



ZQ110

Mobile Printer Service Manual

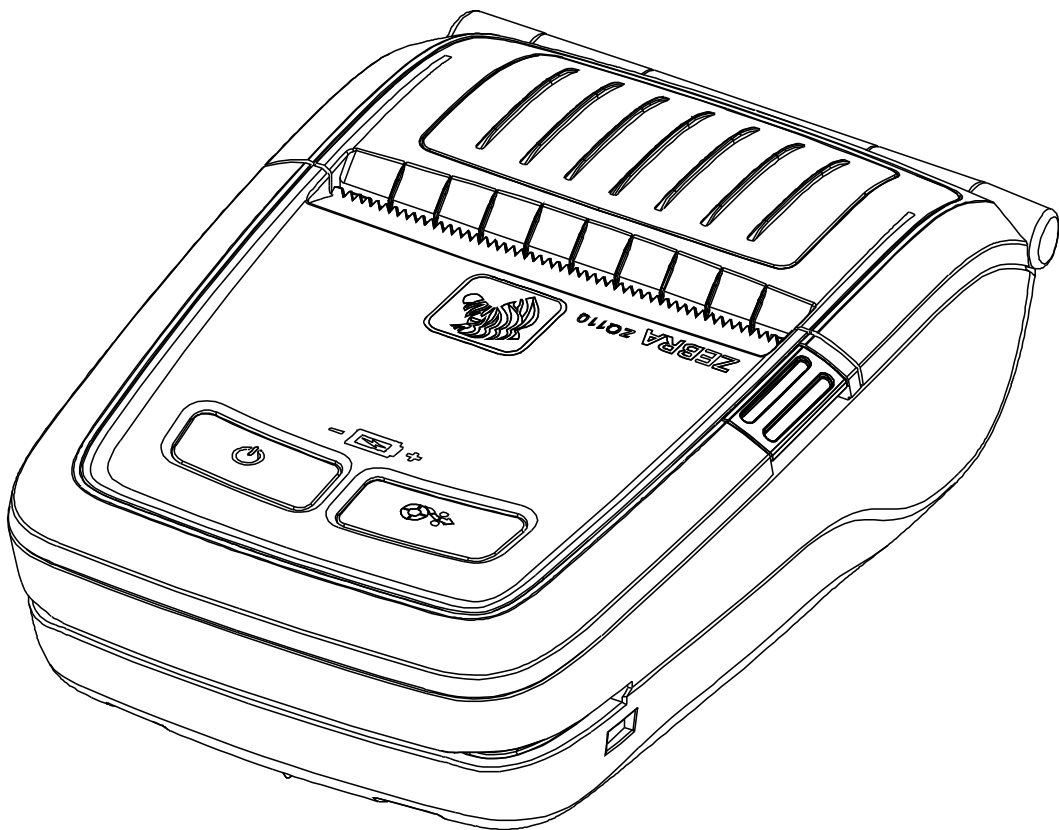


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1. Proprietary Statements

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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 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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1-1 Safety Precautions

1. Be sure that all of the built-in protective devices are replaced. Restore any missing protective shields.
2. When reinstalling the chassis and its assemblies, be sure to restore all protective devices including: nonmetallic control knobs and compartment covers.
3. Make sure that there are no cabinet openings through which people – particularly children – might insert fingers and contact dangerous voltages. Such openings include excessively wide cabinet ventilation slots and improperly fitted covers and drawers.
4. Leakage Current Hot Check:
WARNING: Do not use an isolation transformer during this test.
Use a leakage-current tester or a metering system that complies with American National Standards Institute (ANSI C101.1, Leakage Current for Applications), and Underwriters Laboratories (UL Publications UL1410, 59.7).
With the unit completely reassembled, plug the AC line cord directly into a 100VAC or 240VAC outlet of the Adaptor.
With the unit's AC switch first in the ON position and then OFF, measure the current between a known Earth ground(metal water pipe, conduit, etc.) and all exposed metal part, including: metal cabinet, frame, and screw-heads and printer. The current measure should not exceed 0.1 milliamp. Reverse the power-plug prong in the AC outlet and repeat the test.
5. Design Alteration Warning:
Never alter or add to the mechanical or electrical design of the ECR. Unauthorized alterations might create a safety hazard. Also any design changes or additions will void the manufacture's warranty.
6. Components, parts and wiring that appear to have overhead or that are otherwise damaged should be replaced with parts that meet the original specifications. Always determine the cause of damaged or overheating and correct any potential hazards.
7. Observe the original lead dress, especially near the following areas: sharp edges, and especially the AC and high voltage supplies. Always inspect for pinched, out-of-place, or frayed wiring.
Do not change the spacing between components and the printed circuit board. Check the AC power cord for damage. Make sure that leads and components do not touch thermally hot parts.
8. Product Safety Notice:
Some electrical and mechanical parts have special safety-related characteristics, which might not be obvious from visual inspection. These safety features and the protection they give might be lost if the replacement component differs from the original-even if the replacement is rated for higher voltage, wattage, etc.
Components that are critical for safety are indicated in the circuit diagram by shading,  or .
Use replacement components that have the same ratings, especially for flame resistance and dielectric strength specifications. A replacement part that does not have the same safety characteristics as the original might create shock, fire or other hazards.

1-2 Servicing Precaution

WARNING 1: First read the Safety Precaution section of this manual. If some unforeseen circumstance creates a conflict between the servicing and safety precautions, always follow the safety precaution.

WARNING 2: An electrolytic capacitor installed with the wrong polarity might explode.

1. Always unplug the unit's AC power cord from the AC power source or the Power Switch off before attempting to:
 - (a) Remove or reinstall any component or assembly,
 - (b) Disconnect an electrical plug or connector,
 - (c) Connect a test component in parallel with an electrolytic capacitor.
2. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometime used. The internal wiring is sometimes clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.
3. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the portion around the serviced part has not been damaged.
4. Check the insulation between the blades of the AC plug and accessible conductive parts (example: metal panels and input terminals).
5. Insulation Checking Procedure: Disconnect the power cord from the AC source and turn the power switch ON. Connect an insulation resistance meter (500V) to the blades of the AC plug. The insulation resistance between each blade of the AC plug and accessible conductive parts (see above) should be greater than 1 mega-ohm.
6. Never defeat any of the B+ voltage interlock. Do not apply AC power to the unit (or any of its assemblies) unless all solid-state heat sinks are correctly installed.
7. Always connect an instrument's ground lead to the instrument chassis ground before connecting the positive lead; always remove the instrument's ground lead last.

1-3 Precaution for Electrostatically Sensitive Devices (ESDs)

1. Some semiconductor (solid state) devices are easily damaged by static electricity. Such components are called Electrostatically Sensitive Devices (ESDs); examples include integrated circuits and some field-effect transistors. The following techniques will reduce the occurrence of component damaged caused by static electricity.
2. Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. (Be sure to remove it prior to applying power-this is an Electric shock precaution.)
3. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of electrostatic charge.
4. Do not use freon-propelled chemical. These can generate electrical charges that damage ESDs.
5. Use only a grounded-tip soldering iron when soldering or unsoldering ESDs.
6. Use only an anti-static solder removal device. Many solder removal devices are not rated as anti-static; these can accumulate sufficient electrical charge to damage ESDs.
7. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.
8. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the device will be installed.
9. Minimize body motions when handling unpacked replacement ESDs. Motions such as brushing clothes together, or lifting a foot from a carpeted floor can generate enough static electricity to damaged an ESD.

1-4 Operational Precautions

1. The heating element of the printer mechanism's thermal head and the driver IC are easily damaged. Never allow these components to come into contact with metal or other hard objects.
2. Never touch the printer mechanism's heating element with your hand. Doing so can damage the heating element and affect proper operation.
3. The head and motor areas are very hot during and immediately after printing. Do not touch components in these areas directly with your hand.
4. Do not use any paper other than these specified in this manual otherwise print head reliability and print quality are affected adversely.
5. Thermal paper starts to color at around 70°C. Take care to protect unused and printed thermal paper against the affects of heat, light and characters on the paper to feed.
6. Take the roll paper out of the printer when you will not use the printer for a long time in a high temperature and humidity environment.

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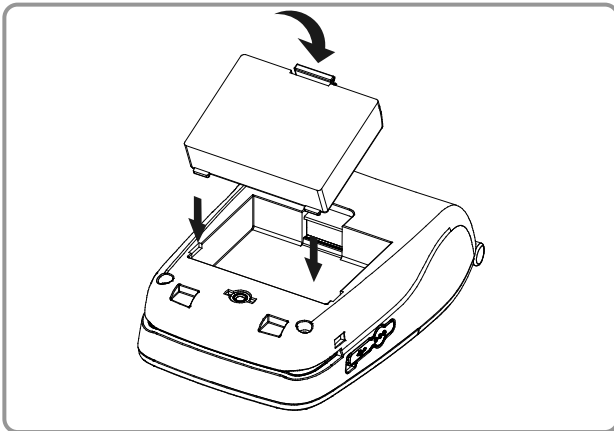
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2. Installation and Usage

2-1 Battery Installation



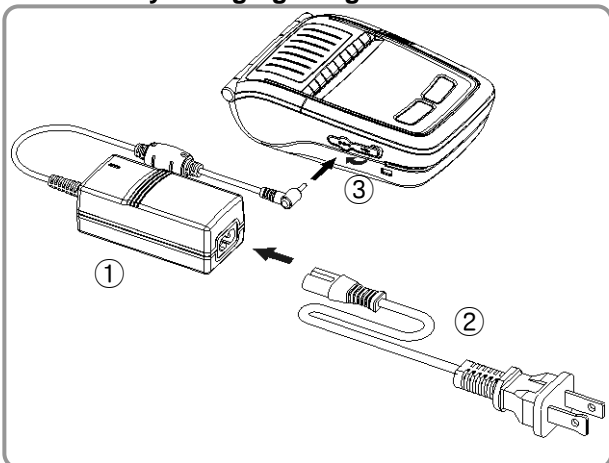
1. Insert the battery in the bottom of the printer, and ensure that you align the battery hook properly.
2. Push the battery into the slot until you hear it snap in place.

 **NOTE**

Since the battery is partially charged at the time of purchase, charge the battery prior to product use. (Use the AC adaptor or the optional Single battery charger/Quad battery charger.)

2-2 Battery Charging

2-2-1 Battery Charging Usage



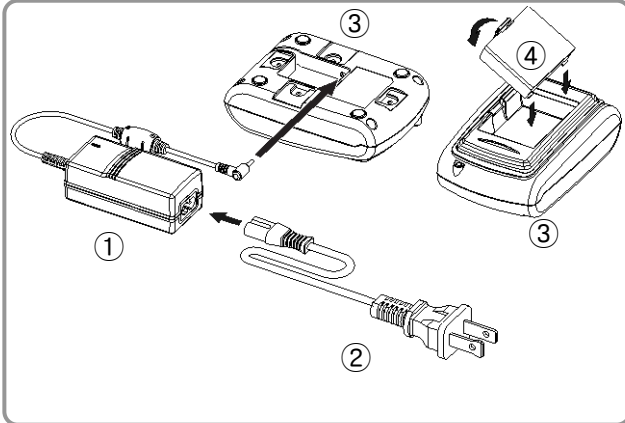
1. Turn off the printer power.
2. Connect the power cord ① to the AC adaptor ②.
3. Open the Interface Cap ③.
4. Connect the AC adaptor ② to the Power connector of the printer.
5. Plug the power cord into an electrical outlet ①.

 **CAUTION**

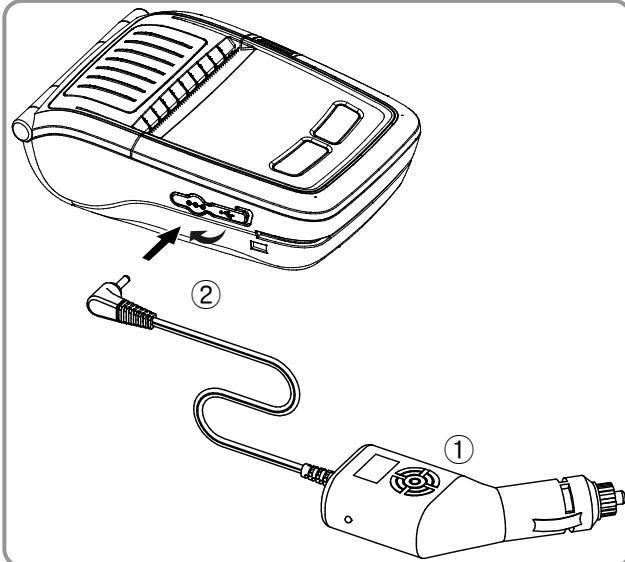
The printer may incur serious damage if the AC adaptor provided by Zebra is not used. Zebra is not legally liable for any such damages. (The voltage and electrical current specifications of the printer and AC adaptor must match.)

 **WARNING**

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

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

1. Connect the power cord ① to the AC adaptor ②.
2. Connect the AC adaptor ② to the power connector (on the bottom) 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 it snaps in place.

2-2-3 Cigarette Lighter Adaptor (Optional) Usage

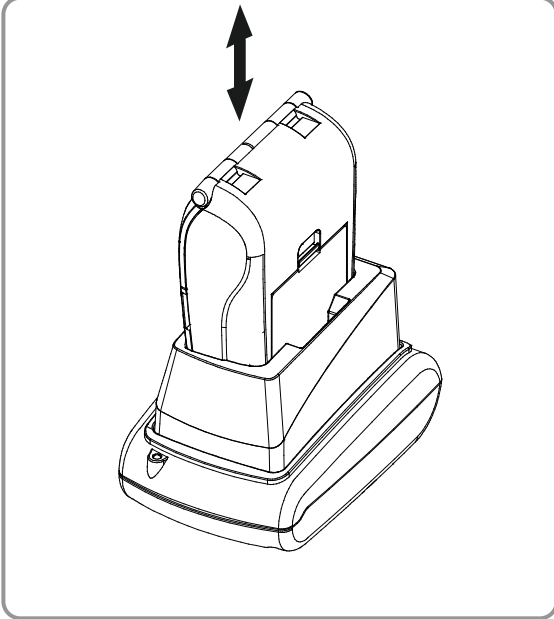
1. Turn off the printer power.
2. Connect the Cigarette lighter adaptor ① to your car's cigarette lighter jack.
3. Open the external interface cap ②.
4. Connect the Cigarette lighter adaptor ① to the power connector.

⚠ CAUTION

The printer may be seriously damaged if a cigarette lighter adaptor not provided by Zebra is used. Zebra is not liable for such damage.

⚠ WARNING

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

2-2-4 Single Docking Cradle (Optional) Usage

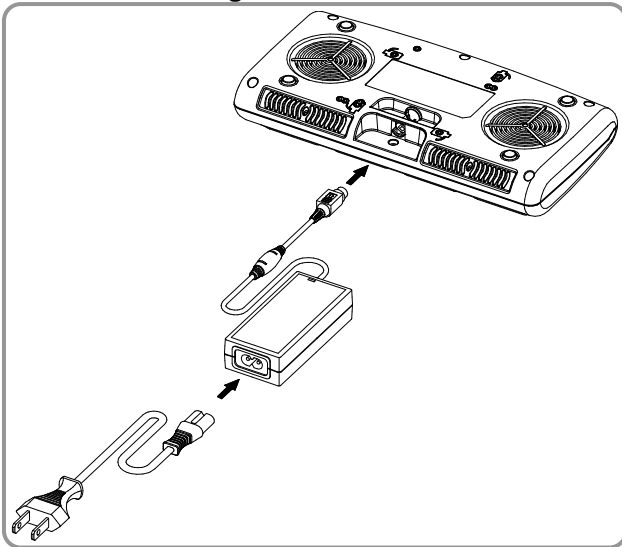
1. Turn off the printer.
2. Slide the printer into the single docking cradle as shown.
3. Push the printer in until you hear a click.
4. Charging will begin when the printer is installed.
5. Pull out the printer to remove it.

⚠ CAUTION

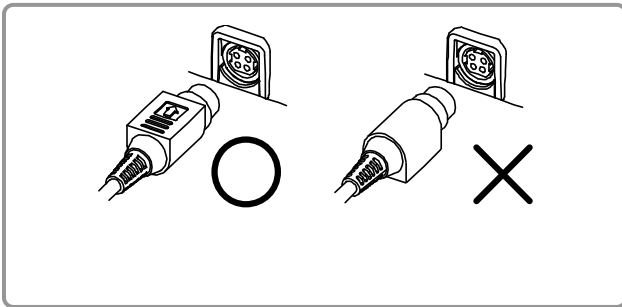
Please be sure to use the battery with Outer contacts.

2-2-5 Quad Battery Charger / Quad Docking Cradle (Optional) Usage

2-2-5-1 Connecting the cables



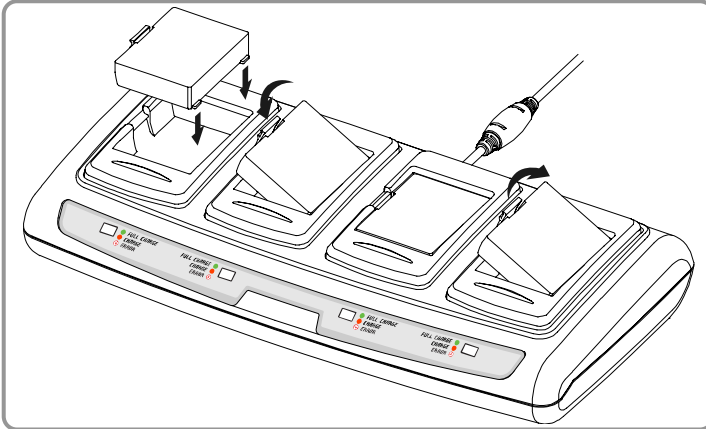
1. Connect the power cord to the adaptor, and connect the adaptor to the power connector on the bottom of the Quad Battery Charger/Quad Docking Cradle.
2. Plug the power cord into a power outlet. Input power is 100-240VAC, 50/60Hz, 1.0A.
3. When the power is on, the amber, green, and red LEDs are lit for three seconds. The printer performs the self-test.



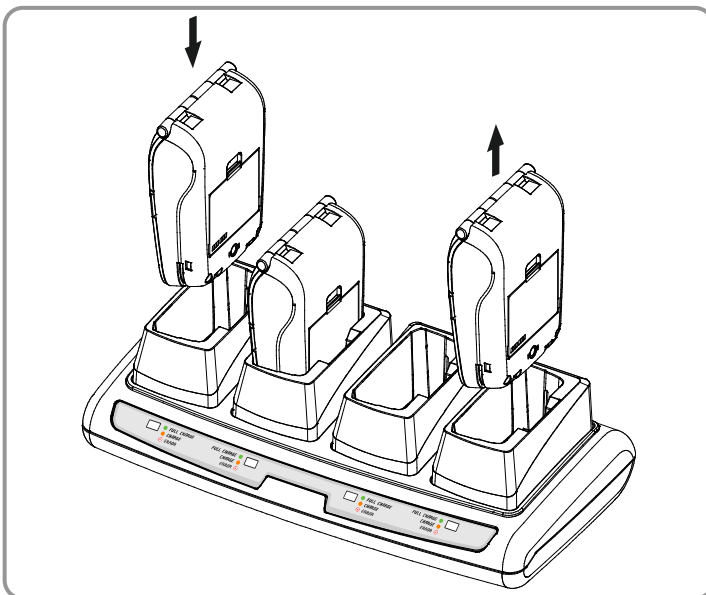
⚠ WARNING

Use only the designated AC/DC adaptor.
(12VDC, 3A)

2-2-5-2 Charging Battery (Printer)



1. Using the battery hooks, insert the batteries into the Quad Battery Charger as shown.
2. Push the battery in until you hear a snap.
3. Charging begins as soon as the battery is completely inserted. Batteries are charged to 8.4VDC, 0.8A.
4. Lift the hook and pull up to remove the battery.



