

SAM4S

ANDROID CASH REGISTER

ZETA-A50 SERIES

SERVICE *Manual*

ANDROID ECR

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About this Manual

This service manual describes how to perform hardware service maintenance for the SAM4S ZETA-A50 Series Electronic Cash Register.

Notes

Notes may appear anywhere in the manual. They describe additional information about the item.

Precaution symbols

⚠. Indicates a Safety Precaution that applies to this part component.

⚠. Indicates the part or component is an electro-statically sensitive device. Use caution when handling these parts.

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SAM4S ZETA-A50 SERIES

Service Manual First edition.

Dec. 2024.

V1.0

Printed in KOREA

Overview of this Android ECR

This Android ECR is a microprocessor-based system, using an 64-bits ARM Cortex-A55 microprocessor. This service manual provides the technical information for many individual component systems, circuits and gives an analysis of the operations performed by the circuits. If you need more technical information, please contact our service branch or R&D center. Schematics and specifications provide the needed information for the accurate troubleshooting.

All information in this manual is subject to change without prior notice. Therefore, you must check the correspondence of your manual with your machine. No part of this manual may be copied or reproduced in any form or by any means, without the prior written consent of Shin Heung Precision.

1 Precaution Statements

Follow these safety, servicing and ESD precautions to prevent damage and to protect against potential hazards such as electrical shock.

1-1 Safety Precautions

1. Be sure that all 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 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. 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 manufacturer's warranty.
5. Components, parts and wiring that appear to have overheated or that are otherwise damaged should be replaced with parts that meet the original specifications. Always determine the cause of damage or over-heating, and correct any potential hazards.
6. 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/DC adaptor for damage. Make sure that leads and components do not touch thermally hot parts.
7. 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.

CAUTION

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.

Dispose used batteries according to the manufacturer's instructions.

ATTENTION

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie.

Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur.

Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

1-2 Servicing Precautions

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

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

1. Servicing precautions are printed on the cabinet. Follow them.
2. Always unplug the units AC/DC adaptor from the AC power source 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
3. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring is sometimes clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.
4. 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.
5. 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 Precautions for Electrostatic Sensitive Devices (ESDs)

1. Some semiconductor (solid state) devices are easily damaged by static electricity. Such components are called Electrostatic Sensitive Devices (ESDs); examples include integrated circuits and some field-effect transistors. The following techniques will reduce the occurrence of component damage 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 chemicals. 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 chassis or circuit assembly into which the device will be installed.
9. Minimize body motions when handling unpackaged replacement ESDs. Motions such as brushing clothes together or lifting a foot from a carpeted floor can generate enough static electricity to damage an ESD.

2 Product Specifications

Specifications are correct at the time of printing. Product specifications are subject to change without notice. See below for product specifications.

2-1 General Specification

2-1-1 System Specifications

Item	Description	Remark
Processor	• Rockchip RK3566 Quad-core Cortex-A55 1.8GHz	
OS	• Android 13	
RAM	• 2GB	
ROM	• 16GB eMMC	
Printer	• Model : RMP520 • Print Speed : Max. 70 mm/sec • Type : Thermal dot line printing type	Detail Spec refers to next page
Display	• Operator Display : 5 Inch TFT LCD (1280 * 720) • Customer Display : 8 Digits LED	
Touch Panel	• Operator Display : PCT(Projective Capacitive Touch)	None Touch (Option)
Keyboard	• 48 Keys Raised (with cap)	
Interface	• Serial Port : RJ45 2Ports • USB Port : A type 2Ports • Ethernet Port : RJ45 1Port (10M/100M) • Drawer Port : RJ11 1Port	
Consumption	• Max. : 18W Reg. : 2.5W	
Power Requirement	• Adaptor DC 9V/5A (Input : AC 100~240V / 50~60Hz)	
Environment Condition	• Temperature : 0°C ~ 45°C • humidity : 30% ~ 80% RH	
Dimensions(mm)	• 320(W) X 260(D) X 113(H)	
Weight	• 1.6Kg (SET only)	

Table 2-1 General Specifications

2. Product Specifications

2-1 General Specification

2-1-2 Printer Specification

Item	Description		Remark
Model	• RMP520		
Print Method	• Thermal Direct Line Printing		
Printing Format	Total Number of Dots	• 384 Dots	
	Dot Pitch	• Vertical : 0.125 mm • Horizontal : 0.125 mm	
Printing Speed	• 70mm/Sec (8 Dot)		
Printing Direction	• Unidirectional friction feed		
Paper Feeding	Feeding Method	• Friction Feed	
	Minimum Feed Pitch	• 0.0625 mm	
	Feeding Speed	• 70 mm/Sec (At 8.5V of motor voltage)	
Power Supply Volt	Power Voltage	• 7.2~8.5V (Recommend)	Head/Motor
	Circuit Input Voltage	• 2.7~5.25V	Head Control/Sensor
Printer Head	Heat Element Density	• 8 Dots/mm (0.125mm/Dot ; 200 dpi)	(1step 0.0625mm)
	Total Head Elements	• 384 Dots/Dot Line	
	Available Printing Width	• 48 mm	
Line Feed Motor	• 2-2 Phase Bi-Polar Stepping Motor		
Sensor	Head Temperature	• Thermistor	
	Paper-End Sensor	• Reflection type photo interrupter	
Reliability	Life	• 50km or more	
Dimension (mm)	• 69.2 (W) × 32.6 (D) × 15.1 (H)		
Weight	• Approx. 41 g		

Table 2-2 Thermal Printer Specification

2-1-3 Paper Specification

Item	Description	Remark
Paper Type	• Single-ply Thermal Paper Roll	
Paper Size	• 1 station 57.5 ± 0.5 mm (Width) × diameter Ø 70 mm or less	
Specified Paper	• Original Paper No : HPK-110 (Hansol paper XT)	

Table 2-3 Paper Specifications

Note: The following paper can be used instead of the specified paper above.

TF50KS-E: Nippon paper industries Co.,Ltd.

PD 160R : New Oji paper Mfg, Co.,Ltd. , F380 : Kansaki specialty papers, Inc. (USA)

2-1-4 Character Specification

Item	Description	Remark
Character Structure	• 12(W) × 24(H) Font (Including a horizontal)	
Character Size	• 1.5 mm(W) × 3.0 mm(H)	
Column Pitch	• 2.0 mm	
Line Pitch	• 3.5 mm (Including 8-dot line spacing)	
Number of Column	• 24 (12×24 Dots/Character)	

Table 2-4 Character Specification

2-2 Appearance

2-2-1 Appearance Dimensions (mm)

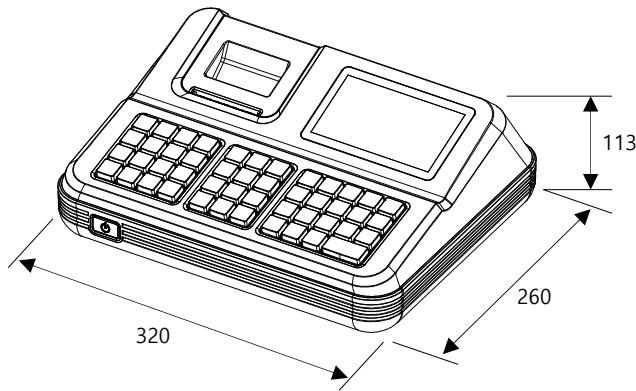
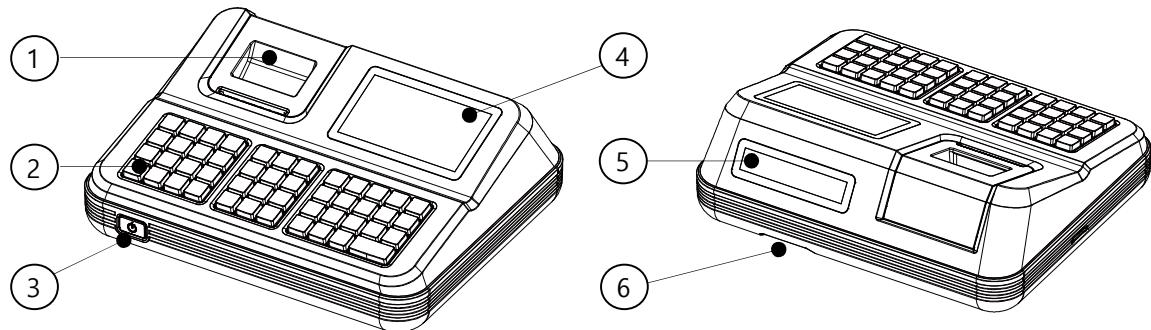


Figure 2-1 Dimensions

2-2-2 Location Features



- ① Cover Printer
- ② Key Board
- ③ Power Button
- ④ Front Display
- ⑤ Rear Display
- ⑥ Interface Cable Outlet

Figure 2-2 Location Feature

2. Product Specifications

Memo

3 Installation and Operation

3-1 System Configuration

3-1-1 Configuration

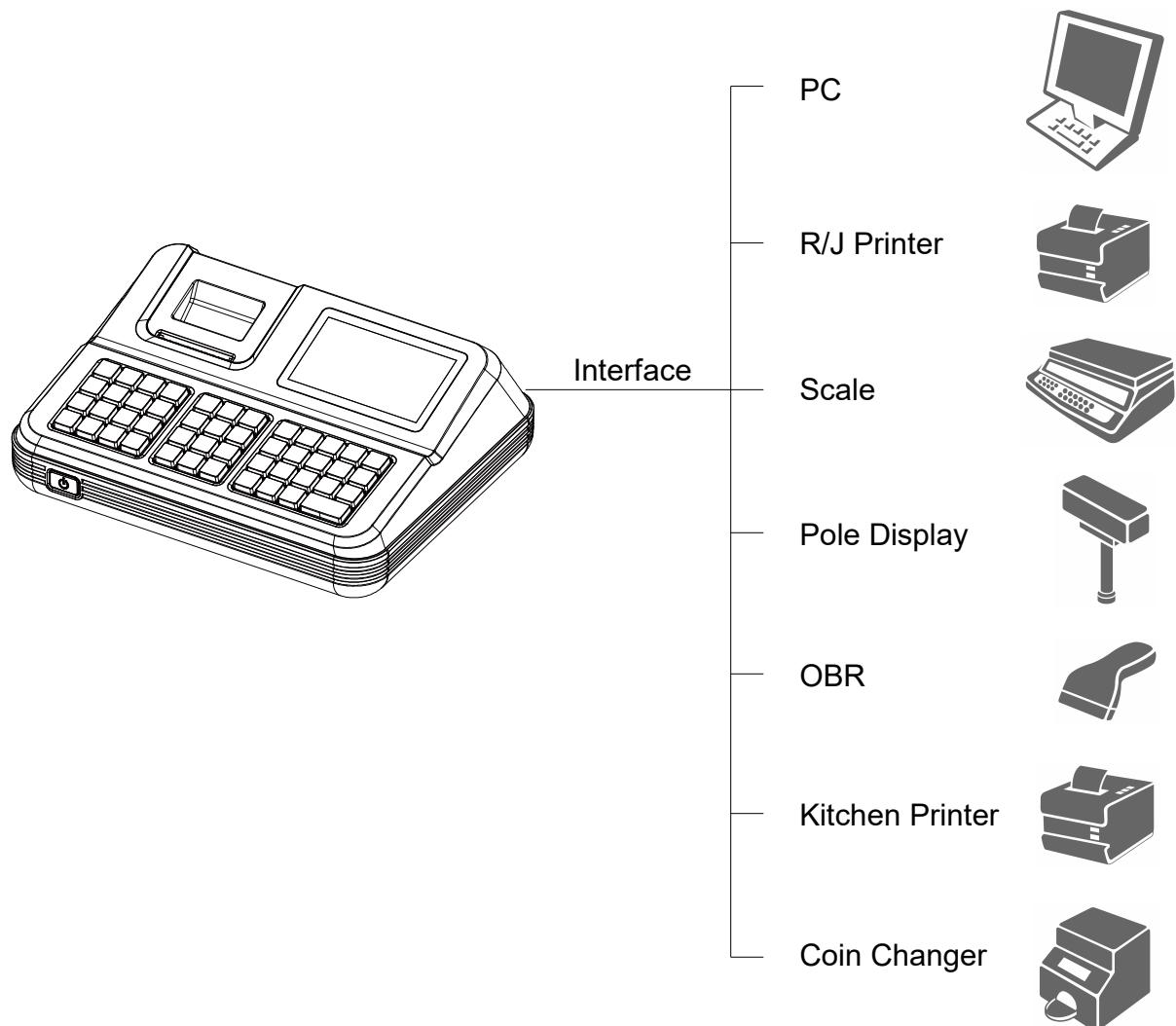


Figure 3-1 System Configuration

3-1 Installation

3-1-2 Paper Roll Installation

1. Hold the handle and open the Cover Printer in the direction of the arrow.(Fig 3-2 (A))
2. Remove the used paper roll core if there is one.(Fig 3-2 (B))
3. Insert the paper roll as shown.(Fig 3-2 (C))
4. Lay a cover on the side and press the FEED button.
5. Close the Cover Printer in the direction of the arrow until it locks firmly.(Fig 3-2 (D))

