

SAMSUNG**Mobile Device
SM-S901B Common****SERVICE *Manual*****Contents****- Level 3 -**

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1. SVC Tech Information

1-1. Calibration Items

- 'O' mark items must be calibrated after repairing/replacing each part.

TSP Cal.	O	Force Touch Cal.	X	Optical Finger print Cal.	X
Speaker Cal.	O	Digital Hall IC Cal.	X	TOF Camera Cal.	X
Water Resistance	O	Ranging Sensor Cal	X	UWB Cal	X
Multi Camera Cal.	O	mmWave RF Cal. (Only for USA/Japan)	O		

1-2. Part list which must be changed after reassembly

Item	Code	Picture
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Kit code (including all the parts below) : GH82-27496A

① Back glass tape (1)	GH81-21612A	
② CAM Inner Deco (SUS) (1)	GH98-47029A	
③ Flash mic tape (1)	GH02-23262A	
④ Inner Deco Sponge (1)	GH02-23406A	
⑤ Inner Deco Air vent tape (1)	GH02-23264A	
⑥ Screws for Rear(18) & Sub-PBA (3)	6001-003428	3.0mm(Silver, yellow resin) 
⑦ Screws for Upper SPK (2)	6001-003229	2.5mm(Silver, white resin) 
⑧ WPC Sealing tape for Cam Flash & Tele (2)	GH81-21611A	
⑨ WPC tape for MIC (2)	GH02-07406A	

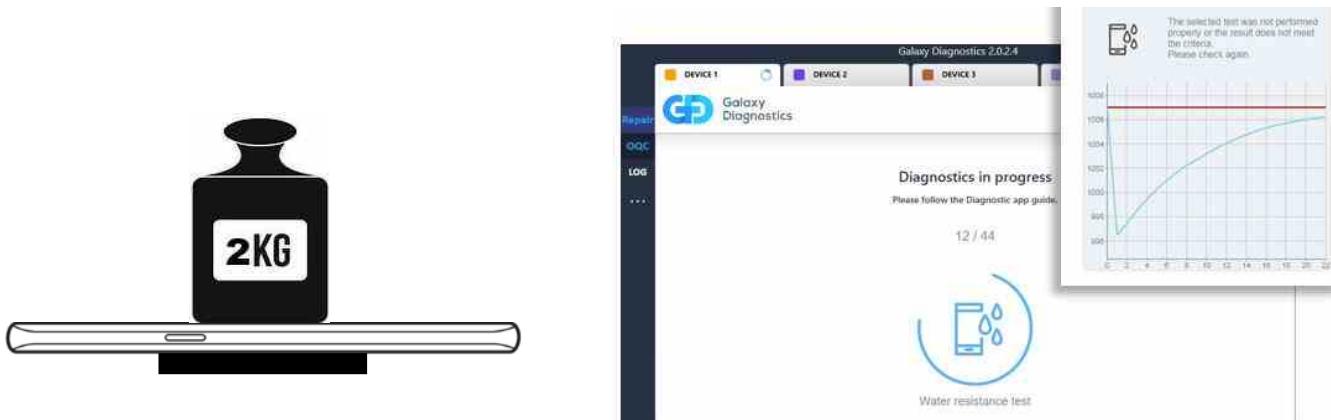
1. SVC Tech Information

1-3. JIG

- Pressing Pad TOP : **GH81-22113A**
- Pressing Pad BTM : GH81-19344A (Common)
- Common Jig : AOD, Pressing Jig Body, Camera Cal Jig(chart), 2Kg Weight, etc
- UV protect file Jig : N/A (No protect film)
- New Jig : None

1-4. WRT Test Information

- JIG Type : 2kg Weight + Inner Barometer sensor



- Sealing point
: Rear Flash Window, Tele Camera Window, Upper Mic, Lower Mic



Upper MIC



Lower MIC



Flash Window

Tele CAM Window

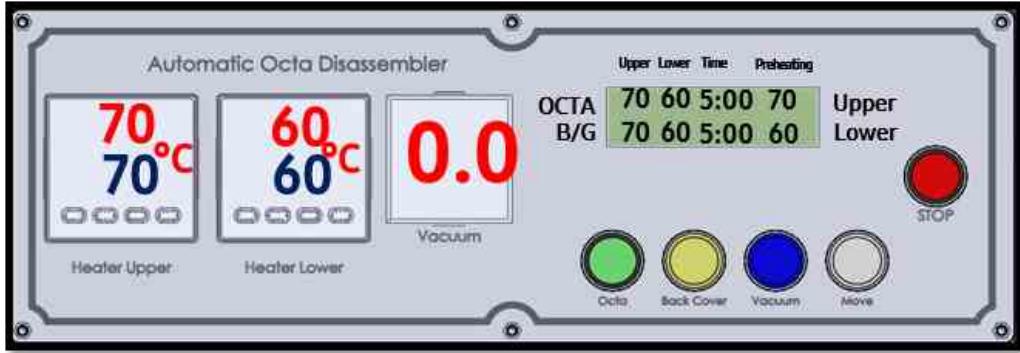
1. SVC Tech Information

1-5. AOD Setting Information

- Temperature & Time

: Set the AOD to the following temperature to remove the Back Cover

→ Heat the upper to 70°C and lower to 60°C for five (5) minutes



- Suction pad type & location

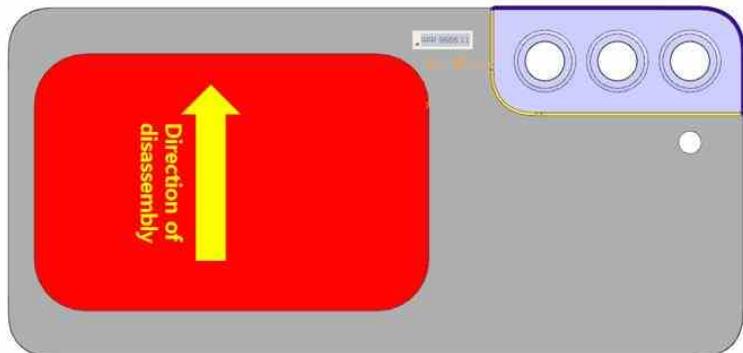
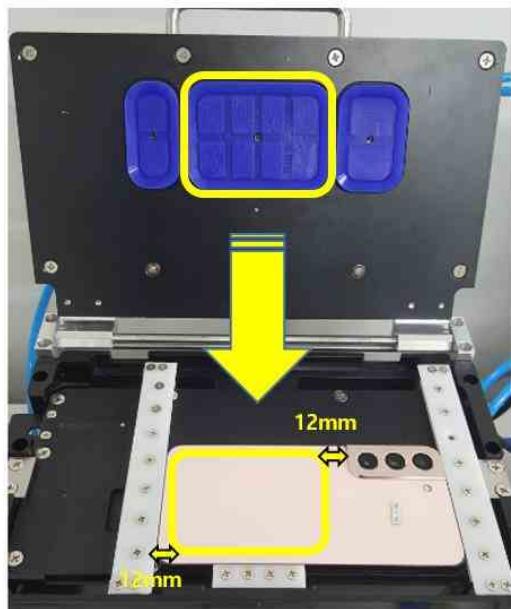
- Change the Center Suction Seal

: To prevent damage to Camera windows, replace the Orange Center Seal with the 77mm Blue Seal (GH81-18490A)

- Device Placement

: Place the device face down with the Camera positioned towards the lower left side of lower plate. Align the device with the suction lines so that the Center Seal is aligned directly on the center of the Back Cover.

Once aligned, lock the device in place by twisting the Torque Wheel, then lower the upper plate.



