windows CE Module Program Manual**

This manual provides information on the dll files required for the development of Microsoft® Windows® CE application programs.

### **2. Windows Driver Manual**

This manual provides information on installation and main functions of the Microsoft Windows driver for this product.

### **3. Unified Utility Manual**

This manual provides information on the software used to select functions of this product, modify operation conditions, and other functions.

- VMSM (Virtual Memory Switch Manager)

Provides information on setting the basic operation conditions of the product, the use of non-hardware controls and software based virtual switches.

- NV Image Download Manager

Provides information on downloading image files, such as logos, intended for repetitive printing.

- Firmware Download Manager

Provides information on downloading and installing the latest firmware.

### **4. Bluetooth & Wireless Manual**

This manual provides information on the connection of this product with devices equipped with Bluetooth & Wireless LAN functionality (such as PDAs or personal computers).

The devices included are as follows.

- PDAs:

- Intermec PDA (Device: CN2B, OS: Pocket PC 4.20.0)
- SYMBOL PDA (Device: SYMBOL MC70, OS: Windows Mobile 5.0)
- HP PDA (Device: iPAQ hx2700, OS: Windows Mobile 5.1.1702)
- Mobile Compia PDA (Device: M3, OS: WinCE 5.0)
- InnoTeletek PDA (Device: MC3000, OS: WinCE 4.2)
- Bluetooth Dongle (BlueSoleil IVT Stack)

### **5. Commands Manual**

This manual provides information on the protocol and functions of the control commands that can be used with this product.

### **6. Code Pages Manual**

This manual provides information on each character code page that can be used with this product.

## ■ Safety Precautions

When using the EM420 printer, please obey the following recommended safety regulations.

### ⚠ Warning

**Violating the following instructions may cause serious injury.**

- Do not plug several products in one multi-outlet; this can provoke over-heating and a fire.
  - If the plug is wet or dirty, wipe it before usage.
  - If the plug does not fit perfectly with the outlet, do not force it in.
  - Be sure to use only standard multi-plug outlets.
- Use only the supplied adapter.  
It is dangerous to use other adapters.
- Do not pull the cable to unplug it.  
This can damage the cable, resulting in a fire or a breakdown of the printer.
- Keep the plastic bag out of children's reach.
- Do not plug in or unplug the printer with wet hands.
- Do not bend the cable by force or leave it under any heavy object.  
A damaged cable may cause a fire.

**⚠ Caution**

**Violating the following instructions may cause injury to the user or damage to the printer.**

- If you observe smoke, odor or noise from the printer, unplug it before taking the following measures:
  - Turn off the printer and unplug it from the electrical outlet.
  - Contact an authorized Zebra Technologies service provider for repair.
- Keep the packet of desiccant material (silica gel) out of children's reach.
- Use only approved accessories for your printer; do not disassemble or attempt to repair the printer yourself.
  - Contact your authorized service provider for all service requirements.
  - Do not touch the blade of auto cutter.
- Keep liquids and foreign objects away from the printer.  
If any object or liquid falls into the printer, immediately unplug the printer and have it checked by an authorized Zebra Technologies service provider.
- Use the printer at least 20cm from the human body

## ■ Battery Safety Precautions

**Make sure that you review the user manual carefully before using the product.**

Neglecting to follow the instructions may result in overheating of the battery, combustion, explosion, damage and/or decline in performance and product life.

### **⚠ Danger**

1. Do not allow liquids to enter or leak into the battery interior. If the safety mechanism within the battery becomes burned out, charging of the battery may result in abnormal electrical current flow and/or voltage that causes an abnormal chemical reaction, which may then cause the battery to overheat, ignite, and/or explode.
2. Do not use or leave the battery in a location that is exposed to high temperatures. Excessive heat exposure can cause damage to the resin case and/or insulating materials, thus causing short circuits within the battery that may result in battery overheating, combustion, and/or explosion.
3. When charging the battery, use the exclusive charger or follow the charging requirements outlined by Zebra. Charging under conditions not included in such requirements (such as higher temperature, higher voltage/larger electrical current, or use of a modified charger) can result in excessive battery charging and abnormal electrical current flow and/or voltage that causes an abnormal chemical reaction, which may then cause the battery to overheat, ignite, and/or explode.
4. The battery has clearly delineated plus and minus poles. When inserting the battery into the charger and /or product, ensure that the battery is properly aligned. Reverse insertion will cause reverse charging that can result in an abnormal chemical reaction, which may then cause the battery to overheat, ignite, and/or explode.
5. Do not heat the battery or place it in a fire. Excessive heat can melt the insulating materials and/or damage the safety mechanism, allowing the electrolytic solution to ignite resulting in battery overheating, combustion, and/or explosion.
6. Do not use the battery in reverse (+) and (-) alignment. This will cause reverse charging that can result in an abnormal chemical reaction. During use, unpredictable electrical current abnormalities can arise, causing battery overheating, combustion, and/or explosion.
7. Do not allow the battery's (+) and (-) poles to come into contact with any metals. In addition, do not carry or store the battery with metal items. Resulting short circuits within the battery can cause excessive electrical current flow, resulting in battery overheating, combustion, and/or explosion as well as potential overheating of the adjacent metal items.
8. Do not subject the battery to heavy shock. If the safety mechanism within the battery burns out, any charging of the battery can result in abnormal electrical current flow and/or voltage that cause an abnormal chemical reaction, which may then cause the battery to overheat, ignite, and/or explode.

9. Do not pierce the battery with a sharp object or hit it with a heavy object. Avoid accidental short circuiting of any battery. A flowing battery terminal to contact conductive material will create a short circuit, which could cause burns and other injuries or could start a fire. The battery may rupture or become warped, causing short circuits, which may result in battery overheating, combustion, and/or explosion.
10. Do not solder the battery directly. The heat may melt the insulating materials and/or damage the safety mechanism or safety equipment, resulting in battery overheating, combustion, and/or explosion.
11. Do not disassemble and/or modify the battery. The battery contains safety equipment and a safety mechanism to prevent danger. Any damage to these components can cause battery overheating, combustion, and/or explosion.
12. Do not charge near a source of heat and/or under direct sunlight. Exposure to high temperatures may cause the safety mechanism to activate, thus making charging impossible. In addition, any damage to the safety mechanism may result in abnormal electrical current flow and/or voltage that causes an abnormal chemical reaction within the battery and/or battery overheating, combustion, and/or explosion.
13. Do not expose the battery to high temperatures over 60C (140F), and do not use or store it in a hot or humid place.
14. Do not use the battery if it is damaged or the exterior is deformed due to external shock or if it is swollen.