1. Turn off the printer.
2. Slide the printer into the Quad Docking Cradle as shown.
3. Push in the printer until you hear a click.
4. Charging will begin once the printer is installed.
5. When charging is complete, pull out the printer to remove it.

⚠ CAUTION

Please be sure to use the battery with Outer contacts.



NOTE

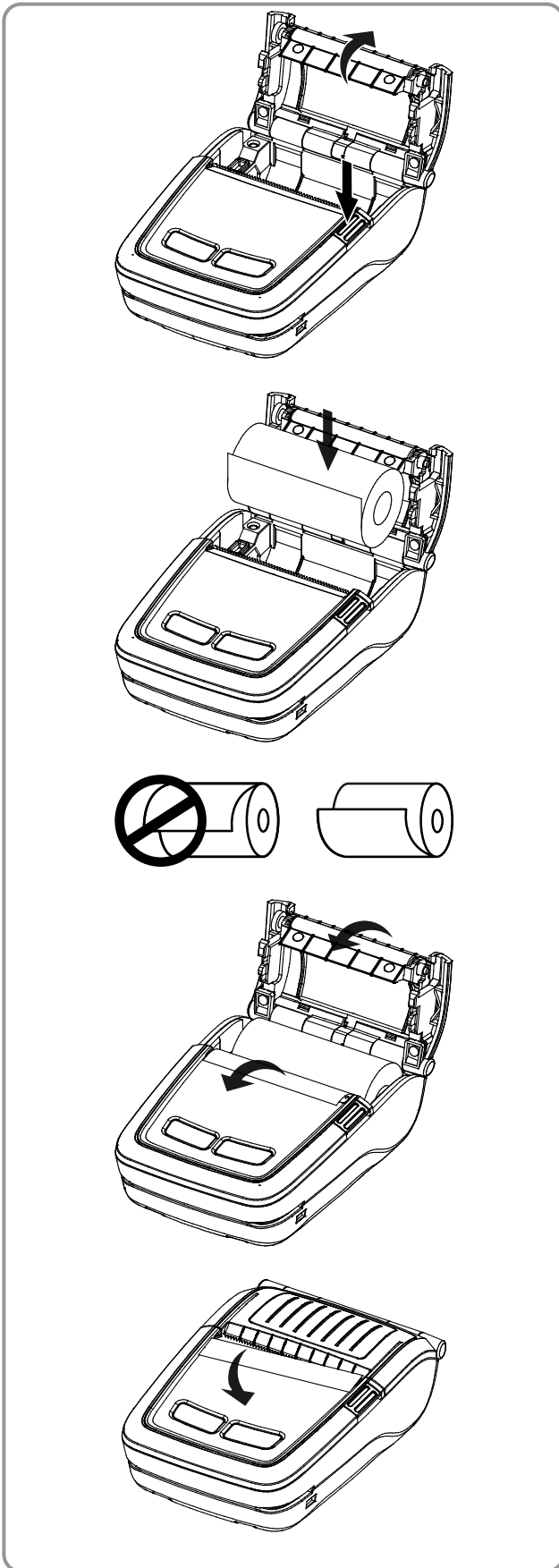
Battery charging status descriptions are as follows:

LED	Charge Status	Charge Time
Amber LED On	Charging	2.5 hours
Green LED On	Fully Charged	
Red LED Blinking	Error Replace or Reinstall Battery	

⚠ CAUTION

1. If the red LED on the charger blinks, reinstall the battery.
2. If the red LED continues to blink despite several attempts (4-5 times) to install the battery, contact your local dealer.
3. The charging time may vary depending on the type of the charger and the ambient temperature.

2-3 Paper Installation



1. Press the Open button to open the media cover.

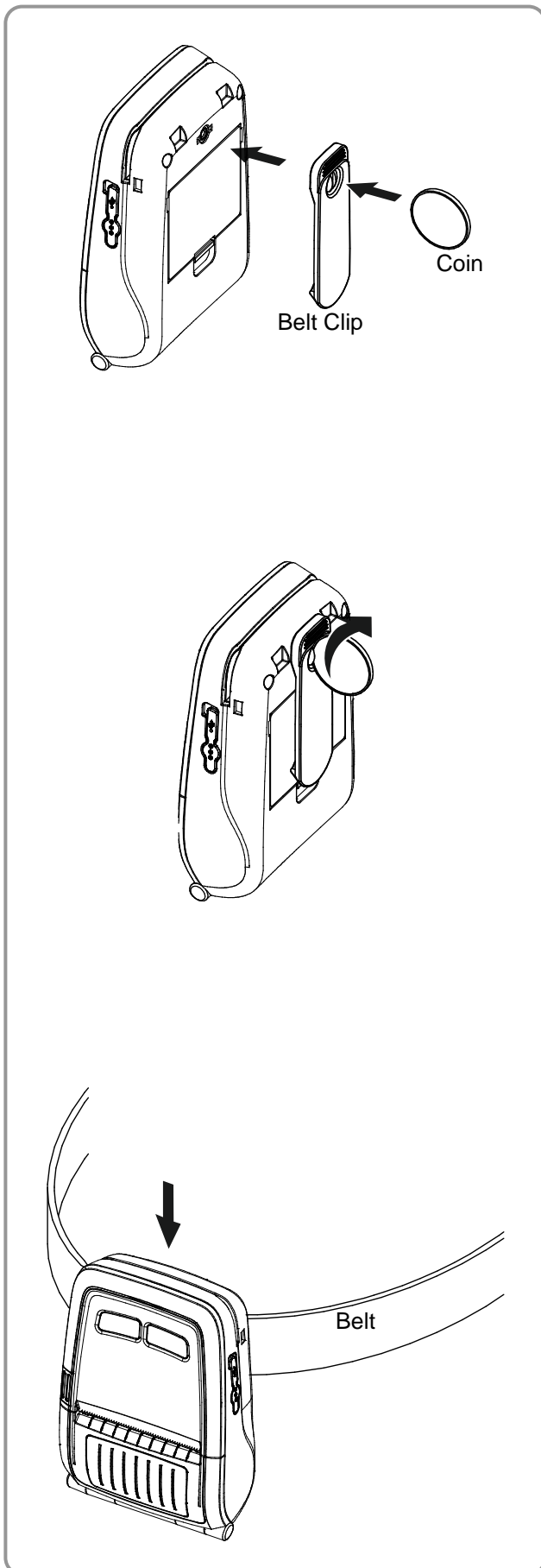
2. Insert the paper as shown. (Remove the empty core.)

3. Align the paper as shown.

4. Pull out the paper as shown and close the media cover.

5. Tear off any excess paper toward the side of the printer.

2-4 Belt Clip Usage

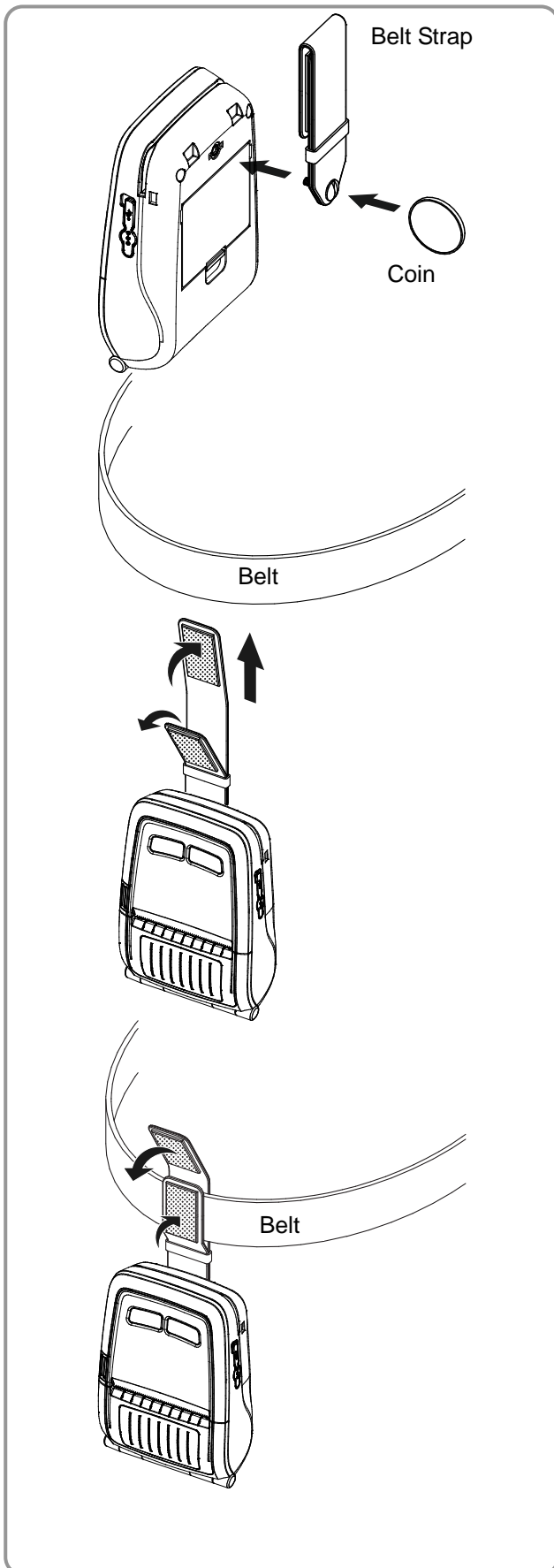


1. Insert the belt clip screw into the belt clip mounting hole.

2. Tighten the screw of the belt clip with an object like a coin as shown. (Be careful to tighten the screw in the correct direction.)

3. Slide the clip over the belt..

2-5 Belt Strap (Optional) Usage

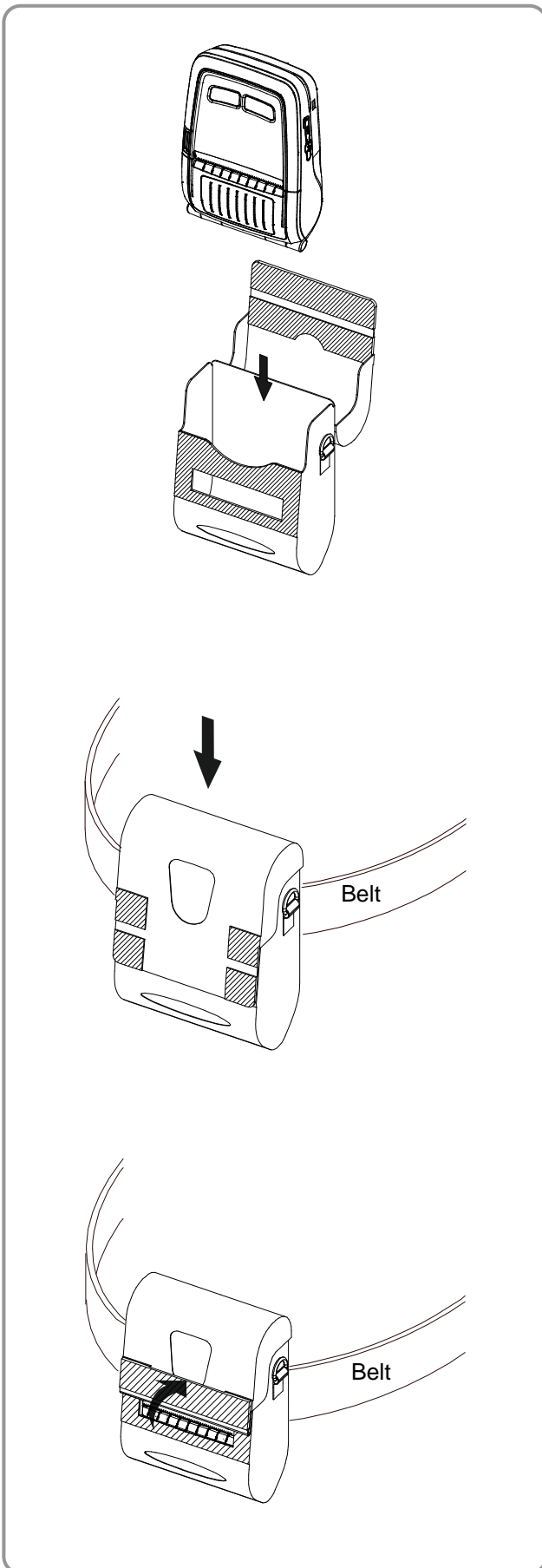


1. Insert the belt strap screw into the belt strap hole.
2. Use a coin to tighten the belt strap screw as shown.

3. Unfasten the belt strap Velcro.
4. Slide the belt strap over a belt.

5. Fasten the Velcro as shown.

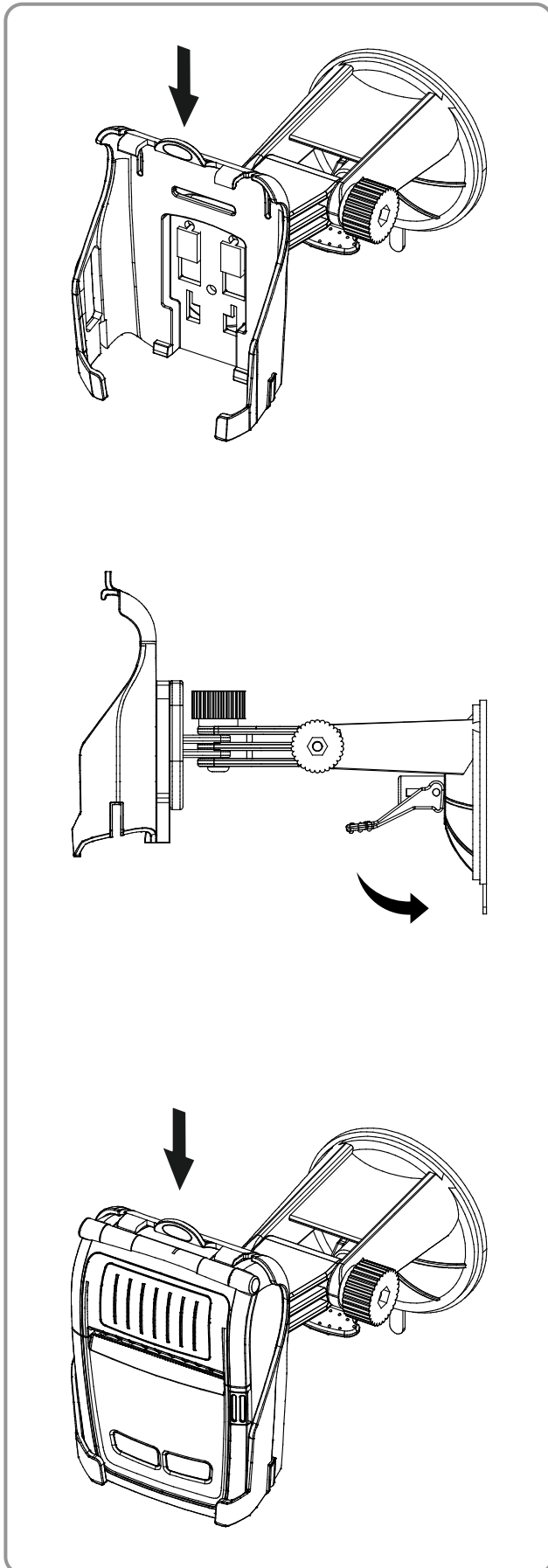
2-6 Protective Case (Optional) Usage



1. Open the top cover of the protective case.
2. Insert your printer into the protective case as shown.
3. Close the top cover.
4. Using the clip on the back of the protective case, attach it to the belt.
5. When using the printer, open the paper discharger as shown.

 **Note**

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

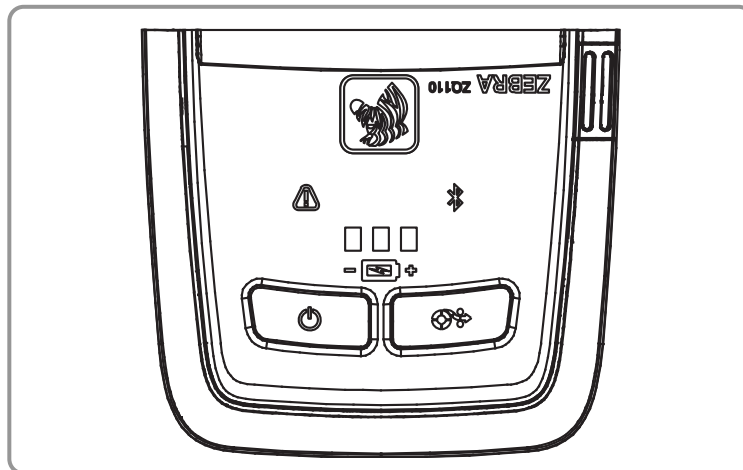
2-7 Vehicle Holder (Optional) Usage

1. Attach the vehicle holder to the mount.

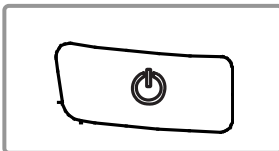
2. Adjust the vehicle mount properly, place the suction plate close to the glass, and push the lever to fix the position. (Use the disk pad to mount it on the dashboard)

3. Slide the printer into the vehicle holder completely as shown. (Push in the printer until you hear a click.)

2-8 Control Panel Usage

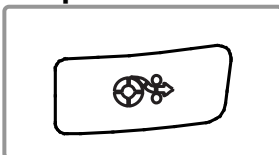


• Power Button



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

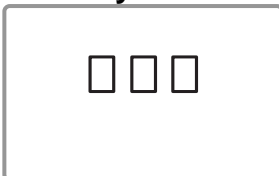
• Paper Feed Button



To manually feed the paper, press 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 (Green)



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

• Error LED (Red)



1. If the red LED is lit, the media cover is open.
2. If the red LED is blinking, either the paper is out or the print head is overheated. (Replace the roll of paper or turn off the printer for at least 10 minutes.)
3. If the red LED continues to blink, it may indicate a more serious problem with the product. Call your authorized service dealer.

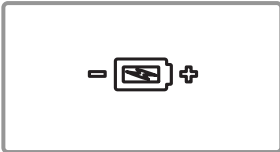
• Bluetooth LED (Blue)



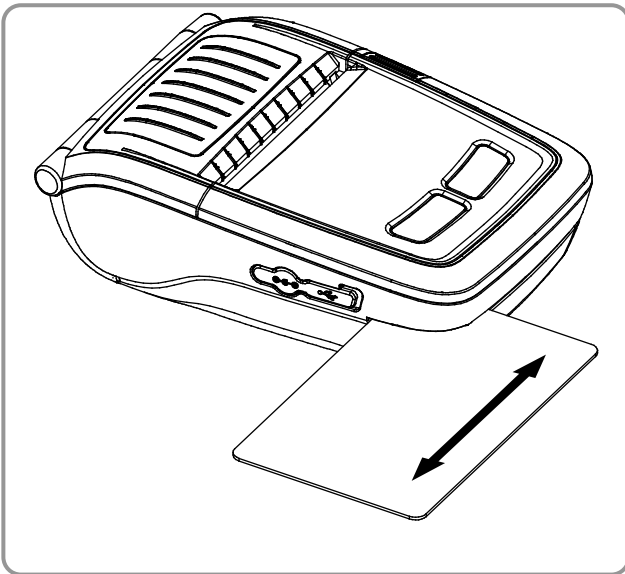
1. If the blue LED is lit, Bluetooth is connected.
2. If the blue LED is blinking rapidly, data is transmitting between the printer and another device.

