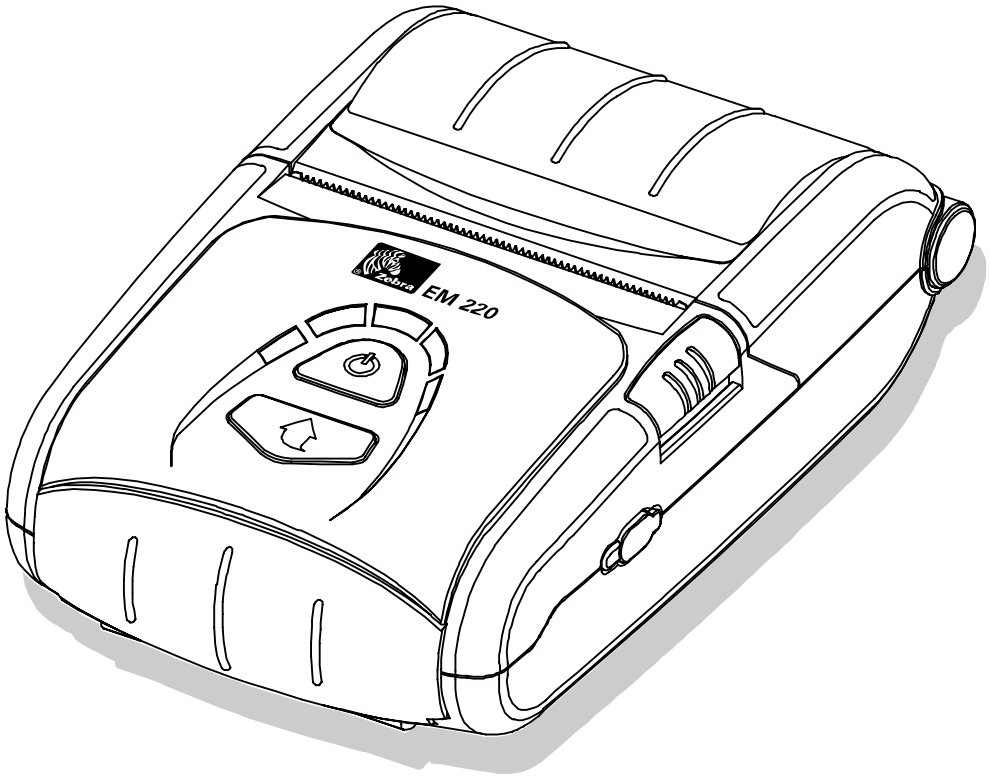
EM 220

Mobile Printer User's Manual



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Product Improvements

Since continuous product improvement is a policy of Zebra Technologies Corporation, all specifications and signs are subject to change without notice.

FCC Compliance Statement

NOTE: This equipment has been tested and found to comply with the limits or a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet 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 insure 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 á 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 EM 220 Mobile Printer. Zebra's ultra-small EM 220 mobile printer delivers convenient receipt printing wherever you need it. The EM 220 combines optional Bluetooth® 2.0 wireless connectivity and 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 EM 220 series printer. For a list of supplemental manuals provided with the EM 220, 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 EM 220 printer.

※ For additional information on the EM 220, please refer to the following supplemental manuals:

1. Windows CE Module Program Manual

This manual provides information on the dll files required for Windows CE application program development.

2. Windows Driver Manual

This manual provides information on installation and main functions of the 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, etc.

- 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 Connection Manual

This manual provides information on the connection of this product with devices equipped with Bluetooth functionality (PDAs, PCs, etc.). 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 EM 220 printer, please follow the recommended safety regulations provided below.

⚠ Warning

Violating the following instructions may cause serious injury.

1. 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.

2. You must use only the supplied adapter.
- It is dangerous to use other adapters.

3. Do not pull the cable to unplug.
- This can damage the cable, resulting in a fire or a breakdown of the printer.

4. Keep the plastic bag out of children’s reach.

5. Do not plug in or unplug with wet hands.

6. 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 the printer.

1. If you observe smoke, odor or noise from the printer, unplug it before taking the following measures:

• Turn off the printer and unplug the unit from the electrical outlet.
• Contact an authorized Zebra Technologies service provider for repair.

2. Keep the packet of desiccant material (silica gel) out of children's reach.

3. 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.

4. 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.

■ Battery Safety Precautions

Make sure you review the user manual carefully prior to product use.

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 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 (higher temperature, higher voltage/larger electrical current, use of a modified charger, etc.) 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 causes 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. Allowing battery terminals 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 that 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.

⚠ 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 that 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, warping, etc., 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 eye 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 ~ 40℃
   - Product Usage: -20 ~ 60℃
   - Storage: -20 ~ 60℃ (30 days)
   - Long-Term Storage: -20 ~ 40℃ (90 days)

4. Please review the exclusive charger manual carefully for charging instructions.

5. If upon first use following purchase, a strange odor, overheating, and/or anything deemed out of the ordinary is detected, 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 battery originally installed in the printer by the manufacturer. Dispose of used batteries per the instructions provided by the manufacturer.

10. If 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 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 and a decline in printer performance.

6. Ensure that you turn off the printer after usage. Neglecting to do so may cause a decline in printer performance.

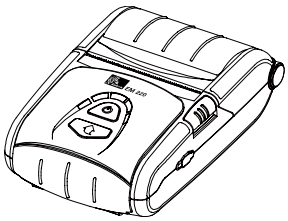
7. A battery that has not been used over a long period of time may not be sufficiently charged. If you opt to store the battery for future use, ensure that you charge the battery to the status recommended by the manufacturer every six months. Neglecting to do can cause a decline in battery performance 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.

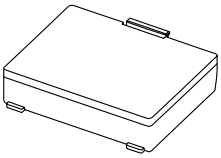
9. Each battery has a product life. If the usage time of the product has become short, replace the battery. Wrap the terminals of used batteries with tape to insulate prior to disposal.

1. Content Confirmation

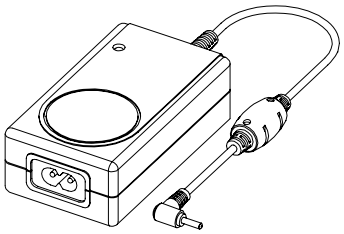
Contact the dealer from which the purchase was made if any item is damaged and/or missing.