## **⚠ Warning**

1. Do not place the battery within the reach of small children to prevent any swallowing accidents. If a small child has swallowed the battery, consult a physician immediately.
2. Do not place the battery in a microwave oven and/or high voltage appliance. This may cause rapid overheating and/or destruction of the sealing, resulting in battery overheating, combustion, and/or explosion.
3. Do not combine and use any battery of different capacity and/or type with the primary battery. This may cause excessive electrical discharge during use or excessive charging during charging, resulting in an abnormal chemical reaction within the battery, which can cause battery overheating, combustion, and/or explosion.
4. If during battery usage, storage, or charging, a strange odor or conditions differing from normal operations (such as overheating, color changes, or warping) are detected, remove the battery from the product or charger and discontinue use. Continued use may cause battery overheating, combustion, and/or explosion.
5. If the battery is not charged after the normal fixed charging time, discontinue charging. Continued charging may result in battery overheating, combustion, and/or explosion.
6. If the battery contains condensation or emits a strange odor, immediately remove it from any heat source. The condensation may be caused by a leak of electrolytic solution that can ignite, resulting in battery combustion and/or explosion.
7. If the battery is leaking electrolytic solution and the solution enters the eyes, immediately rinse the eyes with clean water, and then consult a physician. Neglecting to do so may cause permanent eye injuries.

**⚠ Caution**

1. Do not use or leave the battery in a location exposed to high temperatures or intense direct sunlight. Doing so can cause battery overheating and/or combustion. In addition, battery performance and product life may be reduced.
2. The battery contains a safety mechanism to prevent danger. Do not use the battery in a location that is prone to static electricity (above the amount covered by the manufacturer's product warranty). Static electricity may damage the safety mechanism resulting in overheating, combustion and/or explosion.
3. The temperature ranges for battery usage are as follows. Any usage outside of these ranges can result in battery overheating and/or damage. In addition, battery performance and product life may be reduced.
  - Charging: 0 to 40C (32 to 104F)
  - Product Usage: -20 to 60C (-4 to 140F)
  - Storage (up to 30 days): -20 to 60C (-4 to 140F)
  - Long-Term Storage (up to 90 days): -20 to 40C (-4 to 104F)
4. Please review the exclusive charger manual carefully for charging instructions.
5. If upon first use following purchase, you detect a strange odor, overheating, and/or anything deemed out of the ordinary, discontinue use and contact an authorized Zebra Technologies service provider.
6. Store the battery in a location that is out of the reach of small children. During usage, make sure to place the charger and/or product out of the reach of small children.
7. If the battery is leaking electrolytic solution, and the solution comes into contact with the skin or clothing, immediately rinse the affected area with clean water. Contact with skin can result in skin disorders.
8. Make sure to review the user manual and precautions carefully prior to use.
9. Improper exchange of the battery can pose risk of explosion. When replacing the battery, use a battery equivalent to the one originally installed in the printer by the manufacturer. Dispose of used batteries per the instructions provided by the manufacturer.
10. If you are using preprinted receipt paper, please consult Technical Support.

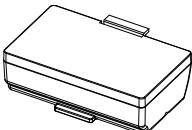
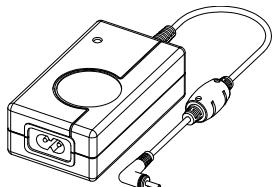
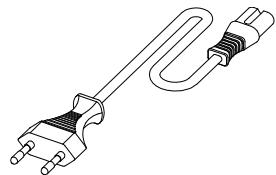
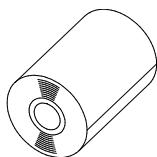
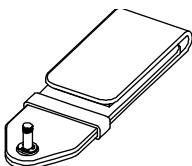
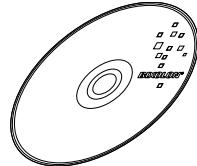
**⚠ Recommended**

1. Review the user manual for instructions regarding insertion and removal of the battery from the printer.
2. The battery ships partially charged. You must charge the battery fully before using the printer for the first time. To charge the battery, use the exclusive charger provided with your printer.
3. To avoid improper use of the battery, review the product user manual carefully.
4. Do not charge the battery beyond the normal charging time indicated in the user manual.
5. If you do not plan to use the battery for an extended period of time, remove the battery from the printer and store it in a low-humidity location. If you opt to store the printer with the battery installed, avoid high-humidity locations. High humidity may cause oxidation in the battery and a decline in printer performance.
6. Ensure that you turn off the printer after use. Neglecting to do so may cause a decline in printer performance.
7. A battery that has not been used over a long period of time may not be sufficiently charged. If you opt to store the battery for future use, ensure that you charge the battery to the status recommended by the manufacturer every six months. Neglecting to do can cause a decline in battery performance and product life.
8. If the battery terminal is dirty, use a dry cloth to clean prior to use. Neglecting to do so may cause power stoppages or difficulty in charging the printer.
9. Each battery has a product life. If the usage time of the battery has become short, replace it. Wrap the terminals of used batteries with tape to insulate them prior to disposal.

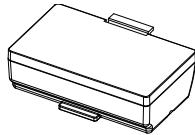
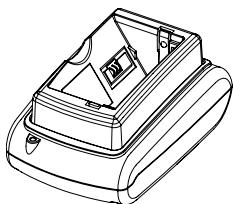
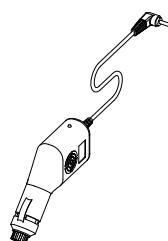
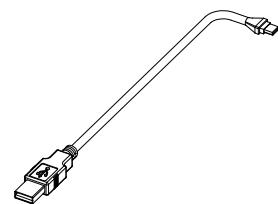
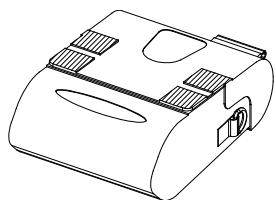
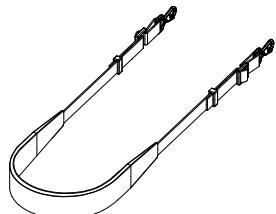
## 1. Content Confirmation

Contact the dealer from which you purchased the printer if any item is damaged and/or missing.