2. SVC Model Information

2-1. RAM & Storage size by region

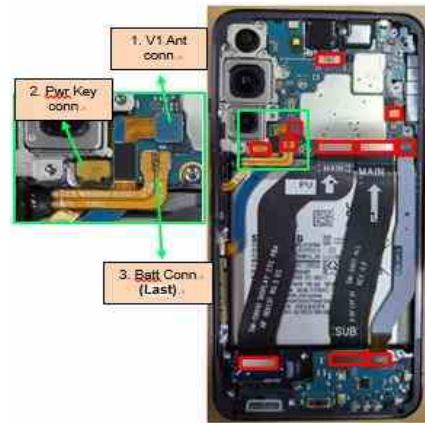
Model name	Region	SKU CODE Rule	RAM	ROM	Remark
			(GB)	(GB)	
SM-S901B	EUR / CIS	SM-S901BXXDXXX	8	128	2-Nano + eSIM
		SM-S901BXXGXXX	8	256	

2-2. Disassembly & Reassembly (Important management points)



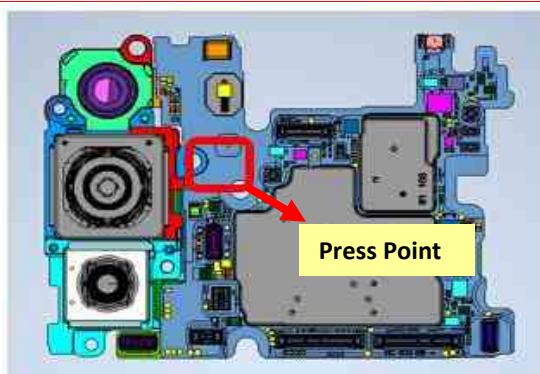
When handling main PBA,
Don't touch and press red area

When assemble
connectors on PBA,
Need to assemble
battery connector
lastly.
(Refer image)



When assembling main PBA on the Front,
Be careful not to get stuck in the upper right corner

When disassemble main UB
connector and IF CTC connector,
Need to use disassemble point



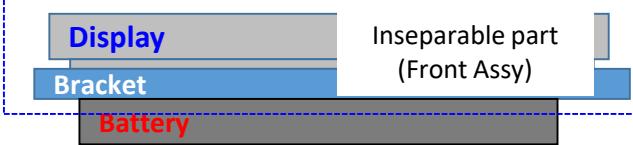
When assembling main PBA on the Front, press the PBA after mounting and press cameras.
(Be careful to disconnect camera connectors)

2. SVC Guide Information

2-3. Disassembly & Reassembly (Battery replacement)

Do not reuse the battery after it has been removed. It must be replaced with a new battery.

* Reusing a removed battery could lead to potential safety hazards

Type	Structure
	<p>Display and Bracket are inseparable</p> <p>Battery replacement is required when Front Ass'y components are defected</p>

3. Product Function

3-1. Main Function

Item	Description
OS	Android S OS V12
Network	<p>2G - GSM : GSM850 / GSM900 / DCS1800 / PCS1900</p> <p>3G - WCDMA : B1 / B2 / B4 / B5 / B8</p> <p>4G LTE - FDD : B1 / B2 / B3 / B4 / B5 / B7 / B8 / B12 / B13 / B17 / B18 / B19 / B20 / B25 / B26 / B28 / B32 / B66 - TDD : B38 / B39 / B40 / B41</p> <p>5G - FDD : N1/ N2/ N3 / N5 / N7 / N8 / N12 / N20 / N25 / N28 / N66 - TDD : N38/ N40 / N41 / N75 / N77 / N78</p>
Battery	3,700mAh
Processor	Exynos2200, 2.8 GHz / 2.5 GHz / 1.3 GHz
Connectivity	GPS, Glonass, Beidou, Galileo, BT 5.2 support, USB 3.2 gen1,WiFi 802.11 a/b/g/n/ac/ax (2.4G+5GHz), NFC
Camera	<p>Rear - Wide : 50MP, A/F, OIS, F1.8 - Tele : 10MP, A/F, OIS, F2.4 - Ultra Wide : 12MP, F2.2</p> <p>Front : 10MP, A/F, F2.2</p>
Display	6.1" FHD+, Dynamic AMOLED 2X
RAM	8 GB
ROM	128 / 256 GB
Sensor	Accelerometer, Barometer, Fingerprint Sensor, Gyro Sensor, Geomagnetic Sensor, Hall Sensor, Light Sensor, Proximity Sensor

4. Exploded View and Parts List

4-1. Electronical Part List

: Refer to '[01-SM-S901B_Main Part List](#)' file which uploaded separately

4-2. Cellular phone Exploded View

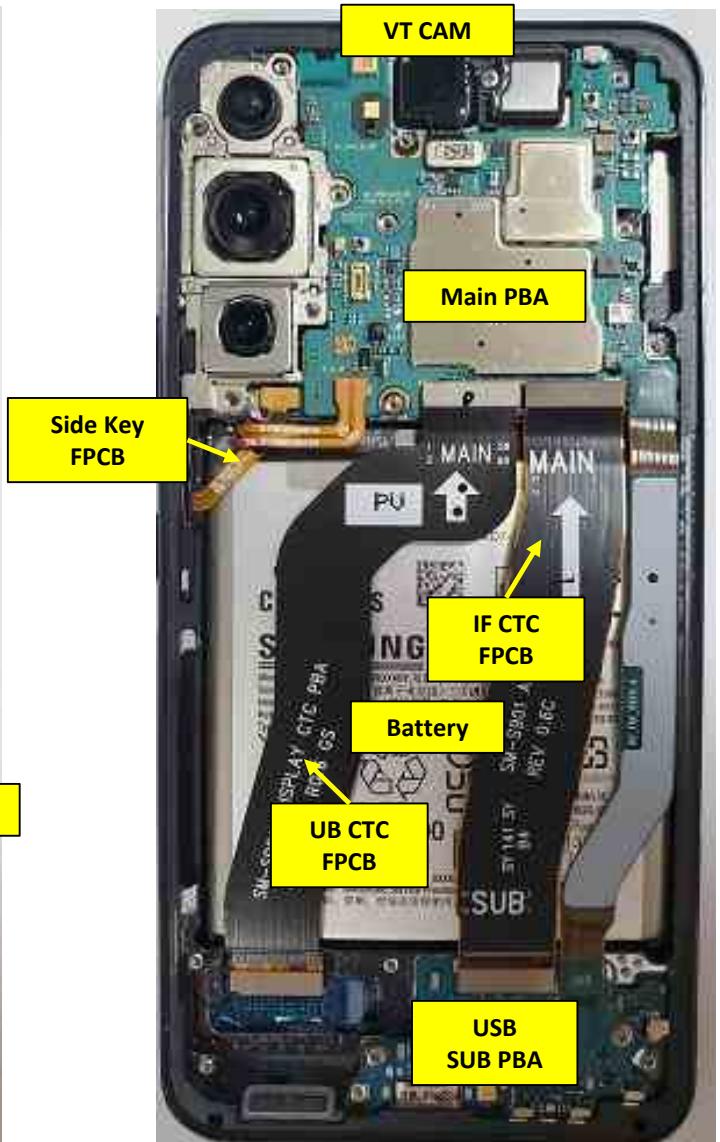
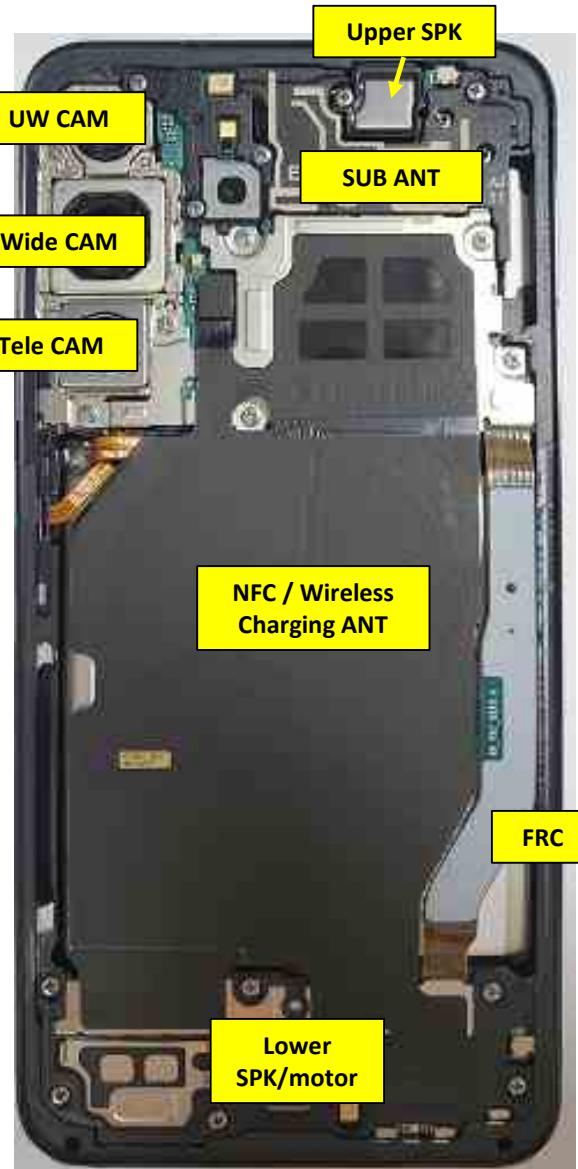
: Refer to '[02-SM-S901B_Exploded View](#)' file which uploaded separately

