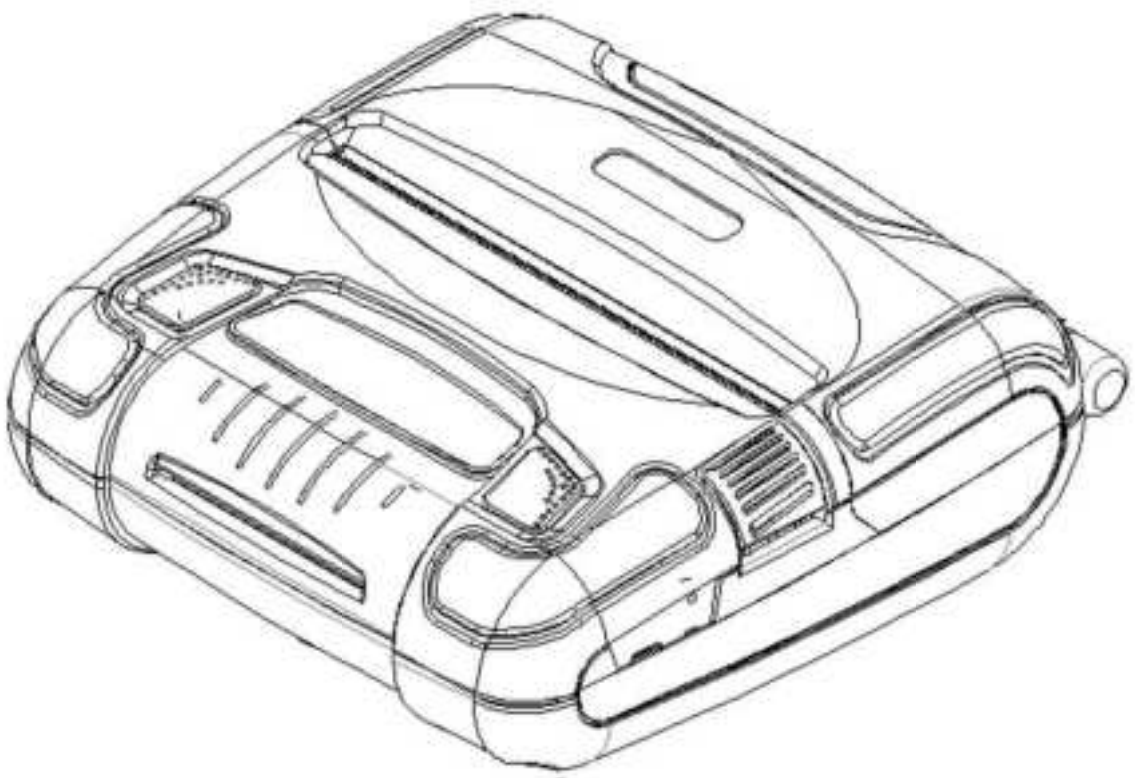**Welcome to start**
Your mobile printing solutions

TOUSEI

4-inch Thermal Printer TS-i451

Quick reference guide

Introductions

Thank you for purchasing a WSP-I451 product from TOUSEI. The WSP-i451 is the ideal solution for Mobile thermal printing for Receipts, Label, Tickets, and support Bluetooth, WIFI（optional）, USB connection

This quick reference guide is designed to help users effectively operate the device.

1. Please read this reference guide carefully before using the device for safe and proper use.

2. This device may only be used in countries where it is sold.

3. The components and colors of this device in this reference guide may different from the actual product.

4. Features and specifications are subject to change without prior notice.

5. Some screens or illustrations used in this reference guide may differ from the actual screens of the device.

6. Except where noted, device illustrations used in the reference guide are not the WSP-I451 full option model.

Notice before using device

1. This device is qualified for the standard of the safety of human body against electromagnetic wave.

2. Use only specified original batteries and standard power adapter. Keep indoors the temperature between 0~40℃ (32~104℉). The guarantee duration of the battery is 6months from the sales.

3. When charging the battery, you must use the supplied standard power adapter. If the original adapter is not used, the battery life may decrease and may explode. (In

this case you cannot receive the free repair service.)

4. Please make sure that nothing rests on the power cord when connecting the power cord, and the location where the power cord will not be stepped on or cause to stumble.

5. Please backup the data and information from your device. During the repair or upgrade, there is a slight possibility of your data being erased.

6. When a device is not in use for a long time, please charging device and unplug the power cord and place it at a safe place where it won't drop. Even for fully charged battery, the lifetime can be decreased because of its own properties of voltage decrease.

7. Do not remodel, take apart, or repair the device. If not the case, you will not be able to get your free repair service. Only authorized agent or service center has access to the device.