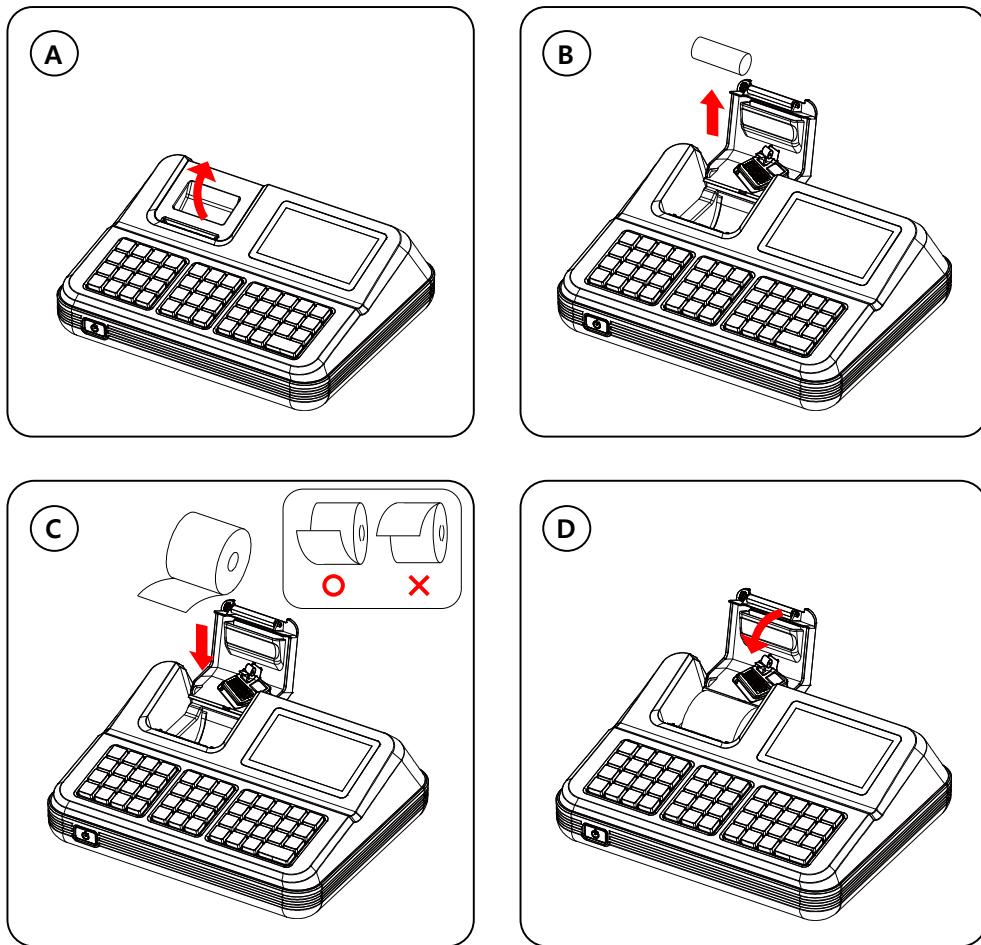


Figure 3-2 Paper Installation

3. Installation and Operation

3-1 Installation

3-1-3 Cable Installation

1. Connect the RJ45 serial cable to the RJ45 serial port of ECR.
2. Connect the USB cable to the USB port of ECR.
3. Connect the Ethernet cable to the RJ45 LAN port of ECR.
4. Connect the Drawer cable to the RJ11 Drawer port of ECR
5. Connect the 9V Adaptor to the DC Jack of ECR until it locks firmly.

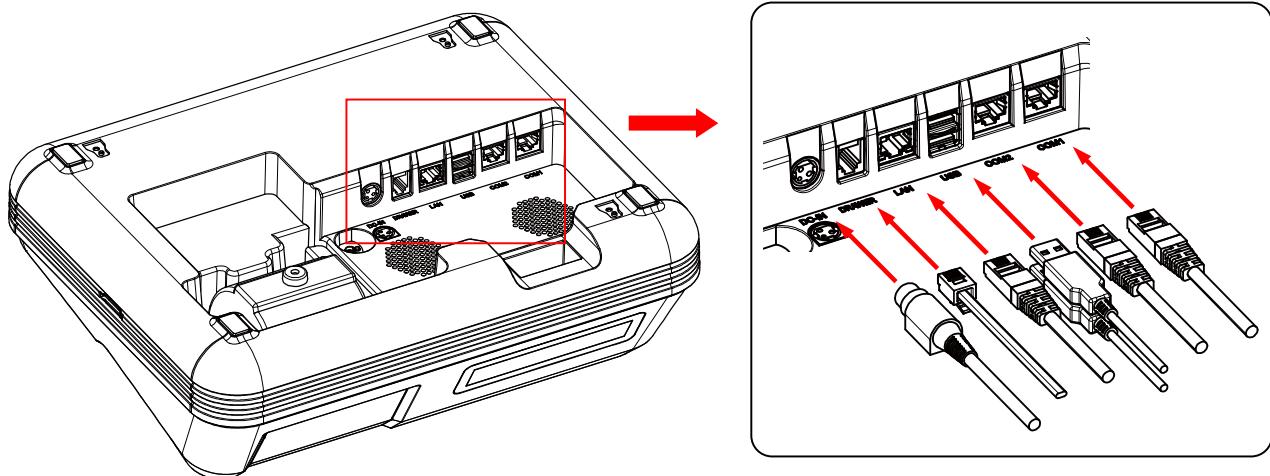


Figure 3-3 Cable Installation

3-1-4 Supplies

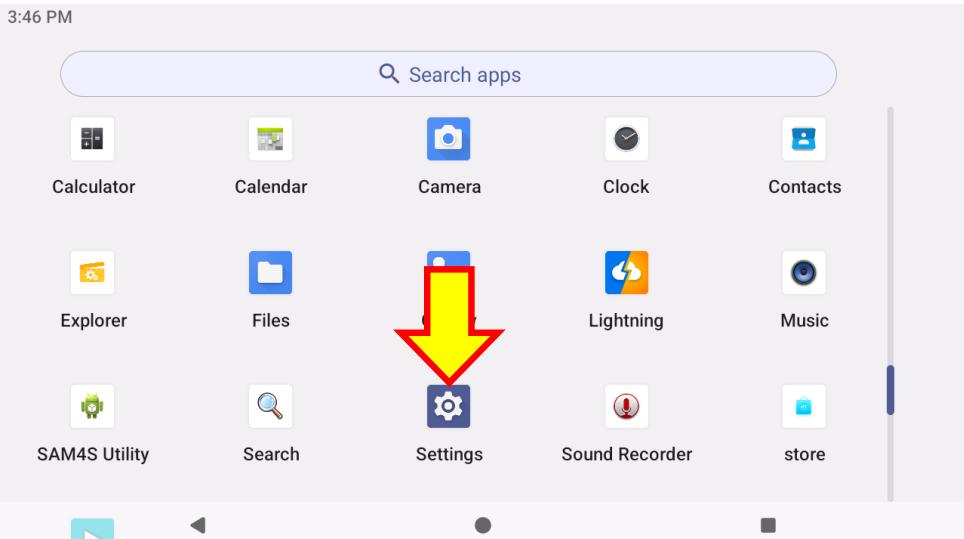
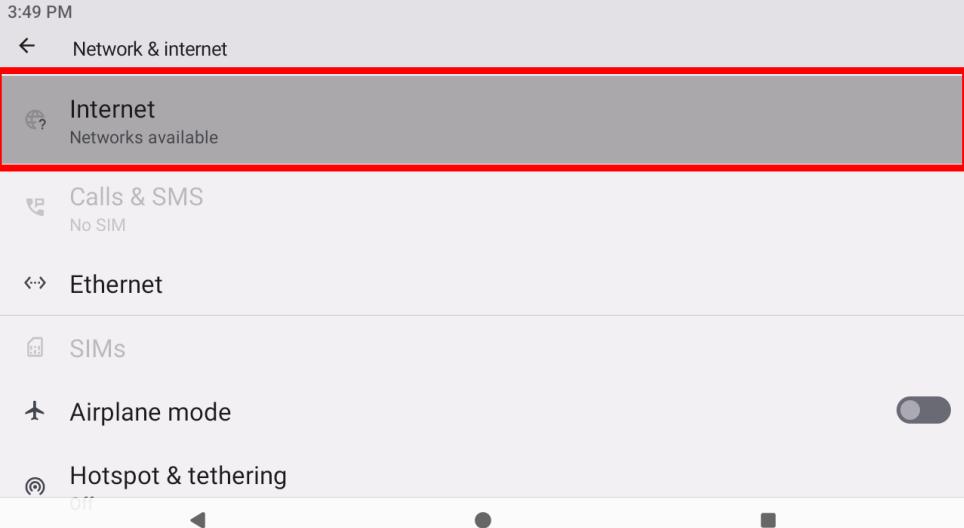
Item	Description	Remark
Paper Roll	1 ea	
Power Adaptor	1 ea	
Power Cable	1 ea	
User Manual	1 ea	