4-3. Cellular phone Parts list

: Refer to SVC PPL

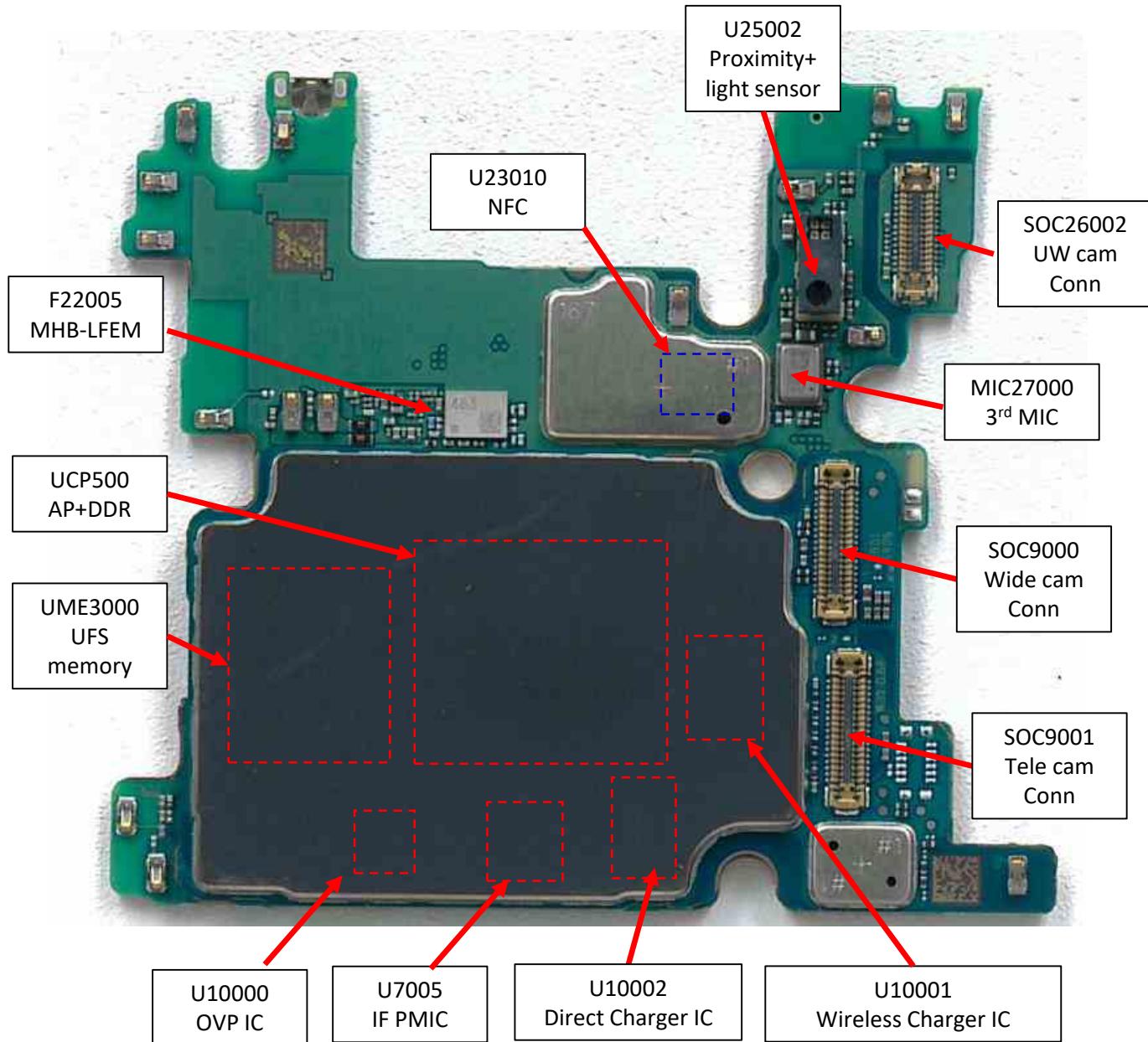
5. Components Layout

5-1. Components Layout



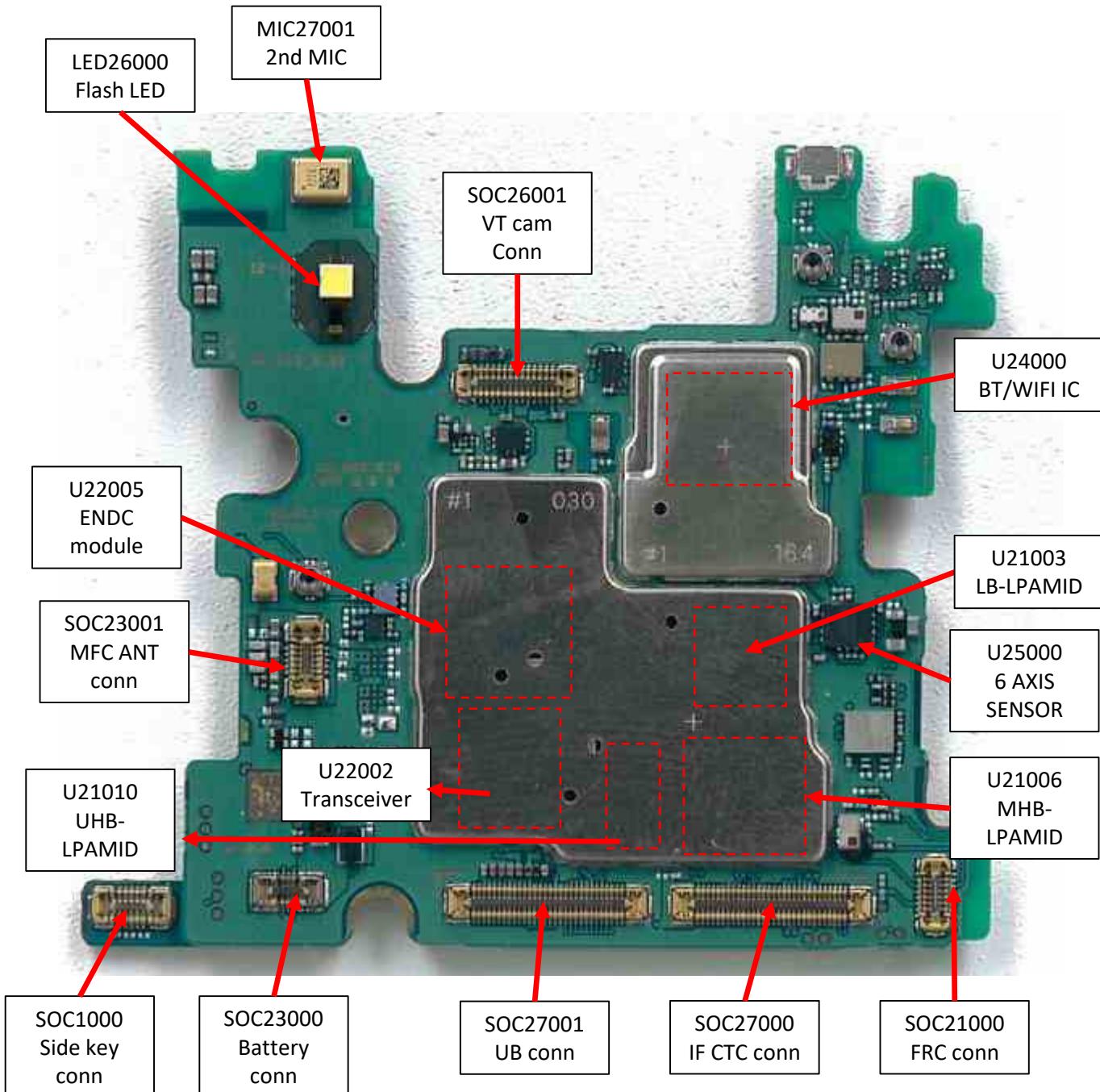
5. Components Layout

5-1. Components Layout



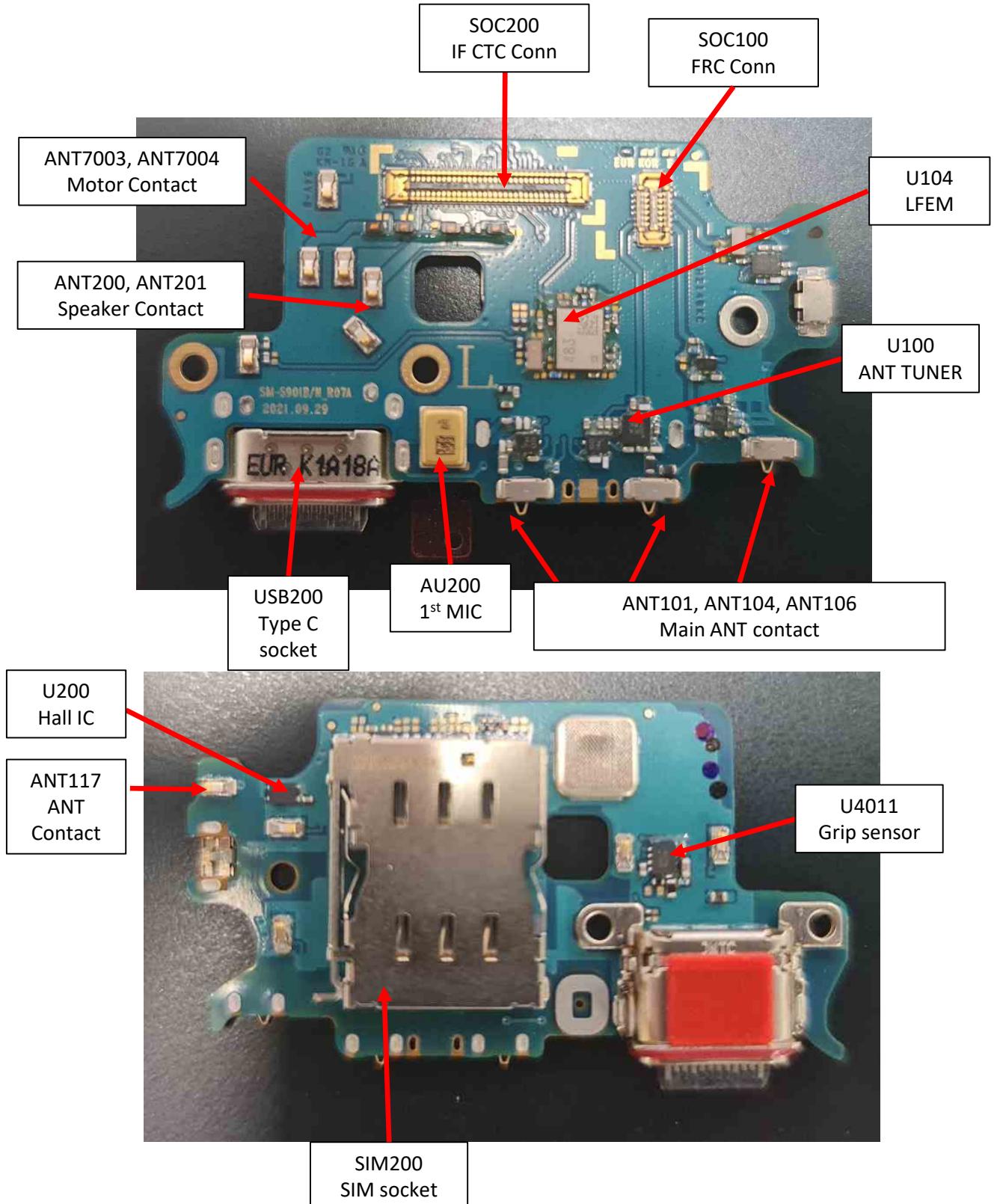
5. Components Layout

5-1. Components Layout



5. Components Layout

5-1. Components Layout



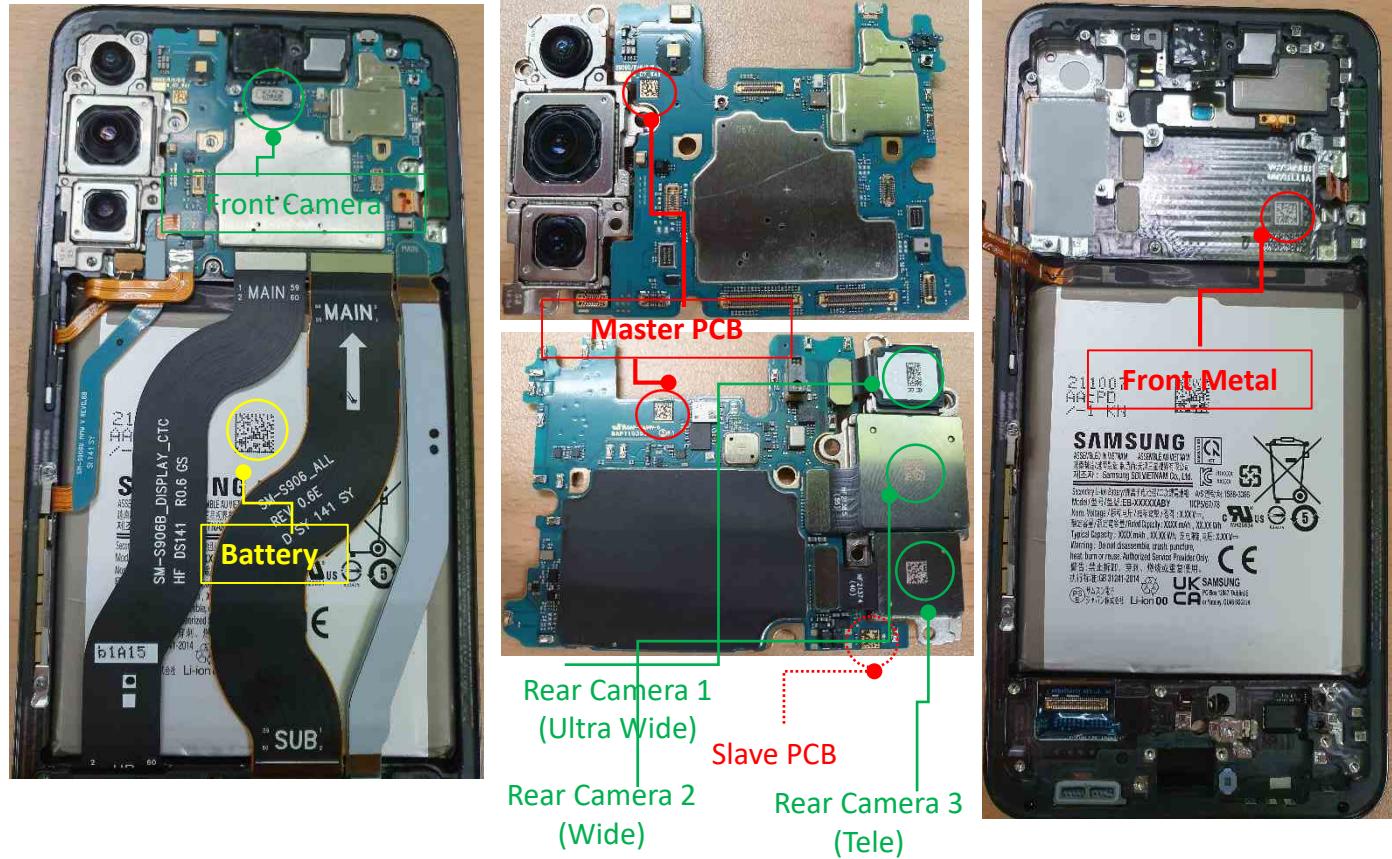
5. Components Layout

5-2. 2D barcode Location

- ※ The available QR Code may vary depending on the country/purpose.
- ※ It is required to scan Master PCB for Main PBA replacement and Front-Metal for Front- OCTA Ass'y replacement.

Model Code

[R0] SM-S90U/U1/W/B/E/N/S9010
 [G0] SM-S906U/U1/W/B/E/L/S9060



* The images are S906 (G0) base . S901(R0) also almost similar.

6. Trouble Shooting (L3)

- 6-1. Display
- 6-2. Touch
- 6-3. Power, Charging
- 6-4. Camera
- 6-5. Audio
- 6-6. Sensor
- 6-7. Connectivity (WiFi, GPS, NFC)
- 6-8. No SVC
- 6-9. USIM
- 6-10. SPEN

6-1. Display

6-1-1. Display Black Display (L3)

1) Symptom

- Description : No display after power on. Temporary no display or dimmed display

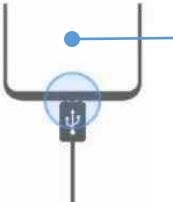


2) Defect Decision Conditions

- Noised images on the screen after turning on
- Check booting sound and vibration.