### \* Basic items

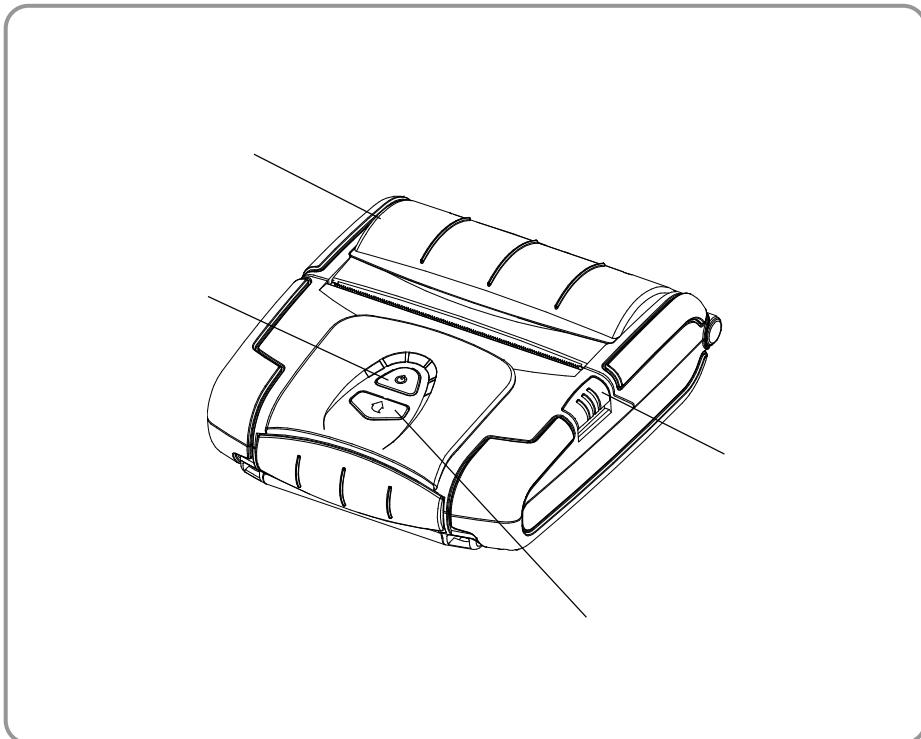
**EM420****Battery****Battery Charger****Power Cord****Paper****Belt Strap****CD**

### \* Optional items

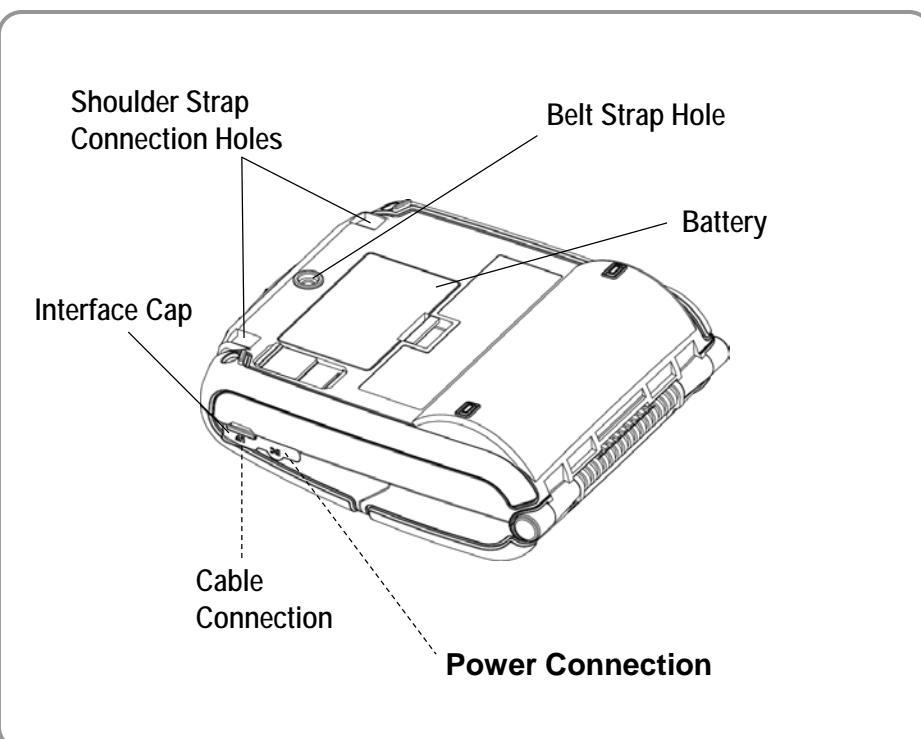
**Battery****Single Battery  
Charger****Car Charger****Interface Cable****Protective Case****Shoulder Strap**

## 2. Product Part Names

- **Front**

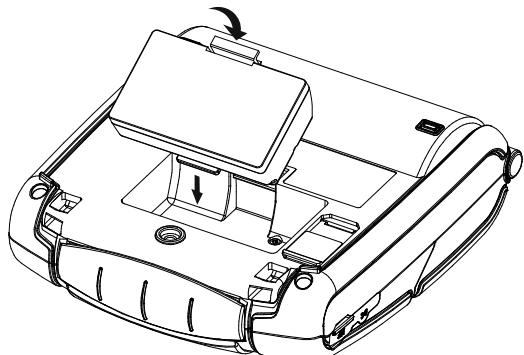


- **Rear**



### 3. Installation and Usage

#### 3-1 Battery Installation



1) Insert the battery on the rear side of the printer, aligning the battery hook as shown.

2) Push the battery into the slot until a snapping sound is heard.

**NOTE**

Because the battery is not charged at the time of purchase, charge the battery prior to using the product. (Use the battery charger and/or the optional Single battery charger.)

#### 3-2 Battery Charging

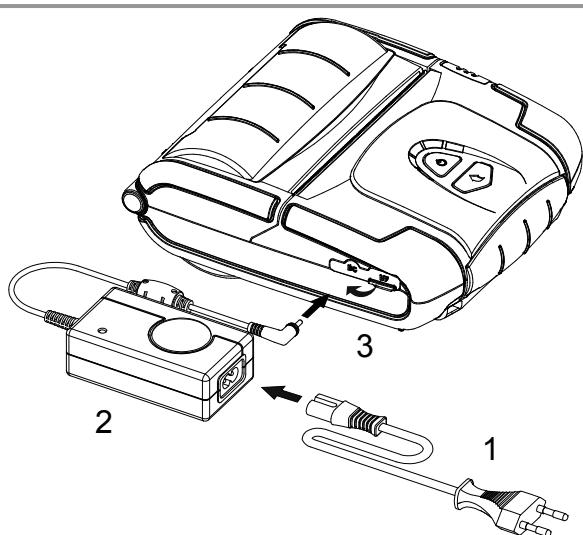
##### 3-2-1 Battery Charging Usage

**CAUTION**

The printer may incur serious damage if the battery charger provided by Zebra is not used. Zebra is not legally liable for any such damages. (The voltage and electrical current specifications of the printer and battery charger must match.)