3. Installation and Operation

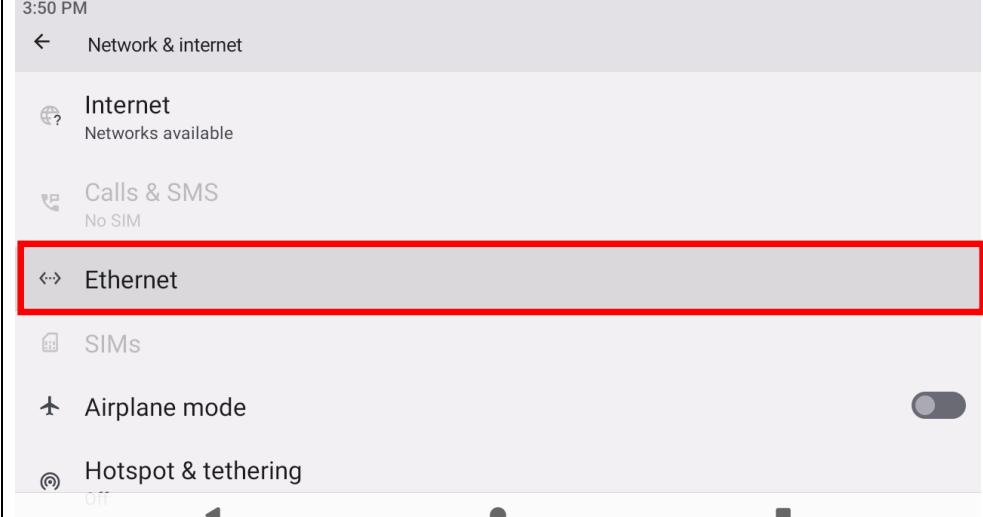
3-2 Operation

3-2-1 System Setup

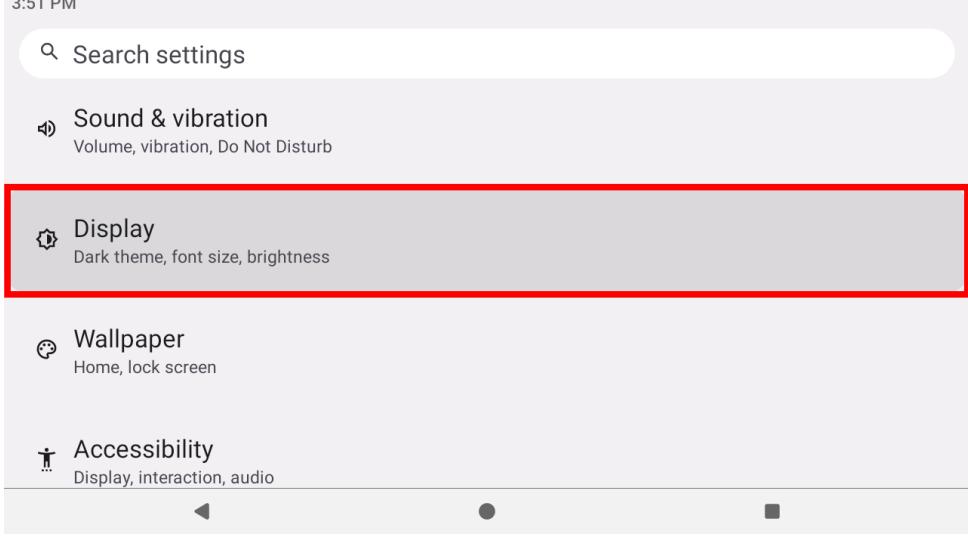
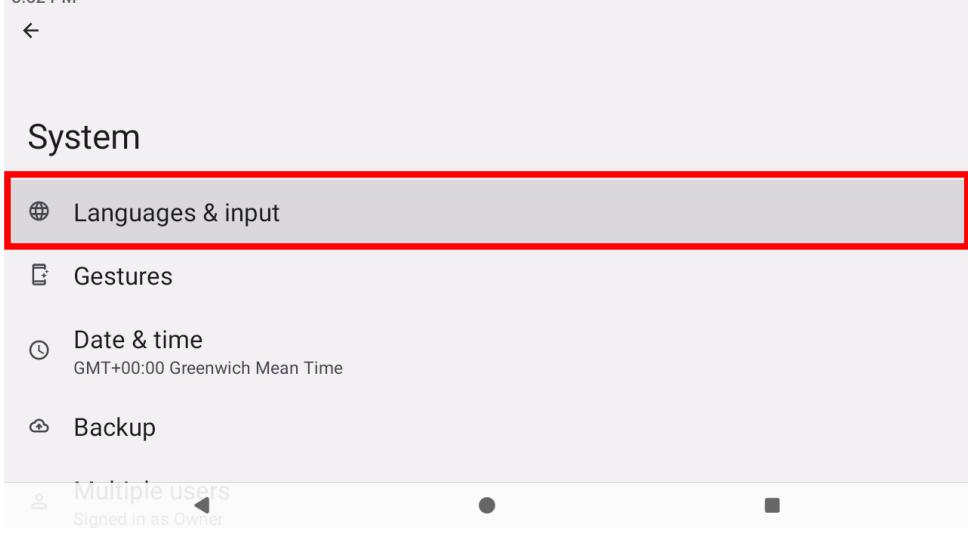
In the system user can setup according to their own requirements, such as network connection, language, Input methods, Display brightness and Sound output.

No	Setup Method	Remark
1	<p>Click Settings Icon.</p> 	
2	<p>WIFI</p> <p>When opened WIFI Setting would search available wireless router signals, user just select a router and input correct password then could browser internet. If the router does not have password, WIFI would connect it directly</p> 	

3. Installation and Operation

		
3	<p>Ethernet</p> <p>First, check box to turn on Ethernet, click "Ethernet" to choose connection type.</p> 	
4	<p>Display</p> <p>This is for Display setting; Brightness: Click to setup brightness of backlight. Font Size: Click to setup system font size according to their preference.</p>	

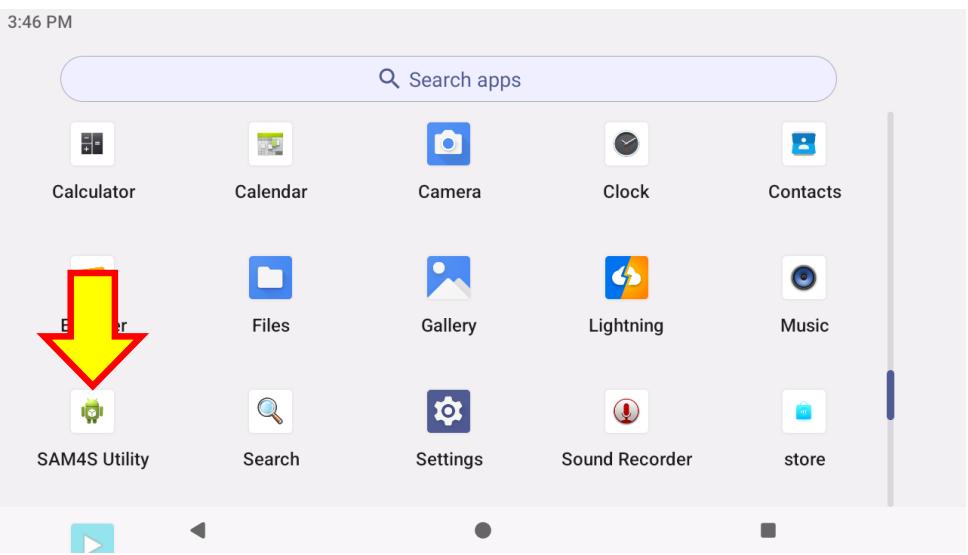
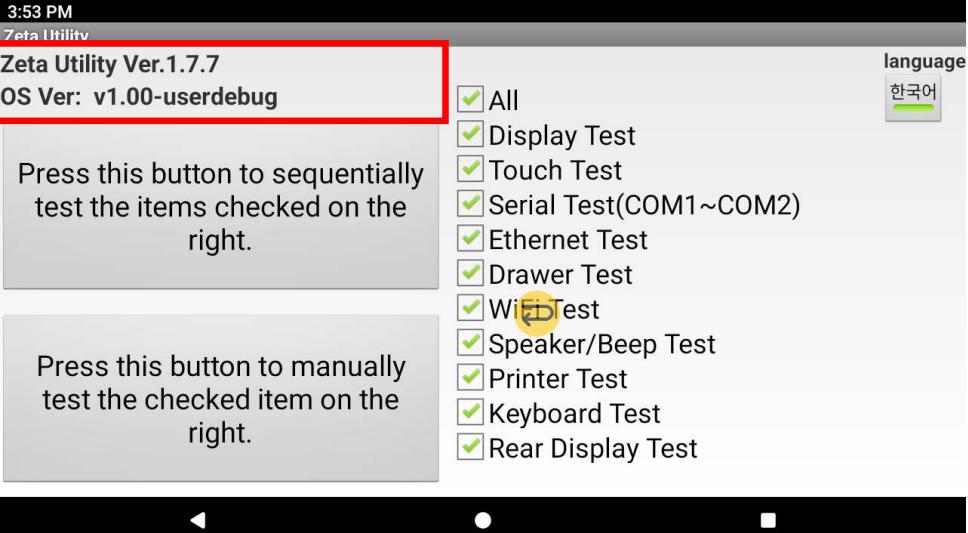
3. Installation and Operation

	 <p>3:51 PM</p> <p>Search settings</p> <p>Sound & vibration</p> <p>Volume, vibration, Do Not Disturb</p> <p>Display</p> <p>Dark theme, font size, brightness</p> <p>Wallpaper</p> <p>Home, lock screen</p> <p>Accessibility</p> <p>Display, interaction, audio</p>	
5	<p>Language & Input</p> <p>User can set the language for system menus according to their Country or preference. (About 60 languages supported) System default support Chinese and English, user need manual installing other input methods.</p>  <p>3:52 PM</p> <p>←</p> <p>System</p> <p>Languages & input</p> <p>Gestures</p> <p>Date & time</p> <p>GMT+00:00 Greenwich Mean Time</p> <p>Backup</p> <p>Multiple users</p> <p>Signed in as Owner</p>	

3. Installation and Operation

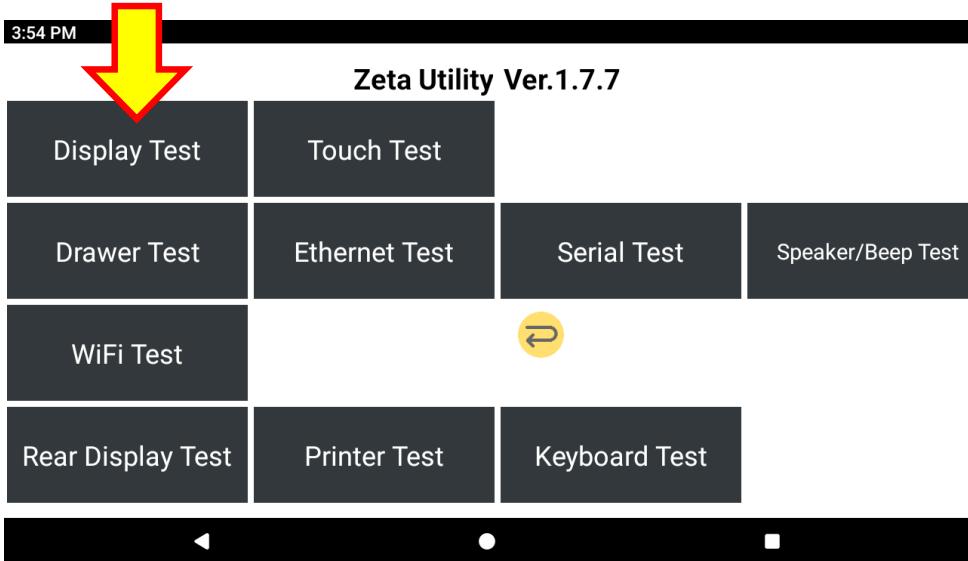
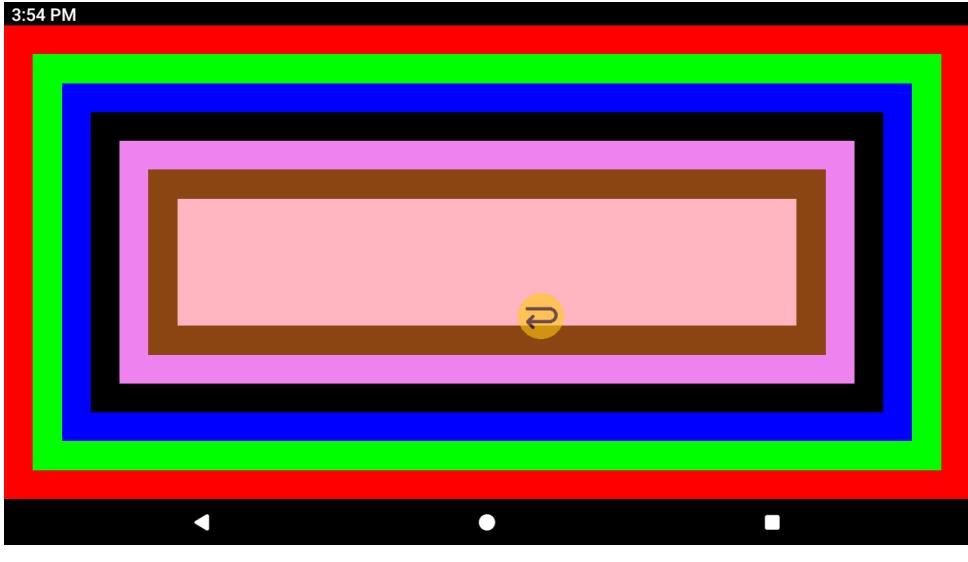
3-2-2 Hardware Self Test

3-2-2-1 Start SAM4S Utility App

No	Setup Method	Remark
1	<p>"SAM4S Utility App"</p> <ul style="list-style-type: none"> • Click this App 	
2	<ul style="list-style-type: none"> • Check the BSP versions (OS) <p>3:53 PM</p> <p>Zeta Utility</p> <p>Zeta Utility Ver.1.7.7 OS Ver: v1.00-userdebug</p> <p>language 한국어</p> <p>Press this button to sequentially test the items checked on the right.</p> <p>Press this button to manually test the checked item on the right.</p> 	