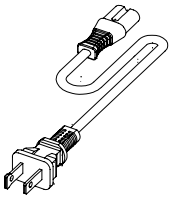
EM 220



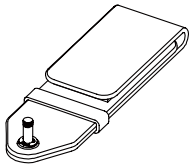
Battery



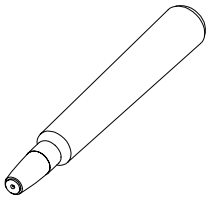
Battery Charger



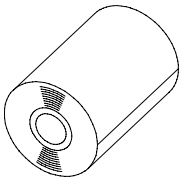
Power Cord



Belt Strap

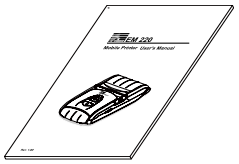


Cleaning Pen



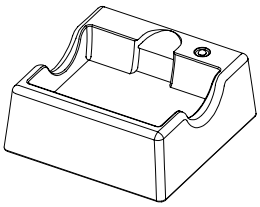
Paper

CD

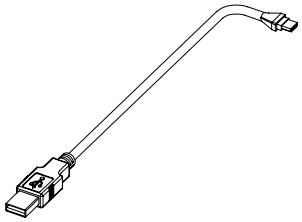


User Manual

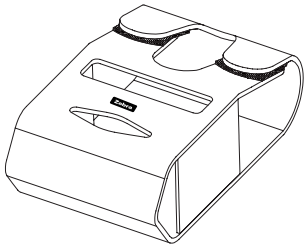
※ Optional items



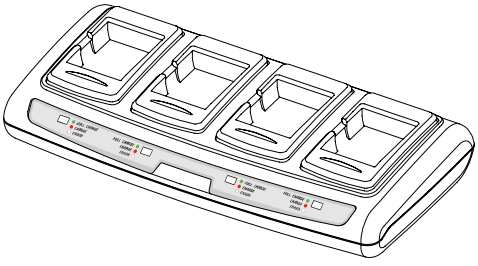
Battery Holder



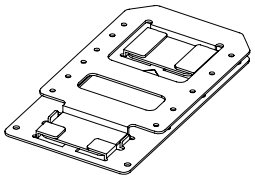
Interface Cable



Leather Case



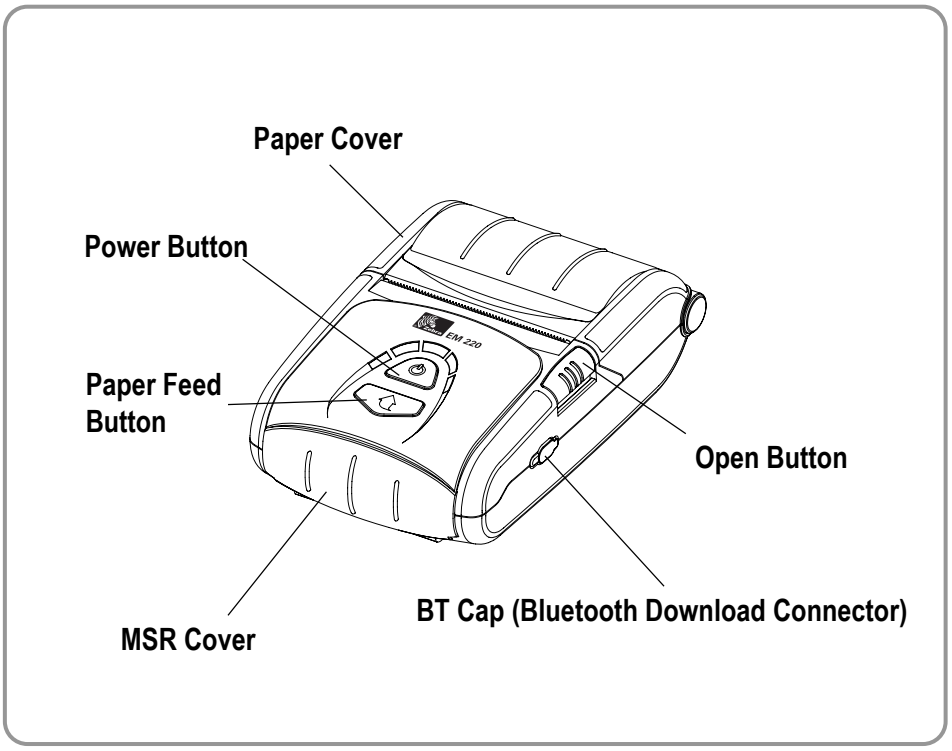
EM Series Quad Charger



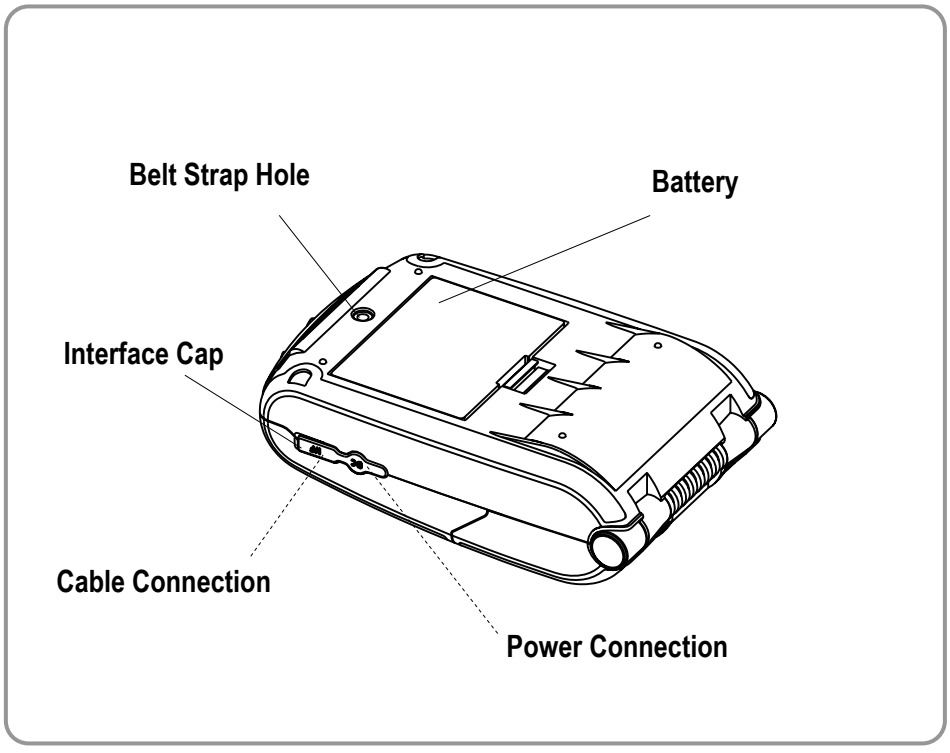
Wall mount for
EM Series Quad Charger

2. Product Part Names

- **Front**

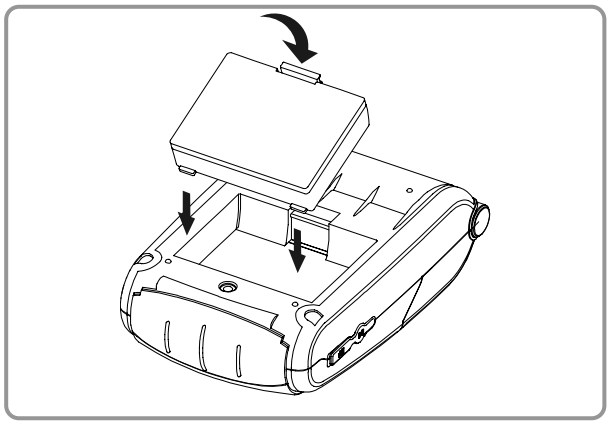


- **Rear**



3. Installation & Usage

3-1 Battery Installation



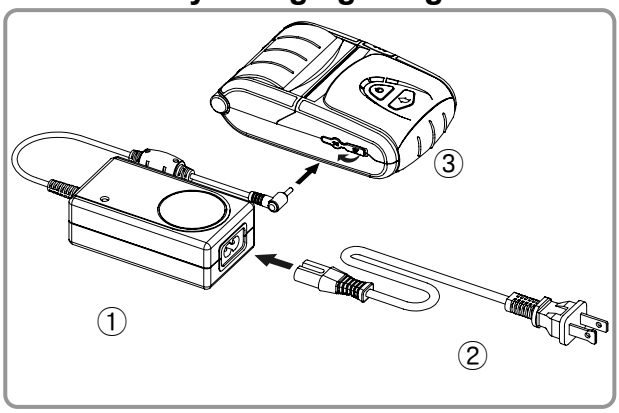
1) Insert the battery on the rear side of the printer, aligning the battery hook properly.
2) Push the battery into the slot until a snapping sound is heard.

NOTE

As the battery is not charged at the time of purchase, charge the battery prior to product use. (Use the battery charger and/or the optional battery holder.)