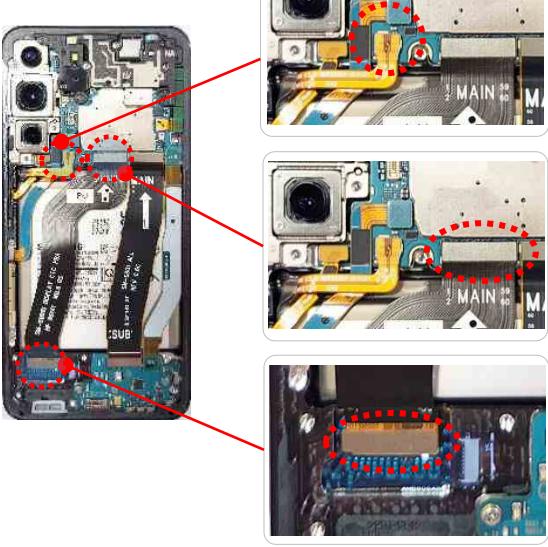
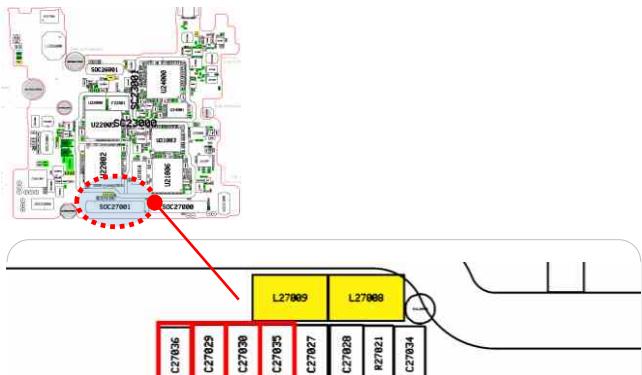
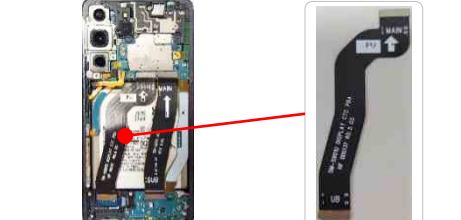
3) Repair Guide

- **Caution : Disconnect battery connector first when it shows.**

Image	Description
 <div data-bbox="396 1112 648 1175" style="border: 1px solid black; padding: 5px; width: fit-content;"> Checking external damage of the device. </div>	<ol style="list-style-type: none"> 1. Check if there is any damage of external impact on the device.
 <div data-bbox="403 1362 597 1424" style="border: 1px solid black; padding: 5px; width: fit-content;"> * Charging sound or vibration </div>	<ol style="list-style-type: none"> 2. Check the charging notification sound or vibration when connected to charger. <ul style="list-style-type: none"> - Should be sound or vibration. - The device keep 'No display' status.
 <div data-bbox="213 1851 313 1882" style="margin-right: 20px;">[AOD Jig]</div> <div data-bbox="457 1851 630 1882" style="margin-left: 20px;">[AOD mini]</div>	<ol style="list-style-type: none"> 3. Disassemble the device. <ul style="list-style-type: none"> - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.

6-1. Display

6-1-1. Main Display Black Display (L3)

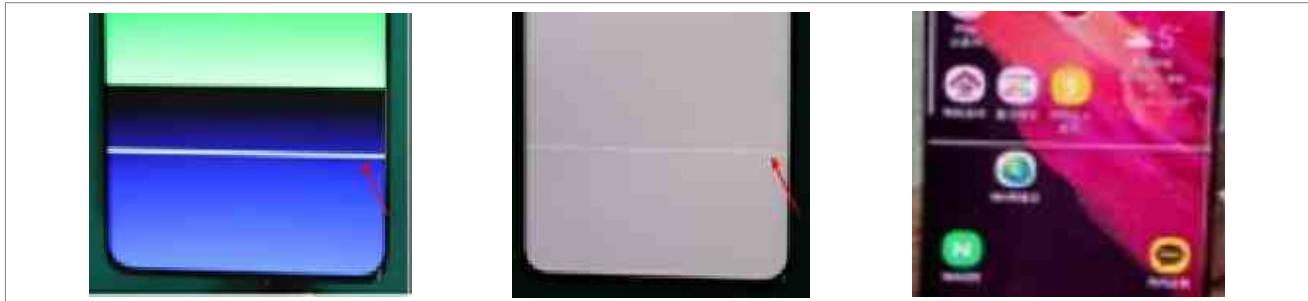
Image	Description
	<p>[Attention]</p> <p>4. Disconnect the battery connector at first. (Ref. SOC24003)</p> <p>5. Check the 'main PBA ↔ Display Con to Con' connectors and connect it again when it connected improperly. After that, Connect the battery connector again and check the display.</p> <p>6. Check the 'Display Con to Con ↔ UB module' connectors and connect it again when it connected improperly. After that, Connect the battery connector again and check the display.</p>
 SOC27001	<p>7. Check 'Capacitors' nearby 'SOC27001' on the PBA as below.</p> <ul style="list-style-type: none"> - VDD_MAIN_DDI_3P0 = 3.0V (C27030) - VDD_MAIN_DDI_1P8 = 1.8V (C27029) - VDD_MAIN_DDR_1P5 = 1.5V (C27036) - ELAVDD_7P1 = 5.8~8.0V (C27035) <p>If each power level is low, change the capacitor. If the device is not working normally after changing the capacitor, Change main PBA with new one and check the device.</p>
	<p>8. Change the Display CTC FPCB with new one and check the device.</p>
 <div data-bbox="453 1768 684 1861" style="border: 1px solid black; padding: 5px; width: fit-content; margin-left: auto; margin-right: 0;"> • Exchange the Display Module </div>	<p>9. If not, Finally, Change the Display Module with new one and check the device.</p>

6-1. Display

6-1-2. Main Display Bit defect (Horizontal line) (L3)

1) Symptom

- Description : Bit defect(Horizontal line) after power on.



2) Defect Decision Conditions

- Description : Even if the screen changes or the device reboots, the bit failure phenomenon remains.

3) Repair Guide

- Caution : First of all, Check whether there is any damage of external impact on the device or not.

Image	Description
 <div data-bbox="371 1077 673 1150" style="border: 1px solid black; padding: 5px; width: fit-content; margin-left: 20px;"> Checking external damage of the device. </div>	<ol style="list-style-type: none"> Check if there is any damage of external impact on the device. (especially, Front Window)
 <div data-bbox="213 1541 313 1568" style="margin-left: 20px;">[AOD Jig]</div> <div data-bbox="506 1535 630 1568" style="margin-left: 20px;">[AOD mini]</div>	<ol style="list-style-type: none"> Disassemble the device. - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.
 <div data-bbox="414 1645 630 1707" style="border: 1px solid black; padding: 5px; width: fit-content; margin-left: 20px;"> <ul style="list-style-type: none"> Exchange the Display Module </div>	<ol style="list-style-type: none"> Exchange the Display Module with new one and check the device.

6-1. Display

6-1-3. Main Display Screen overlap / shaking / flicker (L3)

1) Symptom

- Description : Screen overlap / Shaking / Blinking after power on. Temporary symptom or continuous maintenance.

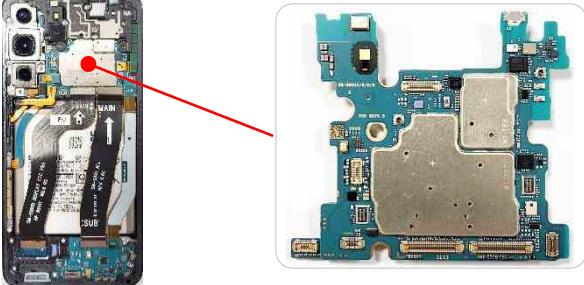
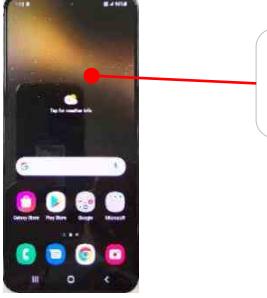


2) Defect Decision Conditions

- Description : You can see that symptom when something is changed or something is played on the screen of device. (ex : contents of Youtube[Mosaic Pattern], swap menu block on screen [ICON Crack])

3) Repair Guide

- Caution : Disconnect battery connector first when it shows.

Image	Description
 [AOD Jig] [AOD mini]	<p>1. Disassemble the device. - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.</p>
	<p>2. Change the Main PBA. with new one and check the device.</p>
 <div style="border: 1px solid black; padding: 5px; width: fit-content; margin-left: 10px;"> <ul style="list-style-type: none"> • Exchange the Display Module </div>	<p>3. If not, Exchange the Display Module (or Front Assy) with new one and check the device.</p>

6-2. Touch

6-2-1. Touch Malfunction

1) Symptom

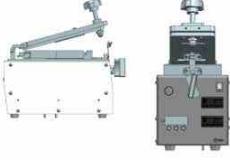
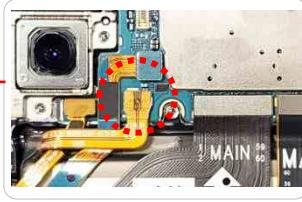
- Description : Abnormal touch(Ghost touch), No Touch and others

2) Defect Decision Conditions

- Description : Abnormal touch(Ghost touch), No Touch and others

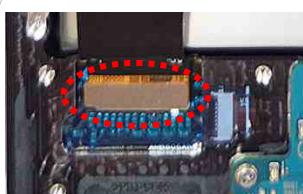
3) Repair Guide

- Caution : First of all, Check whether there is any damage of external impact on the device or not.