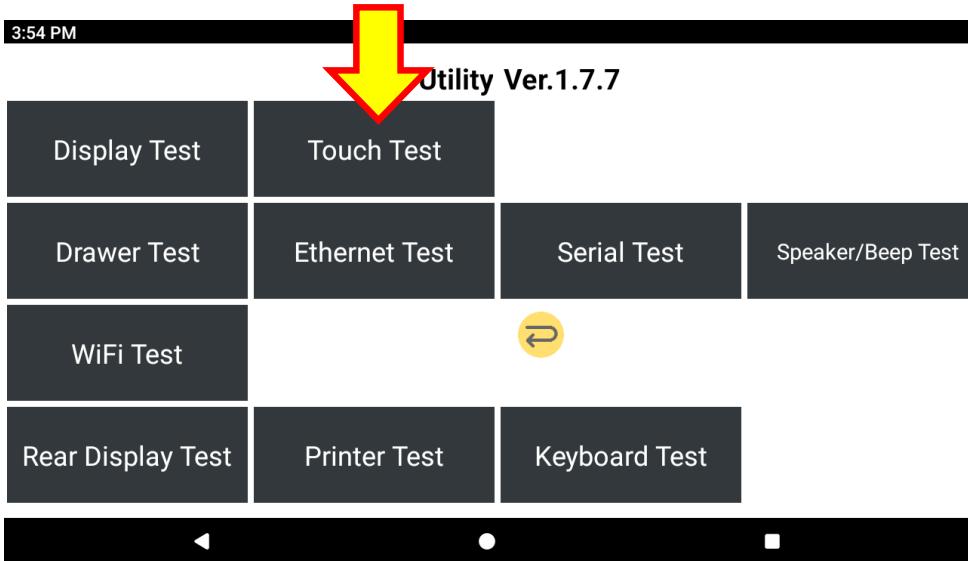
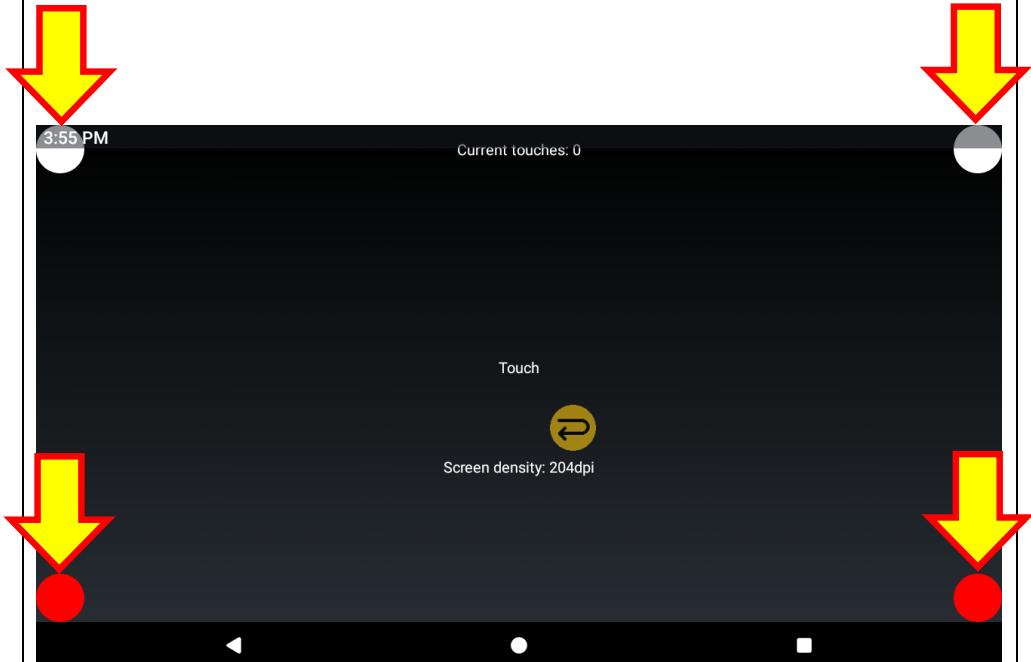
3. Installation and Operation

3-2-2-1 Display Test

No	Method	Remark
	<ul style="list-style-type: none">Press “DISPLAY TEST” from the main menu in the Touch Screen. Check the LCD State.(5inch LCD). You must touch the screen for test is done. 	

3. Installation and Operation

3-2-2-2 Touch Test

No	Method	Remark
	<ul style="list-style-type: none"> Press “TOUCH TEST” from the main menu in the Touch Screen.  <ul style="list-style-type: none"> Touch the 4 Circles or Press and drag 4 Circles. 	

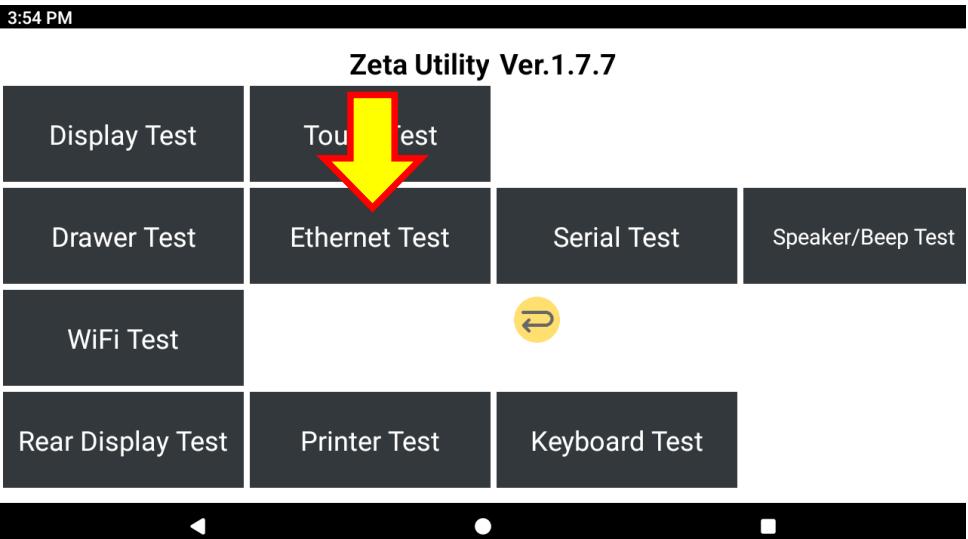
3. Installation and Operation

3-2-2-3 Drawer TEST

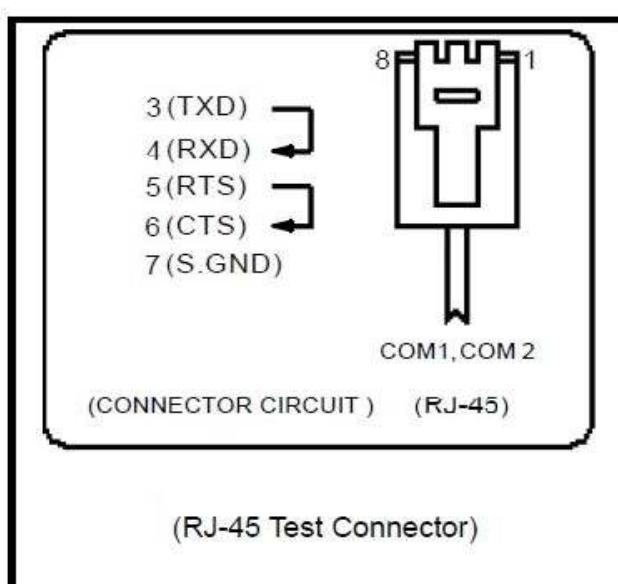
No	Method	Remark
	<ul style="list-style-type: none">Press “DRAWER TEST” from the main menu in the Touch Screen.	

3. Installation and Operation

3-2-2-4 Ethernet Test

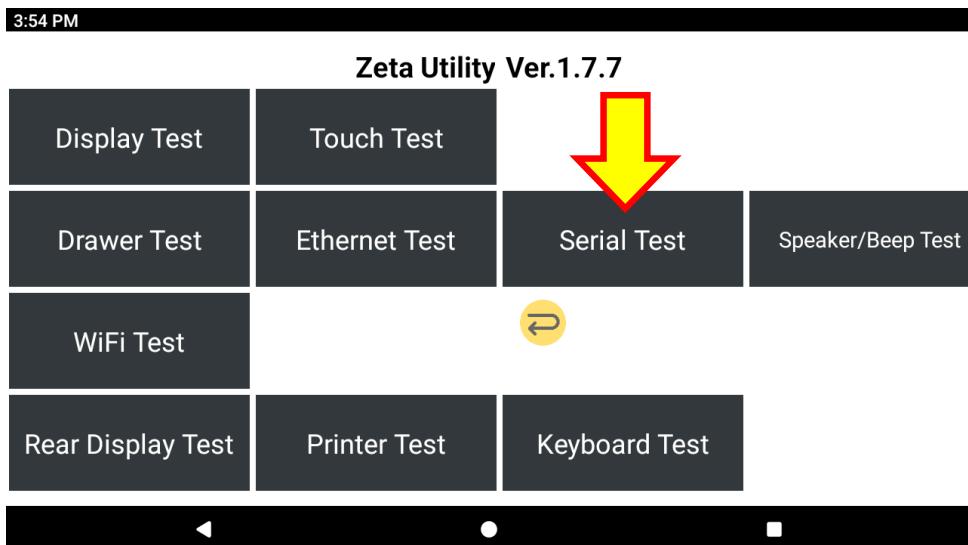
No	Method	Remark
	<ul style="list-style-type: none"> • Connect The UTP CABLE to Ethernet Port • Press “ETHERNET TEST” from the main menu in the Touch Screen. 	

3-2-2-5 Serial Test

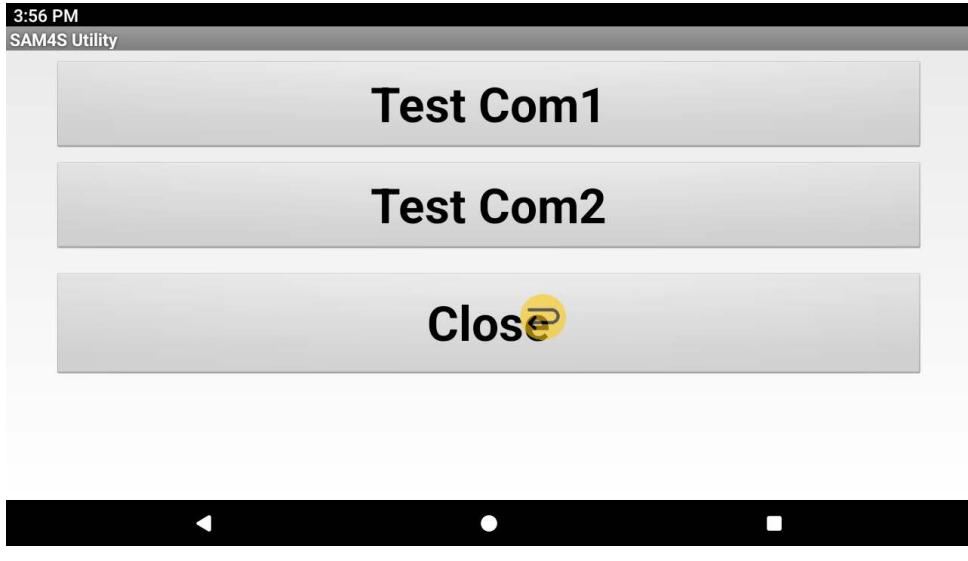
No	Method	Remark
	<ul style="list-style-type: none"> • Connect Loop-back Test Connector to SERIAL Port 	

3. Installation and Operation

- Press “**SERIAL TEST**” from the main menu in the Touch Screen.