3-2 Battery Charging

3-2-1 Battery Charging Usage

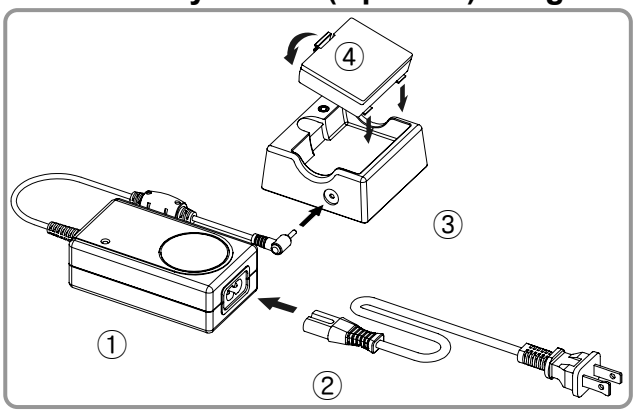


1) Turn off the printer power.
2) Connect the power cord② to the battery charger ①.
3) Open the Interface Cap ③.
4) Connect the battery charger ① to the power connector of the printer.
5) Plug the power cord ② into an electrical outlet.

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.)

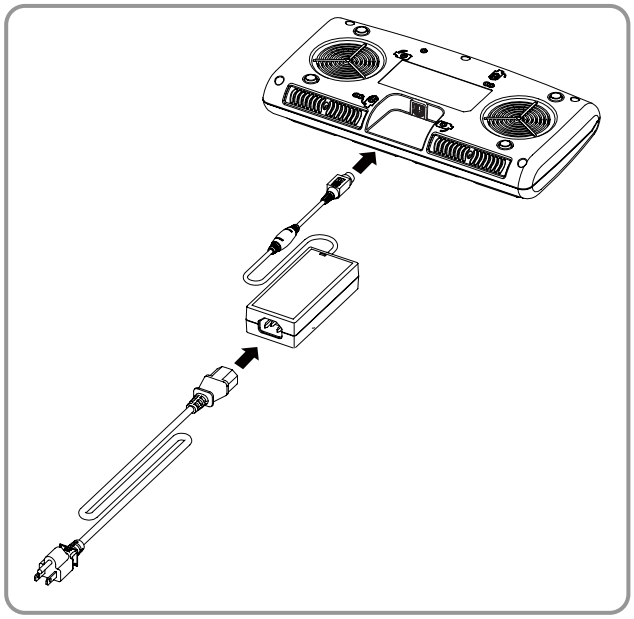
3-2-2 Battery Holder (Optional) Usage



1) Connect the power cord② to the battery charger ①.
2) Connect the battery charger ① to the power connector of the battery holder ③.
3) Plug the power cord ② into an electrical outlet.
4) Insert the battery ④ into the battery holder ③ until a snapping sound is heard.

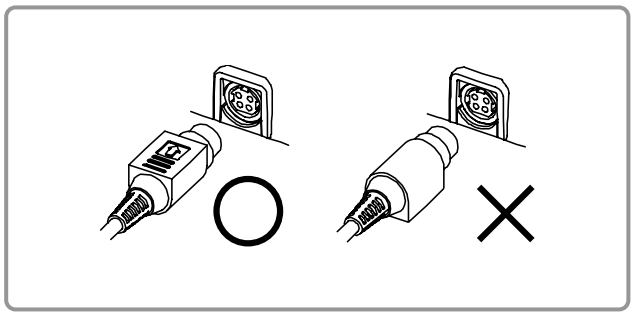
3-2-3 EM Series Quad Charger (Optional) Usage

3-2-3-1 Connecting the cables



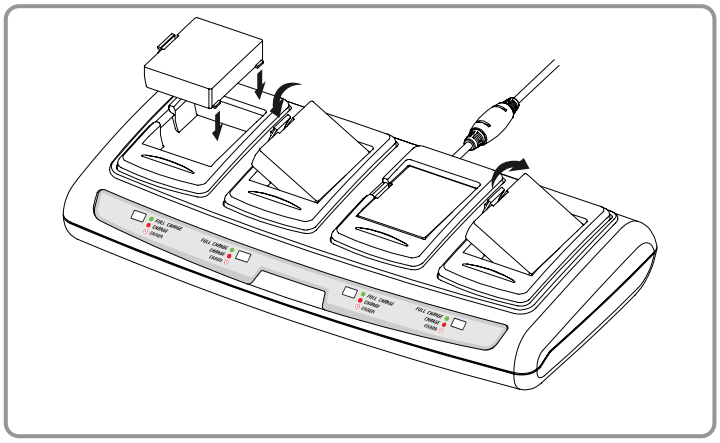
1) Connect the power cord to the adaptor, and Connect the adaptor to the power connector of the Quad Charger.
2) Plug the power cord into a power Outlet. Input power is 100 ~ 250VAC, 50/60Hz, 1.4A.
3) When power is supplied, the green LED turns on for two seconds.