• WIFI (Green, Yellow or Red)

1. Infrastructure mode
 - a. If the LED is off, the radio has not been found.
 - b. If the LED is blinking red, signal association.
 - c. If the LED is blinking yellow, signal authentication.
 - d. If the LED is solid green, strong signal.
 - e. If the LED is blinking green, weak signal.
 - f. If the LED is solid red, WLAN Fault (authentication error).
2. Adhoc / WiFi Direct mode
 - Regardless of signal power, green LED is always blinking.

• Power Save Mode (White)

During Power Save mode, the white LED slowly alternates between bright and dim. The other LEDs are off.

2-9 MSR Usage

1. Insert the card as shown and swipe in either direction (see the arrow).

**NOTE**

If the card does not register, insert the card and swipe it again.

2-10 Self-Test

Detailed setting of printer is able to be checked by performing self-test.

• Self-Test Instructions

1. Turn off the printer power and close the media cover.
2. Press and hold the paper feed button and power button simultaneously to turn on the printer.
3. After printing begins, release the two buttons.
4. To view 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 (For Bluetooth)

Firmware version :
 V01.00 STDa 010114
 Butter Capacity : 64K Bytes
 USB 2.0 Interface
 Print Density : 100%
 Default Codepage : PC437
 Print Speed : Max. 90mm/s
 Double byte character mode: Off
 Font : 12 x 24
 Paper out Bell : On
 Low Battery Buzzer : On
 Black mark : Off
 Power off time : 15 Min
 Idle mode time : 240 Sec
 MSR data including sentinel
 Character mode : Dynamic(Encrypt)
 MSR read mode : Auto TRACK1/2/3
 BATT NTC : OK

Memory switch setup status

Memory S/W1 ON OFF	1 2 3 4 5 6 7 8	Memory S/W2 ON OFF	1 2 3 4 5 6 7 8
Memory S/W3 ON OFF	1 2 3 4 5 6 7 8	Memory S/W4 ON OFF	1 2 3 4 5 6 7 8
Memory S/W5 ON OFF	1 2 3 4 5 6 7 8	Memory S/W6 ON OFF	1 2 3 4 5 6 7 8
Memory S/W7 ON OFF	1 2 3 4 5 6 7 8	Memory S/W8 ON OFF	1 2 3 4 5 6 7 8

RF Interface
 Bluetooth Firmware version :
 1.0.4
 Bluetooth BD address :

 74F07D205A9D
 - Auth. & Encry. are enable
 - Connection Mode = 2
 Not available WLAN





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;:<=>?@ABCDEF GHIJ
 ,-./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;:<=>?@ABCDEFGHIJKLMNOPQRSTU VWX

PC437
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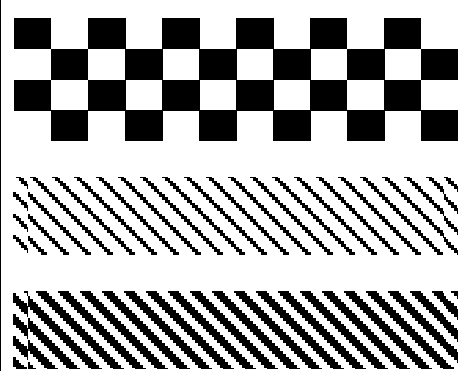
• Self-Test Printout Sample (For Wireless LAN)

Firmware version :
V01.00 STDa 010114
Butter Capacity : 64K Bytes
USB 2.0 Interface
Print Density : 100%
Default Codepage : PC437
Print Speed : Max. 90mm/s
Double byte character mode: Off
Font : 12 x 24
Paper out Bell : On
Low Battery Buzzer : On
Black mark : Off
Power off time : 15 Min
Idle mode time : 240 Sec
MSR data including sentinel
Character mode : Dynamic(Encrypt)
MSR read mode : Auto TRACK1/2/3
BATT NTC : OK

Memory switch setup status

<p>Memory S/W1 1 2 3 4 5 6 7 8 ON ■ ■ ■ ■ ■ ■ ■ ■ OFF ■ ■ ■ ■ ■ ■ ■ ■</p>	<p>Memory S/W2 1 2 3 4 5 6 7 8 ON ■ ■ ■ ■ ■ ■ ■ ■ OFF ■ ■ ■ ■ ■ ■ ■ ■</p>
<p>Memory S/W3 1 2 3 4 5 6 7 8 ON ■ ■ ■ ■ ■ ■ ■ ■ OFF ■ ■ ■ ■ ■ ■ ■ ■</p>	<p>Memory S/W4 1 2 3 4 5 6 7 8 ON ■ ■ ■ ■ ■ ■ ■ ■ OFF ■ ■ ■ ■ ■ ■ ■ ■</p>
<p>Memory S/W5 1 2 3 4 5 6 7 8 ON ■ ■ ■ ■ ■ ■ ■ ■ OFF ■ ■ ■ ■ ■ ■ ■ ■</p>	<p>Memory S/W6 1 2 3 4 5 6 7 8 ON ■ ■ ■ ■ ■ ■ ■ ■ OFF ■ ■ ■ ■ ■ ■ ■ ■</p>
<p>Memory S/W7 1 2 3 4 5 6 7 8 ON ■ ■ ■ ■ ■ ■ ■ ■ OFF ■ ■ ■ ■ ■ ■ ■ ■</p>	<p>Memory S/W8 1 2 3 4 5 6 7 8 ON ■ ■ ■ ■ ■ ■ ■ ■ OFF ■ ■ ■ ■ ■ ■ ■ ■</p>

RF Interface
Not available Bluetooth
WLAN firmware version :
Ver 2.1
System Name : ZQ110
Network Mode : INFRASTRUCTURE
Authentication : Open
Encryption : None
ESSID : 125
DHCP : Enabled
IP : 192.168.1.2
Netmask : 255.255.255.0
Gateway : 192.168.1.1
Port : 6101
HTTPS : Disabled
Telnet : Disabled
FTP : Disabled
SNMP : Disabled
WLAN MAC address :

cc 7 a 3 0 0 2 0 5 1 7



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:;<=>?@ABCDEF
)()*+,-./0123456789:;<=>?@ABCDEF
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+,-./0123456789:;<=>?@ABCDEF
,-./0123456789:;<=>?@ABCDEF
./0123456789:;<=>?@ABCDEF
/0123456789:;<=>?@ABCDEF
0123456789:;<=>?@ABCDEF
123456789:;<=>?@ABCDEF
23456789:;<=>?@ABCDEF
3456789:;<=>?@ABCDEF
456789:;<=>?@ABCDEF
56789:;<=>?@ABCDEF
6789:;<=>?@ABCDEF
789:;<=>?@ABCDEF
89:;<=>?@ABCDEF
9:;<=>?@ABCDEF

PC437
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2-11 Hexadecimal dumping

This feature allows experienced users to see exactly what data is coming to the printer. This can be useful in finding software problems. When you turn on the hexadecimal dump function, the printer prints all commands and data in hexadecimal format along with a guide section to help you find specific commands.

2-11-1 Hexa-Decimal Dump Instructions

- 1) Turn the printer power off and open the printer media 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) If press Feed button three times, then hexa-decimal dump mode is terminated.

2-11-2 Hexa-Decimal Dump Sample

Hexadecimal Dump

To change WLAN setting values factory default
press POWER button three times!!

To terminate hexadecimal dump
Press FEED button three times!!

If send data 'ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz' to printer,
Then printing is below.

```
0000: 41 42 43 44 - 45 46 47 48
0008: 49 4A 4B 4C - 4D 4E 4F 50
0010: 51 52 53 54 - 55 56 57 58
0018: 59 5A 0D 0A - 61 62 63 64
0020: 65 66 67 68 - 69 6A 6B 6C
0028: 6D 6E 6F 70 - 71 72 73 74
0030: 75 76 77 78 - 79 7A 0D 0A
```

2-12 iOS MFi Mode Setting (Optional)

This product supports Made for iOS (MFi) mode which enables Bluetooth communication with iOS devices.

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

1. Turn on the printer.
2. Open the media cover.
3. Press and hold the power button and paper feed button for more than two seconds.
4. Close the cover when you hear a beep.
5. Reboot the printer when the following message is printed:
 - iOS mode enable!!
 - Please Reboot Printer!!
6. To disable MFi mode, repeat the above procedure.

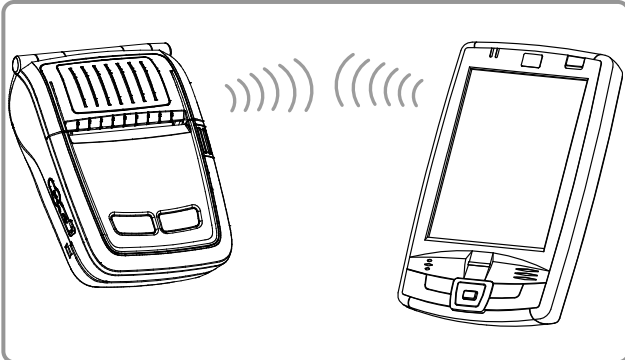
- **Check iOS mode:**

1. Execute a self-test.
2. If the printed firmware version contains a lowercase "a" (for example: V01.00 STDa), iOS mode is disabled.
3. If the printed firmware version contains a lowercase "i" (for example: V01.00 STDi), iOS mode is enabled.

2-13 Peripherals Connection

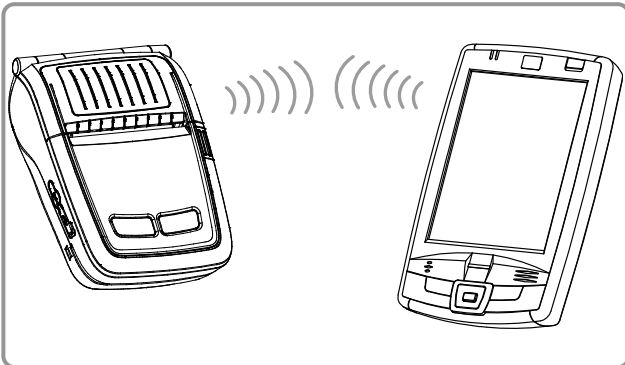
This product can communicate with other devices via Bluetooth communication and cable.

2-13-1 Bluetooth® Connection



1. The printer can connect to devices equipped with Bluetooth communication capability. Make sure your printer is on and discoverable.
2. Use the Bluetooth connection function supported by the device to connect to the printer.

2-13-2 Wireless LAN Connection

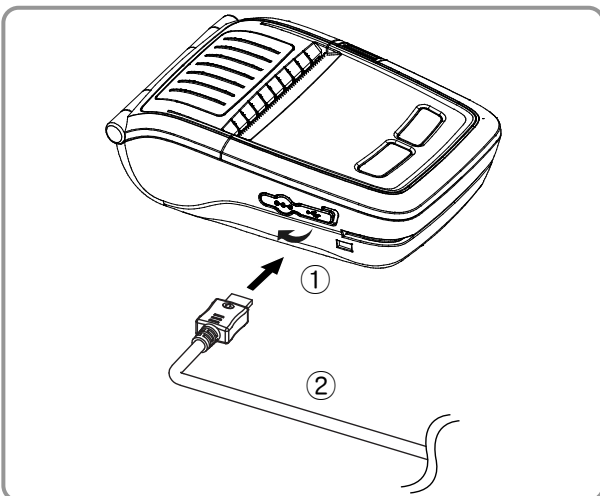


1. This printer supports WLAN communication in Ad-hoc mode and Infrastructure mode (AP). The printer can be connected to other devices such as PDAs and PC's supporting wireless LAN communication in Ad Hoc mode, AP in Infrastructure mode and WiFi Direct mode.

 **NOTE**

Refer to the Bluetooth/WLAN Manual for more specific information about.

2-13-3 Interface Cable Connection



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

 **NOTE**

Use only the USB cables (optional) provided by Zebra.

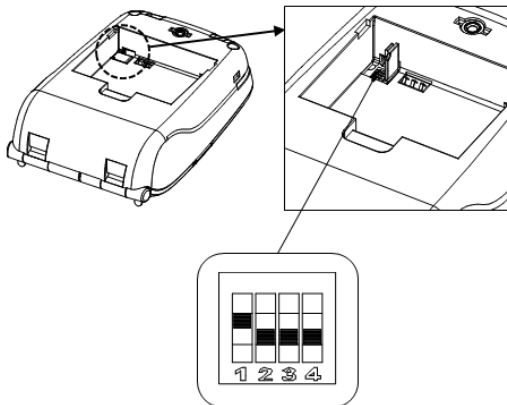
3. Connect the interface cable to the USB port of the device (PDAs, PCs, etc.).

 **NOTE**

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

2-14 HW Memory switch control

2-14-1 Emergency download



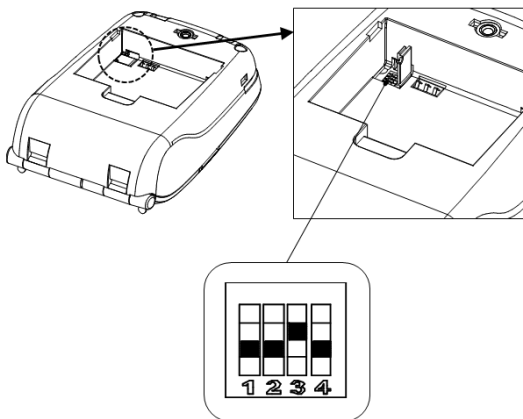
1. Only in case that firmware download is not available on Zebra Firmware Downloader, Zebra USB Emergency Tool is necessary.
2. Change to Emergency mode after adjusting printer dip switch no.1



NOTE

Refer to the USB Emergency Download Manual

2-14-2 EM220II Compatibility mode



1. EM220II user is possible to replace the printer without changing the system environment.
2. Change to EM220II Compatibility mode after adjusting printer dip switch no.3

3. Product Specifications

3-1 General Specifications

Item		Description	
Printing	Printing Method	Thermal printing	
	Print Speed	90 mm/sec (Receipt Paper), 60 mm/sec (Linerless Paper)	
	Resolution	203 DPI	
	Paper Supply Mode	Easy paper loading	
	Character Size	Font A: 12 x 24 Font B: 9 x 17 Font C: 9 x 24	
	Characters Per Line	Font A: 32 Font B/C: 42	
	Character Set	English: 95 Expanded Graphics: 128 x 33 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, DATAMATRIX, QR Code, GS1 DataBar, Aztec (optional)	
	Driver	Windows XP(32/64bit) / WEPOS / 2003 Server(32/64bit) / VISTA(32/64bit) / 2008 Server(32/64bit) / 7(32/64bit) / 8(32/64bit)	
	SDK	Windows XP / WEPOS / 2003 Server / VISTA / 2008 Server / 7 / 8 / CE 3.0 and later	
	Sensor	Paper End, Media Cover Open	
Cutter Type	Tear-Bar		
Language	User language supported		
Paper	Paper Shape	Receipt	Linerless
	Paper Type	Thermal Paper	Thermal Paper
	Outer Diameter of Paper Roll	Max. ø30 mm (1.18 in.)	Max. ø30 mm (1.18 in.)
	Width	57.5 ± 0.5 mm (2.26" ± 0.2 in.)	57.5 ± 0.5 mm (2.26" ± 0.2 in.)
	Thickness	0.06 - 0.1 mm (0.0024 in.-0.0040 in.)	0.08 ± 0.008 mm (0.0031in. ± 0.00031in.)
Reliability	Printer	50 km (Receipt Paper), 10 km (Linerless Paper)	
	Battery	Rechargeable up to 500 times	
Communications	Interface	USB, Bluetooth Class2 V3.0 + 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)
AC Adaptor	Output	Voltage: 8.4 VDC Current: 0.8A * Charging current and charging time may depend on the type (option) of charger.	
	Type	Lithium-ion	
Battery	Output	Voltage: 7.4 VDC (Available 8.4-6.8VDC) Capacity: 1200 mAh	
	Charging Time	2.5 hours	
Usage Conditions	Temperature	Printer: -15-50 °C (5-122 °F) Battery: 0-40 °C (32-104 °F) Battery discharge: -20-60 °C (-4-140 °F)	
	Humidity	Printer: 10-80% RH (No condensation) Battery: 20-70% RH (Non-condensing, refer to the temperature conditions on page 8)	
Dimensions	Printer	80.1mm x 118.8mm x 37.7mm (3.15 in. x 4.68 in. x 1.48 in.)	
Weight	Printer	Printer : 190g (0.42 lbs), Printer + Battery : 242g (0.53 lbs) Printer + Battery + Paper : 273g (0.60 lbs) Package: approx. 670g (1.5 lbs)	
Accessories	Basic Package	Battery Standard, AC Adaptor, Belt Clip, Paper, Power Cord	
	Sold Separately	Battery with outer contacts, Protective Case, Shoulder Strap, Belt Strap, Vehicle Holder, USB Cable, Cigarette Lighter Adaptor, Quad Docking Cradle, Quad Battery Charger, Single battery Charger, Single Docking Cradle, Adaptor for Quad Battery Charger/Docking Cradle	

 **NOTE**

Printer specifications are subject to change without notice.