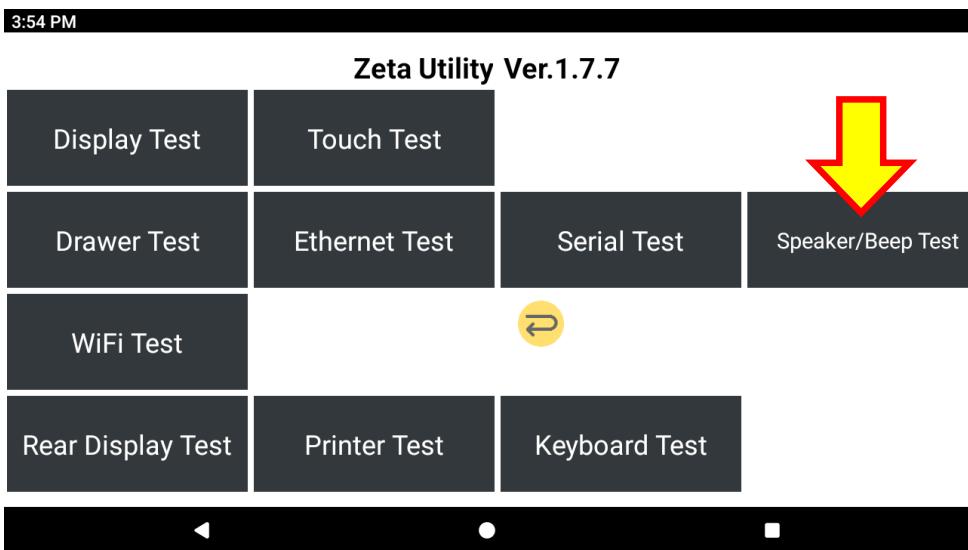
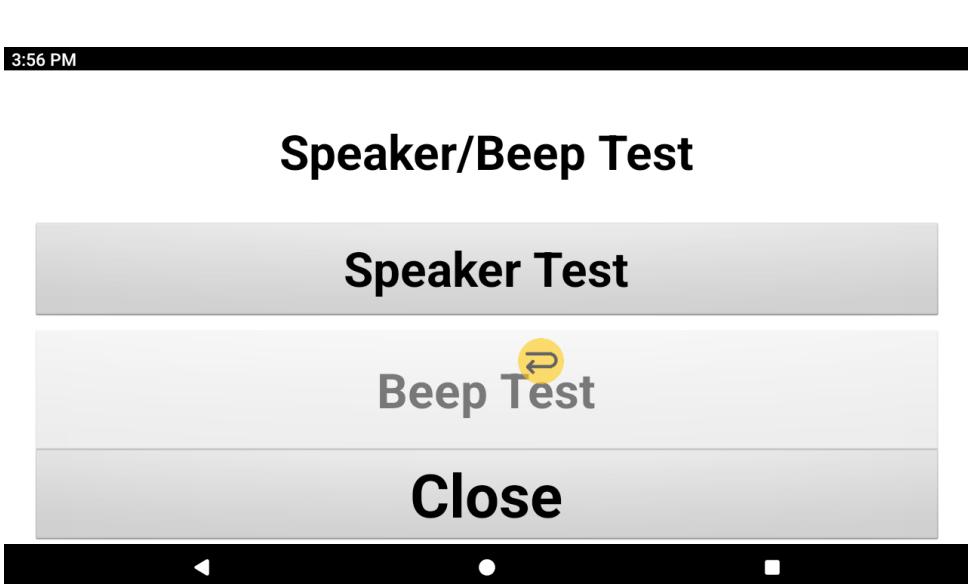


- Check the Port #1, #2



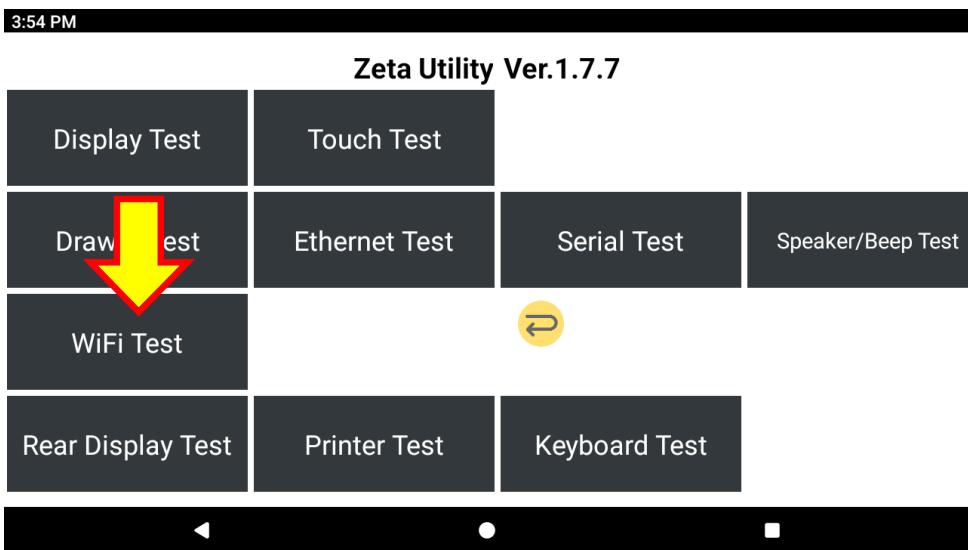
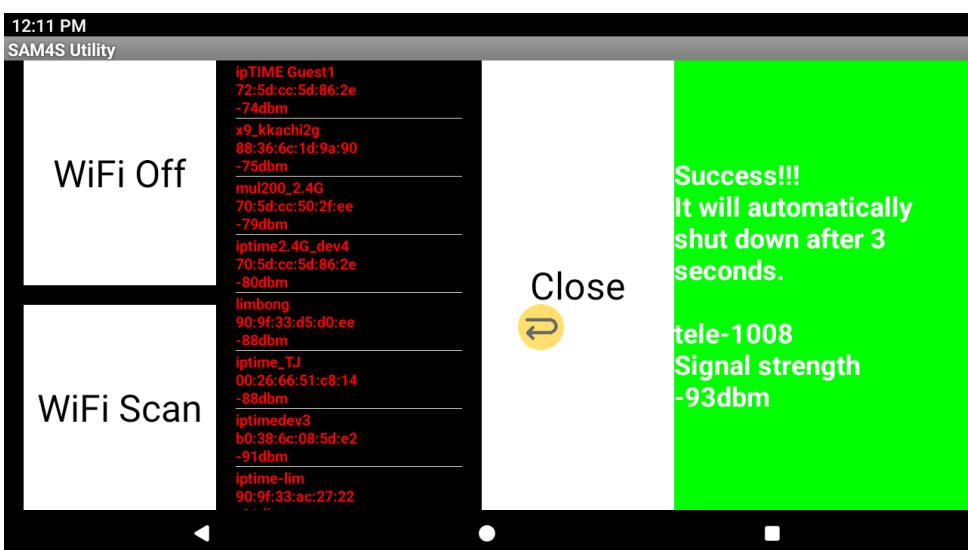
3. Installation and Operation

3-2-2-6 Speaker/Beep Test

No	Method	Remark																
	<ul style="list-style-type: none"> Press “SPEAKER/BEEP TEST” from the main menu in the Touch Screen.  <p>3:54 PM</p> <p>Zeta Utility Ver.1.7.7</p> <table border="1"> <tr> <td>Display Test</td> <td>Touch Test</td> <td></td> <td></td> </tr> <tr> <td>Drawer Test</td> <td>Ethernet Test</td> <td>Serial Test</td> <td>Speaker/Beep Test</td> </tr> <tr> <td>WiFi Test</td> <td></td> <td>⟳</td> <td></td> </tr> <tr> <td>Rear Display Test</td> <td>Printer Test</td> <td>Keyboard Test</td> <td></td> </tr> </table> <p>◀ ● □</p> <ul style="list-style-type: none"> Check the Speaker Test, Beep Test  <p>3:56 PM</p> <p>Speaker/Beep Test</p> <p>Speaker Test</p> <p>Beep Test</p> <p>Close</p> <p>◀ ● □</p>	Display Test	Touch Test			Drawer Test	Ethernet Test	Serial Test	Speaker/Beep Test	WiFi Test		⟳		Rear Display Test	Printer Test	Keyboard Test		
Display Test	Touch Test																	
Drawer Test	Ethernet Test	Serial Test	Speaker/Beep Test															
WiFi Test		⟳																
Rear Display Test	Printer Test	Keyboard Test																

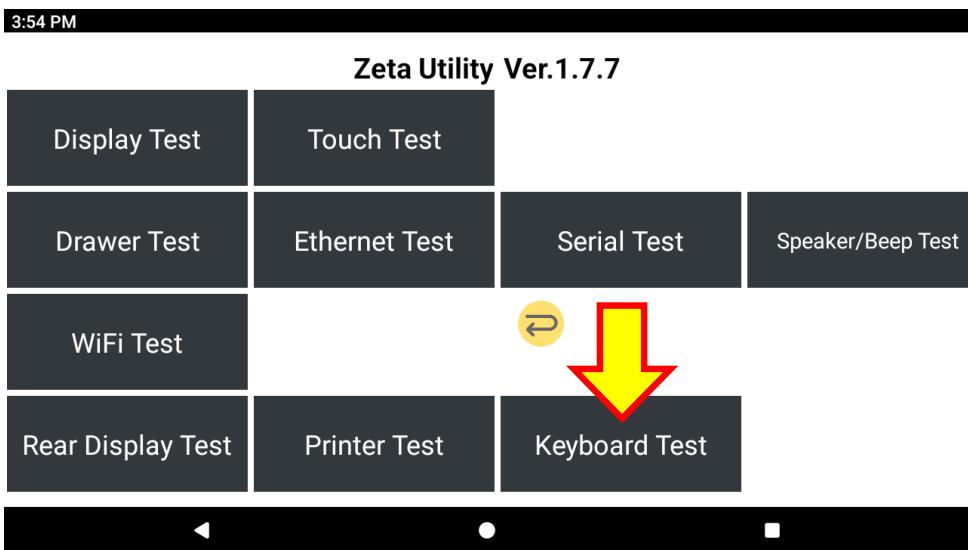
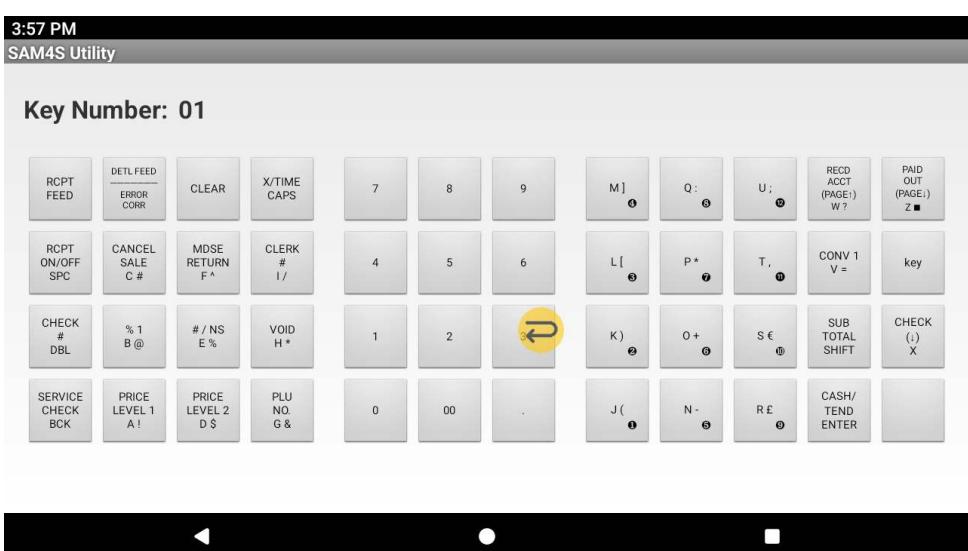
3. Installation and Operation

3-2-2-7 WiFi Test

No	Method	Remark
	<ul style="list-style-type: none"> Press “WIFI TEST” from the main menu in the Touch Screen.  <ul style="list-style-type: none"> Press WIFI ON button and then show the dbm. 	

3. Installation and Operation

3-2-2-8 Keyboard Test

No	Method	Remark
	<ul style="list-style-type: none"> Press “KEYBOARD TEST” from the main menu in the Touch Screen.  <ul style="list-style-type: none"> Press “KEYBOARD 47KEY” on Keyboard. When You press Keys, Button is changed to yellow Test is done. 	