⚠ CAUTION
If the red LED turns on for two seconds, it may indicate a battery-charging problem. Please consult the reseller.



⚠ WARNING
Use only designated AC/DC adaptor. (12VDC, 5A)

3-2-3-2 Battery Charging



1) Fasten batteries via the battery hooks into the Quad Charger as shown above.
2) Push the battery in until a snapping sound is emitted.
3) Charging begins as soon as the battery is completely inserted.
   Batteries are charged to 8.4VDC, 0.8A.
4) Push the hook and pull up to extract the battery.

NOTE

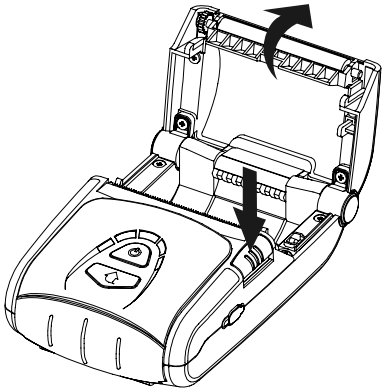
Battery charging status descriptions are as follows.

LED	Charge Status	Charge Time
Red LED On	Charging	2 hours
Green LED On	Charging Complete	
Red Lamp Blinking	Problem with Battery and/or Placement	

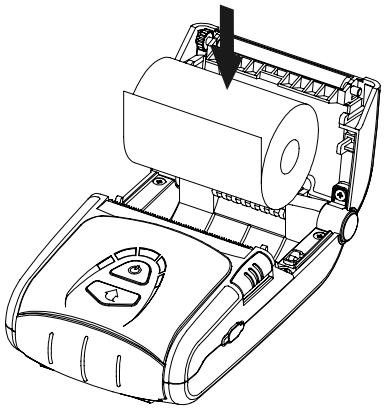
CAUTION

If the red LED is blinking, try extracting the battery and reinserting.
If the red LED continues to blink, please consult the reseller.

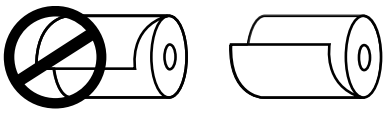
3-3 Paper Installation



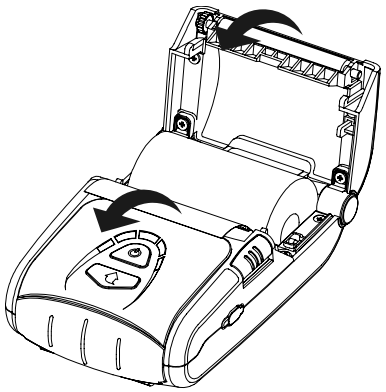
1) Press the Open button to open the paper cover.



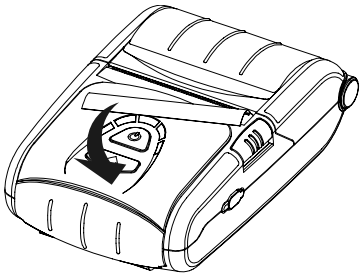
2) Insert the paper as shown in the image. (Remove any remaining core of a fully used paper roll.)



3) Ensure that you align the paper correctly.

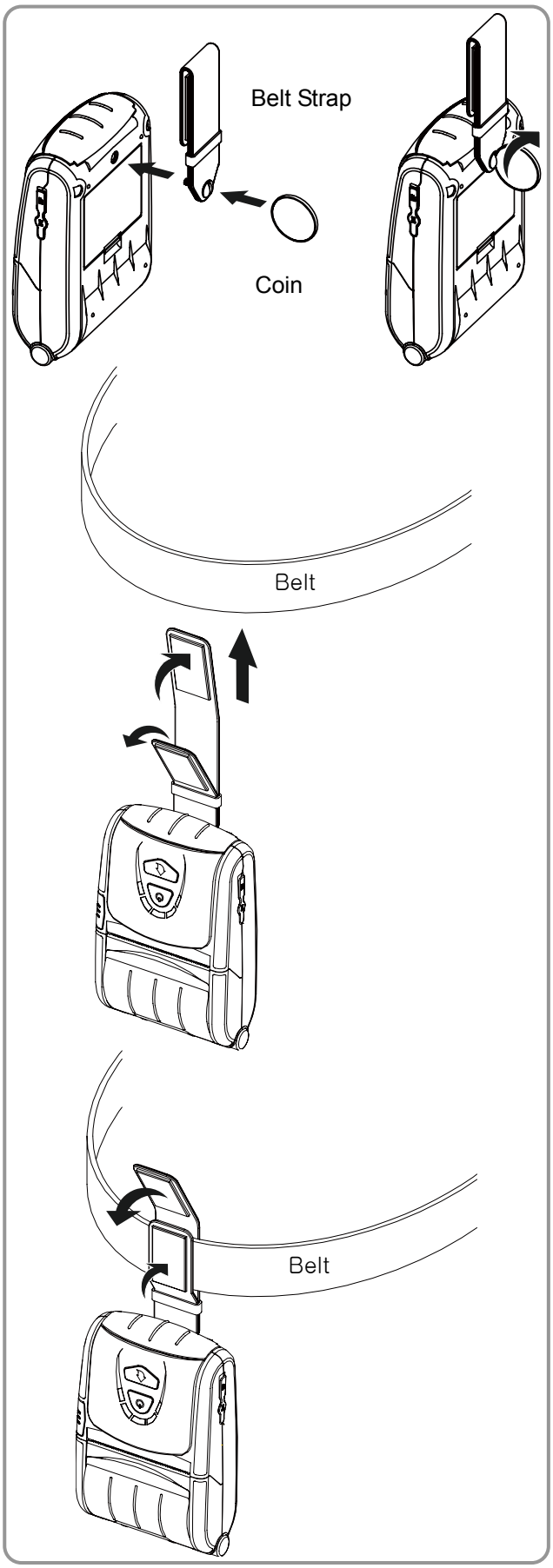


4) Pull the paper out as shown in the image and close the paper cover.



5) Tear off any excess paper in the direction of the side of the printer.

3-4 Belt Strap Usage



1) Insert the belt strap screw into the belt strap hole.