Image	Description
 <div data-bbox="443 709 692 771" style="border: 1px solid black; padding: 5px; width: fit-content;"> Checking the external damage of the device. </div>	<p>1. Check if there is any damage of external impact on the device. (especially, Front Window)</p>
 	<p>2. If possible, Input key string *#2663#, click TSP FW update(General). After that, Check the *#0*# TSP test.</p> <p>If the touch test is not work normally, Check the next step.</p>
 <div data-bbox="213 1505 311 1535" style="margin-left: 20px;">[AOD Jig]</div>  <div data-bbox="506 1505 630 1535" style="margin-left: 20px;">[AOD mini]</div>	<p>3. Disassemble the device. - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.</p>
 	<p>[Attention]</p> <p>4. Disconnect Battery Connector at first. (Ref. SOC24003)</p>

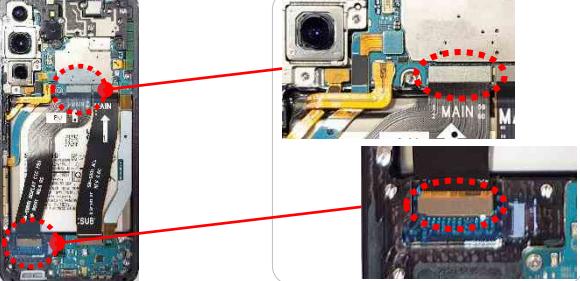
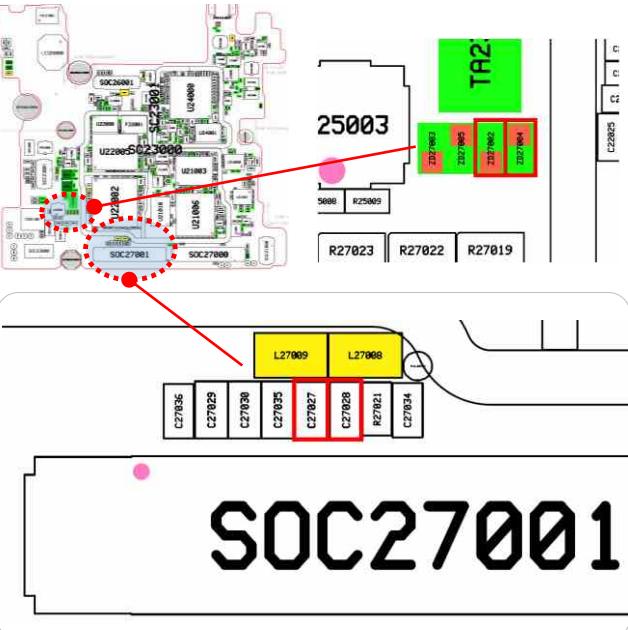
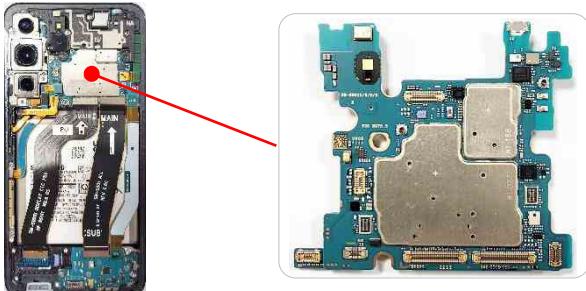
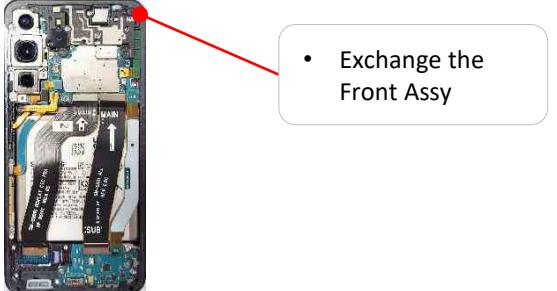
6-2. Touch

6-2-1. Touch Malfunction (Display)

Image	Description
	<p>5. Check the 'Main PBA ↔ UPPER Con to Con' connectors and connect it again when it connected improperly. After that, connect battery connector again and check the touch function.</p>
	<p>6. Check the 'Display ↔ LOWER Con to Con' connectors and connect it again when it connected improperly. After that, connect battery connector again and check the touch function.</p>
	<p>7. Change the Main PBA with new one and check the device.</p>
	<ul style="list-style-type: none"> • Exchange the Front Assy <p>8. If not, Finally, Change the Display Module (or Front Assy) with new one and check the device.</p>

6-2. Touch

6-2-2. No touch

Image	Description
	<p>1. Check the 'UPPER/LOWER Con to Con' connectors and connect it again when it connected improperly. After that, Connect battery connector again and check the touch function.</p>
	<p>2. Check 'capacitors or inductors' nearby 'SOC26002' on the PBA as below. - VDD_TSP_3P0 = 3.0V (Ref. C27027) - VDD_TSP_1P8 = 1.8V (Ref. C27028) - TSP_SPI_MISO/TSP_SPI_MOSI = 1.8V (Ref. ZD27002, ZD27004)</p> <p>If each power level is low, change the inductors and check the capacitors, resistors. If each TSP_SPI level is low, Go to next step.</p>
	<p>3. Change the Main PBA. with new one and check the device.</p>
 <ul style="list-style-type: none"> • Exchange the Front Assy 	<p>4. If not, finally, change the Display Module (or Front Assy) with new one and check the device.</p>

6-3. Power, Charging

6-3-1. No Power

1) Symptom

- Description : No display & vibration after press power key.



2) Defect Decision Conditions

- Description : The phone no any display & vibration after booting.

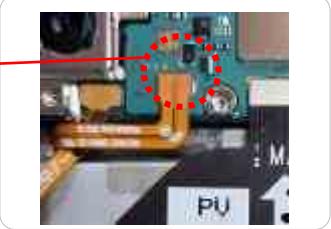
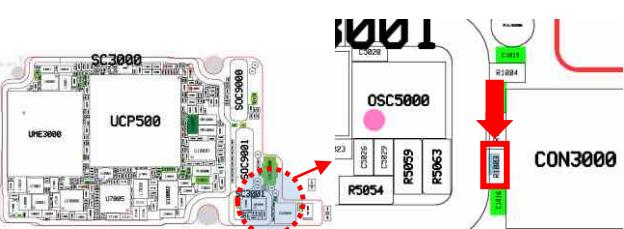
3) Repair Guide

- Caution : **Disconnect battery connector first when it shows.**

Image	Description
	<p>1. Check the charging notification sound or vibration when connected to charger. - Should be no sound and no vibration. - The device keep 'No Power' status.</p>
<div style="display: flex; justify-content: space-around;"> [AOD Jig] [AOD mini] </div>	<p>2. Disassemble the device. - Refer to '<u>Disassembly and assembly video guide for Galaxy S22</u>' from the GSPN.</p>
<div style="display: flex; justify-content: space-around;"> Water indicator tripped USB charging port burnt </div>	<p>3. Check the disassembled device for OOW. - Water damage. - Part burnt. (Charging port, PBA, Battery and others) - Broken traces and others.</p>