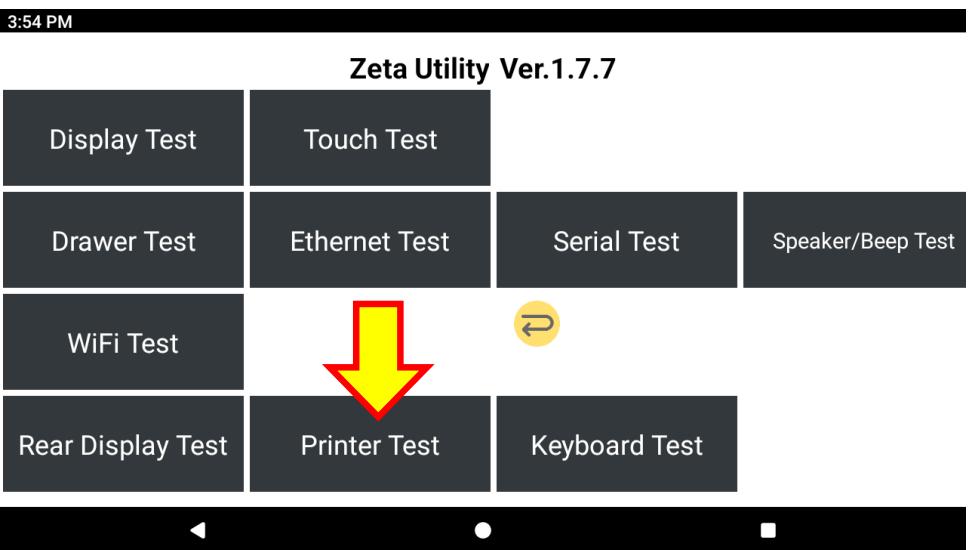
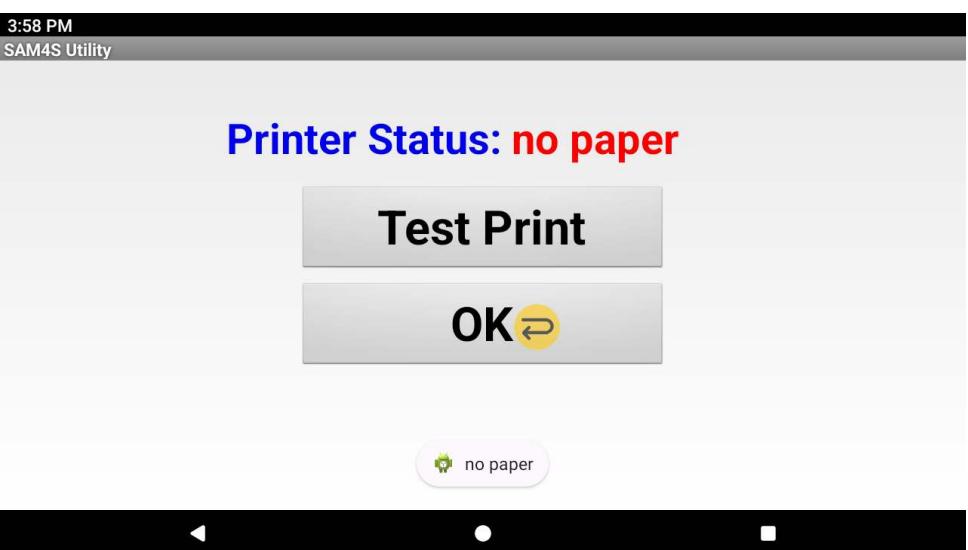
3. Installation and Operation

3-2-2-9 Rear Display Test

No	Method	Remark
	<ul style="list-style-type: none">Press “REAR DISPLAY TEST” from the main menu in the Touch Screen. Check the Rear Display(1Line Display).	

3. Installation and Operation

3-2-2-10 Printer Test

No	Method	Remark														
	<ul style="list-style-type: none"> Press “PRINTER TEST” from the main menu in the Touch Screen.  <p>3:54 PM</p> <p>Zeta Utility Ver.1.7.7</p> <table border="1"> <tr> <td>Display Test</td> <td>Touch Test</td> </tr> <tr> <td>Drawer Test</td> <td>Ethernet Test</td> <td>Serial Test</td> <td>Speaker/Beep Test</td> </tr> <tr> <td>WiFi Test</td> <td></td> <td>⟳</td> <td></td> </tr> <tr> <td>Rear Display Test</td> <td>Printer Test</td> <td>Keyboard Test</td> <td></td> </tr> </table> <p>◀ ● □</p> <ul style="list-style-type: none"> Click the TestPrint button. Open the Print Cover and then show the Error messages.  <p>3:58 PM</p> <p>SAM4S Utility</p> <p>Printer Status: no paper</p> <p>Test Print</p> <p>OK ⟳</p> <p>◀ ● □</p> <p>no paper</p>	Display Test	Touch Test	Drawer Test	Ethernet Test	Serial Test	Speaker/Beep Test	WiFi Test		⟳		Rear Display Test	Printer Test	Keyboard Test		
Display Test	Touch Test															
Drawer Test	Ethernet Test	Serial Test	Speaker/Beep Test													
WiFi Test		⟳														
Rear Display Test	Printer Test	Keyboard Test														

3. Installation and Operation

MEMO

4 Assembly and Disassembly

This chapter describes the Disassembly and Reassembly procedures.

WARNING: This ECR contains electro-statically sensitive devices.

Use caution when handling any components in this system.

CAUTION: Disconnect the ECR from the external power source before Disassembly.

NOTE: Before disassembling, first of all separate the ASS'Y CASE UPPER from the ASS'Y CASE LOWER.

1. Remove the three screws(10) from the ASS'Y CASE LOWER.(FIG 4-1(A))
2. Open the COVER PRINTER to unlock it. (FIG 4-1(B))
3. Lift up the back of the ASS'Y CASE UPPER and remove it from the ASS'Y CASE LOWER. (FIG 4-1(C),(D))
4. Separate the three harnesses(@,③,④) from the MAIN BOARD(2) and the PRINTER BOARD(8). (Page 5-1)

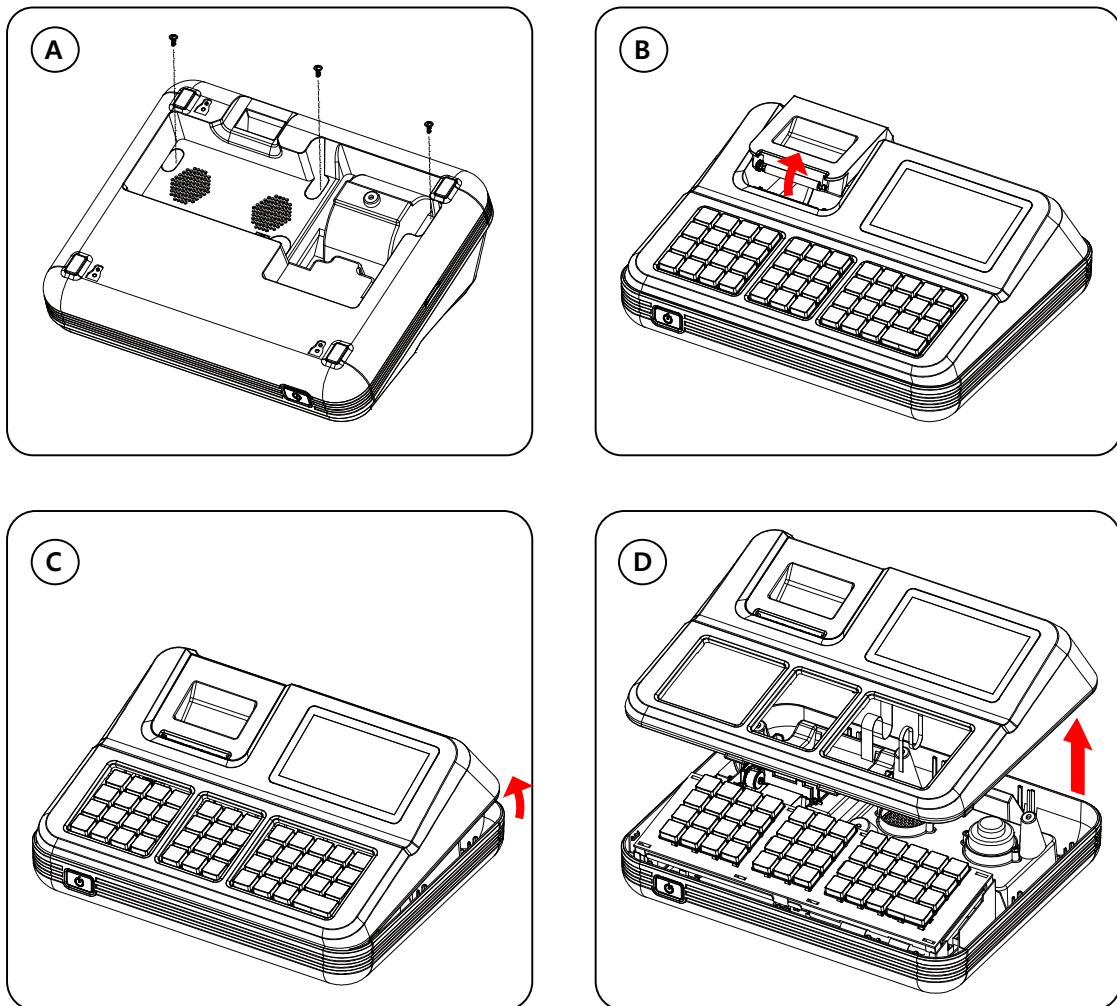


Figure 4-1 Separating the ASS'Y CASE UPPER

4-1 Disassembly

4-1-1 Disassembling the Case Upper Block

1. Separate the COVER PRINTER(22) and ROLLER ASS'Y(23) from the CASE UPPER(17). (Page 5-1)
2. Separate the TOUCH PANEL(or WINDOW FRONT)(13) and WINDOW REAR(16) from the CASE UPPER(17). (Page 5-1) It is attached with adhesive tape so it may be difficult to disassemble.
3. Remove the four screws(10) and separate the HOLDER LCD(14) and 5INCH LCD(21) from the CASE UPPER(17). (Page 5-1)
4. Remove the four screws(18) and separate the 1LINE LED(15) from the HOLDER LCD(14). (Page 5-1)
5. Remove the three screws(19) and separate the CUTTER PAPER(20) from the CASE UPPER(17). (Page 5-1)

4-1-2 Disassembling the Case Upper Block

1. Separate the two harnesses(④,⑤) from the MAIN BOARD(2) and separate the KEYBOARD(3) from the CASE LOWER(1) (Page 5-1)
2. Separate the three harnesses(⑨,⑩,⑪) from the MAIN BOARD(2) and remove the four screws(10) to separate it from the CASE LOWER(1) (Page 5-1)
3. Separate the one harness(⑫) from the PRINTER BOARD(8) and remove the three screws(11) to separate the PRINTER(4) from the CASE LOWER(1) (Page 5-1)
4. Remove the seven screws(10) and separate the POWER SWITCH BOARD(7), the PRINTER BOARD (8), the SD BOARD(12) and the SPEAKER(5) from the CASE LOWER(1) (Page 5-1)
5. Remove the POWER BUTTON(6) and the four FOOT RUBBERS(9) from the CASE LOWER(1). (Page 5-1)

4-1-3 Reassembly Procedure

- Reassembly procedure is in reverse order.

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5 Exploded View and Parts List

[Exploded View]