**WARNING**

Turn off the printer power before charging the battery for the printer.



1) Turn off the printer power.

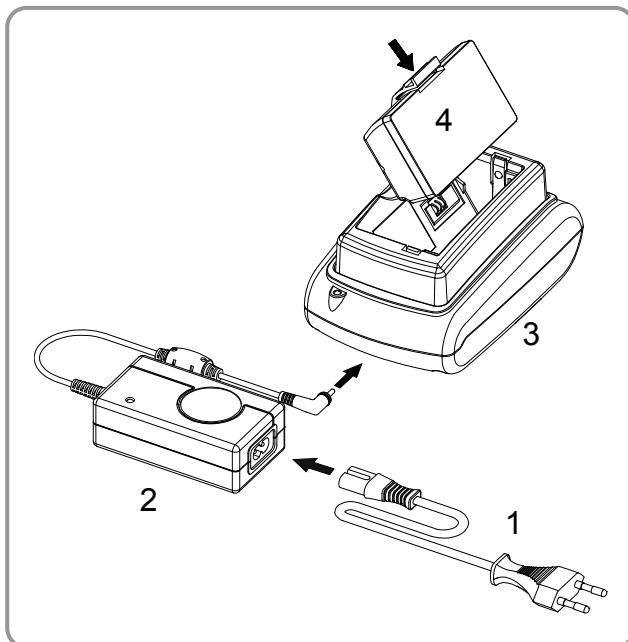
2) Connect the power cord (1) to the battery charger (2).

3) Open the Interface Cap (3).

4) Connect the battery charger (2) to the power connector of the printer.

5) Plug the power cord (1) into an electrical outlet.

### 3-2-2 Single Battery Charger (Optional) Usage



- 1) Connect the power cord (1) to the battery charger (2).
- 2) Connect the battery charger (2) to the power connector of the single battery charger (3).
- 3) Plug the power cord (1) into an electrical outlet.
- 4) Insert the battery (4) into the single battery charger (3) until a snapping sound is heard.

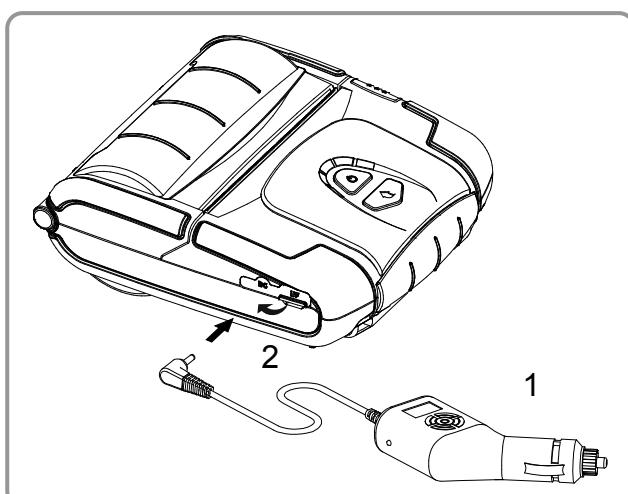
### 3-2-3 Car Charger (Optional) Usage

#### **⚠ CAUTION**

The printer may incur serious damage if the battery charger provided by Zebra is not used. Zebra is not legally liable for any such damages. (The voltage and electrical current specifications of the printer and battery charger must match.)

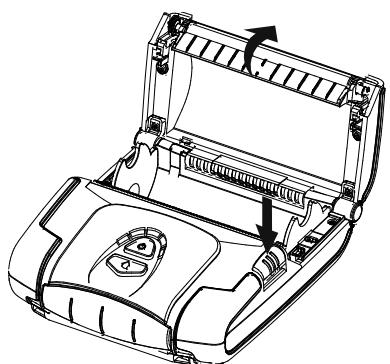
#### **⚠ WARNING**

Turn off the printer power before charging the battery for the printer.

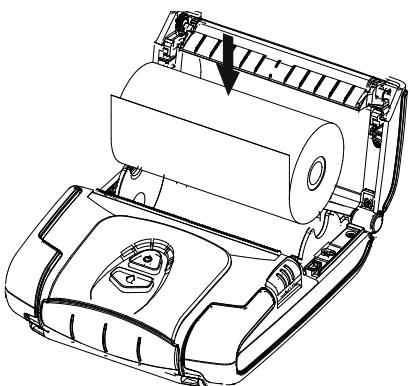


- 1) Turn off the printer power.
- 2) Connect the car charger (1) to your car's DC power outlet.
- 3) Open the external interface protection cap in the direction shown (2).
- 4) Connect the battery charger to the power connector of the printer.

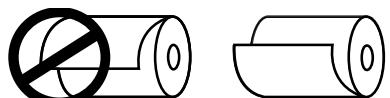
### 3-3 Paper Installation



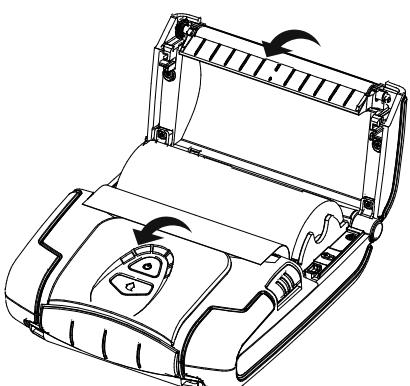
- 1) Press the Open button to open the paper cover.



- 2) Insert the paper as shown in the image.  
(Remove any remaining core of a fully used paper roll.)



- 3) Ensure that you orient the paper correctly.



- 4) Pull out the paper as shown in the image, and then close the paper cover.



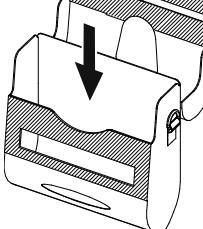
- 5) Tear off any excess paper by tearing toward the side of the printer.