3-2 Printer Specifications

3-2-1 Product Configurator – ZQ series

Product Configurator - ZQ series

	Z	Q	1	-	0	x	x	x	x	0	x	0	-	0	0
--	----------	----------	----------	---	---	---	---	---	---	---	---	---	---	---	---

Series: _____

CHARACTER SET

English / Latin1,9, Thai, Cyrillic, Arabic, Hebrew.....	U	_____
Chinese GB18030 24x24 (Simplified).....	D	_____
Chinese Big5 24x24 (traditional).....	F	_____
Japanese 24x24	H	_____
Korean 24x24	K	_____

Wireless Option

Bluetooth.....	B	_____
802.11b/g/n.....	G	_____

Card Rader (Choose One)

None	0	_____
3 Track Magnetic Card Reader	1	_____
Smart Card Reader	2	_____

Country Code (Certifications)

Group "0" (US/CA).....	0	_____
Group "E" (EU/IN/RU)..... (EU/EFTA/ZA/RU/IL/EG/TR/UA/UE/JO/LB/SA/HR/RS/BY/KZ/KW/QA/MA)	E	_____
Group "L" (MX/AR/BR/CHILE)..... (MX/AR/BR/CL/CO/CR/GT/HN/NI/PE/VE/SV/PA)	L	_____
Group "A" (TW/ID/IN/KR/MY/AU/NZ/LK/JP).....	A	_____
Group "B" (CN/SG/HK/TH/PH/VN).....	B	_____

POWER CORD OPTIONS (Choose one)

US.....	1	_____
EU.....	2	_____
Australia.....	3	_____
China.....	4	_____
Argentina.....	5	_____
UK.....	6	_____
Korea.....	7	_____
Brazil.....	8	_____
Japan.....	9	_____

Default -00 _____

Customer	<i>This product will not be offered with custom configurations, therefore the last 2 digits will always be 0</i>
Specific Options*: (Enter text)	

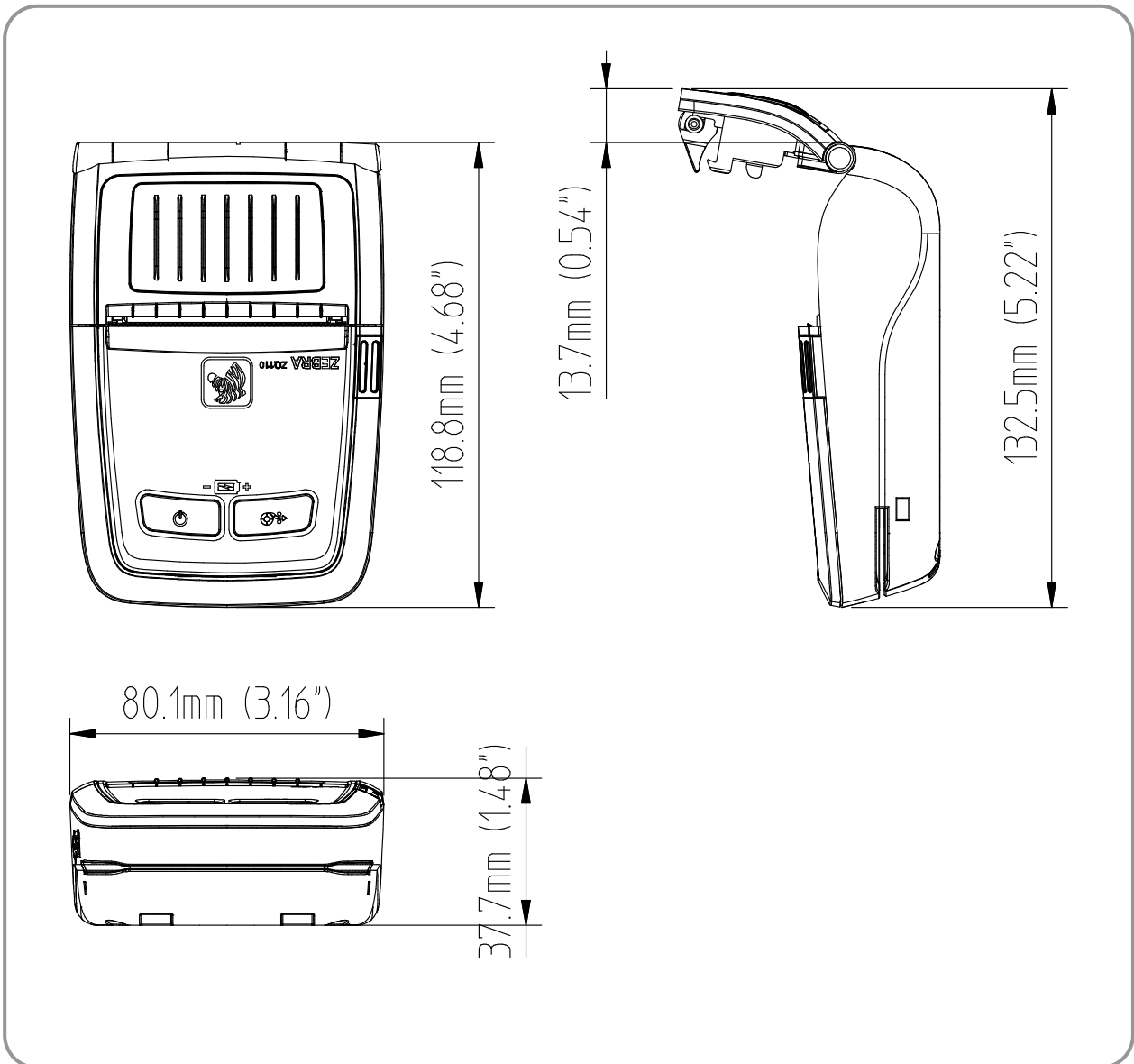
Refer to product's price list for configurations and prices. All trademarks are the property of their respective owners.

SPECIFICATIONS AND PRICES SUBJECT TO CHANGE WITHOUT NOTICE F.O.B.

* - Additional Charge

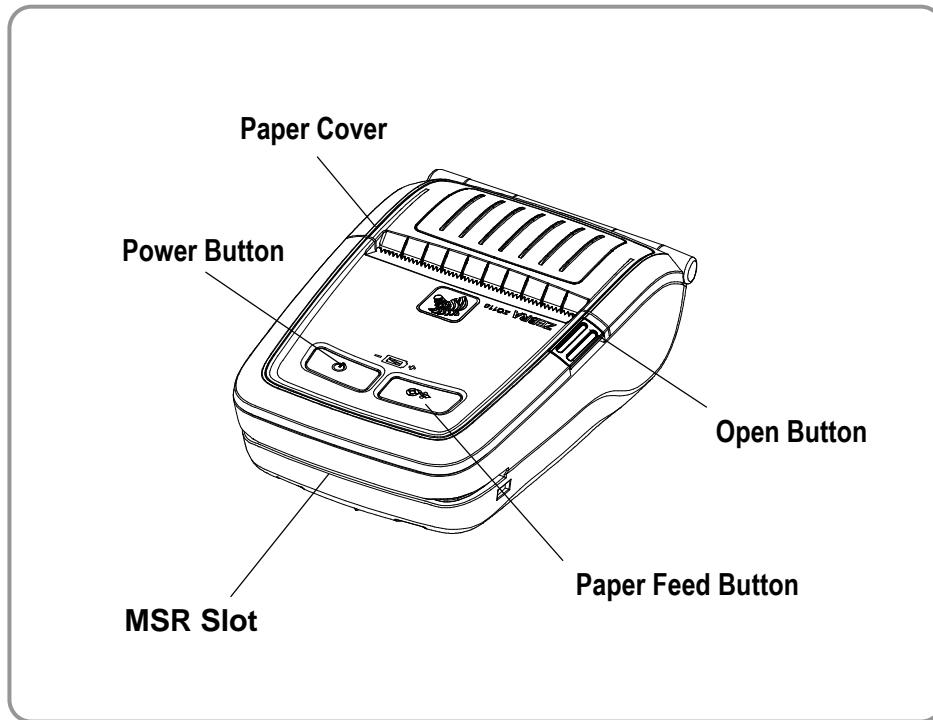
3-2-2 Printer Appearance

3-2-2-1 Printer Dimensions (mm)

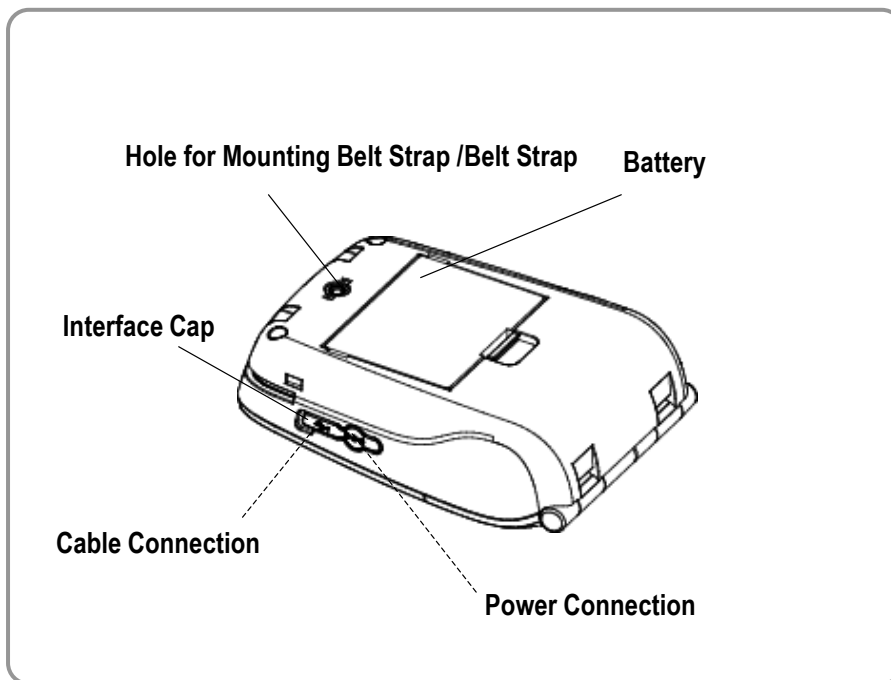


3-2-2-2 Feature Locations

1) Front



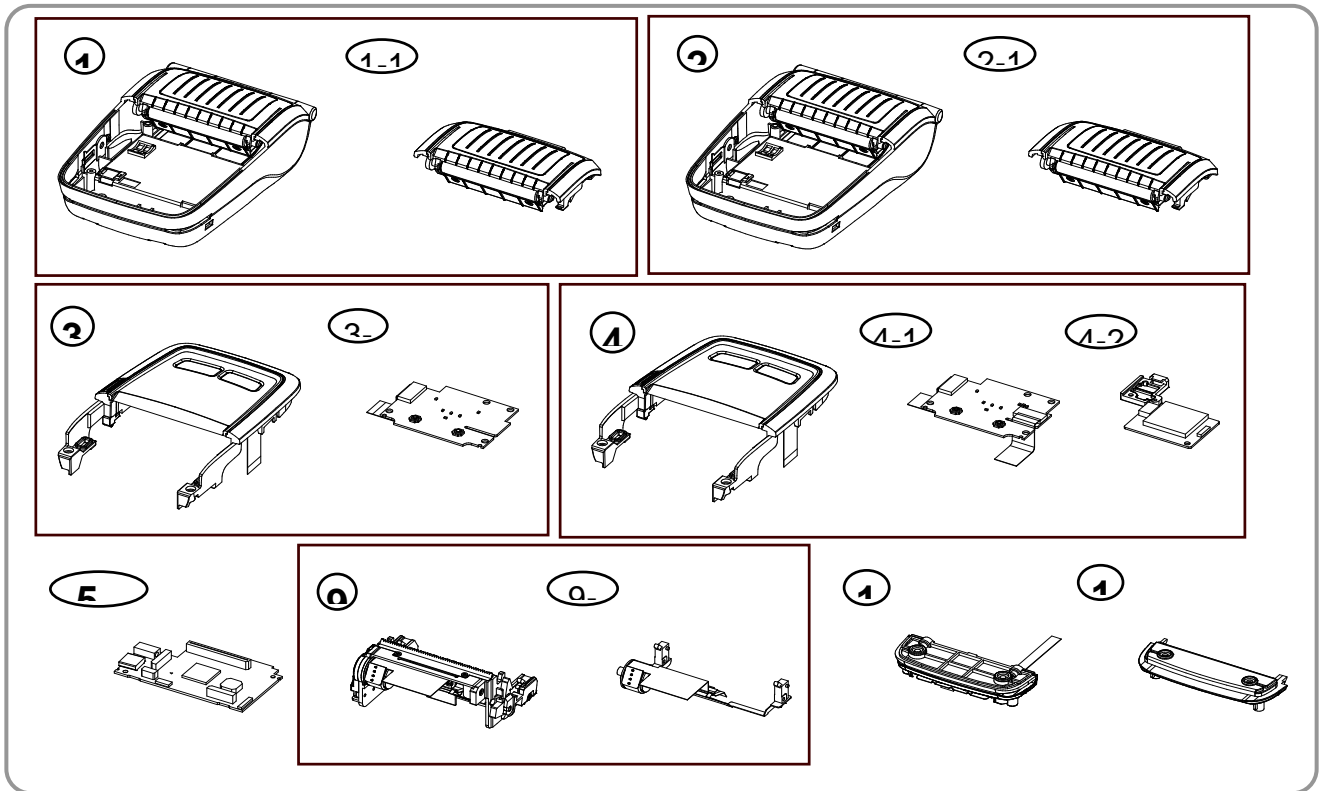
2) Rear



3-2-3 Other Component Specifications

	Item	Description
TPH	Heat element structure	2 heaters/dot
	Number of heat elements	384 dots
	Heat element pitch	8.0 dots/mm (0.125 mm pitch)
	Print width	48 ± 0.2 mm
	Average resistance value (R_{ave})	176Ω ± 4 %
Motor	Voltage	7.0 VDC(Standard Operating)
	Phase	2 Phase
	Exciting method	1-2 Phase (Bipolar – Constant V)
	Exciting mode	Bipolar
	Step angle	18° (2-2 Phase)
	Rotation	CW/CCW (Bi-direction)
	Inductance	3.37 mH ± 25 %
MSR head	DC resistance	140 Ω ± 25 %
	Inductance	28 mH ± 30 %
	Head Life	500,000 Min
Bluetooth module	Bluetooth Specification	Version 3.0 +EDR
	Frequency	2400 ~ 2483.5 MHz
	Output Transmit Power	0~4 dBm
	Operating Voltage	3.0 ~ 3.6 V
	Package Size	11 x 11 x 1.56 mm
	Flash Memory	8 Mbit
	Interface	UART

3-3 Service Parts List

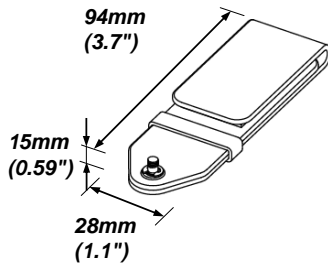


No.	Model name	Description	Remark
1		KIT ZQ110 LWR HSG ASSY NO CTG	
1-1		KIT ZQ110 MEDIA CVR ASSY NO CTG	
2		KIT ZQ110 LWR HSG ASSY CTG	
2-1		KIT ZQ110 MEDIA CVR ASSY CTG	
3		KIT ZQ110 UPR CVR ASSY NO WLAN	
3-1		KIT ZQ110 PCB CONR NO WLAN_FFC ASSY	
4		KIT ZQ110 UPR CVR ASSY WLAN	
4-1		KIT ZQ110 PCB CONR WLAN_FFC ASSY	
4-2		KIT ZQ110 MDLE WLAN_HLDR WLAN ASSY	
5		KIT ZQ110 "iK" MAIN PCB ASSY - MFi B/T	
6		KIT ZQ110 "WK" MAIN PCB ASSY - Wifi	
7		KIT ZQ110 "iKM" MAIN PCB ASSY - MFi B/T & MSR	
8		KIT ZQ110 "WKM" MAIN PCB ASSY - Wifi & MSR	
9		KIT ZQ110 PRINT MECHA ASSY	
9-1		KIT ZQ110 MOTOR ASSY	
10		KIT ZQ110 MAG CARD REDR ASSY	
11		KIT ZQ110 CVR FRT ASSY	

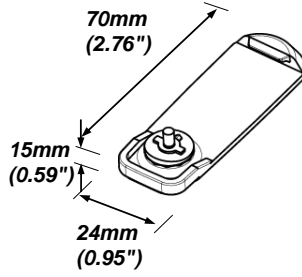
3-4 Accessories Specifications**3-4-1 Accessories List**

No.	Model name	Description	Remark
1	P1070125-037	Belt Strap	
2	P1070125-027	Belt Clip	
3	P1070125-035	Shoulder Strap	
4	P1070125-008	Battery Standard	
5	P1070125-007	Battery with outer contacts	
6	P1070125-028	AC Adaptor	
7	P1070125-018	US Cord	
8	P1070125-019	EU Cord	
9	P1070125-020	Australia Cord	
10	P1070125-021	China Cord	
11	P1070125-022	Argentina Cord	
12	P1070125-023	UK Cord	
13	P1070125-024	Korea Cord	
14	P1070125-025	Brazil Cord	
15	P1070125-026	Japan Cord	
16	P1070125-016	Protective Case	
17	P1060264	USB Cable	
18	P1070125-001	Single Battery Charger	
19	P1070125-036	Single Docking Cradle	
20	P1070125-029	Quad Docking Cradle / US cord (with adaptor, cord)	
21	P1070125-030	Quad Docking Cradle / EU cord (with adaptor, cord)	
22	P1070125-031	Quad Docking Cradle / UK-SG cord (with adaptor, cord)	
23	P1070125-032	Quad Docking Cradle / BZ cord (with adaptor, cord)	
24	P1070125-033	Quad Docking Cradle / AU cord (with adaptor, cord)	
25	P1070125-010	Quad Docking Cradle / China cord (with adaptor, cord)	
26	P1070125-011	Quad Docking Cradle / Korea cord (with adaptor, cord)	
27	P1070125-012	Quad Docking Cradle / Japan cord (with adaptor, cord)	
28	P1070125-002	Quad Battery Charger / US cord (with adaptor, cord)	
29	P1070125-003	Quad Battery Charger / EU cord (with adaptor, cord)	
30	P1070125-004	Quad Battery Charger / UK-SG cord (with adaptor, cord)	
31	P1070125-005	Quad Battery Charger / BZ cord (with adaptor, cord)	
32	P1070125-006	Quad Battery Charger / AU cord (with adaptor, cord)	
33	P1070125-013	Quad Battery Charger / China cord (with adaptor, cord)	
34	P1070125-014	Quad Battery Charger / Korea cord (with adaptor, cord)	
35	P1070125-015	Quad Battery Charger / Japan cord (with adaptor, cord)	
36	P1070125-009	Cigarette Lighter Adaptor	
37	P1070125-034	Vehicle Holder	