8. Do not press power button on the device if the device is wet or do not touch adapter or power cord with wet hands. There is risk of electric shock.

9. In case your device is wet, do not put your device in heaters, microwaves, or etc to dry- there is a risk of explosion or it can be the cause of malfunction. (Please note there is a label in the device that changes color when it gets wet. In this case you will not be able to get your free repair service.)

10. This device is not waterproof. Do not use in places of high temperature and high humidity. The following can be the causes of malfunction: getting wet from the rain, spilling drinks, and taking it in with you at the high temperature places.

11. Do not place the device in a high temperature, heating equipment or direct sunlight.

12. Do not use your device at an explosive danger zone.

13. Do not place this device on an unstable stand or table, lest it fall, causing unnecessary damage and personal injury.

14. Do not place your device at a dusty place. Keep your power cord away from any heating device. Unplug the power cord when cleaning. If there are any dusts or

residue clean the power cords pins thoroughly.

15. Do not paint your device and Do not place heavy or sharp objects on the LCD screen or on the device. It can damage your screen or your device's exterior.

Cleaning the device

1. Please make sure that the machine is turned off before cleaning the device.

2. Please use a soft and lint-free and dry cloth to clean the device.

3. If the stain is difficult to remove, please use a clean, soft and lint-free cloth stained with a little ammonia-free non-alcoholic ingredient, and non-abrasive cleaner to wipe the surface of the shell.

4. Do not directly spray cleaning fluids or spilled on the device.

Operating Precautions

The general features of WSP-i451 printer are as follows:

➢ Compact size (153×153×63mm)

➢ Light weight(596g) for true mobility

➢ Very silent printing thru direct thermal printing method

➢ High speed (100mm/sec, MAX)

➢ High resolution (203dpi: 8dots/mm).

➢ Bluetooth, USB , Wireless LAN(IEEE802.11b/g/n) [option] interface

➢ Support Graphic LCD (128×32dots) with Blue LED Backlight

➢ Support text and graphic printing

➢ Intutive LED's indicate Power(on/off), Error

➢ Easier paper roll loading by CLAMSHELL design

➢ One touch paper cover

➢ Printer door open & Paper-out sensor

➢ Easier maintenance with self-diagnostic.

➢ In field programming – Update Firmware, Download Fonts and Logos

➢ Water-resistant construction.

➢ Microsoft Windows/Windows CE, Linux, Android, iOS compatible

➢ Flow control: Software (XON/XOFF) ※ Hardware flow control not supported in printer.

➢ Free fall: 1.5 meter

➢ Agency Approval

Operating Precautions

Please follow the precautions below to enjoy and maintain the full performance of the printer.

⭕ Caution

Some semiconductor devices are easily damaged by static electricity. You should turn the printer "OFF", before you connect or removed the cable on the rear side, in order to guard the printer against the static electricity.

If the printer is damaged by the static electricity, you should turn the printer "OFF"

⭕ Notice

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

⭕ Using the Printer

● Be careful not to drop or bump the printer on a hard surface.

● Do not install the printer in direct

sunlight or such areas. Suitable

environment for the use of the printer

is as follows:

◆ Operating temperature: -10°C to 50°C

◆ Relative humidity   : 30% to 80%

- Do not install the printer near devices that generate strong electromagnetic fields such as a copy machine.
- Do not open the platen cover during printing.
- Do not remove or reinstall the communication cable during printing or transmission.
- Do not touch the connectors of the communication during printing.
- Switch the POWER OFF when not in use.
- Do not use other solvent.
- The AC adapter, the battery charger and the battery pack may become warm when in use. This is normal and is not a malfunction.
- When the battery pack is used at low temperature, the length of time the printer can be used may be shortened.

○ Thermal Paper Handling

- Store the thermal paper in a cool, dry and dark place.
- Do not rub the paper with hard object.
- Do not leave the paper with hard object.
- Do not allow plastic film, erasers, or adhesive tape to touch the paper for long periods.
- Do not stack the thermal paper with diazo copies immediately after copying or wet-type copies.
- Do not use chemical glue.
- Always use the clean thermal paper.

Set up the printer.