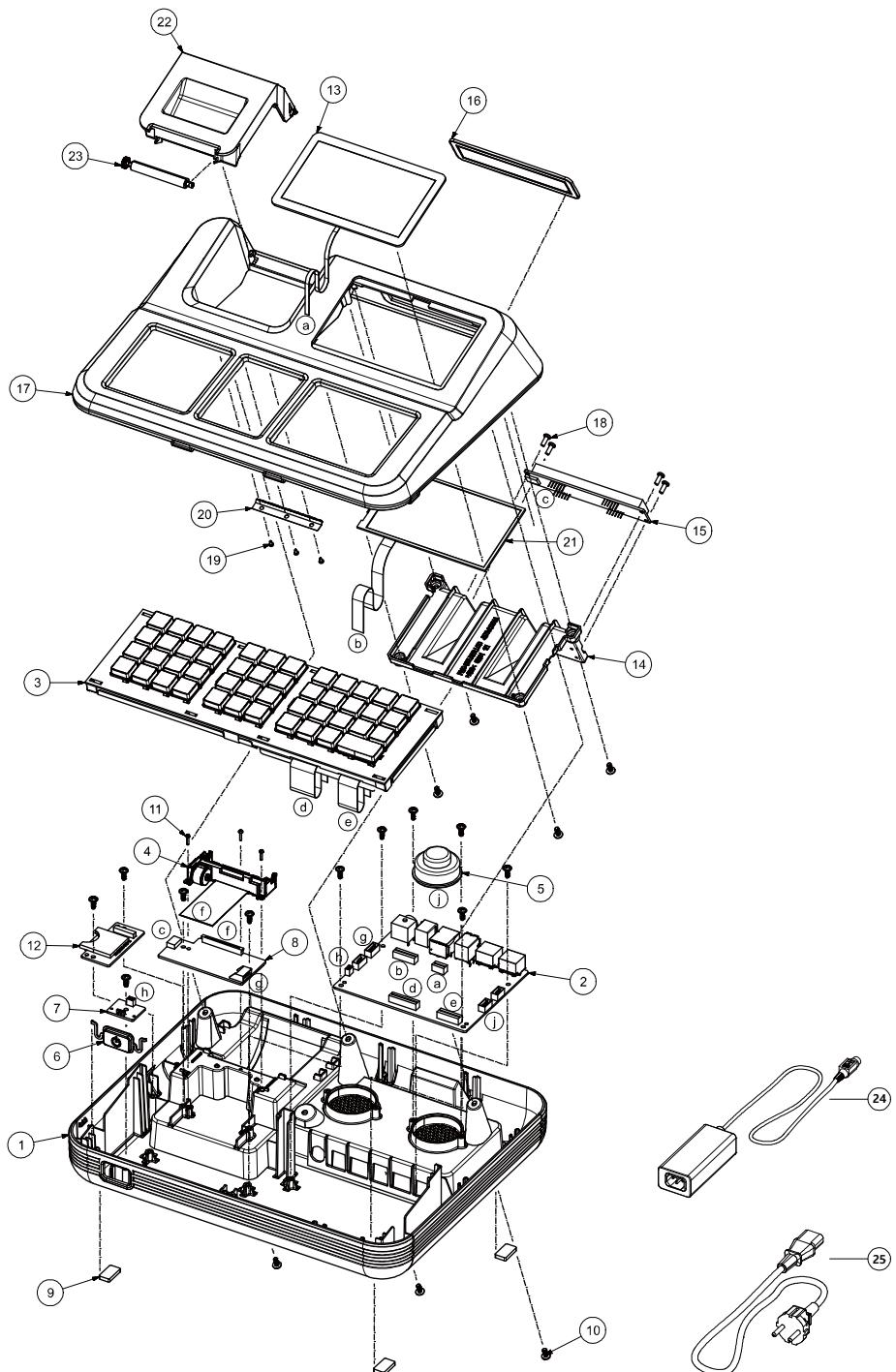


Figure 5-1. Total Disassembly

5. Exploded View and Parts List

5-1 ASS'Y MAIN

No	Parts-No.	Description/Specification	Q'ty	Design-Location	Serviceable	Remark
1	JK72-21251A	PMO-CASE LOWER	1	ABS, BLACK	Y	
2	JK81-20182A	MAIN-BOARD	1	Rockchip, RK3566	Y	
3	JK59-30077P	KEYBOARD	1	48KEY, RAISED	Y	
4	JK81-20183A	PRINTER	1	2", THERMAL	Y	
5	JK81-20184A	SPEAKER	1	3W	Y	
6	JK72-21255A	PMO-POWER BUTTON	1	ABS, BLACK	Y	
7	JK81-20185A	POWER SWITCH-BOARD	1		Y	
8	JK81-20186A	PRINTER-BOARD	1		Y	
9	JK81-20187A	RMO-FOOT	4	RUBBER	Y	
10	S600200006A	SCREW-TAPPING : PWH,M3X8	18	CASE UPPER, CASE LOWER, HOLDER LCD, BOARD, SPEAKER	Y	
11	S600200032A	SCREW-TAPPING : PH,M2X8	3	PRINTER	Y	
12	JK81-20188A	SD-BOARD	1		Y	OPTION
13	JK81-20189A	TOUCH PANEL	1	5", PCT	Y	
	JK81-20190A	PMO-WINDOW FRONT	1	ACRYL, 투명	Y	OPTION
14	JK72-21254A	PMO-HOLDER LCD	1	ABS, BLACK	Y	
15	JK81-20191A	LED	1	1LINE	Y	
16	JK81-20192A	PMO-WINDOW REAR	1	ACRYL, 반투명(SMOG)	Y	
17	JK72-21252A	PMO-CASE UPPER	1	ABS, BLACK	Y	
18	S600200011A	SCREW-TAPPING : PH,M3X8	4	LED(REAR)	Y	
19	S600200016A	SCREW-TAPPING : PH,M2X4	3	CUTTER PAPER	Y	
20	JK70-20304A	IPR-CUTTER PAPER	1	SUS	Y	
21	JK81-20193A	LCD	1	5", TFT	Y	
22	JK72-21253A	PMO-COVER PRINTER	1	ABS, BLACK	Y	
23	JK81-20194A	PLATEN ROLLER	1		Y	
24	JK81-20195A	ADAPTOR	1	9V, 5A	Y	
25	JK39-20004A	POWER CABLE	1	EUROPE	Y	
	JK39-20004B			USA		
	JK39-20004C			UK		
	JK39-20004D			AUSTRALIA		
	JK39-20004E			KOREA		
	JK39-20004F			SOUTH AFRICA		
	JK39-20004G			ISRAEL		
	JK39-20004H			INDIA		
	JK39-20004J			ARGENTINA		

5-2 ASS'Y KEYBOARD (48KEY)

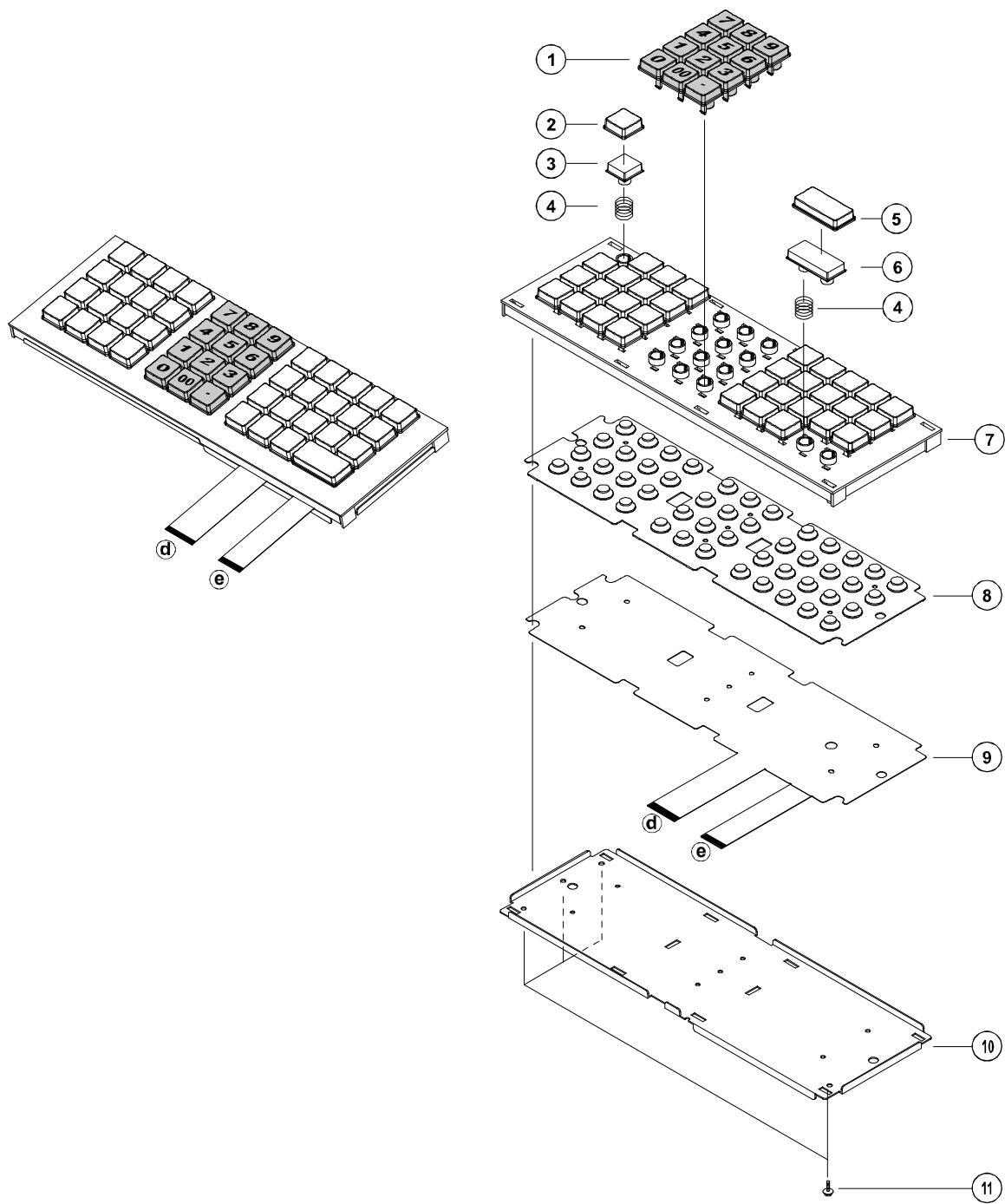


Figure 5-2 ASS'Y KEYBOARD (48KEY)

5. Exploded View and Parts List

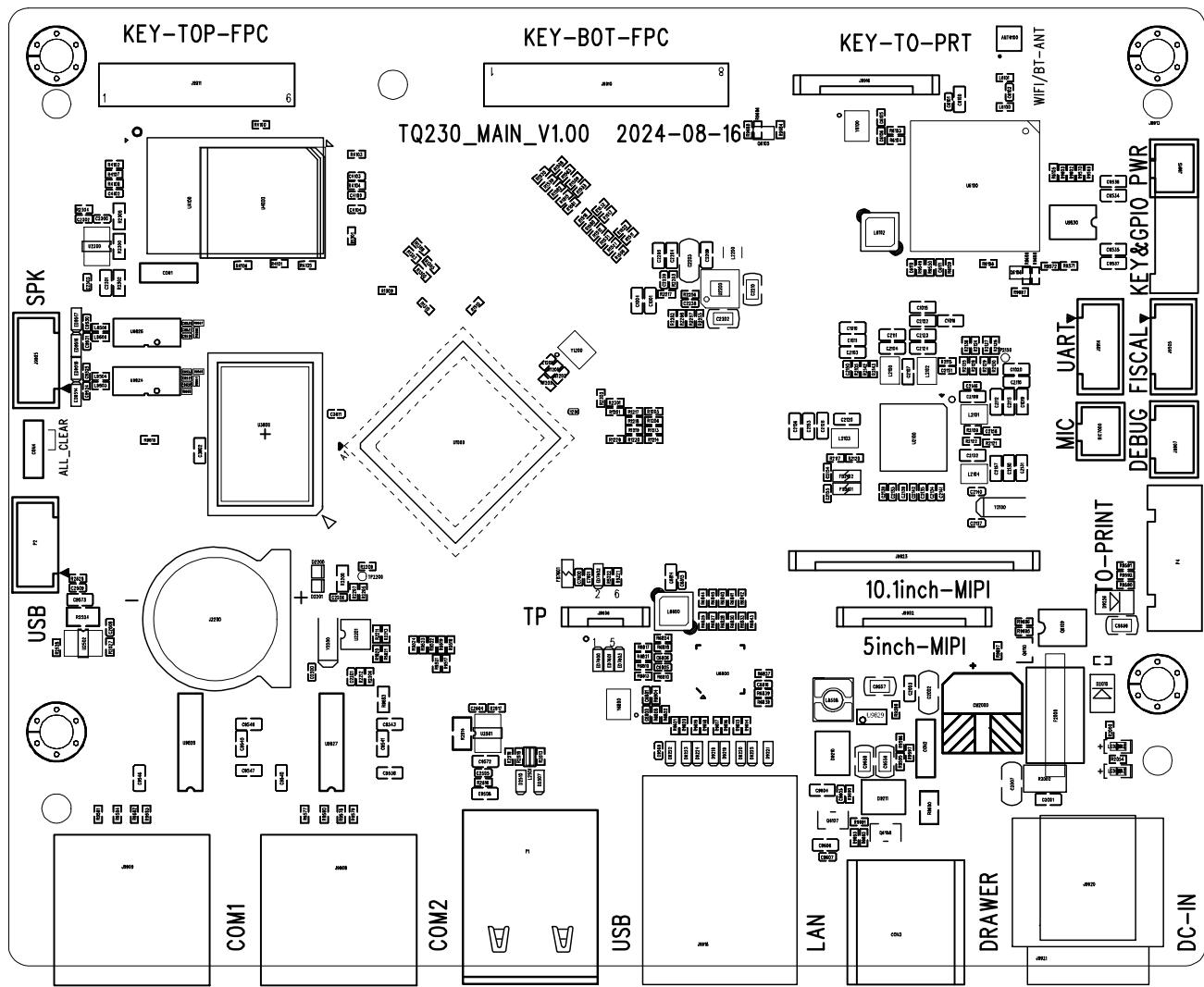
5-2 ASS'Y KEYBOARD (48KEY)