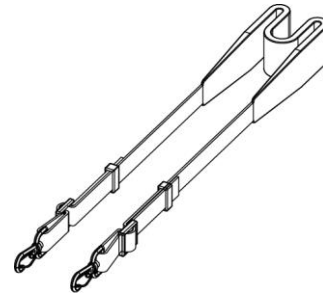
3-4-2 Accessories Appearance



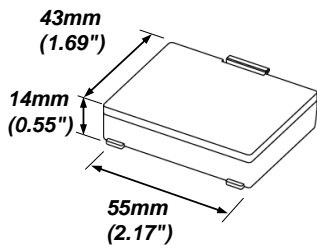
• **Belt Strap**



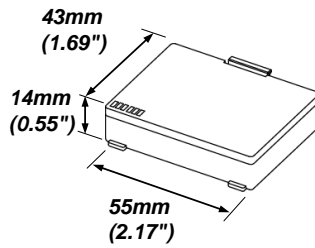
• **Belt Clip**



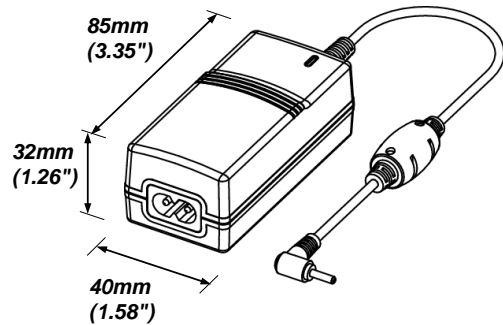
• **Shoulder Strap**



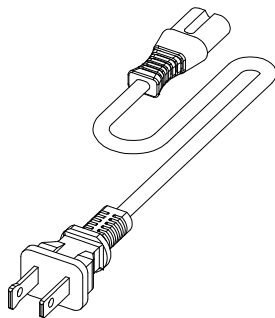
• **Battery Standard**



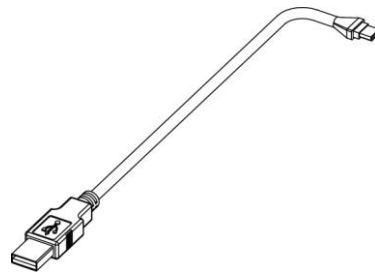
• **Battery with outer contacts**



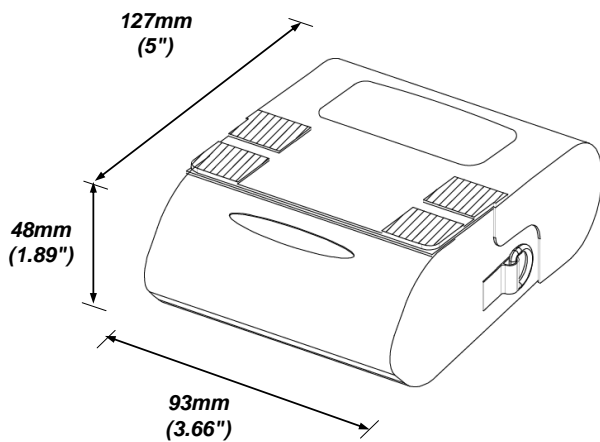
• **AC Adaptor**



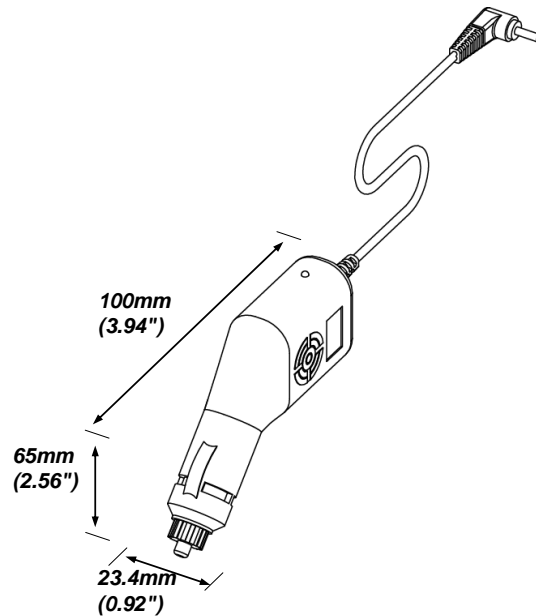
• **Power Cord**



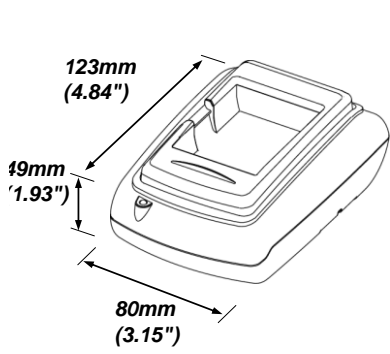
• **USB Cable**



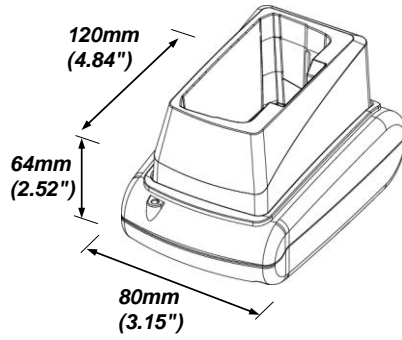
• **Protective Case**



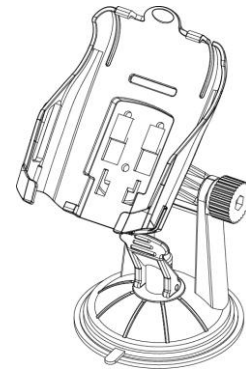
• **Cigarette Lighter Adaptor**



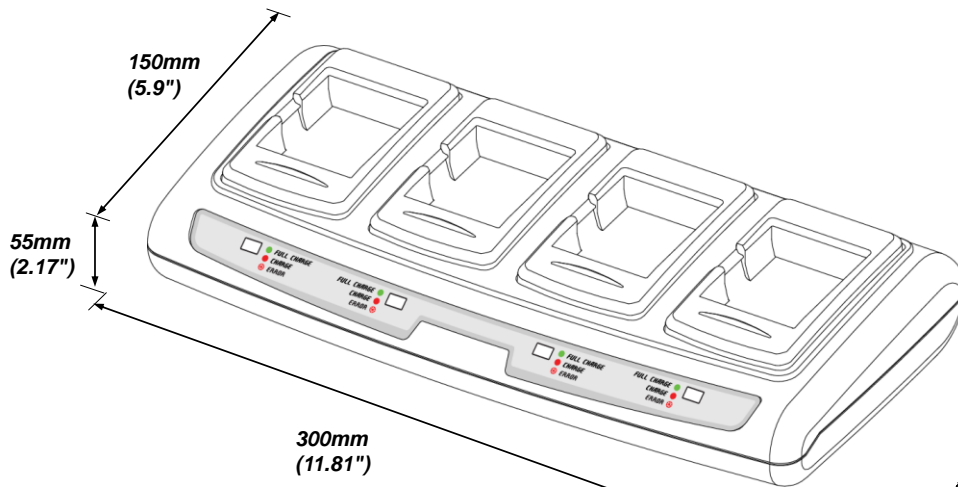
• Single Battery Charger



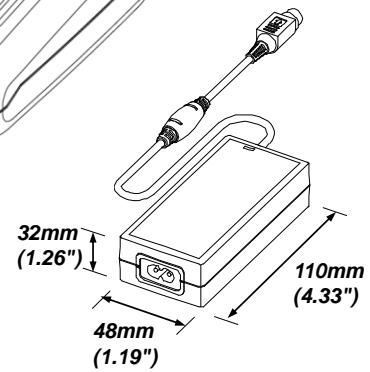
• Single Docking Cradle



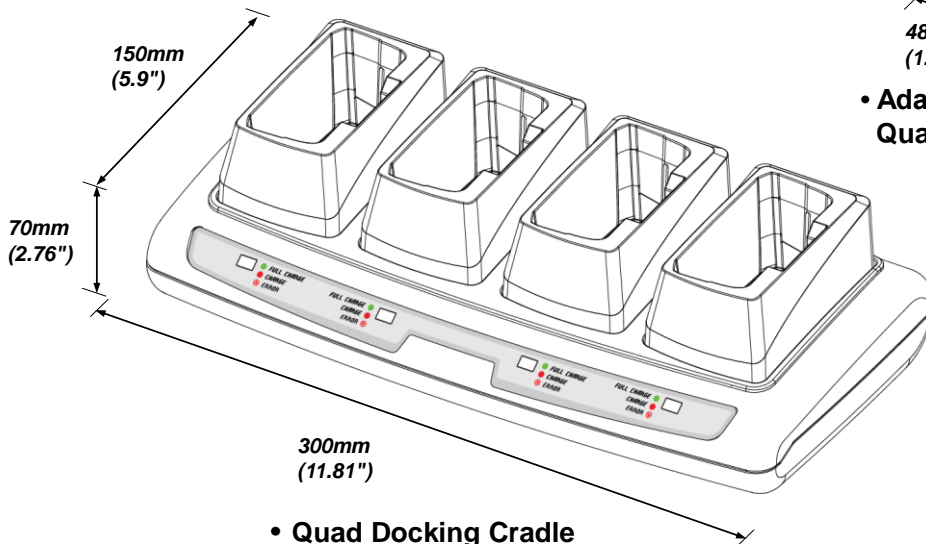
• Vehicle Holder



• Quad Battery Charger



• Adapter for Quad charger/cradle



• Quad Docking Cradle

3-4-3 P1070125-028 AC Adaptor

Item		Description
Input	Voltage	100~250VAC
	Line frequency	50 / 60Hz
	Current	0.5A Max. at 110VAC input
Output	Battery type	Lithium ion 2 cell
	Charging voltage	8.4VDC
	Charging current	0.8A \pm 10%

3-4-4 P1070125-001 Single Battery Cradle / P1070125-036 Single Docking Cradle

Item		Description
Input	Charging voltage	8.4VDC
	Charging current	0.8A \pm 10%
Output	Battery type	Lithium ion 2 cell
	Charging voltage	8.4VDC
	Charging current	0.8A \pm 10%

3-4-5 P1070125-008 Battery Standard / P1070125-007 Battery with outer contacts

Item		Description
Input	Cell type	Lithium-ion
	Charging voltage	8.4VDC
	Charging current	0.8A \pm 10%
	Charging time	2.5 hours
Output	Voltage	7.4VDC (Available 8.4~6.8VDC)
	Capacity	1200 mAh

3-3-6 P1070125 Cigarette Lighter Adaptor

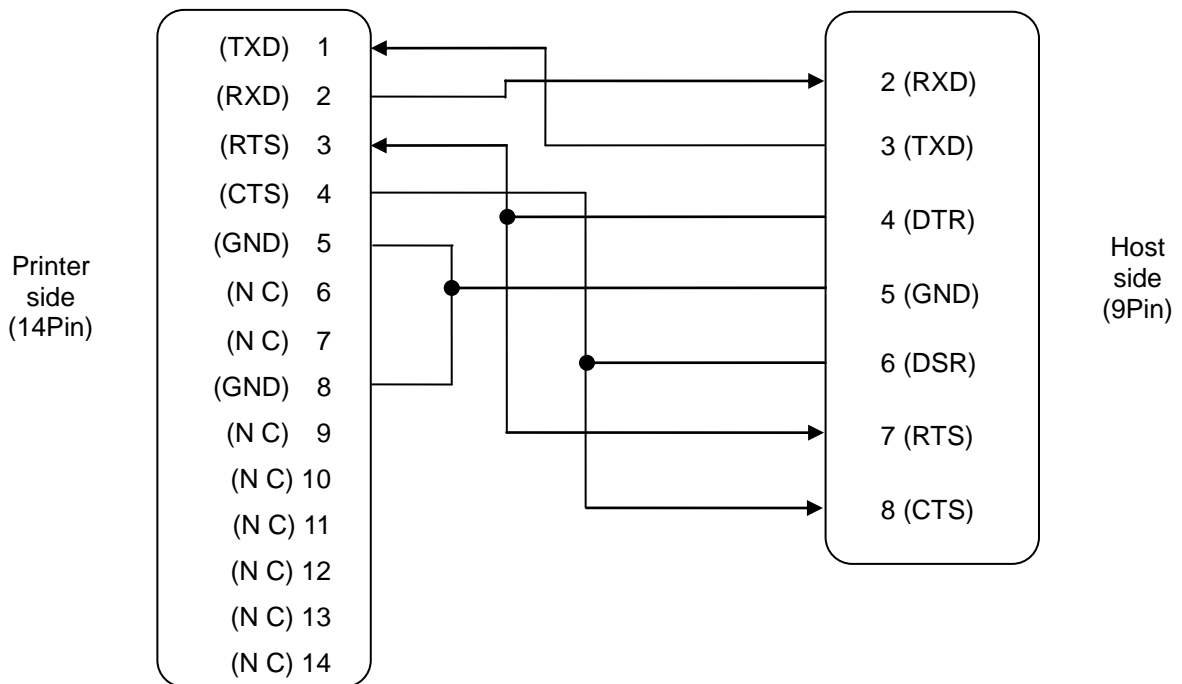
Item		Description
Input	Voltage	12~24VDC (\pm 10%)
	Current	0.7A Max. at 12VDC input
Output	Battery type	Lithium ion 2 cell
	Charging voltage	8.4V
	Charging current	0.8A \pm 10%

3-4-7 P1070125-010,011,012,029,030,031,032,033 Quad Docking Cradle / P1070125-002,003,004,005,006,013,014,015 Quad Battery Charger

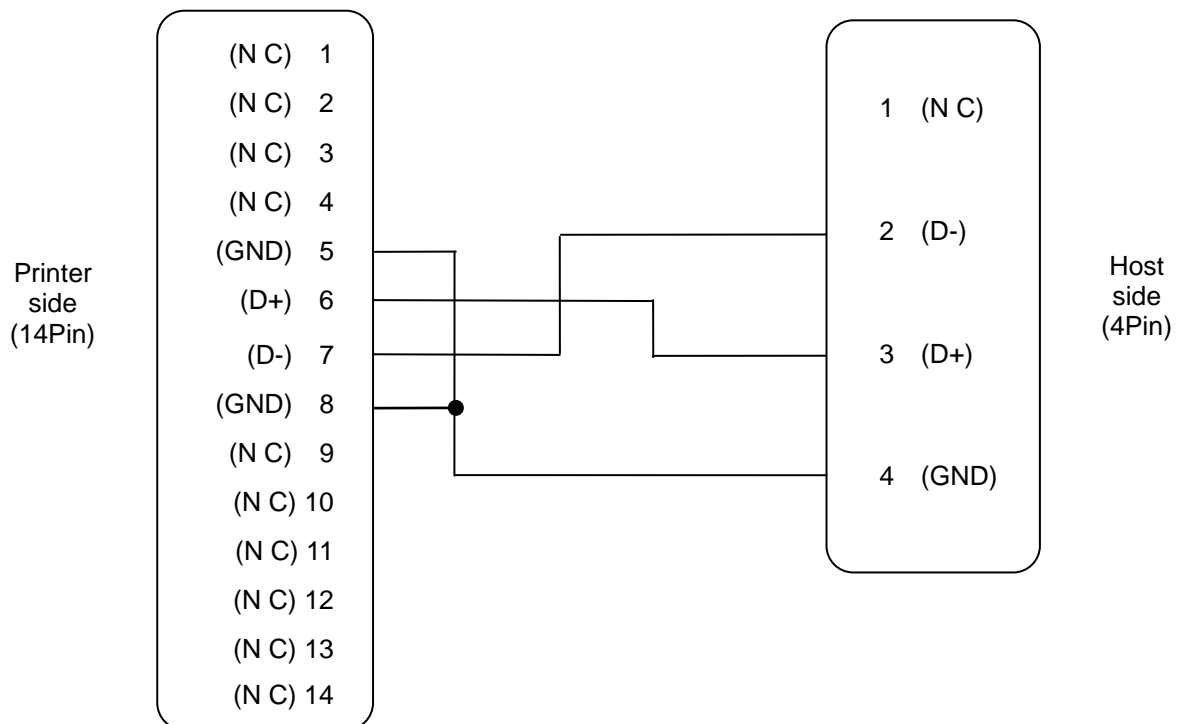
Item		Description
SMPS Input	Voltage	100~240VAC
	Line frequency	50 / 60Hz
	Current	1.0A Max. at 110VAC input
SMPS Output & Quad charger Input	Voltage	12VDC (\pm 10%)
	Current	3A more than 12VDC input
Quad charger output	Charging voltage	8.4V
	Charging current	0.8A \pm 10%

3-4-8 Interface cable for PC

1) P1060263 14 Pin Serial Cable connection for PC



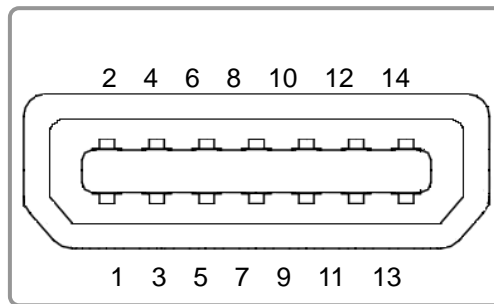
2) P1060264 USB Cable connection for PC



3) Serial / USB signal descriptions

Pin No.	Signal name	Direction	Function
1	TXD	Output	Transmit data
2	RXD	Input	Receive data
3	nRTS	Output	Request to send Set high when printer is ready to accept a command or data
4	nCTS	Input	Clear to send from host
5	GND	-	Ground
6	D +	-	Differential data line
7	D -	-	Differential data line
8	GND	-	Ground
9	INDEX	Input	USB, Serial Cable Detect
11	BT_MOSI	Output	Bluetooth(MOSI)_Engineer Cable
11	BT_CSB	Output	Bluetooth(CSB)_Engineer Cable
12	BT_CLK	Output	Bluetooth(CLK)_Engineer Cable
13	BT_MISO	Input	Bluetooth(MISO)_Engineer Cable
14	VCC 3.3V	Output	External Power Supply