1.1. Printer & Accessories

Please make sure all the above components are included.
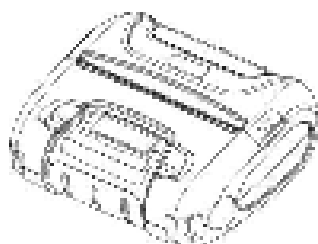
WSP-i451   Communication cable   Thermal roll paper
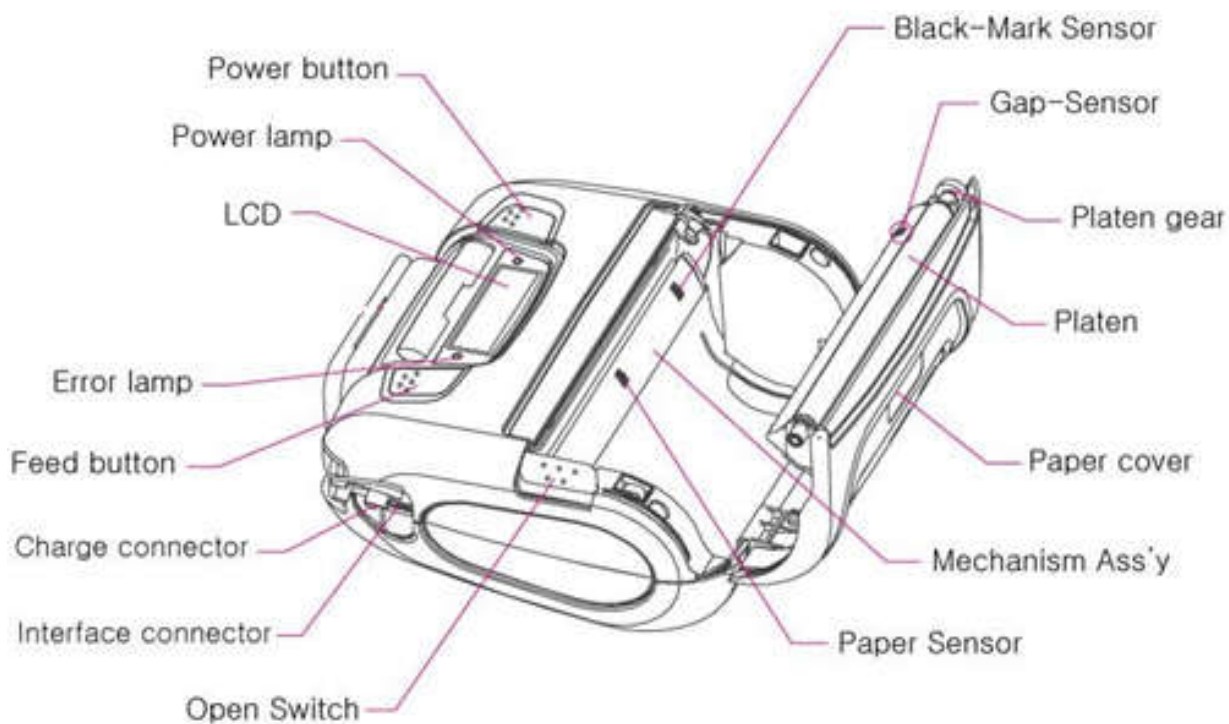
Battery Pack   Battery charger adapter

1.2. Symbol

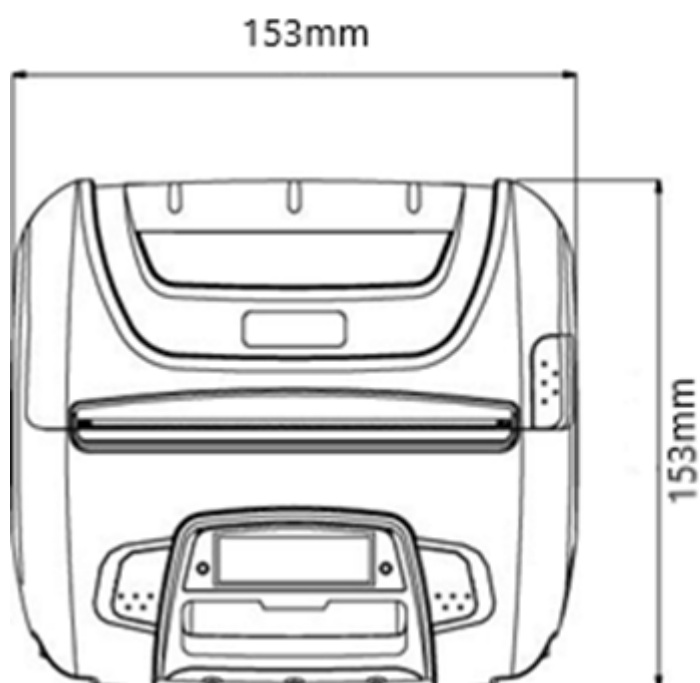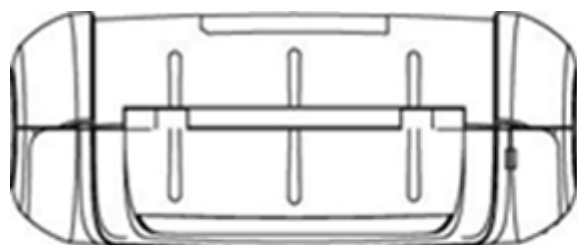|	
⏻	**Standby symbol** IEC 5009, the standby symbol(line partially within a broken circle), Indicates a sleep mode or low power state.
⎓	**Direct current symbol** This symbol is found on many electronic devices that either require or produce direct current.