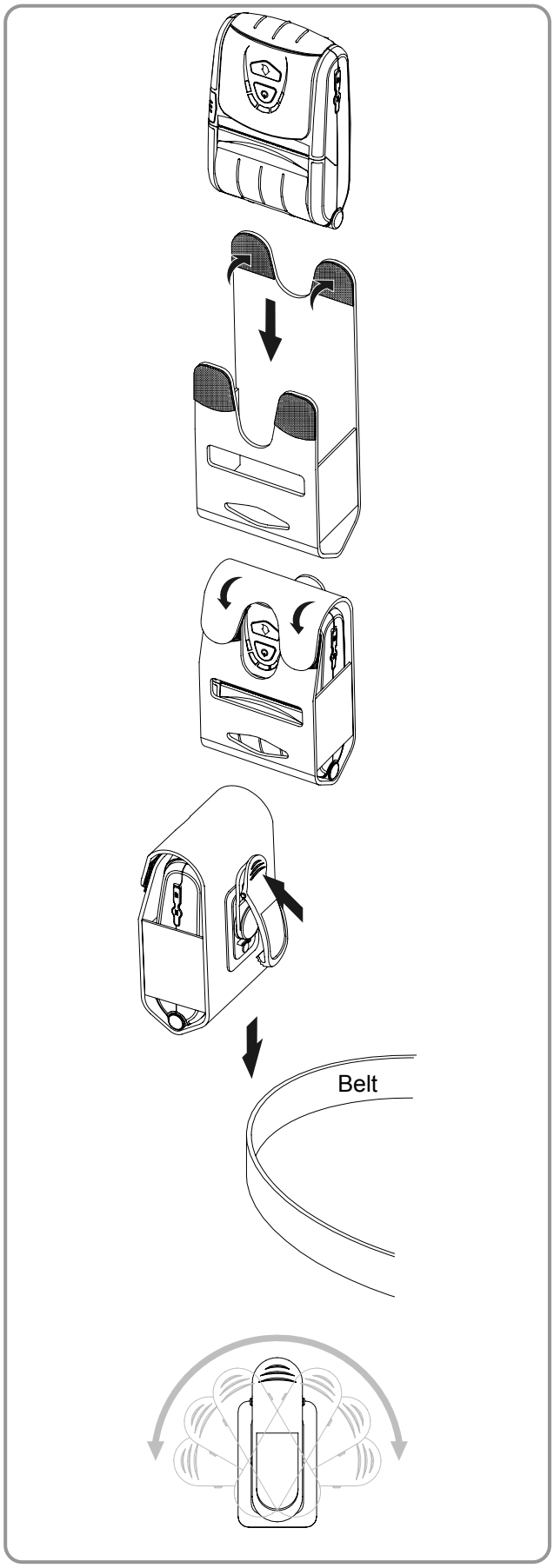
2) Use a coin to tighten the belt strap screw as shown in the image.

3) Undo the belt strap Velcro.

4) Fasten the belt strap to a belt.

5) Close the Velcro as shown in the image.

3-5 Leather Case (Optional) Usage



1) Undo the Velcro.

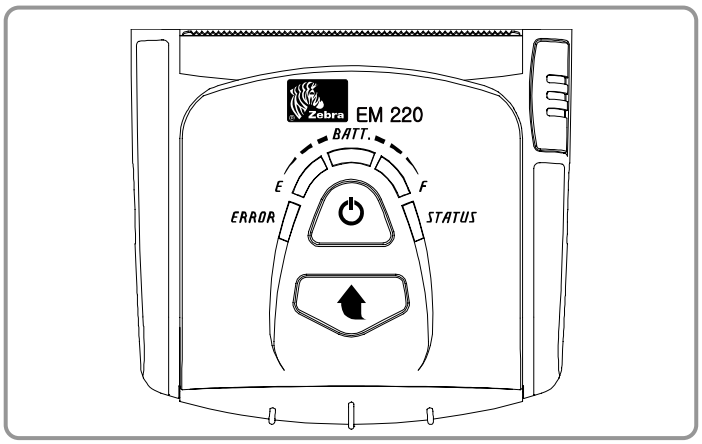
2) Place the printer into the leather case following the direction shown in the image.

3) Close the Velcro.

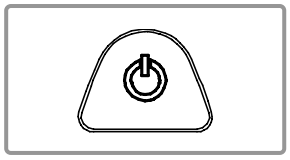
4) Affix to a belt using the clip at the rear of the case.

NOTE
The clip on the leather case can be rotated three stages by 30° per stage (maximum 90°)

3-6 Control Panel Usage

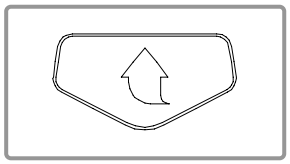


• Power Button



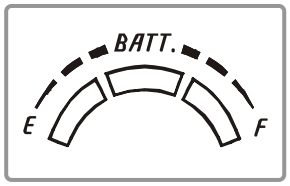
This button is used to turn the printer on and off.
When the printer is off, pressing this button for approximately 2 seconds will turn the power on. When the printer is on, pressing this button for approximately 2 seconds will turn the power off.

• Paper Feed Button



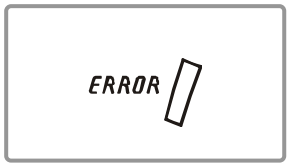
Paper output can be done manually by pressing this button.
In addition, self-testing and Hexadecimal Dumping can be done.
1) Refer to “4. Self-Test” for self-test information.
2) Refer to the service manual regarding Hexadecimal Dumping.

• Battery Status LED (Blue or Red)



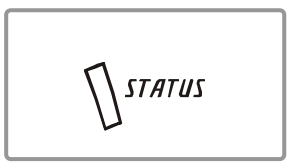
1) If three blue LEDs are lit, the battery is fully charged.
2) If two blue LEDs are lit, the battery is half charged.
3) If one blue LED is lit, the battery is at the lowest charge level.
4) If the red LED is lit, the battery must be charged or replaced.