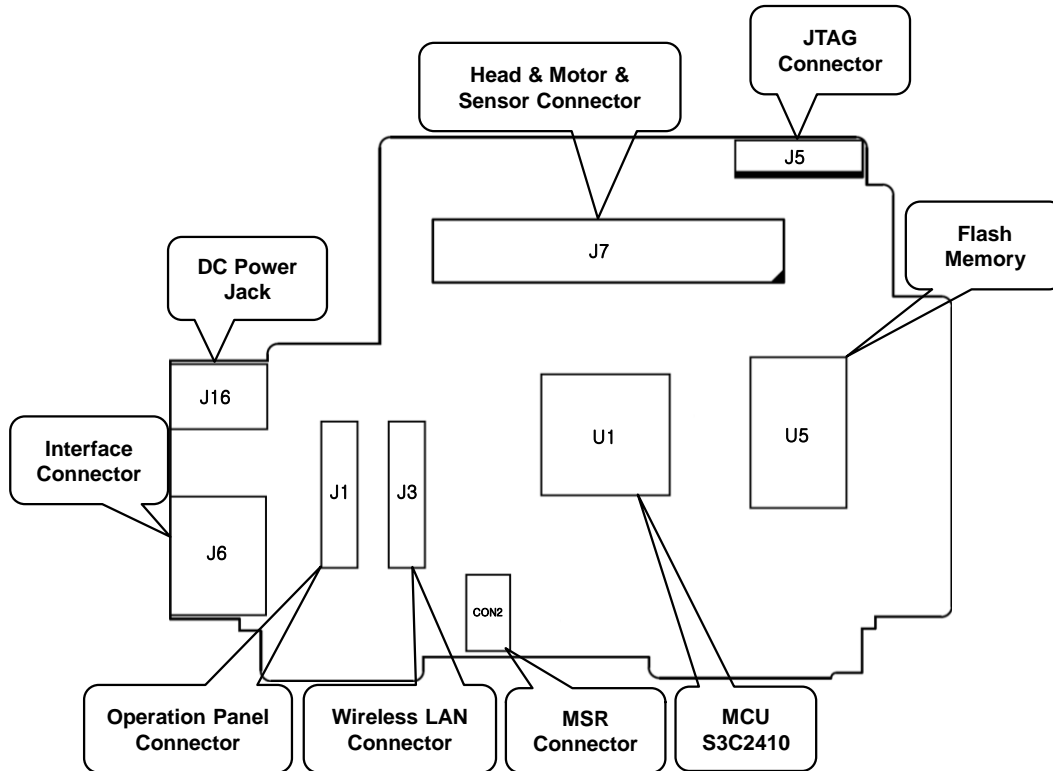
4) Serial / USB output connector



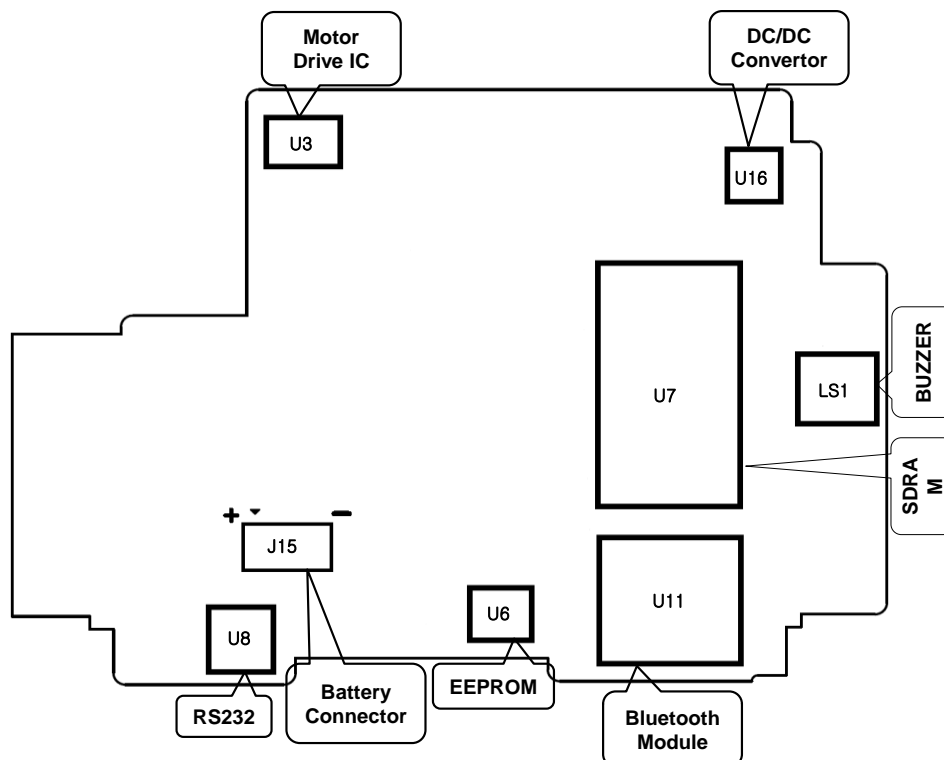
4. Hardware

4-1 Wiring diagram

4-1-1 Main board TOP wiring diagram

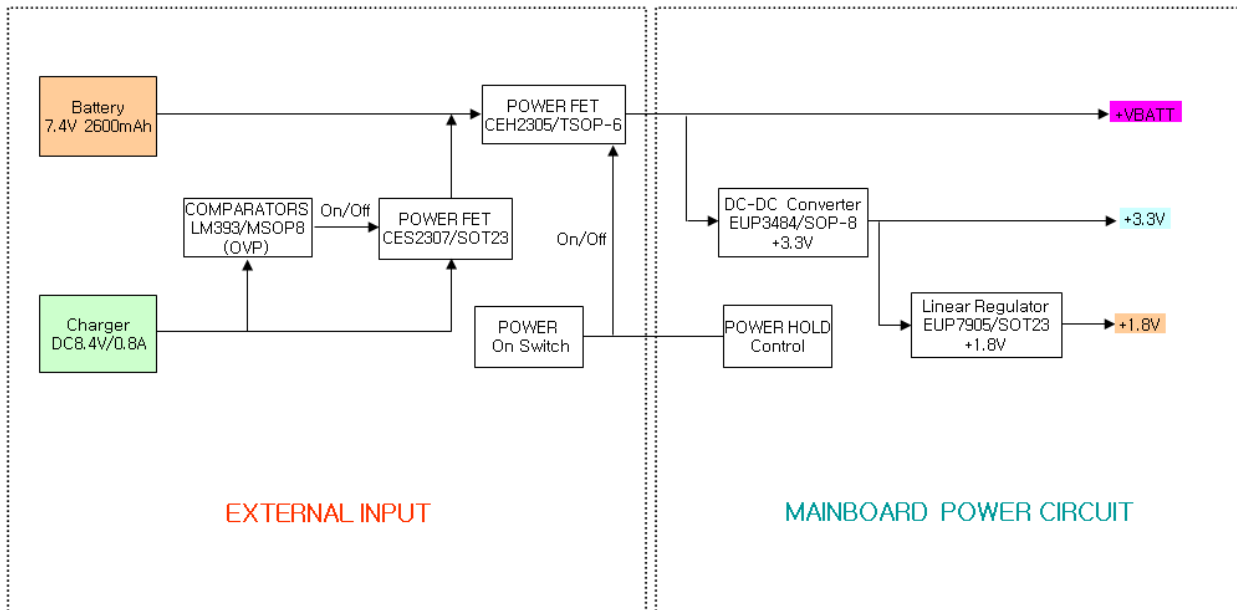


4-1-2 Main board BOTTOM wiring diagram

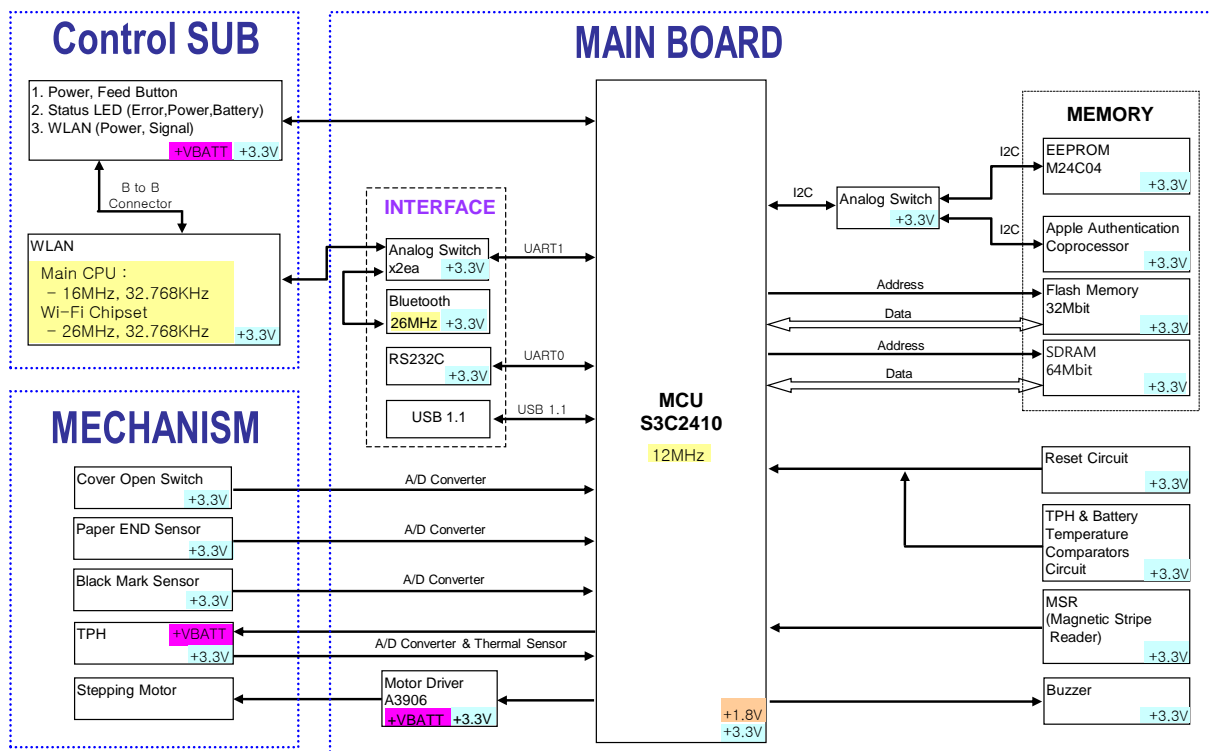


4-2 Block Diagram

4-2-1 Power Block Diagram



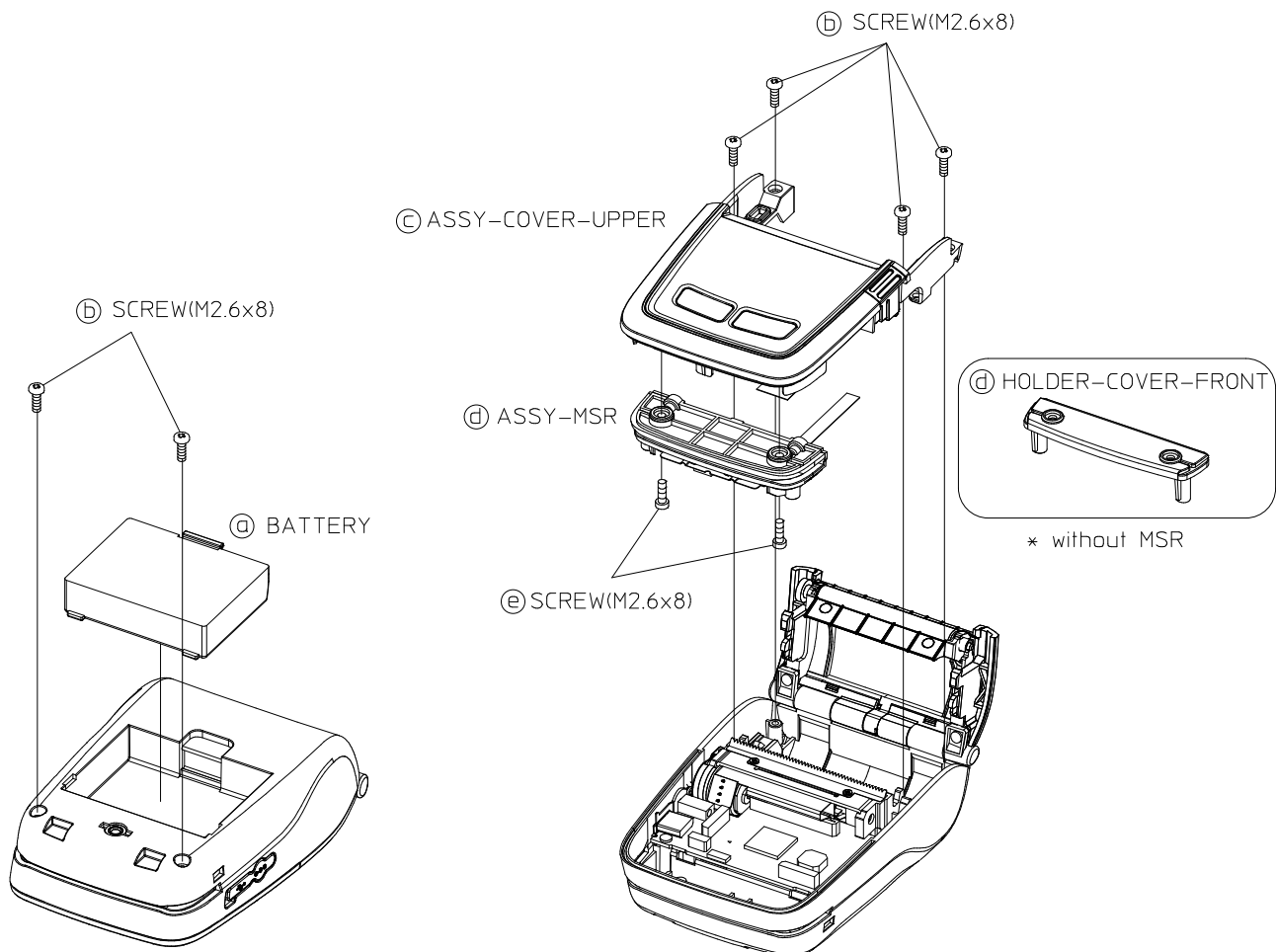
4-2-2 Circuit Block Diagram



5. Disassembly and Exploded view

5-1 Disassembly

5-1-1 BATTERY, ASSY-COVER-UPPER and ASSY-MSR Disassembly

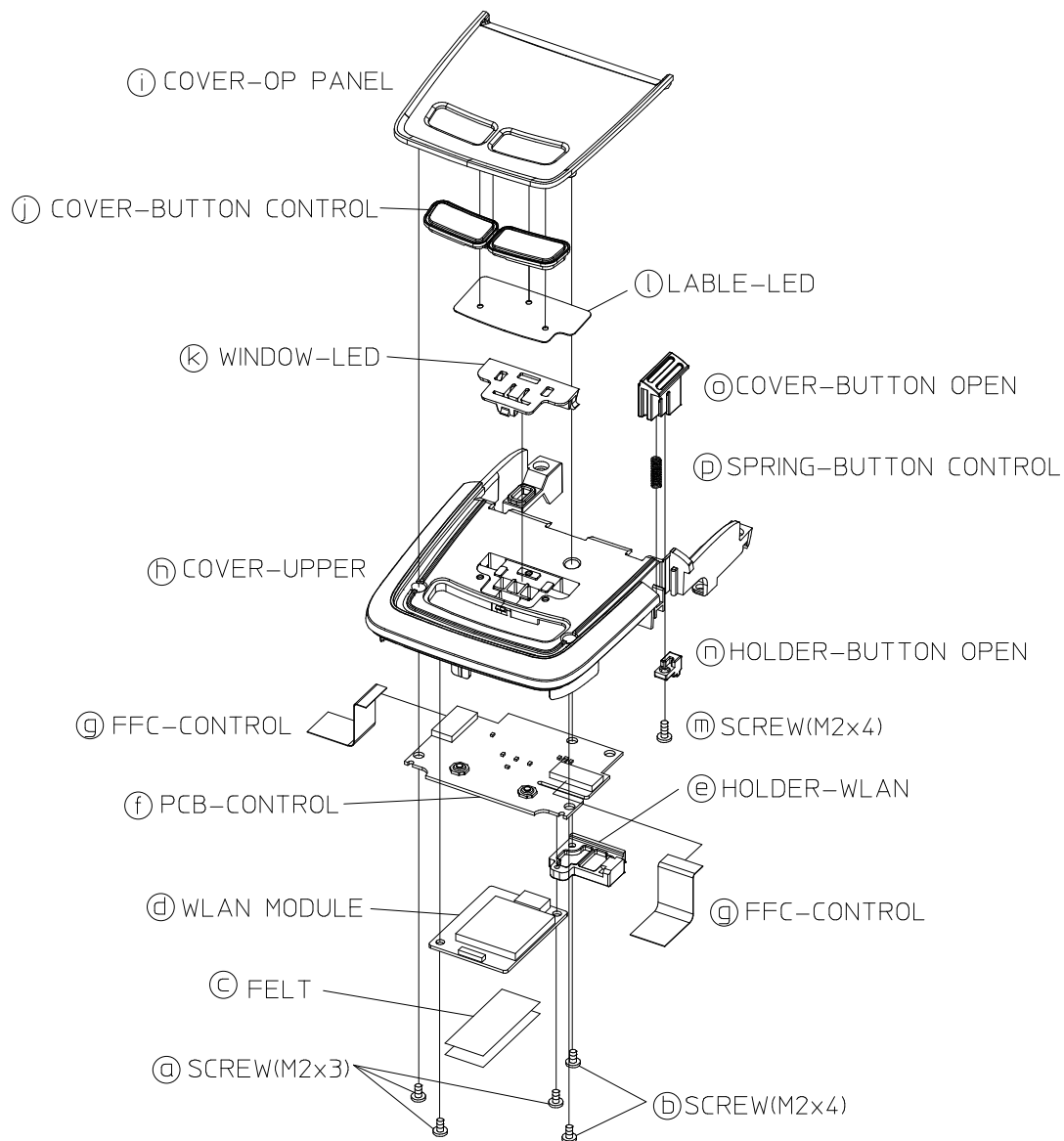


Part name	Disassembly procedure
(a) BATTERY (b) SCREW(M2.6x8) (c) ASSY COVER-UPPER (d) ASSY-MSR (HOLDER-COVER-FRONT) (e) SCREW(M2.6x8)	1) Separate the (a)BATTERY. 2) Remove the six (b)screws(M2.6x8). 3) Separate the (c)ASSY-COVER-UPPER and (d)ASSY-MSR(HOLDER -COVER-FRONT). 4) Remove the two (e)screws(M2.6x8). 5) Separate the (d)ASSY-MSR(HOLDER COVER-FRONT) from the(c)ASSY-COVER-UPPER.

⚠ CAUTION

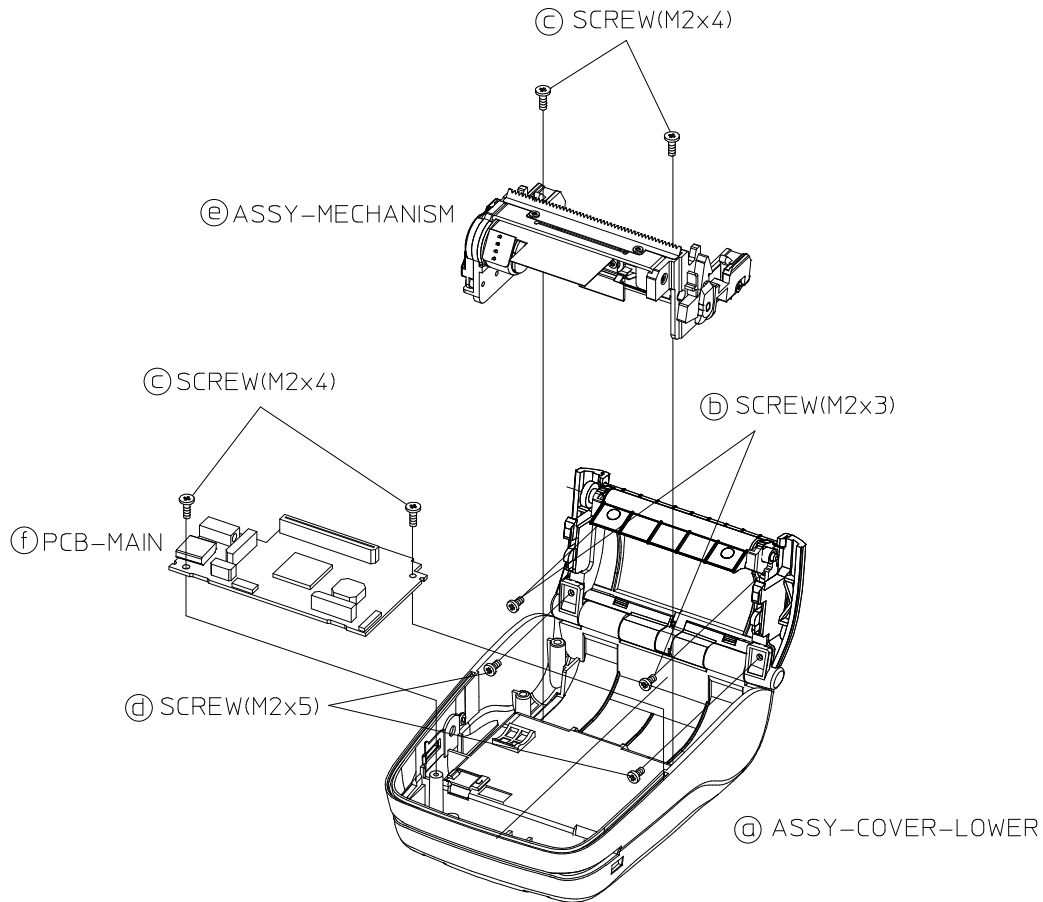
The main PCB and FPC can be damaged severely if you disassemble the printer without removing the battery.