1.3. Printer Features

▶ **Part Name**

1.4. Dimensions

▶ **Standard Model**

153mm

63mm

153mm

1.5. Specifications

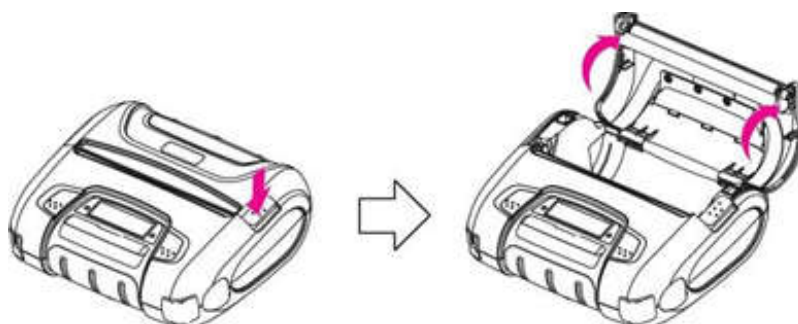| Item	Specifications
Print method	Direct thermal line printing
Character size	- Font Size A: 12X24 / Font Size B : 9X24 / Font Size C : 8X16 - KOR : 24X24(16X24)/ CHN, JPN : 24X24
Characters per line	- Font A : 69cpl / Font B : 92cpl / Font C : 104cpl - KOR, CHN, JPN : 34cpl
Optional Characters	Alphanumeric:95, Extended Graphics:128X50 pages, International:10, Simplified/Traditional Chinese, Japanese, Korean(optional)
Resolution	203dpi, 8dots/mm
Print width	4-inch (104mm, 832dots)
Print speed	100mm / sec (MAX)
Dimension	153×153×63mm
Weight	596g
Interface	Bluetooth Ver 5.2
Paper roll	Thermal roll paper (110mm wide, 50ø)
Barcodes	1-dimension: UPC-A, UPC-E, EAN-8, EAN-13, CODE-39, CODE-93, CODE-128, ITF, CODABAR 2- dimension: PDF417, Micro PDF417, Truncated PDF417, QR-CODE, DATA Matrix, Maxicode
Driver	Microsoft Windows, Linux
H/W Spec	MCU : RX-32bit

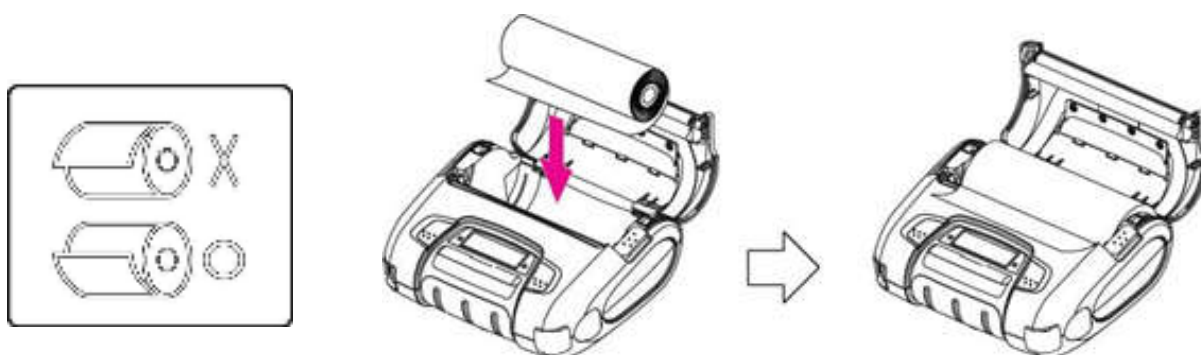| Item	Specifications	
Receive buffer size	64K bytes	
Sensor	Support Cover open, Paper, Label	
LCD	128×32 Dots FSTN (Blue LED Backlight)	
Battery	Rechargeable 7.4V DC, 2600mAh (Li-ion)	
Battery duration	1 hour continuous printing	
Battery charger	Input (100~250V AC, 50~60Hz) Output(5VDC/2A), 4hours full charge time	
Environment conditions	Temperature	-10°C ~ 50°C (operating) -10°C ~ 70°C (storage)
	Humidity	30% - 80% (operating) 10% - 90% (storage)
MCBF (Mean Cycle Between Failure)	Mechanical	37,000,000 lines
	Head	Approximately 50 Km