• Error LED (Red)



1) If the red LED is lit, the paper cover is open.
2) If the red LED is blinking, either the paper has been fully used or the print head is overheated.
   (Fill with paper or turn the printer off for at least 10 minutes.)
3) 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 LED (Green)

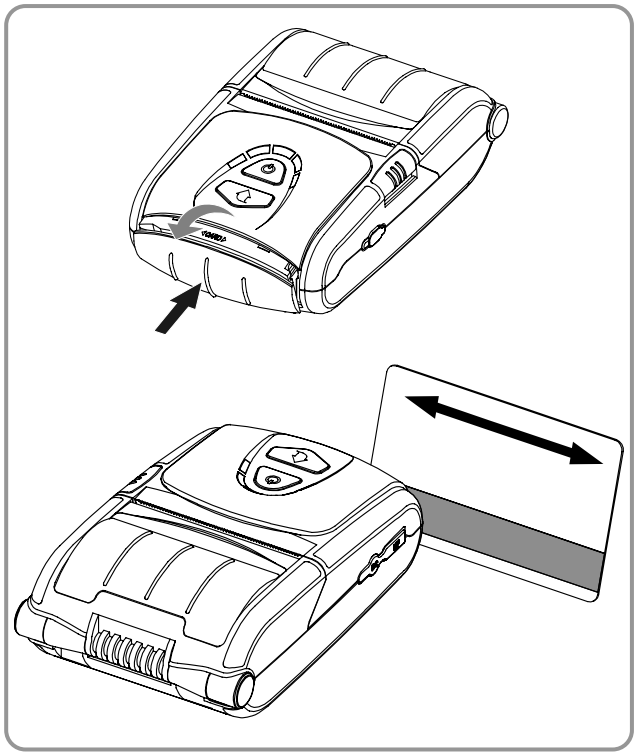


1) If the green LED turns on in unison with the battery status LED, the printer can be used with Bluetooth wireless communication.
2) If only the green LED is lit, the printer has entered the power saving mode.

NOTE

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

3-7 MSR Usage



1) Press the MSR cover to open.

2) Insert the card as shown in the image and swipe in the direction of the arrow. (can be done in both directions)

3) When finished using, press the MSR cover to close it.

NOTE
If the card does not register, first check to see if it is properly aligned. When swiping the card, the recommended swiping speed is 100 ~ 1500 mm/sec.

4. Self-Test

Run the self-test when first setting the printer or when encountering a problem, and check the following:

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

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

• Self-Test Instructions

1) Turn the printer power off and close the printer paper cover.
2) Pressing the paper feed button and power button simultaneously turns the printer on.
3) The printout is produced after releasing the two buttons.
4) To add a printout of the ASCII pattern, press the paper feed button once more.
5) After the ASCII pattern is printed out, the self-test is automatically terminated.

• Self-Test Printout Sample

Boot loader version :
VER v2.01 20071005
Firmware version :
B01.00 STD 071108
Bluetooth Firmware version :
3.0.0
Bluetooth BD address :

001901223194
Auth. & Encry. are enable
Connection Mode = 2
==========
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 : 80mm/s
Double byte character mode:Off
Busy printer buffer full
Font : 12 x 24
Paper out Bell : Off
Low Battery Buzzer : On
Power off time : 15 Min
Idle mode time : 10 Sec
Two Dimension Symbol :
- Selected PDF417 symbol
- Selected DATAMATRIX symbol
- Selected MAXI code symbol
- Selected QR code symbol
MSR read mode : Auto TRACK1/2/3

Memory switch setup status

Memory S/W1
1 2 3 4 5 6 7 8
ON
OFF

Memory S/W2
1 2 3 4 5 6 7 8
ON
OFF

Memory S/W3
1 2 3 4 5 6 7 8
ON
OFF

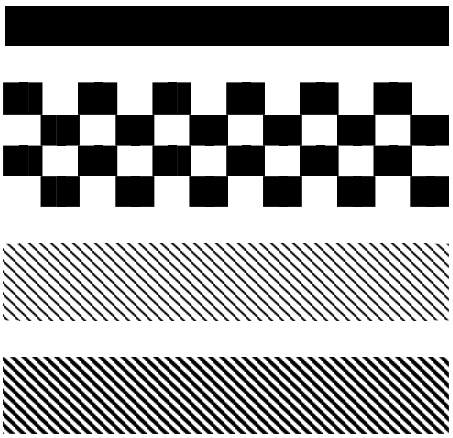
Memory S/W5 (Power off time)
1 2 3 4 5 6 7 8
ON
OFF

Memory S/W6 (Idle time)
1 2 3 4 5 6 7 8
ON
OFF

Memory S/W7
1 2 3 4 5 6 7 8
ON
OFF

Memory S/W8
1 2 3 4 5 6 7 8
ON
OFF

Memory S/W Serial condition
1 2 3 4 5 6 7 8
ON
OFF



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

ASCII
```
!"#$%&'()*+,-./0123456789:;<=>?@
"#$%&'()*+,-./0123456789:;<=>?@A
#$%&'()*+,-./0123456789:;<=>?@AB
$%&'()*+,-./0123456789:;<=>?@ABC
%&'()*+,-./0123456789:;<=>?@ABCD
&'()*+,-./0123456789:;<=>?@ABCDE
'()*+,-./0123456789:;<=>?@ABCDEF
()*+,-./0123456789:;<=>?@ABCDEFG
)*+,-./0123456789:;<=>?@ABCDEFGH
*+,-./0123456789:;<=>?@ABCDEFGHI
+,-./0123456789:;<=>?@ABCDEFGHIJ
,-./0123456789:;<=>?@ABCDEFGHIJK
-./0123456789:;<=>?@ABCDEFGHIJKL
./0123456789:;<=>?@ABCDEFGHIJKLM
/0123456789:;<=>?@ABCDEFGHIJKLMN
0123456789:;<=>?@ABCDEFGHIJKLMNO
123456789:;<=>?@ABCDEFGHIJKLMNOP
23456789:;<=>?@ABCDEFGHIJKLMNOPQ
3456789:;<=>?@ABCDEFGHIJKLMNOPQR
456789:;<=>?@ABCDEFGHIJKLMNOPQRS
56789:;<=>?@ABCDEFGHIJKLMNOPQRST
6789:;<=>?@ABCDEFGHIJKLMNOPQRSTU
789:;<=>?@ABCDEFGHIJKLMNOPQRSTUV
89:;<=>?@ABCDEFGHIJKLMNOPQRSTUVW
9:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWX
```