No.	Parts No.	Description / Specification	Q'ty	Design-Location	Serviceable	Remark
-	JK59-30077P	UNIT-KEYBOARD:ZETA-A50,RAISED,48KEY	1		Y	
1	JK72-20483A	KEY NUMBER SET	1		Y	
2	JK72-20476A	PMO-KEY CAP_1X1	32		Y	
3	JK72-20479A	PMO-KEY TOP_1X1	32		Y	
4	JK81-20061A	RETURN-SPRING	36		Y	
5	JK72-20477A	PMO-KEY CAP_1X2	2		Y	
6	JK72-20480A	PMO-KEY TOP_1X2	1		Y	
7	JK81-20052A	PMO-KBD FRAME_48,RAISED	1		Y	
8	JK81-20052D	CONTACT-RUBBER_48	1		Y	
9	JK81-20052C	ASSY-FPC,48KEY,RAISED	1		Y	
10	JK81-20052B	IPR-BOTTOM PLATE_48	1		Y	
11	S600200006A	SCREW-TAPPING:PWHT,M3,L8	4		Y	
12	JK81-20062A	RETURN-SPRING_S:1X2,2X2	1		Y	
13	JK81-20098A	AS-BALANCE-BAR_L	1		Y	
14	JK72-20482A	PMO-GUIDE HOLDER_R	1		Y	

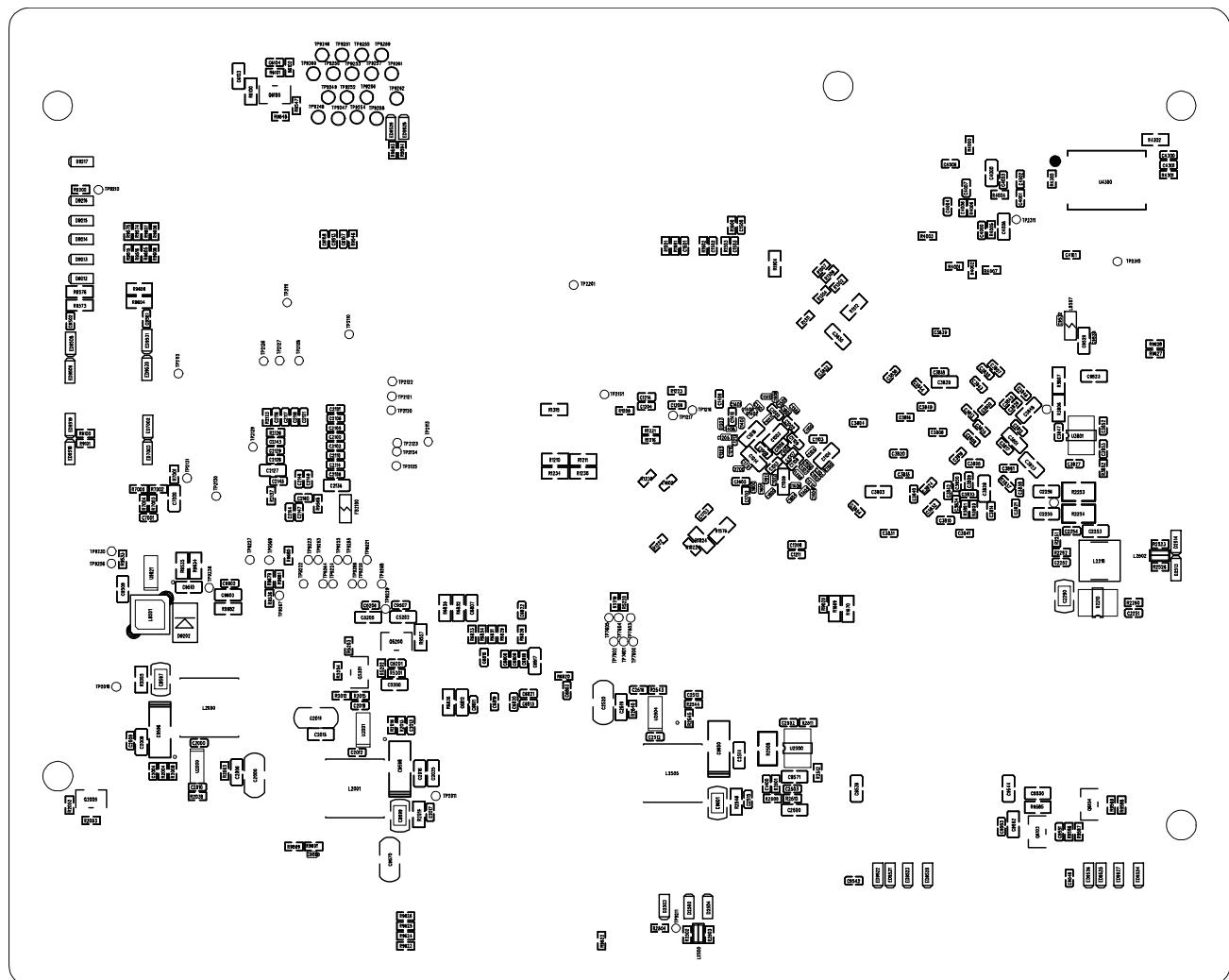
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6 PCB Layout

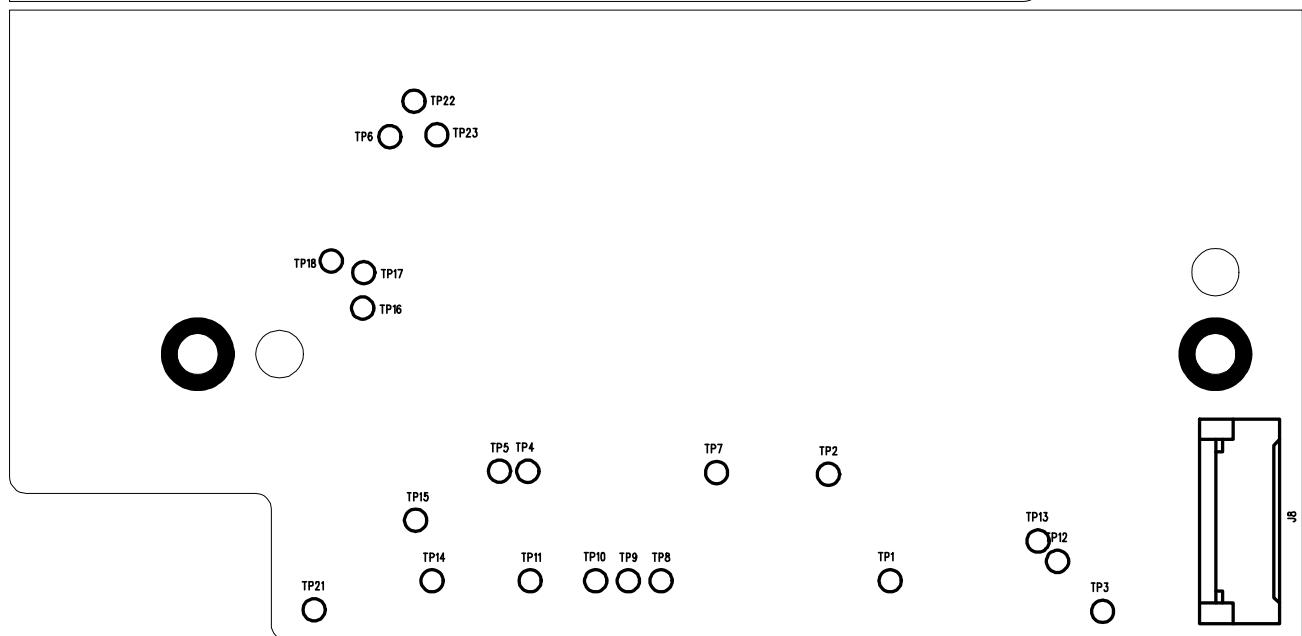
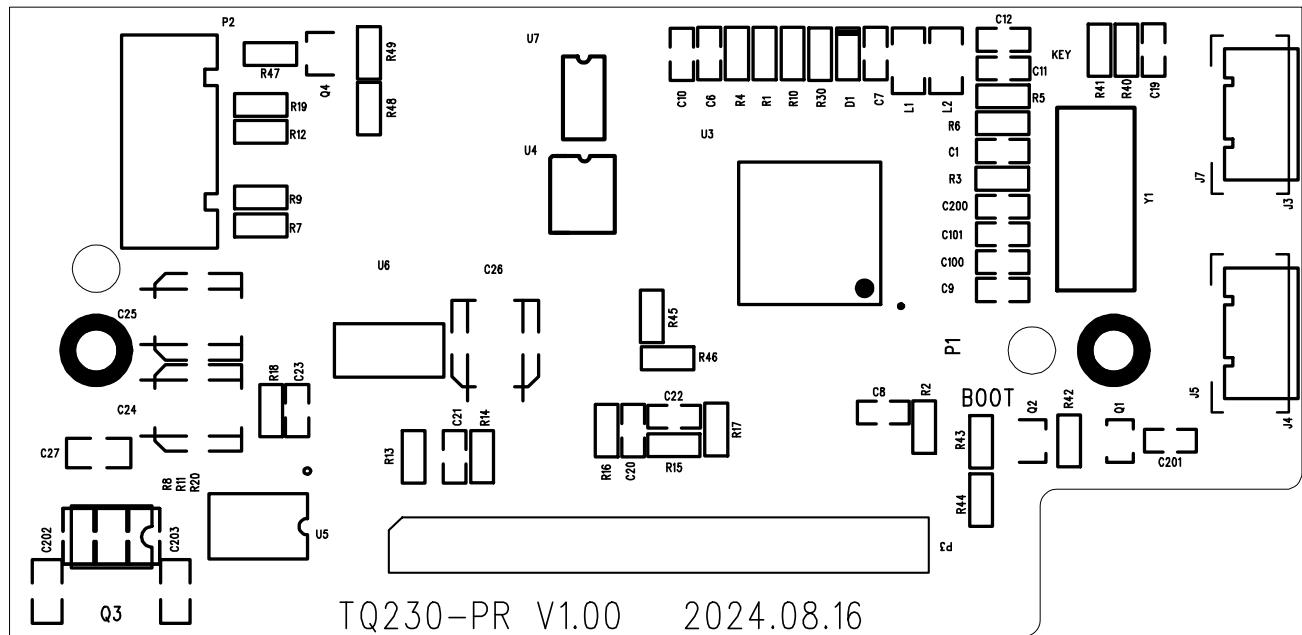
6-1 MAIN PCB



6. PCB Layout

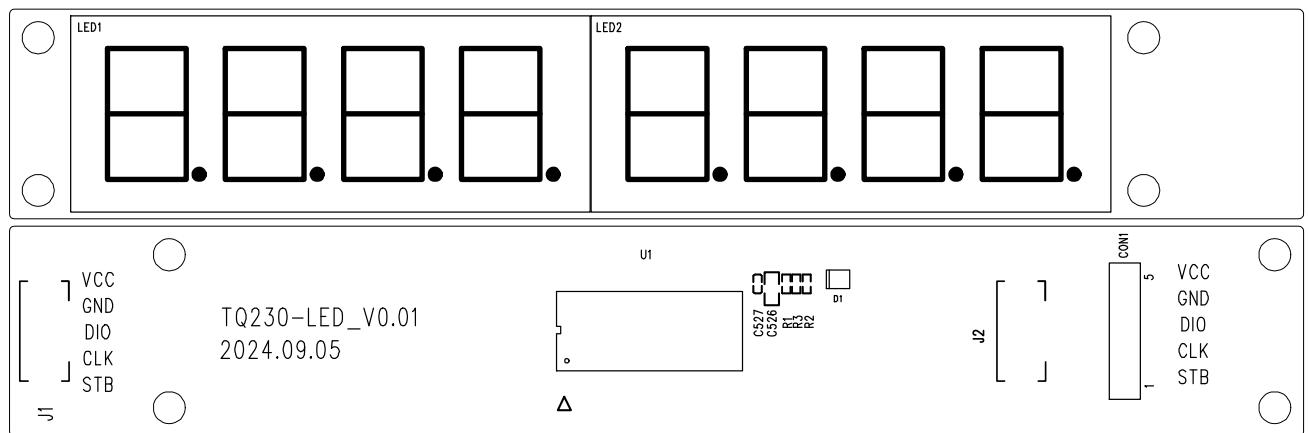


6-2 PRINT PCB



6. PCB Layout

6-3 LED PCB



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UPDATE LOG

Use this page to record any special servicing information such as Service Bulletins or Supplements.

Use this page to record any special servicing information such as Service Bulletins. When possible, record changes to Code numbers directly on the actual Parts List.

Always records Service Bulletin numbers and Application Dates on this log to ensure that your data is always as current as possible.

FCC Statement:

This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment 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.

The device has been evaluated to meet general RF exposure requirement. This equipment should be installed and operated with minimum distance between 20cm the radiator your body:Use only the supplied antenna.

SAM4S

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