1.6. Replacing paper roll.

> **Note** : Be sure to use paper rolls that meet the specifications.
> Do not use paper rolls that have the paper glued to the core
> because the printer can not detect the paper end correctly.
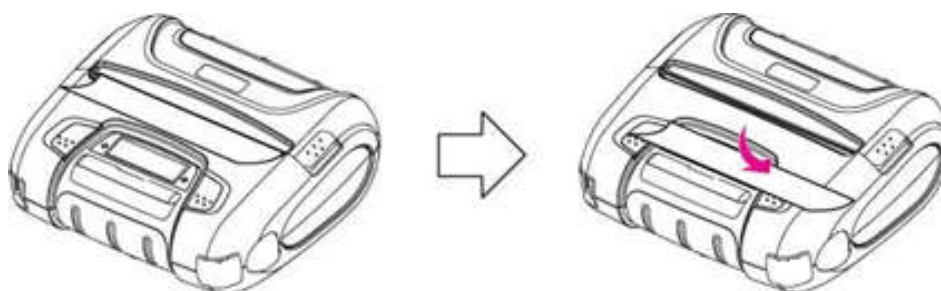
1. Make sure that the printer is not receiving data; otherwise, data may be lost.

2. Open the paper cover as the "One-Touch" way by pressing the button
   in the arrow direction like the picture.

3. Insert a new paper roll as shown.

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

1.7. Power supply

1.7.1. Specified power supply

The following specification is requested for Power supply.

Battery Charger: DC 5V/2A

Avoid using power supply which its power capacity of power current is extremely high.

1.7.2. Installing the battery

Warning:
- Before installing or removing the battery pack, ensure the printer is OFF.
- If the printer is not used for long period of time, remove the battery pack from the printer.
- Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.
- Batteries are provided not being charged. Please charge the battery before use.

① To install Battery Pack, proceed as follows:
  -Insert the Battery Pack in the direction of the arrow.
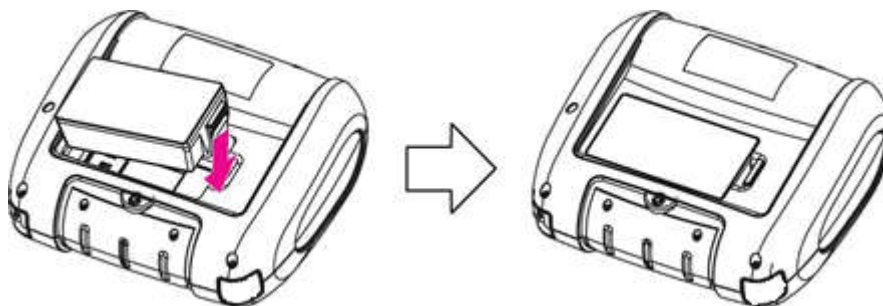
② To remove battery pack, proceed the above order reverse

1.7.3. Recharging the battery pack

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

NOTE :
- ✧ While charging the printer, turn off the printer power.
- ✧ The battery is consumable parts and when purchasing, compared to the use hour is gradually decreases. (Warranty 6 month)
- ✧ If the printer is not used for a long time, unplug the power cord from the printer and outlet
- ✧ The recharging time depends on the voltage level and ambient temperature of the battery. Normally, if takes about 4 hours to recharge a battery pack.
- ✧ You must use only the supplied adapter

1.8. Set operation mode

The printer is powered on then In keeping on pressing the Feed and Power button simultaneously until after the ERROR lamp blinks 5 times, the printer comes out at the circumstance to change the printer mode.

- ■ FEED button: changing Printer MODE status.
- ■ POWER button: changing OPTION status.

MODE	OPTION
SELF TEST	Print the self-test page
SPEED	NORMAL
	QUICK
QUANLITY	NORMAL
	THICK
MARK	NO USE

	NO USE
	30 Seconds Off
	60 Seconds Off
Power Down	90 Seconds Off
(PWDN)	120 Seconds Off
	150 Seconds Off
	180 Seconds Off