PC437
```
ÇüéâäàåçêëèïîìÄÅÉæÆôöòûùÿÖÜ¢£¥Ptƒ
üéâäàåçêëèïîìÄÅÉæÆôöòûùÿÖÜ¢£¥Ptfá
éâäàåçêëèïîìÄÅÉæÆôöòûùÿÖÜ¢£¥Ptfáí
âäàåçêëèïîìÄÅÉæÆôöòûùÿÖÜ¢£¥Ptfáíó
äàåçêëèïîìÄÅÉæÆôöòûùÿÖÜ¢£¥Ptfáíóú
àåçêëèïîìÄÅÉæÆôöòûùÿÖÜ¢£¥Ptfáíóúñ
åçêëèïîìÄÅÉæÆôöòûùÿÖÜ¢£¥Ptfáíóúñ
çêëèïîìÄÅÉæÆôöòûùÿÖÜ¢£¥Ptfáíóúñª
êëèïîìÄÅÉæÆôöòûùÿÖÜ¢£¥Ptfáíóúñºª
ëèïîìÄÅÉæÆôöòûùÿÖÜ¢£¥Ptfáíóúñºª¿
èïîìÄÅÉæÆôöòûùÿÖÜ¢£¥Ptfáíóúñºª¿ ┌
ïîìÄÅÉæÆôöòûùÿÖÜ¢£¥Ptfáíóúñºª¿ ┌ ┐
îìÄÅÉæÆôöòûùÿÖÜ¢£¥Ptfáíóúñºª¿ ┌ ┐ ½
ìÄÅÉæÆôöòûùÿÖÜ¢£¥Ptfáíóúñºª¿ ┌ ┐ ½¼
ÄÅÉæÆôöòûùÿÖÜ¢£¥Ptfáíóúñºª¿ ┌ ┐ ½¼¡
ÅÉæÆôöòûùÿÖÜ¢£¥Ptfáíóúñºª¿ ┌ ┐ ½¼¡«
ÉæÆôöòûùÿÖÜ¢£¥Ptfáíóúñºª¿ ┌ ┐ ½¼¡«»
æÆôöòûùÿÖÜ¢£¥Ptfáíóúñºª¿ ┌ ┐ ½¼¡«»▒
Æôöòûùÿ ÖÜ¢£¥Ptfáíóúñºª¿ ┌ ┐ ½¼¡«»▒▒
ôöòûùÿÖÜ¢£¥Ptfáíóúñºª¿ ┌ ┐ ½¼¡«»▒▒
öòûùÿÖÜ¢£¥Ptfáíóúñºª¿ ┌ ┐ ½¼¡«»▒▒ |
òûùÿÖÜ¢£¥Ptfáíóúñºª¿ ┌ ┐ ½¼¡«»▒▒ |┤
ûùÿÖÜ¢£¥Ptfáíóúñºª¿ ┌ ┐ ½¼¡«»▒▒ |┤╡
ùÿÖÜ¢£¥Ptfáíóúñºª¿ ┌ ┐ ½¼¡«»▒▒ |┤╡╢
ÿÖÜ¢£¥Ptfáíóúñºª¿ ┌┐ ½¼¡«»▒▒ |┤╡╢╖
```

5. Label Printing Function

5-1 Label Function Setting

Label paper and black mark paper available at the label mode.

• Setting Operations

1) Turn on the printer power.
2) Open the paper cover and press and hold down the paper feed button for longer than two seconds.
3) After the buzzer tone is emitted, insert paper and close the cover.
4) Repeat the steps above to return to receipt mode.

• Setting Via Memory Switch

- Please refer to the memory switch changing section of the Commands Manual.

5-2 Auto Calibration Function

The label printing function requires the recognition of label paper gaps and black mark paper black bar in order to print.
If label paper gaps are not properly recognized, use the auto calibration function.

• Auto Calibration Instructions

1) Turn the printer power off while in label print mode.
2) Press and hold down the paper feed button and then press the power button.
3) After the following printout is outputted, press the power button to perform auto calibration.

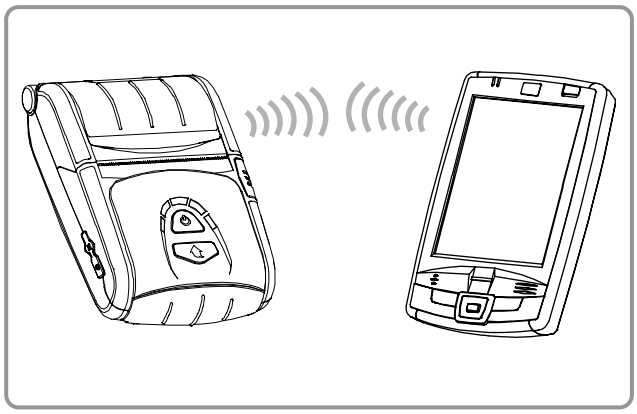
Select the mode
Auto Calibration: Power Button
Self Test: Feed Button

4) Three pages of label paper are outputted when performing auto calibration.

6. Peripherals Connection

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

6-1 Bluetooth Connection



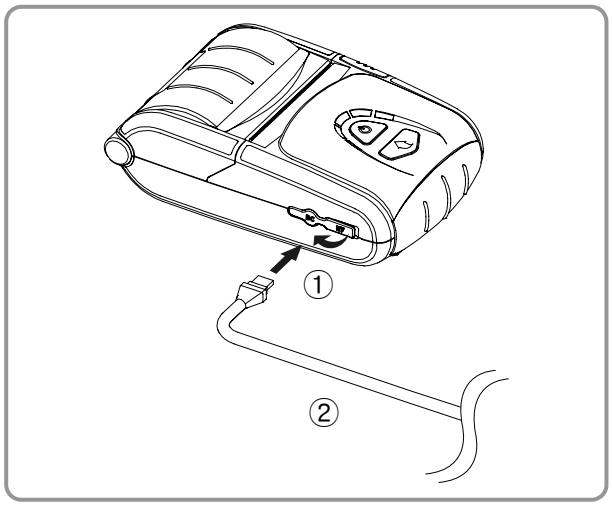
1) The printer can be connected to devices equipped with Bluetooth communication capacity (PDAs, PCs, etc.).

2) Use the Bluetooth connection function supported by the device to connect to the printer.

NOTE
Refer to the Bluetooth Manual for more details on connection.
You can check authentication, Encryption mode as well as connection mode of the Bluetooth from self test page.

CAUTION
The Bluetooth connector located on the right side of the printer is for program downloading only. This connector is for service providers only.

6-2 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 cables (optional) provided by Zebra (USB, Serial).

3) Connect the interface cable to the USB port of the device (PDAs, PCs, etc.).