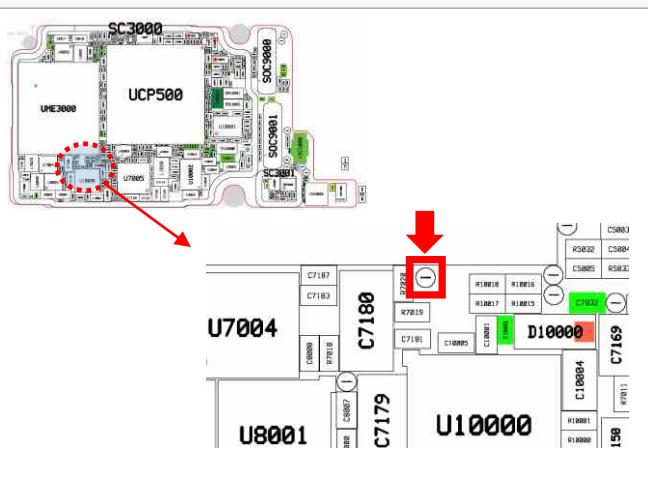
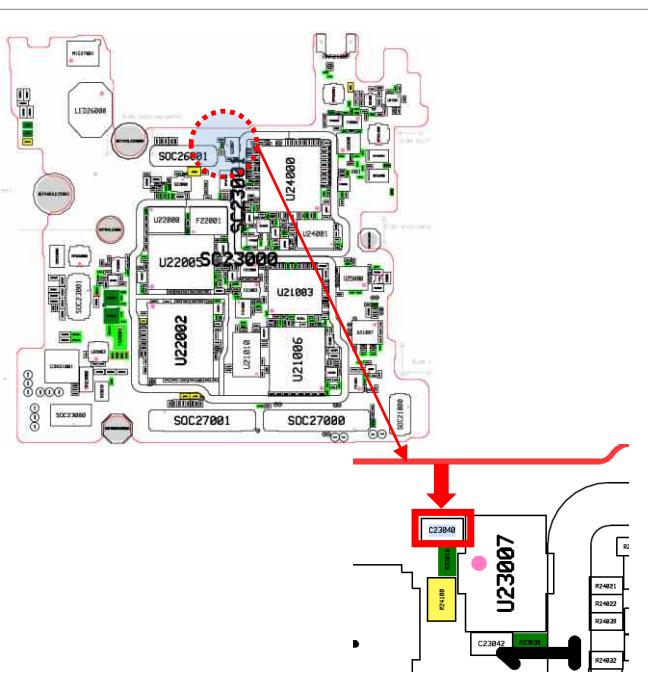
6-3. Power, Charging

6-3-1. No Power

Image	Description
 	<p>4. Check battery voltage (C23032,C23033,C23034) at first. (It's normal over 3.5v) If battery voltage is under 3.5v, Charge the battery by TA. If the voltage has not reached over 3.5V, replace the battery first. Even if replaced the battery, the battery voltage has not reached 3.5V, then check the 6-3-4 Charging Part.</p>
 <div style="border: 1px solid black; padding: 5px; width: fit-content; margin-left: 10px;"> * Need to change with battery </div>	<p>5. Power-on the phone and check the power-on sound or motor Vibration. If there is sound or motor vibration, replace the Front assembly including display.</p>
	<p>6. Check 'POWER KEY signal' on the PBA. -> check R1003 voltage when power key is pressed.</p>
	<p>1. If the R1003 voltage changes to 0V -> power key is OK 2. If the R1003 voltage does not change ->power key is abnormal. replace the POWER KEY FPCB.</p>

6-3. Power, Charging

6-3-1. No Power

Image	Description
	<p>4. Check the PS_HOLD (TP_AP_PS_HOLD) when power key is pressed during 2~3 seconds.</p> <p>If PS_HOLD signal is 0v after press power key, replace the PBA.</p>
	<p>5. Check the output voltage of U7000 and U7001</p> <ul style="list-style-type: none"> - C23040(Master_RF PBA) = 1.8V <p>※ Voltage level has $\pm 10\%$ margin</p> <p>Replace the PBA If the voltage level is abnormal</p>

6-3. Power, Charging

6-3-2. Reboot during Power on (L2)

1) Symptom

- Description : reboot during power on



2) Defect Decision Conditions

- Description : The phone is rebooting during power on.

3) Repair Guide

- Caution : **Disconnect battery connector first when it shows.**

Image	Description
	<p>1. Check power on current with Power Supply and ANYWAY JIG.</p>
	<p>1-1. Push down Anyway Jig switch 7,8 1-2. Power supply set to 4.4v 1-3. During booting, check current.</p>
	<p>2. If current is under 4A, check the battery connector connection and battery condition.</p>

6-3. Power, Charging

6-3-3. Sudden Discharge in the idle state (L2)

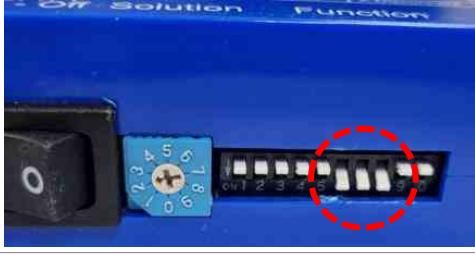
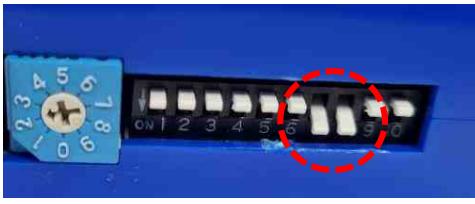
1) Symptom

- Description : Battery level decreases rapidly in the idle state.

2) Defect Decision Conditions

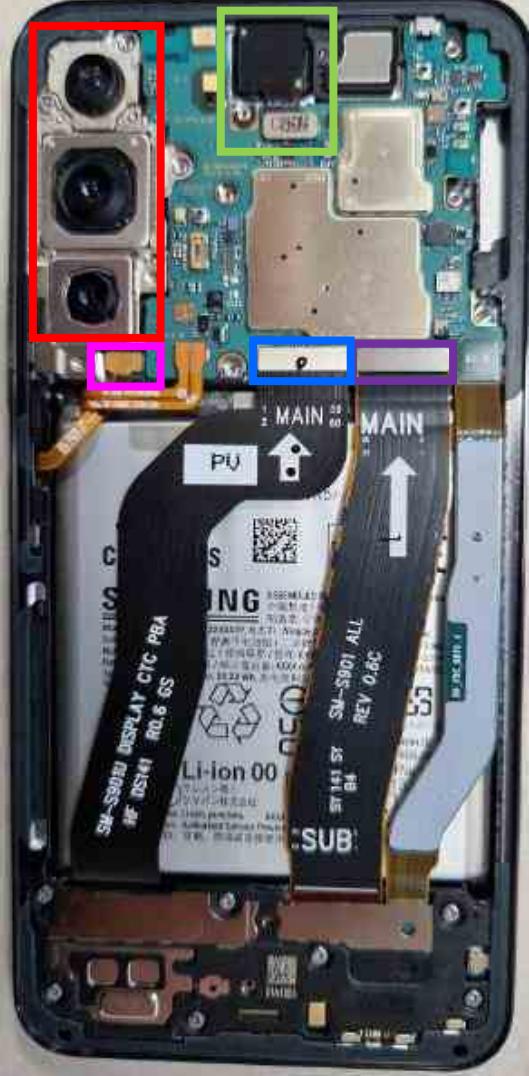
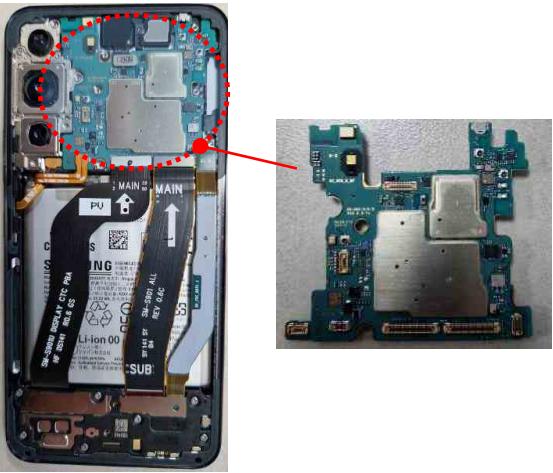
- Description : Battery level decreases rapidly in the idle state by abnormal current consumption.

3) Repair Guide

Image	Description
 	<p>1. Check Power-off leakage current. 1-1. Push down Anyway Jig switch 6,7,8 1-2. Check Power-off leakage current.</p>
 	<p>2-1. Check sleep current. . Push down Anyway Jig switch 7,8 . After booting, Check sleep current. 2-2. Check $-1\text{mA} \leq \text{Power-off leakage} \leq 2\text{mA}$ 2-3. Check sleep current $\leq 13.5\text{mA}$</p>
 [AOD Jig]	<p>3-1 If there is Power-off leakage problem.</p> <p>3-2. Disassemble the device. - Refer to '<u>Disassembly and assembly video guide for Galaxy S22</u>' from the GSPN.</p>
 [AOD mini]	

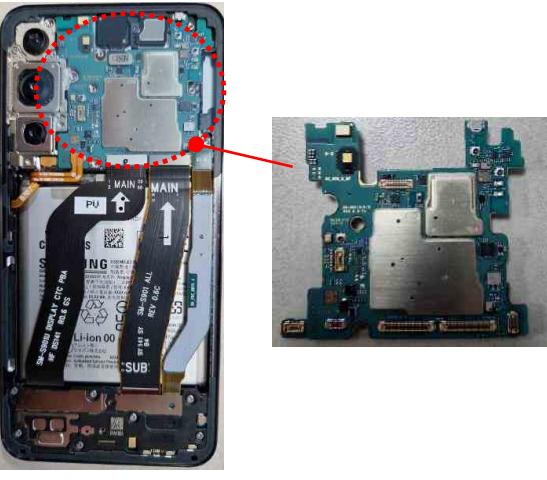
6-3. Power, Charging

6-3-3. Sudden Discharge in the idle state (L2)