### 3-4 Protective Case (Optional) Usage

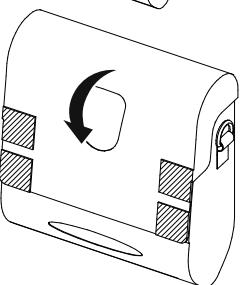


1

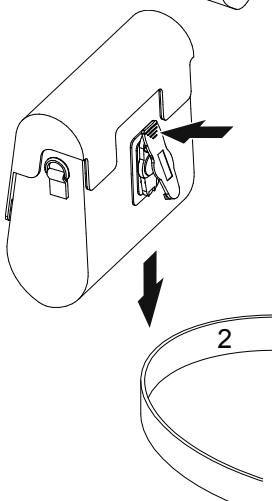
- 1) Open the top cover of the protective case (1).



- 2) Insert your printer into the protective case as shown.

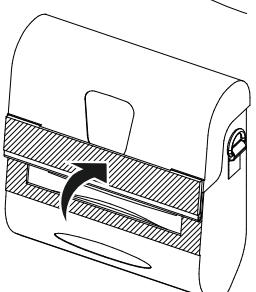


- 3) Close the top cover.



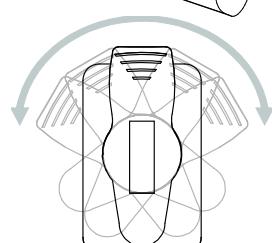
2

- 4) Attach the protective case to a belt (2) using the clip on the back of the case.



3

- 5) When using the printer, open the paper discharger as shown (3).

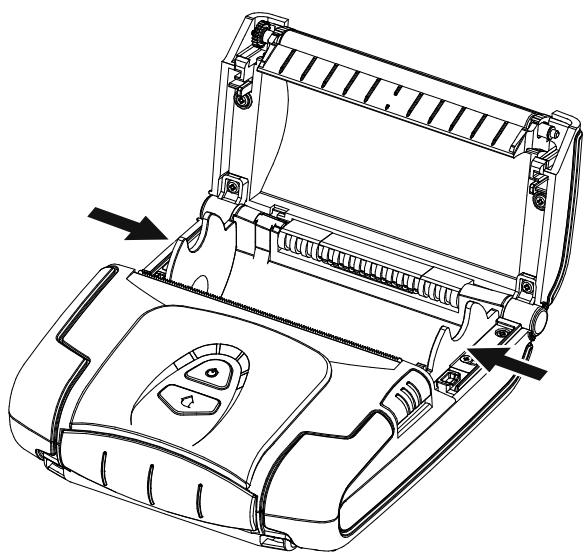


**Note**

The clip of the case can be rotated in two steps of 30° for each step (up to 60°)

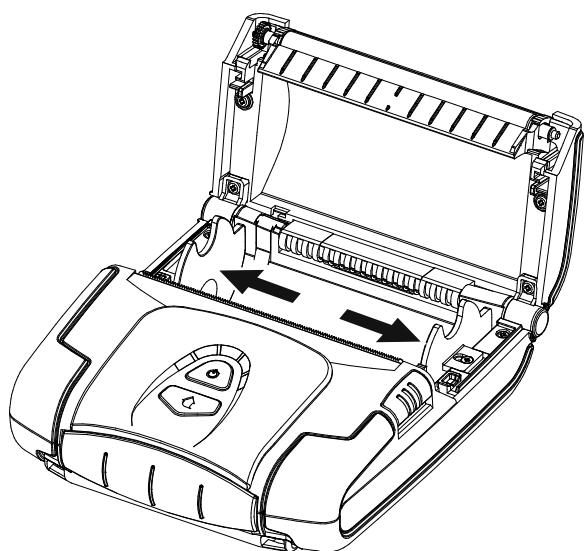
### 3-5 Adjusting Paper Guide

112mm → 105mm



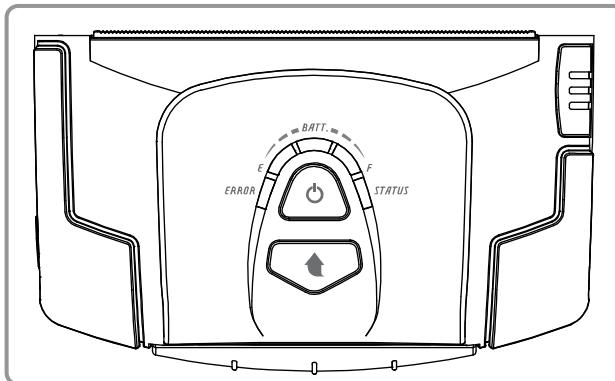
- To use 105 mm paper, hold the upper edge of the paper guide, and adjust the paper guide for both sides in the direction of the arrows shown (1).

105mm → 112mm

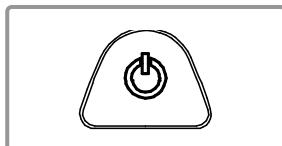


- To use 112mm paper, hold the upper edge of the paper guide, and adjust the paper guide for both sides in the direction of the arrows shown (2)

### 3-6 Control Panel Usage



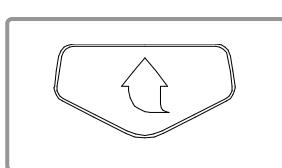
#### • Power Button



The Power button is used to turn the printer on and off.

- To turn on the printer, press and hold the button for approximately 2 seconds.
- To turn off the printer, press and hold the button for approximately 2 seconds.

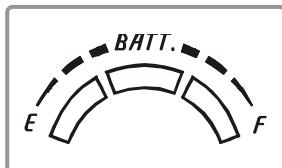
#### • Paper Feed Button



This button is used to feed paper manually, perform a self-test, and dump hexadecimal values.

- To feed paper manually, press this button.
- For information on the self-test, refer to [Self-Test](#).
- For information on hexadecimal dumping, refer to the service manual.

#### • Battery Status LED (Blue or Red)



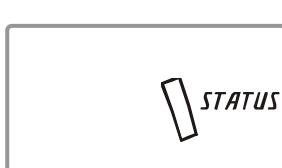
- If three blue LED are lit, the battery is fully charged.
- If two blue LED are lit, the battery is half charged.
- If one blue LED is lit, the battery is at the lowest charge level.
- If the red LED is lit, the battery must be charged or replaced.

#### • Error LED (Left-side)



- If the red LED is lit, the paper cover is open.
- If the red LED is blinking, either the paper has been fully used or the print head is overheated. (Refill with paper, if needed, or turn the printer off for at least 10 minutes.)
- If the red LED continues to blink, it may indicate a more serious problem with the product, and thus an authorized service dealer should be consulted.