5-1-2 ASSY-COVER-UPPER disassembly



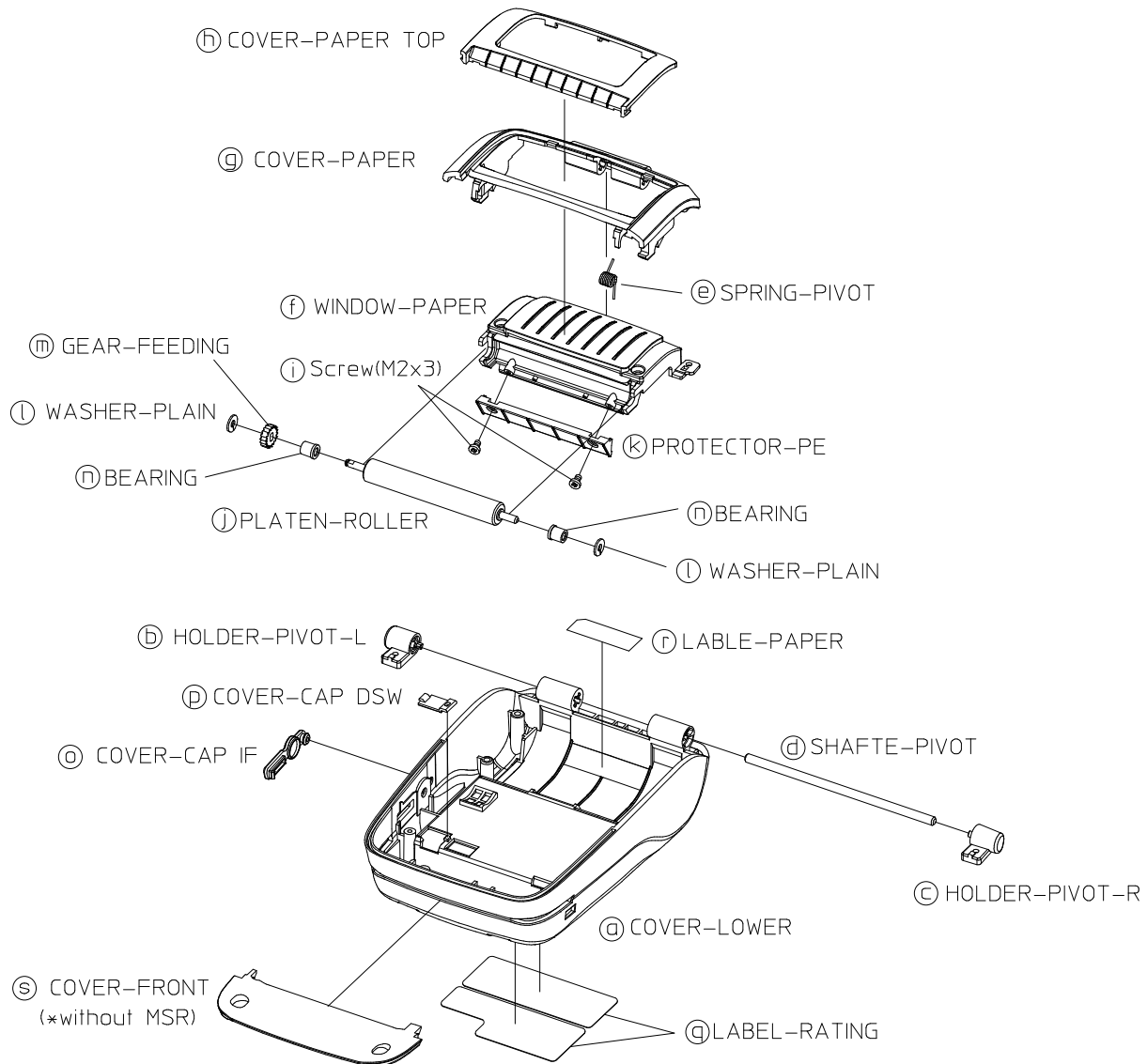
Part name	Disassembly procedure
Ⓐ Screw(M2x3)	<ol style="list-style-type: none"> 1) Remove three Ⓐscrews(M2x3) and two Ⓑscrews(M2x4). 2) Separate the two ⒸFELTs ⒹWLAN MODULE, ⒺHOLDER-WLAN, ⒻPCB-CONTROL from the ⒽCOVER-UPPER. 3) Separate the ⒾCOVER-OP PANEL, ⓁCOVER-BUTTON CONTROL, ⓀWINDOW-LED from the ⒽCOVER-UPPER. 4) Separate the ⓁLABEL-LED from the ⒾCOVER-OP PANEL. 5) Remove a Ⓜscrew(M2x4). 6) Separate the ⓃHOLDER-BUTTON OPEN from the ⓃCOVER-BUTTON OPEN. 7) Separate the ⓄCOVER-BUTTON OPEN and ⓅSPRING-BUTTON OPEN from the ⒽCOVER-UPPER.
Ⓑ Screw(M2x4)	
Ⓒ FELT	
Ⓓ WLAN-MODULE	
Ⓔ HOLDER-WLAN	
Ⓕ PCB-CONTROL	
Ⓖ FFC-CONTROL	
Ⓗ COVER-UPPER	
Ⓘ COVER-OP PANEL	
Ⓛ COVER-BUTTON CONTROL	
Ⓚ WINDOW-LED	
Ⓛ LABEL-LED	
Ⓜ Screw(M2x4)	
Ⓝ HOLDER-BUTTON OPEN	
Ⓞ COVER-BUTTON OPEN	
Ⓟ SPRING-BUTTON OPEN	

5-1-3 Mechanism and PCB-MAIN disassembly



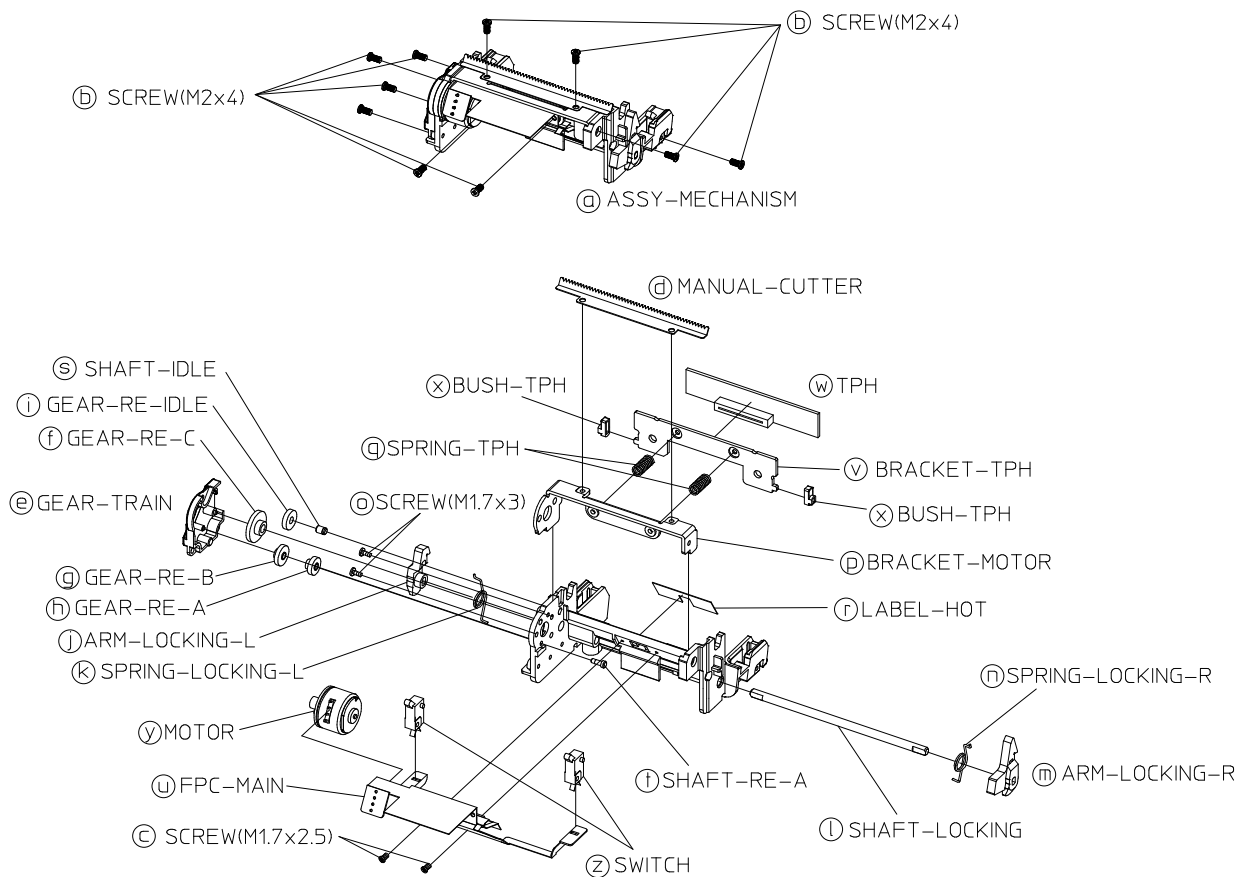
Part name	Disassembly procedure
(a) ASSY-COVER-LOWER (b) Screw(M2x3) (c) Screw(M2x4) (d) Screw(M2x5) (e) ASSY-MECHANISM (f) ASSY-PCB-MAIN	1) Remove eight screws((b)screws(M2x3), (c)screws(M2x4), (d)screws(M2x3)) from (a)ASSY-COVER-LOWER. 2) Separate the (e)ASSY-MECHANISM and (f)ASSY-PCB-MAIN from the (a)ASSY-COVER-LOWER.

5-1-4 ASSY-COVER-LOWER disassembly



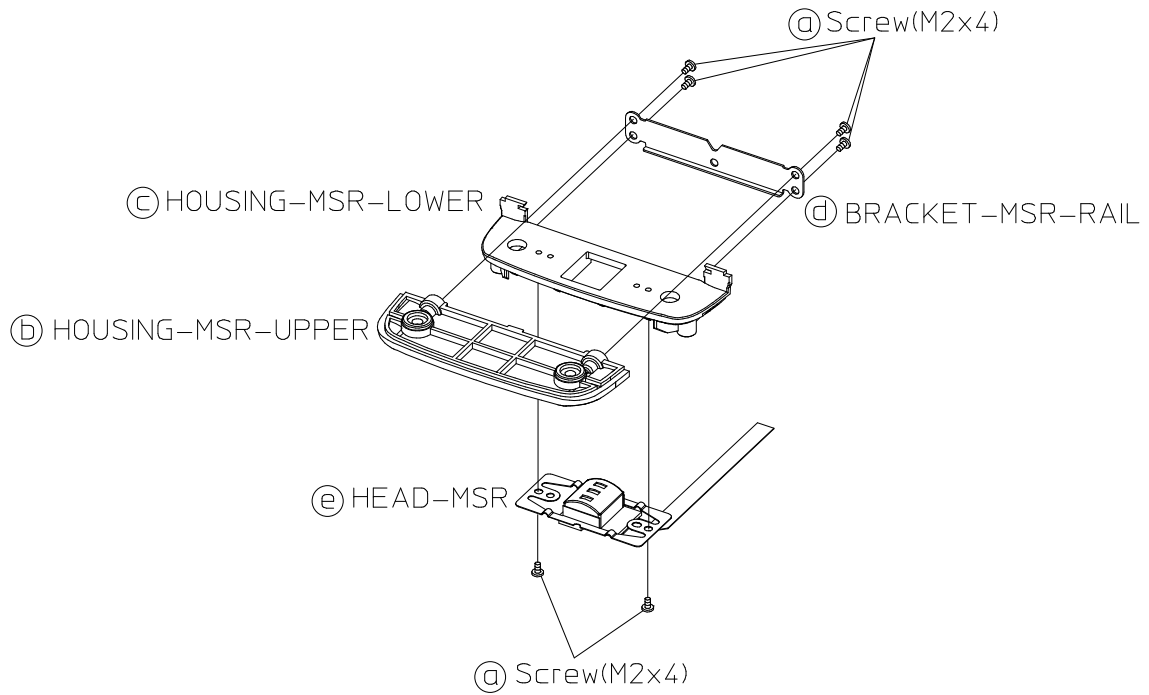
Part name	Disassembly procedure
(a) COVER-LOWER	1) Separate the (b)HOLDER-PIVOT-L, (c)HOLDER-PIVOT-R and (d)SHAFT-PIVOT from (a)COVER-LOWER. 2) Separate the (f)WINDOW-PAPER, (h)COVER-PAPER TOP and (e)SPRING-PIVOT from (g)COVER-PAPER. 3) Remove two (i)screws(M2x3). 4) Separate the (j)PLATEN-ROLLER and (k)PROTECTOR-PE from (f)WINDOW-PAPER. 5) Separate the (l)WASHER-PLAIN, (m)BEARING and (n)GEAR-FEEDING from the (j)PLATEN-ROLLER 6) Separate the (o)COVER-CAP IF and (p)COVER-CAP DSW from the (a)COVER-LOWER. 7) Separate two (q)LABEL-RATING and (r)LABEL-PAPER from the (a)COVER-LOWER.
(b) HOLDER-PIVOT-L	
(c) HOLDER-PIVOT-R	
(d) SHAFT-PIVOT	
(e) SPRING-PIVOT	
(f) WINDOW-PAPER	
(g) COVER-PAPER	
(h) COVER-PAPER TOP	
(i) Screw(M2x3)	* without MSR 8) Separate the COVER-FRONT from the (s)COVER-LOWER.
(j) PLATEN-ROLLER	
(k) PROTECTOR-PE	
(l) WASHER-PLAIN	
(m) BEARING	
(n) GEAR-FEEDING	
(o) COVER-CAP IF	
(p) COVER-CAP DSW	
(q) LABEL-RATING	
(r) LABEL-PAPER	
(s) COVER-FRONT	

5-1-5 Mechanism disassembly



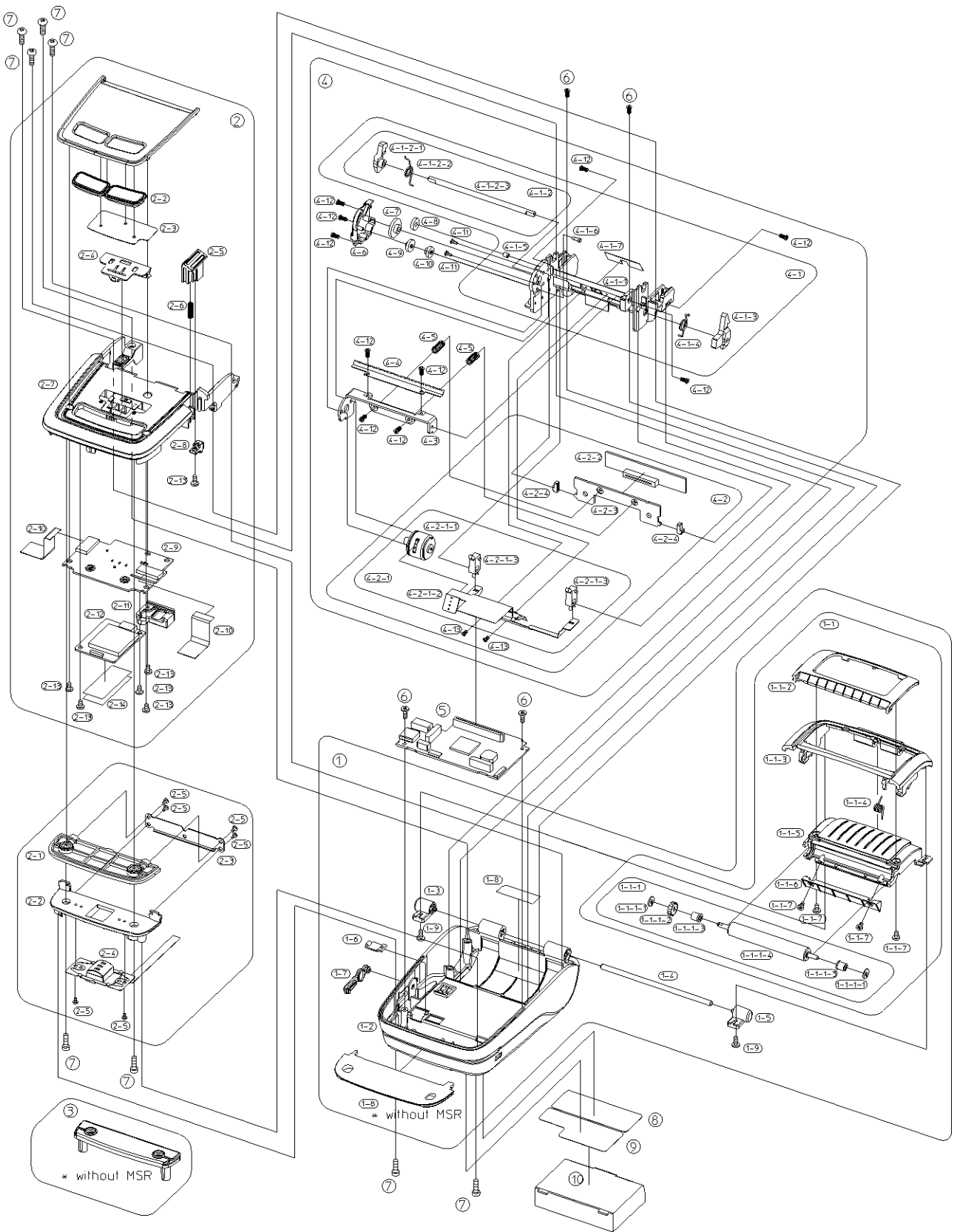
Part name	Disassembly procedure
Ⓐ ASSY-MECHANISM	1) Remove the ten Ⓑ screws(M2x4), the two Ⓑ screws(M1.7x2.5) from the ⒶASSY-MECHANISM.
Ⓑ SCREW(M2x4)	2) Separate the Ⓒ~Ⓥparts from the ⒶASSY-MECHANISM.
Ⓒ SCREW(M1.7x2.5)	3) Separate the ⓂTPH and ⓧBUSH-TPH from the ⓋBRACKET-TPH.
Ⓓ MANUAL-CUTTER	4) Separate the ⓎMOTOR and MCⓧSWITCH from the ⓏFPC-MAIN.
Ⓔ GREA-TRAIN	
Ⓕ GREA-RE-C	
Ⓖ GREA-RE-B	
Ⓗ GREA-RE-A	
Ⓙ GREA-IDLE	
Ⓜ ARM-LOCKING-L	
Ⓚ SPRING-LOCKING-L	
Ⓛ SHAFT-LOCKING	
Ⓜ ARM-LOCKING-R	
Ⓝ SPRING-LOCKING-R	
Ⓞ SCREW(M1.7x3)	
Ⓟ BRACKET-MOTOR	
Ⓠ SPRING-TPH	
Ⓡ LABEL-HOT	
Ⓢ SHAFT-IDLE	
Ⓣ SHAFT-RE-A	
Ⓤ FPC-MAIN	
Ⓥ BRACKET-TPH	
Ⓦ TPH	
ⓧ BUSH-TPH	
Ⓨ MOTOR	
Ⓩ SWITCH	

5-1-6 ASSY-MSR disassembly



Part name	Disassembly procedure
(a) SCREW(M2x4) (b) HOUSING-MSR-UPPER (c) HOUSING-MSR-LOWER (d) BRACKET-MSR-RAIL (e) HEAD-MSR	1) Remove the six (a)screw(M2x4). 2) Separate the (b)HOUSING-MSR-UPPER, (c)HOUSING-MSR-LOWER, (d)BRACKET-MSR-RAIL and (e)HEAD-MSR.