2. Interface

2.1. USB
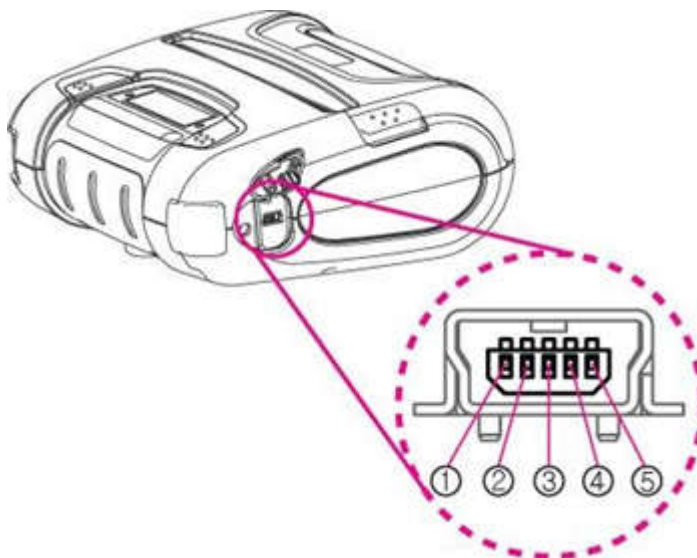
The WSP-i451 printer has a USB interface and is connected by means of a 5 pin mini USB socket.
In the following table, the signals present on the Mini- USB socket are listed:

USB

Pin No.	Name	Function
1	VCC	+5V
2	DM	DATA "-"
3	DP	DATA "+"
4	NC.	-
5	GND	Ground

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

2.2. Bluetooth

Category	Specification
Bluetooth Spec.	Bluetooth Ver5.2 / Class2 (10m)
Frequency band	2402~2480㎒
Protocol	L2CAP, RFCOMM, SDP
Profile	GAP, SDAP, SPP

2.3. Wireless LAN (optional)

Category	Specification
Function	Radio frequency transfer Module (IEEE802.11b/g/n standard conformity)
Frequency band	2.4GHz
Channel	1 to 13 channel
Security	WEP(64/128), WPA(TKIP), WPA2(AES)

2.4. Communication Protocol Sequence

2.4.1. Regular Operation
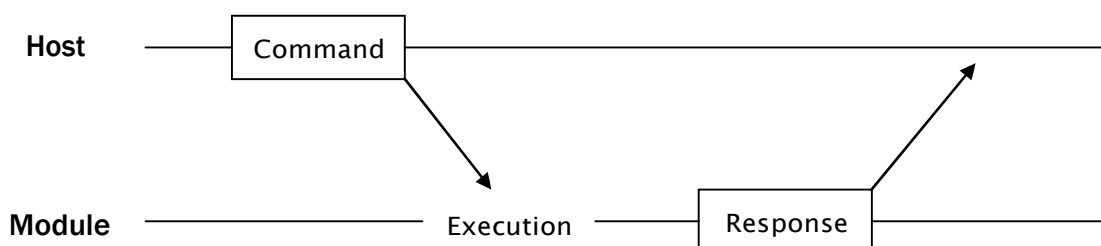
2.4.2. Irregular Operation (Communication Error)

500ms timeout

Host	Command	Command	Command

Module ──────────────── Command is ──── Executio ─

Host	Command	Command

Error

Module ──────────── CheckSumEr ──────── Executio ─
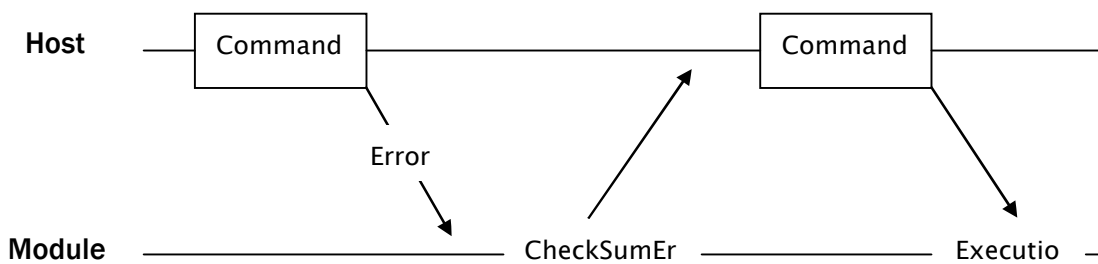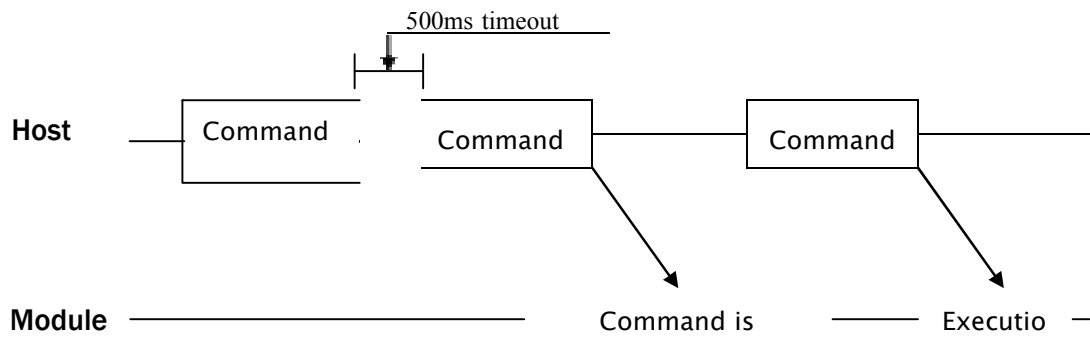
3. Using the printer