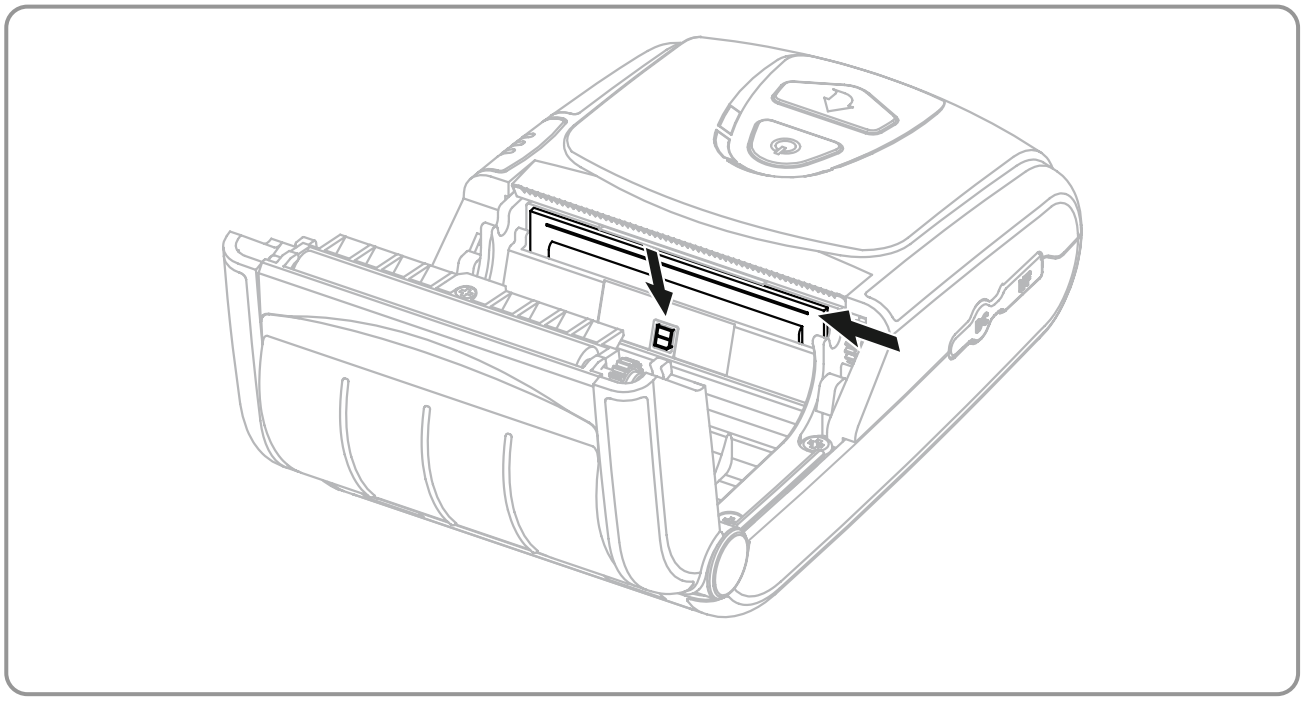
NOTE
The interface cable that can be connected with the printer is available in both USB and Serial type.
Refer to the service manual for detailed interface cable specifications.

7. 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 the printer power off prior to cleaning.
- The print head gets very hot during printing. Before cleaning the print head, turn the printer power off and wait approximately 10 minute before commencement.
- When cleaning the print head, do not to touch the heated portion of the print head.
  → The print head is susceptible to damage from static electricity, etc.
- Do not allow the print head to become scratched and/or damaged in any way.



1) Open the paper cover and remove any paper that may be present.

2) Wipe the print head with a cleaning pen.

3) Use a cloth moistened with an alcohol solution to clean the paper sensor and remove any paper remnants and/or dust.

4) Insert paper into the printer 1~2 minutes after completing the cleaning process and close the printer cover.

8. Appendix

8-1 Specifications

NOTE

Printer specifications are subject to change without notice.

Item		Description
Printing	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 × 24
	Characters Per Line	Font A: 32 Font B: 42
	Character Set	English: 95 Expanded Graphics: Standard(ENG) -128 × 30 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, EAN 18, ITF, Codabar 2 Dimension: PDF417, DATAMATRIX, MAXI, QR
	Emulation	BXL/POS
	Driver	Windows 98 / ME / 2000 / NT / XP / 2003Server / VISTA
	SDK	WinCE 4.2, WinCE 5.0
	Sensor	No Paper Sensor, Paper Cover Open Switch
	Cutter Type	Tear-Bar
	Language	User language supported
Paper	Paper Type	Thermal paper
	Width	58 ± 0.5 mm (2.28” ± 0.2”)
	Diameter	Max. ø40 mm (1.57”)
	Thickness	0.06 ~ 0.10 mm (0.0024 ± 0.0039˝)
Reliability	TPH	120 km
	Battery	Rechargeable up to 500 times
Communications	Interface	Serial/USB, Bluetooth Class2 V2.0 +EDR
Battery Charger	Input	Voltage: 100 ~ 240 VAC Current: 1.0A (Max. at 110VA)
	Output	Voltage: 8.4 VDC Current: 0.8A
Battery	Type	Lithium-ion
	Output	Voltage: 7.4 VDC (Operating Range: 8.4 ~ 6.8VDC) Capacity: 1200 mAh
	Charging Time	2.5 hours
Usage Conditions	Temperature	Printer: -10~50℃ (14~122˚F) Battery: 0~40℃ (32~104˚F)
	Humidity	Printer: 10~90% RH (No condensation) Battery: 20~70% RH (No condensation)
Dimensions	Printer	79.5mm × 126.7mm × 43.6mm (3.13″ × 4.99″ × 1.72″)
Weight	Printer	Printer: 184g (0.41lbs) Printer + Battery: 236g (0.52lbs) Printer + Battery + Paper: 293g (0.65lbs) Package: approx. 1000g (2.2lbs)
Accessories	Basic Package	Battery, Battery Charger, Belt Strap, Cleaning Pen
	Sold Separately	Battery, Battery Holder, Leather Case, Interface Cable, EM Series Quad charger, Wall mount (for EM Series Quad charger)

8-2 Certification

1) EMC & Safety Standards

- Europe: CE Mark: CE 0984, DEMKO GS: EN60950-1: 2001
- North America: FCC rules part 15C
- NRTL Safety Approval IEC60950-1:2001
- Safety Standards: CB-scheme: IEC60950-1: 2001

WARNING

Use of an unprotected interface cable with this printer conflicts with EMC standards. Users should only use cables approved by Zebra.

2) CE Mark

• EMC Directive 2004/108/EC	EN55002 Class B:1998+A1:2000 EN55024:1998+A1:2001 EN61000-3-2:2000 EN61000-3-3:1995+A1:2001 EN6100-4-2:1995+A1:1998+A2:2001 EN6100-4-3:1996+A1:1998+A2:2001 EN6100-4-4:1995+A1:2001 EN6100-4-5:1995+A1:2001 EN6100-4-6:1996+A1:2001 EN6100-4-8:1993+A1:2001 EN6100-4-11:1994+A1:2001 EN310489-17 v1.2.1
• R&TTE Directive 95/5/EC	
• Radio Spectrum	EN300328 v1.6.1
• Low Voltage Directive 2006/95/EC	Safety: EN60950-1:2001

3) 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.

8-3 Label Types

The label types used with this printer is as follows.

- Rating Labels: PP
- Other Labels: PET

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