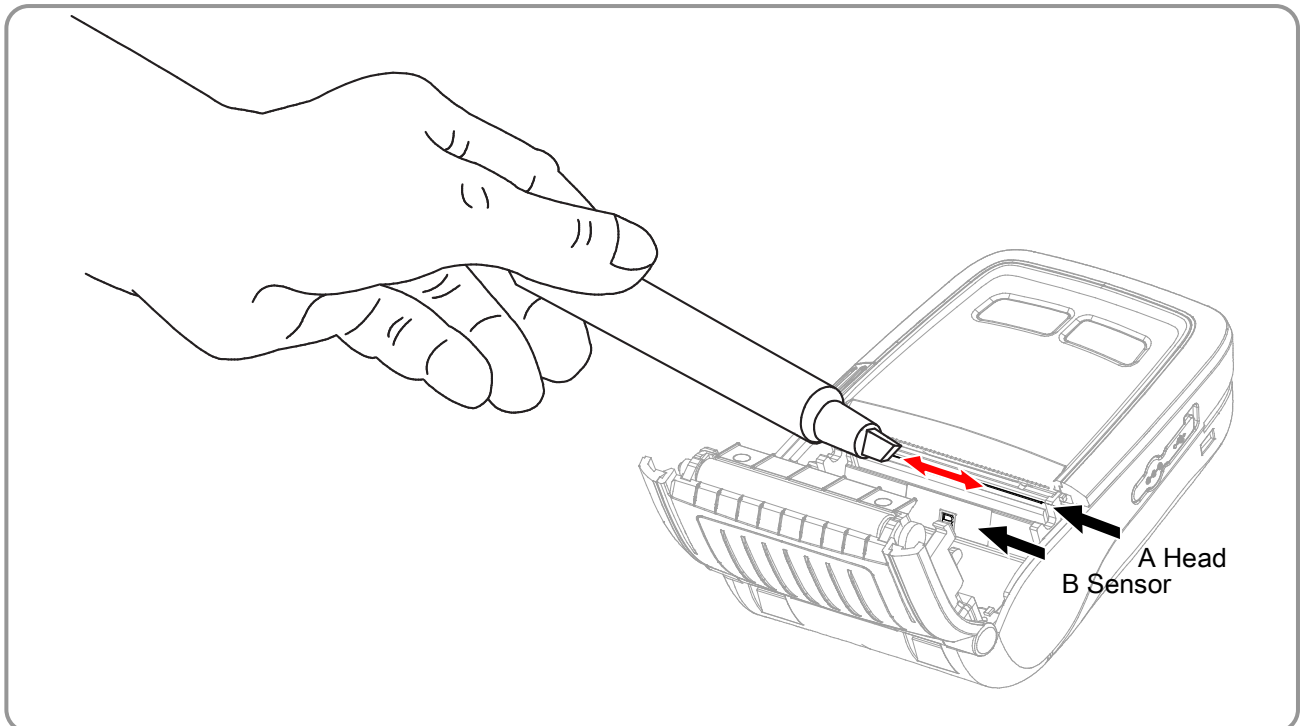
5-2 ZQ110 Exploded view



6. Adjustments and Maintenance

6-1 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.



- 1) Open the media cover and remove the paper, if present.
- 2) Clean the printhead (A) using the cleaning pen. Apply the cleaning pen from the center to the edge of the printhead (A) for cleaning.
- 3) Using the cleaning pen, remove the paper dust from the paper detection sensor (B) .
- 4) Do not use the printer for one to two minutes after cleaning the printhead (A) until the cleaning agent (from the cleaning pen) has completely evaporated and dried.
- 5) Insert the paper and close the media cover.

⚠ Caution

- Make sure the printer power is turned off before cleaning.
- Wait for two to three minutes after power-off before printhead cleaning because it may be very hot.
- Do not touch the heating region of the printhead with your hand while cleaning it.
- The printhead may be damaged by static electricity.
- Avoid scratching the printhead.
- Clean the printhead periodically if linerless paper is used. Recommended cleaning period is after consuming twenty rolls of linerless paper (100 meters), or approximately once a week. Print quality may be degraded or printhead life may be shortened if it is not cleaned periodically.

⚠ Warning

- Use only linerless paper that is provided by Zebra. Use of other paper voids product warranty.
- Use a Zebra Cleaning Pen; part number. 105950-035 (12 pack).

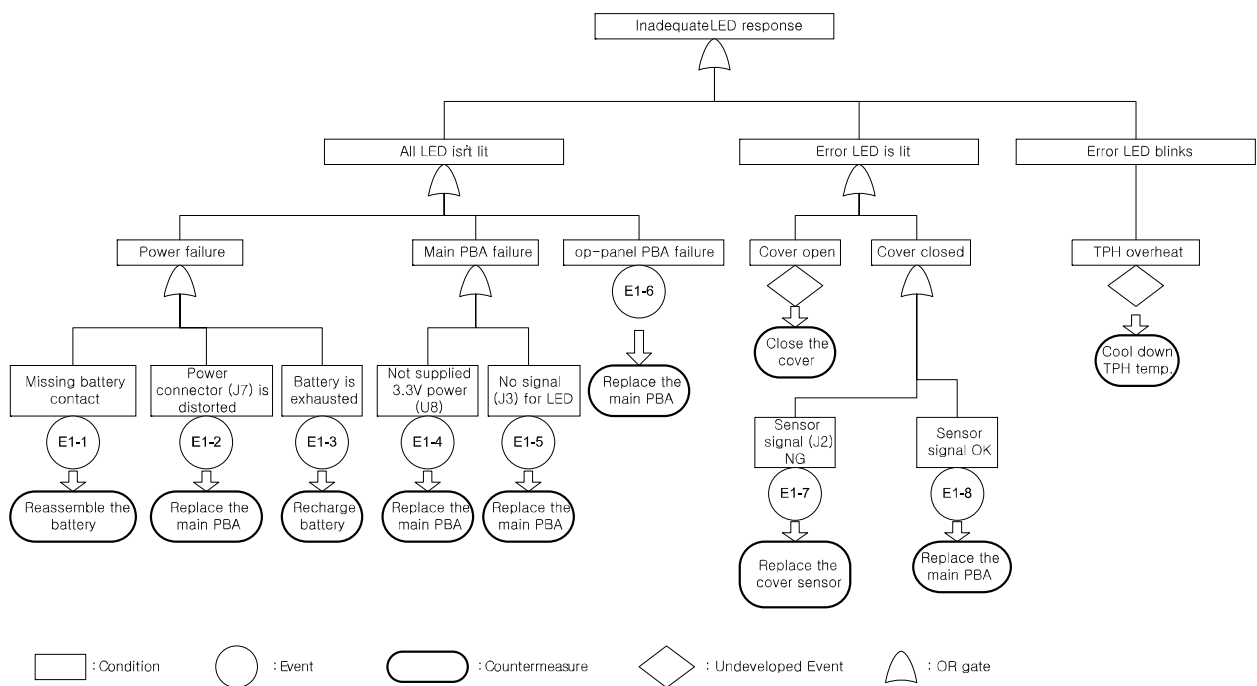
7. Troubleshooting

Every undesired outcome can be investigated with fault tree analysis which is one of RCA (Root Cause Analysis). Fault tree analysis is a graphical representation of the major faults or critical failures associated with a product, the causes for the faults, and potential countermeasures. This way user can identify possible causes easily.

There are six undesired outcome, divided by symptom category :

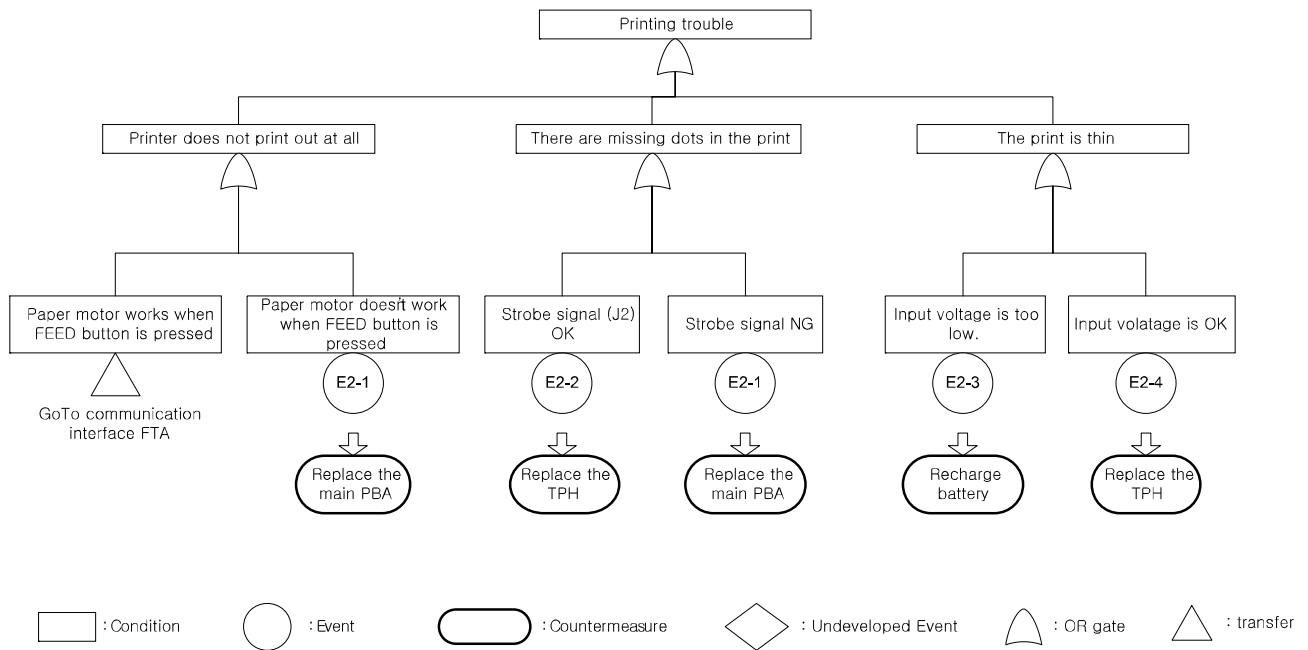
- Inadequate LED response
- Printing trouble
- MSR operation
- Diagnostic (self-test / hexa-decimal dump)
- Communication interface

7-1 Inadequate LED response



- | | | | |
|----------------------------|-------------------|----------------------------------|--------------------------|
| E1-1 : Poor insert battery | E1-2 : Poor parts | E1-3 : Discharged battery | E1-4 : Regulator failure |
| E1-5 : MCU failure | E1-6 : Poor | E1-7 : Cover open sensor failure | E1-8 : MCU failure |

7-2 Printing trouble



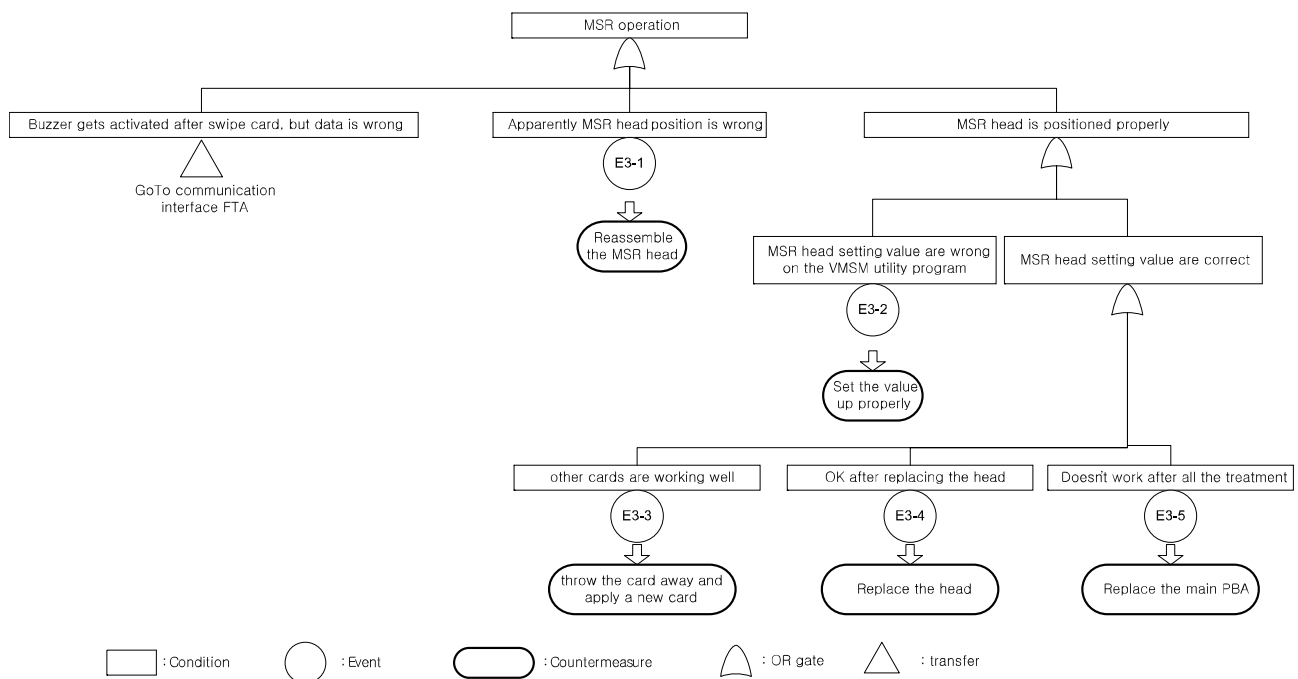
E2-1 : MCU failure

E2-2 : TPH failure

E2-3 : Battery is almost exhausted

E2-4 : TPH becomes aged

7-3 MSR operation



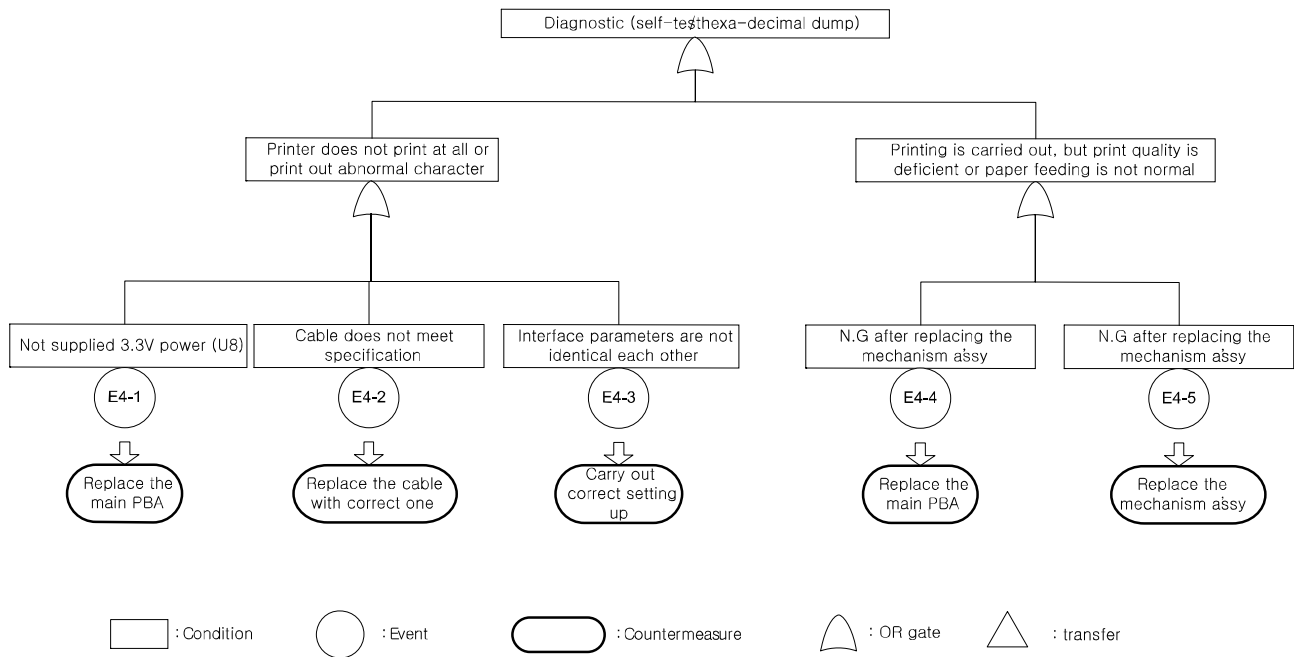
E3-1 : Poor MSR head of assembly
E3-5 : Main PBA failure

E3-2 : Wrong setting value

E3-3 : Card failure

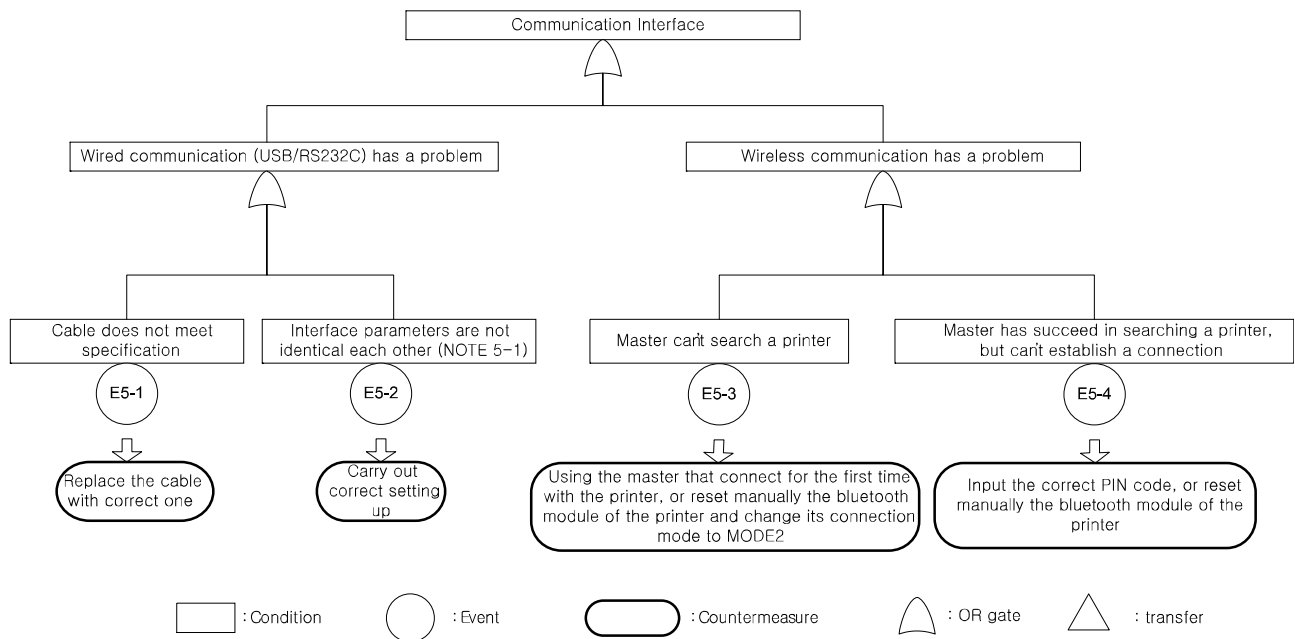
E3-4 : MSR head failure

7-4 Diagnostic (self-test / hexa-decimal dump)



E4-1 : Regulator failure E4-2 : Mistake for choosing a cable E4-3 : Failure in the setting up parameter E4-4 : Main PBA failure
 E4-5 : Mechanism ass'y failure

7-5 Communication Interface



NOTE 5-1 : There are 3-kind cable in RS232C.
 1) TTL-level : 3.3 V
 2) TTL-level : 5 V
 3) RS-232C level

E5-1 : Mistake for choosing a cable E5-2 : Failure in the setting up parameter E5-3 : Rejected by security (connection mode 1) E5-4 : Rejected by security (invalid PIN code)



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