3.1. Control panel.

Power lamp

Power button

Error lamp

Feed button

LCD

Mode status	Battery capacity status

Bluetooth Mode

Display data transmission | ☁ :Bluetooth connection status / ☁:W-LAN connection status

Error (no paper, cover open)	out of battery

Prt Error

Data is being received | Wireless is not connected
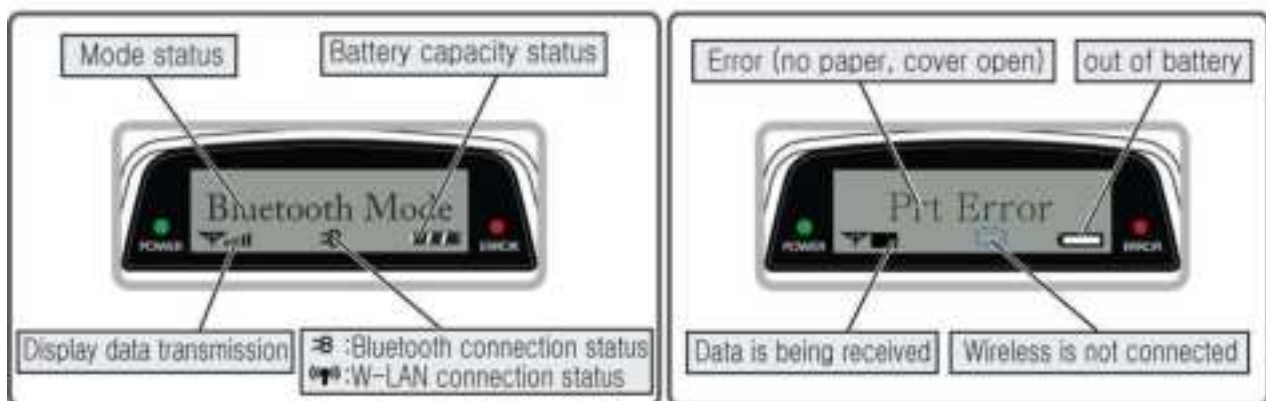
■ BUTTON

- **FEED Button :** When the printer is on, paper can be feed manually by pressing and holding the FEED button for more than one second.

- **POWER Button:**

 ① When of 5 or more seconds presses and power comes to on or off.

 ② After pressing the POWER and the FEED button simultaneously, if the ERROR lamp 5 turn signals POWER button is converted with MODE functions.

 - In keeping on pressing the **Feed and Power button** simultaneously until after the **ERROR lamp** blinks 5 times, the printer comes out at the circumstance to change the printer mode.

■ LAMP

- **POWER lamp :** Printer is ON and ready to receive data.
- **ERROR lamp:** Indicated a fault condition or a printer error.

                          (details: no paper, paper cover opened. etc.)

■ LCD

- LCD will display most of the printer status.
 (details: current printer status, paper out, indicated remaining battery, Bluetooth connection etc.)

3.2. The self test

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

1. Insert proper paper into the printer.
2. The printer is powered on then In keeping on pressing the Feed and Power button simultaneously until after the ERROR lamp blinks 5 times, the printer comes out at the circumstance to change the printer mode.
3. And then choice SELT TEST model and press power button
4. Self-test will be finished automatically and turned to the standby status.

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

4. Consumable Parts.

4.1. Recommended paper.

Type   : Thermal Paper
Paper width   : 110mm
Paper thickness : 60±5μm
Outer diameter   : Ø50mm or less
Recording side   : Outside of roll

> ⚠ **Cautions**
>
> 1. Do not paste the paper to the core. And the roll paper which has Near end mark printing on its near end is recommended.
> 2. Chemicals or oil may change the color of paper, or printed Characters may fade.
> 3. Change of paper color starts from approx 70 ℃. Pay attention to heat, humidity and sun light.
> 4. Color of paper may be changed by being scratched by nail or hard metal, etc

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4.2. Printing position.