#### • Bluetooth & Wireless LAN LED (Right-side)



##### 1) When using Bluetooth

If the printer is ready for wireless communication with any Bluetooth, the green lamp as well as the battery status lamp is turned on.

##### 2) When using wireless LAN

The right indicator shows the signal strength from wireless LAN. The green lamp blinks for acceptable signal strength while the red lamp blinks for weak signal strength.

In power save mode, only the Status lamp is lit.

#### NOTE

The power saving mode is activated after the first communication, with the default time interval being 10 seconds.

## 4. Self-Test

Run the self-test when first setting the printer or when encountering a problem. Use it to check the following.

- Control Circuit
- Mechanisms
- Print Quality
- ROM Version
- Memory Switch Settings

If no issue is found with the printer after running the self-test, examine other devices or peripherals and software. The self-test function is independent on other such devices and software.

### • Self-Test Instructions

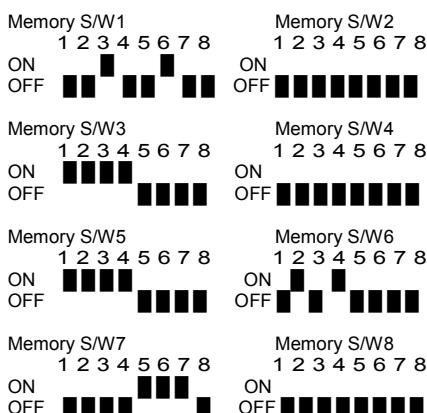
1. Turn off the printer power, and close the printer paper cover.
2. Press and hold the Paper Feed button and the Power button simultaneously.
3. After the printer powers up, release the two buttons.  
The printer prints the self-test information.
4. To add a printout of the ASCII pattern, press the Paper Feed button once more.  
After the printouts are complete, the self-test terminates automatically.

- **Self-Test Printout Sample(For Bluetooth)**

SELF TEST

Firmware version : V01.00 STDA 070114  
Butter Capacity : 128K Bytes  
Print Density : 100%  
Bluetooth Interface  
- Baud rate : 115200 bps  
Serial Interface  
- Baud rate : 115200 bps  
Data bits : 8 bits  
Parity : None  
Stop bit : 1 bit or more  
Handshaking : DTR/DSR  
Default Codepage : PC437  
Print Speed : Max 80mm/s  
Double byte character mode:Off  
Font : 12 x 24  
Paper out Bell : Off  
Low Battery Buzzer : On  
Black Mark : Off  
Power off time : 15 Min  
Idle mode time : 10 Sec  
Black Mark sensor : Front side of p  
MSR data including sentinel  
Character mode : None  
MSR read mode : Auto TRACK1/2

### Memory switch setup status



RF Interface

BT embedded  
Bluetooth firmware version :

## 1.0.4



74F07DB00162

- Auth. & Encry. are enable
  - Connection Mode = 2

Not available WLAN

If you want to continue  
SELF-TEST printing,  
please press FEED button.

ASCI

!"#\$%`()'\*)+,-./0123456789:;<>?@ABCDEF GH JKLMN OP  
#\$%`()'\*)+,-./0123456789:;<>?@ABCDEF GH JKLMN OP Q  
#\$%`()'\*)+,-./0123456789:;<>?@ABCDEF GH JKLMN OP QRS  
#\$%`()'\*)+,-./0123456789:;<>?@ABCDEF GH JKLMN OP QRS T  
#\$%`()'\*)+,-./0123456789:;<>?@ABCDEF GH JKLMN OP QRS TU  
#\$%`()'\*)+,-./0123456789:;<>?@ABCDEF GH JKLMN OP QRS TU VW  
#\$%`()'\*)+,-./0123456789:;<>?@ABCDEF GH JKLMN OP QRS TU VWX  
#\$%`()'\*)+,-./0123456789:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ  
,-./0123456789:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[  
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123456789:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^  
23456789:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
a3456789:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
b456789:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
c56789:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
d6789:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
e789:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
f89:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
g9:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
h9:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
i9:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
j9:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
k9:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
l9:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
m9:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
n9:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
o9:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
p9:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
q9:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
r9:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
s9:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
t9:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
u9:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
v9:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
w9:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
x9:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
y9:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`  
z9:;<>?@ABCDEF GH JKLMN OP QRS TU VWXYZ[W]^`

PC437

\*\*\* Completed \*\*\*

## 5. Label Printing Function

### 5-1 Label Function Setting

The label mode indicates to the printer whether you are using receipt paper or black mark paper.

- **To switch label modes:**

1. Turn on the printer power.
2. Press the Open button to open the paper cover.
3. Press and hold the Paper Feed button for longer than 2 seconds.
4. After the buzzer tone, insert paper, and close the paper cover.
5. Repeat the steps above to return to the other label mode.

- **Setting Via Memory Switch**

Refer to the memory switch changing section of the Commands Manual.

### 5-2 Auto Calibration Function

The printer must recognize the gaps between labels or the black marks on the back of the paper in order to print. If label paper gaps are not properly recognized, use the auto calibration function.

- **Auto Calibration Instructions**

1. Turn off the printer power while in label print mode.
2. Press and hold the Paper Feed button, and then press the Power button.
3. After the following output prints, press the Power button to perform auto calibration.

Select the mode

Auto Calibration: Power Button

Self Test: Feed Button

Three pages are printed during auto calibration.

### 5-3 Black Mark Sensor Location

The default location for the black mark sensor is in the center, if your application requires a different location, please contact Zebra's Custom Applications Group (CAG).

## **6. iOS MFi Mode Setting**

This product supports MFi mode, which enables Bluetooth communication with iOS devices.

- **How to enable and disable MFi mode**

1. Turn on the printer.
2. Press the Open button to open the paper cover.
3. Press the Power button and the Paper Feed button simultaneously for longer than 2 seconds.
4. After the buzzer tone, close the paper cover.
5. Reboot the printer after the following message is printed:
  - iOS mode enable!!
  - Please Reboot Printer!!
6. Repeat the above procedure to disable MFi mode.