113mm Paper Width
104mm Printing Area
4.5mm   4.5mm
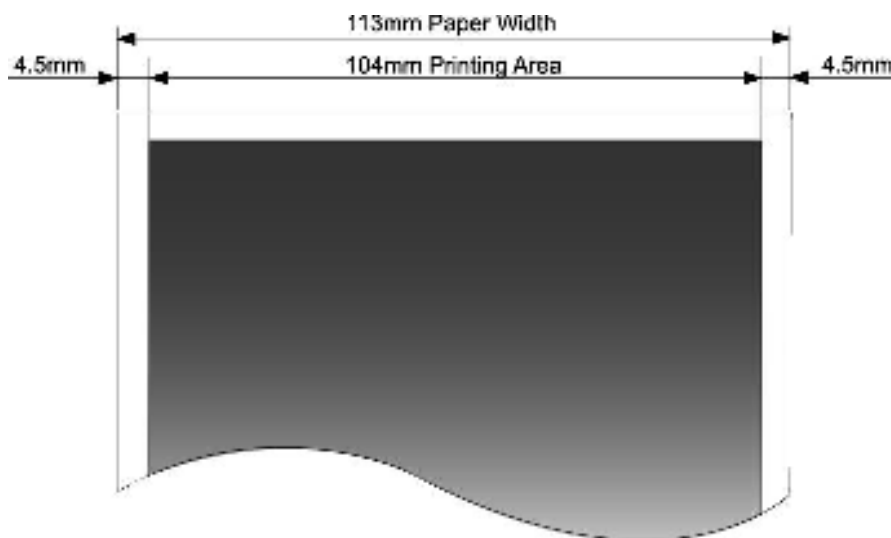
Warranty information

Warranty certificate

TOUSEI warrants this device against defects in materials or workmanship for 12months parts from the original ship date. During this period, TOUSEI will repair or replace defective parts with new or reconditioned parts at TOUSEI option, without additional charges.

Warranty conditions

1. This warranty extends only to products distributed and/or sold by TOUSEI.
2. No warranty extension will be granted for any replacement part(s) furnished to the purchaser in fulfillment of this warranty.
3. TOUSEI and its authorized agent or service center accepts no responsibility for any software programs, data or information stored on any media or any parts of any product returned for repair.
4. All pre-installed software programs are licensed to customers under non-TOUSEI software vendor's term and conditions provided with the packages.
5. This warranty does not cover any third-party software or virus-related problems.
6. TOUSEI makes no warranty either expressed or implied regarding third-party (non-TOUSEI) software.

Warranty limitation and exclusion

1. The case of the device has been opened by anyone other than TOUSEI repair department or authorized repair centers.
2. The device is modified or disassembled by anyone other than TOUSEI repair department or not under supervision by an authorized TOUSEI support specialist.
3. The serial number of the device is removed or unable to be deciphered.
4. Any catastrophic event independent of the normal functioning of the hardware such as flooding or other water damage, fire, transient power surges or insufficient line voltage.
5. Any device failure caused by installing or operating device under conditions not in accordance with installation and operation guidelines or damaged by contact with tools or surroundings.
6. The device is damaged in shipping due to poor packaging.

RMA (Returning Merchandise Authorization) policy

1. If repairs are required, the customer must clearly and in detail record the devices problem on the RMA request form or email.
2. In all cases, TOUSEI has the right to evaluation and inspect the faulty device. TOUSEI will evaluation the device according to the description of the problem on the RMA request form or in the email.
> 3. After evaluation, Warranty or Out-of-Warranty status will be determined.
4. If the description of the problem is the same as listed on the RMA request form or in the e-mail, the device will be repaired under warranty at no charge and shipped back to the customer.
5. If the description of the problem is different from the problem listed, or damaged from delivery, we will contact the customer. After evaluation, the customer shall be notified of the repair cost. If the customer desires an expedited method of return, the device will be shipped collect on delivery.

This Device has been evaluated to comply with RF exposure requirement for general use limit in portable condition. It is safe to be used in sold condition.

WEEE (Waste Electrical and Electric Equipment) Symbol Information

Correct disposal of this product (Waste Electrical & Electronic Equipment)

This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB cable) should not be disposed of with other household waste. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable 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 take these items for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal. This product is RoHS compliant.

Correct disposal of batteries in this product

This marking on the battery, manual or packaging indicates that the batteries in this product should not be disposed of with other household waste at the end of their working life. Where marked, the chemical symbols Hg, Cd or Pb indicate that the battery contains mercury, cadmium or lead above the reference levels in EC Directive 2006/66.

FCC Statement

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

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

To assure continued compliance, any changes or modifications not expressly approved by the party.

Responsible for compliance could void the user's authority to operate this equipment. (Example- use only shielded interface cables when connecting to computer or peripheral devices).

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

RF warning statement:

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

TOUSEI ANLINX CO.,LTD.

Address: 2nd floor, 248, HuaQing road, QingHu, LongHua district, Shenzhen City, China 518109

Technology support link: www.tousei.com.cn/download/
Common Trouble Shooting: www.tousei.com.cn/contact-us/