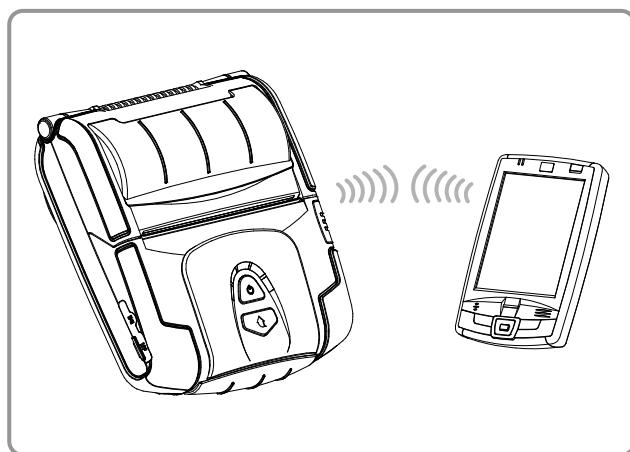
- **Check iOS mode**

1. Perform a printer self-test and check the following:
  - iOS mode is disabled if the printed firmware version contains a lowercase letter “a” such as V01.00 STDa.
  - iOS mode is enabled if the printed firmware version contains a lowercase letter “i” such as V01.00 STDi.

## 7. Peripherals Connection

This product can communicate with other devices via Bluetooth communication and cable.

### 7-1 Bluetooth Connection

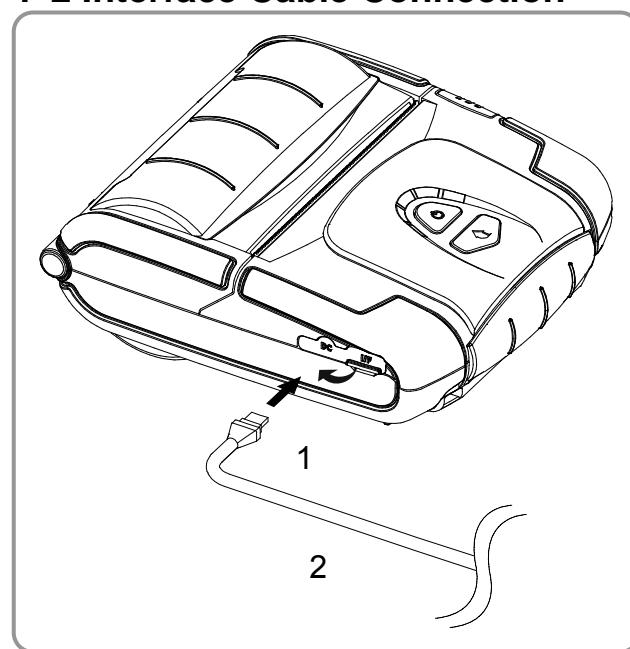


- The printer can be connected to devices equipped with Bluetooth communication capability, such as PDAs or personal computers.
- Use the Bluetooth connection function supported by the device to connect to the printer.
- The printer can be connected to other stations, such as PDAs and PCs supporting wireless LAN communication in Ad-hoc mode and AP in Infrastructure mode.

**NOTE**

Refer to the Bluetooth Wireless LAN Manual for detailed information on its connection. You can check the bluetooth environment (authentication, encryption, connection mode) and the wireless LAN environment (IP, SSID, authentication, encryption) via the self-test page.

### 7-2 Interface Cable Connection



1. Open the Interface Cap (1).
2. Connect the interface cable (optional) (2) to the cable connector of the printer.

**NOTE**

Use only USB or serial cables provided by Zebra.

3. Connect the interface cable to the USB port of the device, such as a PDA or a personal computer.

**NOTE**

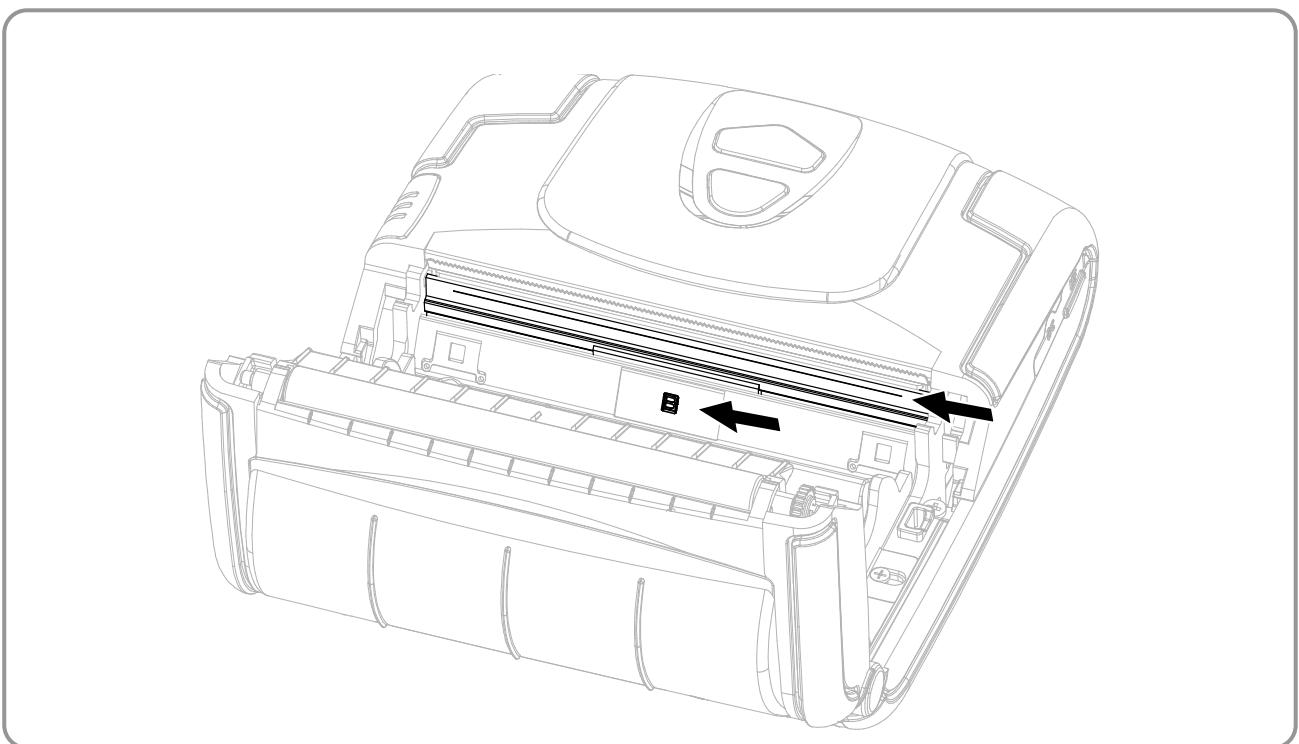
USB or serial interfaces are available on the printer. Refer to the service manual for detailed interface cable specifications.

## 8. Printer Cleaning

If the interior of the printer is dusty, print quality can decline. In such a case, follow the instructions below to clean the printer.

### **⚠ CAUTION**

- Make sure to turn off the printer power prior to cleaning.
- The printhead gets very hot during printing. Before cleaning the printhead, turn off the printer power and wait approximately 10 minutes before continuing.
- When cleaning the printhead, do not touch the heated portion of the printhead. The printhead is susceptible to damage from static electricity, and it can be hot and cause severe burns.
- Do not allow the printhead to become scratched and/or damaged in any way.



1. Press the Open button to open the paper cover, and then remove any paper that may be present.
2. Use the cleaning pen to clean the printhead from the center to the outside edge.
3. Wipe the printhead with a cleaning pen.
4. Use a cloth moistened with an alcohol solution to clean the paper sensor and remove any paper remnants and/or dust.
5. After cleaning the printhead, allow the alcohol used for cleaning to evaporate completely (1 to 2 minutes). Do not use the printer until it has completely dried.
6. Reinsert the paper, and then close the printer's cover.

## 9. Appendix

### 9-1 Specifications



Printer specifications are subject to change without notice.

Item	Description	
<b>Printing</b>	Printing Method	Thermal printing
	Printing Speed	80 mm/sec
	Resolution	203 DPI
	Paper Supply Mode	Easy paper loading
	Character Size	Font A: 12 × 24    Font B: 9 × 17    Font C: 9 × 24
	Characters Per Line	Font A: 69                      Font B/C: 92
	Character Set	English: 95 Expanded Graphics: Standard(ENG) -128 × 33 pages Others(KOR,CHN,JPN) - 128 × 20 pages International: 32
	Barcode	1 Dimension: UPC-A, UPC-E, Code 39, Code 93, Code 128,EAN-8, EAN-13, ITF, Codabar 2 Dimension: PDF417, Data Matrix, MaxiCode, QR code
	Emulation	BXL/POS
	Driver	Windows XP / WEPOS / 2003 Server / VISTA / 2008 Server / 7 / 8
	SDK	Windows XP / WEPOS / 2003 Server / VISTA / 2008 Server / 7 / 8 / Windows CE 5.0 and later
	Sensor	Paper End, Paper Cover Open Switch, Front/Rear Black Mark
<b>Paper</b>	Cutter Type	Tear-Bar
	Language	User language supported
	Paper Type	Thermal paper
	Width	104.5 ± 0.5 mm (4.11" ± 0.2") 111.5 ± 0.5 mm (4.39" ± 0.2")
<b>Reliability</b>	Diameter	Max. ø57 mm (2.24")
	Thickness	0.07 ± 0.003 mm
<b>Communications</b>	TPH	50 km
	Battery	Rechargeable up to 300 times
<b>Battery Charger</b>	Interface	Serial/USB, Bluetooth Class2 V2.0 +EDR, Wireless LAN 802.11 b/g/n * Communication is enabled only for devices with Bluetooth or Wireless LAN function.
	Input	Voltage: 100 ~ 250 VAC Current: 0.5A (Max. at 110VA)
<b>Battery</b>	Output	Voltage: 8.4 VDC Current: 0.8A * The charging current and the charging time may vary depending on the type of charger (option).
	Cell	Lithium-ion
	Voltage	7.4 V
	Charging Capacity	2600 mAh
<b>Usage Conditions</b>	Charging Time	Within 4 hours
	Temperature	-15 to 50C (5 to 122F)
	Humidity	10 to 80% RH (No condensation)
<b>Dimensions</b>	Printer	147 × 171.4 × 66.7 mm (5.79 × 6.75 × 2.63 inches)
	Weight	Printer: 595 g (1.31 lb) Printer + Battery: 697 g (1.54 lb) Printer + Battery + Paper: 939 g (2.07 lb) Shipping Package: Approximately 1530 g (3.37 lb)
<b>Accessories</b>	Basic Package	Battery, Battery charger, Paper
	Sold Separately	Protective Case, Battery, Car Charger, Interface Cable

## 9-2 Certification

### 1. WEEE (Waste Electrical and Electric Equipment)



This mark shown on the product or its literature indicates that the corresponding item should not be discarded at the end of its working life with other household waste. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate marked items from other types of waste and recycle them responsibly to promote the sustained reuse of material resources. Household users should contact either the retailer where they purchased this product, or their local government office for details of where and how they can conduct environmentally safe recycling of such items. Commercial users should contact their suppliers and check the terms and conditions of purchase contracts. This product should not be combined with other commercial waste for disposal.

### 2. AC Adaptor is for indoor use only.

3. The following Bluetooth mark and QD ID B019948 are only applicable to models with the Bluetooth SIG qualification.
4. Hereby, ZEBRA declares that this EM420 is in compliance with the essential requirements and other relevant provisions of directive 1999/5/EC



### **⚠ Warning**

#### Lithium-Ion Battery pack

<Warning> The battery has the potential risk of overheating, fire and/or explosion. To avoid such risks, observe the following instructions:

- A visibly swollen battery may be dangerous. Contact Zebra or your local dealer.
- Only use an approved charger.
- Keep away from open flames. (Do not place in a microwave.)
- Do not leave the battery pack inside a vehicle in the summertime.
- Do not store or use in a hot and humid place like a sauna with sleeping rooms.
- Do not place the battery pack on a quilt, an electric blanket, or a carpet for a long time.
- Do not store the battery pack switched on in an enclosed place for a long time.
- Do not allow the battery port to touch metal items, such as necklaces, coins, keys, or wristwatches.
- Use a lithium secondary cell guaranteed by a mobile phone manufacturer or Zebra.
- Do not disassemble, compress, or pierce the battery pack.
- Do not drop the battery pack from a high place or subject it to strong shock.
- Do not expose the battery to high temperatures over 60C (140F).
- Do not expose to high humidity.
- The main purpose of using this battery is for critical situation as on the manual listed.

## **Disposal Directions**

- Do not dispose of waste battery packs carelessly.
- Do not burn battery packs or throw in a fire to dispose of them. There is a risk of fire and/or explosion.
- How to dispose of battery packs may vary depending on countries or regions. Dispose of it in the correct method.

## **Recommendation for Charging**

- Do not charge your battery pack in a way not mentioned in the instruction manual. Doing so may result in fire or explosion.

## **FCC compliance Information**

This device complies with part 15 of 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.

## **Information to the User**

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 to a different outlet from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## **9-3 Label Types**

The label types used with this printer are as follows.

- Rating Labels: PP
- Other Labels: PET