Image	Description
	<p>4-1. If there is a thermal camera, check if there is a hot part and replace the hot part.</p> <p>4-2. If there isn't a thermal camera OR you can't find a hot part, detach the following parts one by one and recheck the leakage current. (Camera module, VT CAM, Power key, Sub CTC, UB FPCB)</p> <p>4-3. If leakage current goes down by detaching the part, replace the detached part by normal one.</p>
	<p>5. If leakage current doesn't go down OR the hot part can't be replaced, replace the PBA.</p>

6-3. Power, Charging

6-3-3. Sudden Discharge in the idle state (L2)

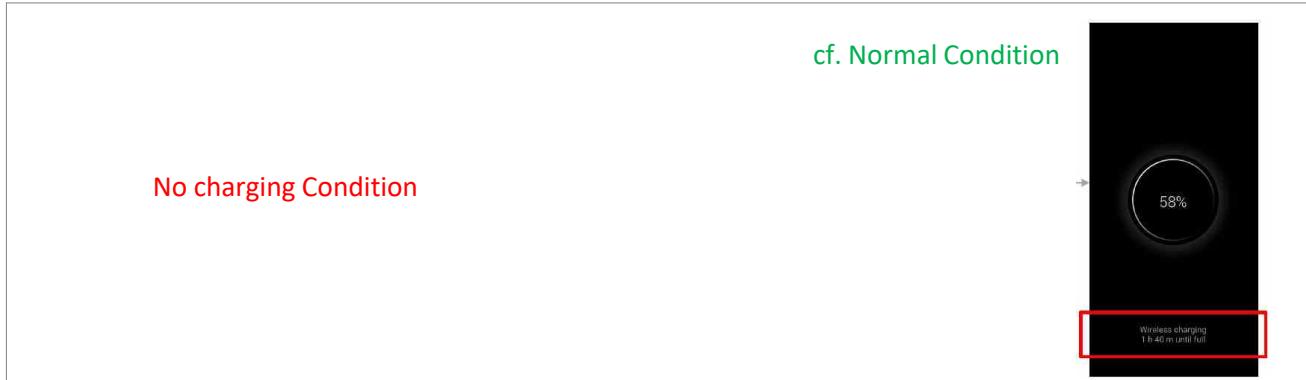
Image	Description
	<p>6-1. If there is a thermal camera, check if there is a hot part on PCB in the idle state and replace the hot part.</p>
	<p>(Thermal camera sample image) 6-2. Search where the hotspot appears.</p>
	<p>6-3. If there isn't a thermal camera OR you can't find a hot part OR the hot part can't be replaced, replace the PBA.</p>

6-3. Power, Charging

6-3-4. No charging (Wireless charging / Power sharing)

1) Symptom

- Description : No charging after contacted wireless charger. / No power sharing operation



2) Defect Decision Conditions

- Description : No charging notification sound, vibration and UI when contacted wireless charger.

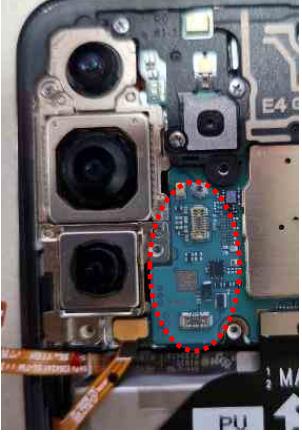
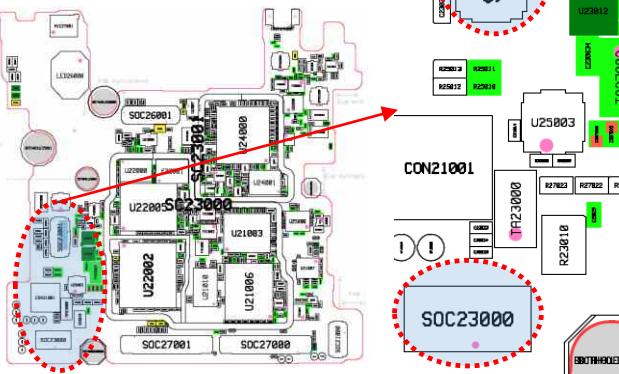
3) Repair Guide

- Caution : Disconnect battery connector first when it shows.**

Image	Description
 <div style="border: 1px solid black; padding: 5px; width: fit-content; margin-left: 10px;"> * No charging sound, vibration and UI   </div>	<ol style="list-style-type: none"> Check the charging notification sound or vibration when contacted wireless charger. - Should be no sound, no vibration and no UI. - Save the log and analyze it.
 [AOD Jig] [AOD mini]	<ol style="list-style-type: none"> Disassemble the device. - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.
  <div style="margin-top: 10px;"> ANT connector damaged or incomplete connection </div>	<ol style="list-style-type: none"> Check the disassembled device for OOW. - Part burnt. (PBA, Battery and others) - Wireless ANT connector damaged or incomplete connection - Broken traces and others.

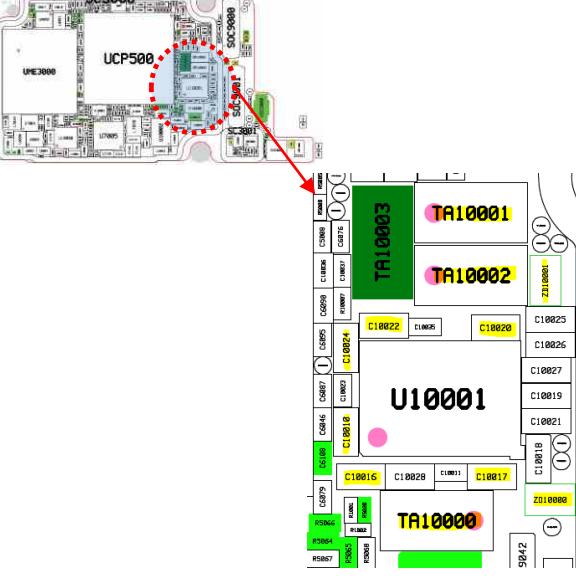
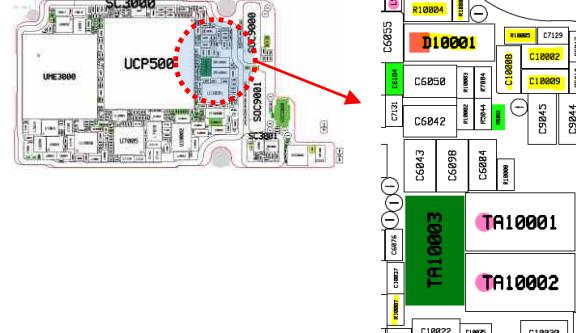
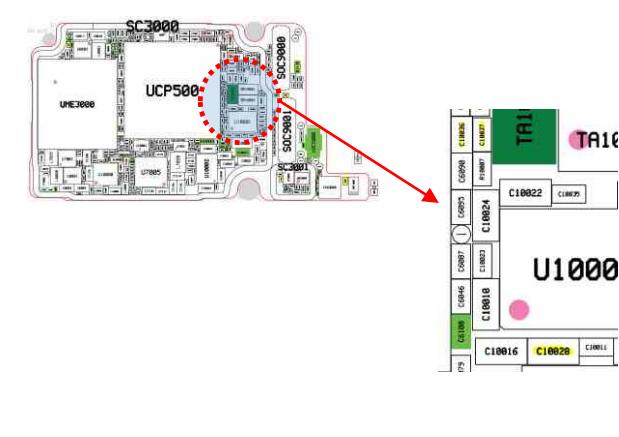
6-3. Power, Charging

6-3-4. No charging (Wireless charging / Power sharing)

Image	Description
	<p>4. Check the 'PBA ↔ wireless charging ANT connector(SOC23001 on the Master PBA)' and 'PBA ↔ battery connector(SOC23000 on the Master PBA)' and the components nearby.</p> <p>Connect it again when it connected improperly.</p>
	<p>After that, connect battery connector and wireless ANT connector again.</p> <p>And check wireless charging when contacted wireless charger.</p>
	<p>5. Exchange the wireless charging ANT with new one and check the device.</p> <p>6. If there is no defects on any components mentioned above, Please replace the PBA.</p>

6-3. Power, Charging

6-3-4. No charging (Wireless charging / Power sharing)

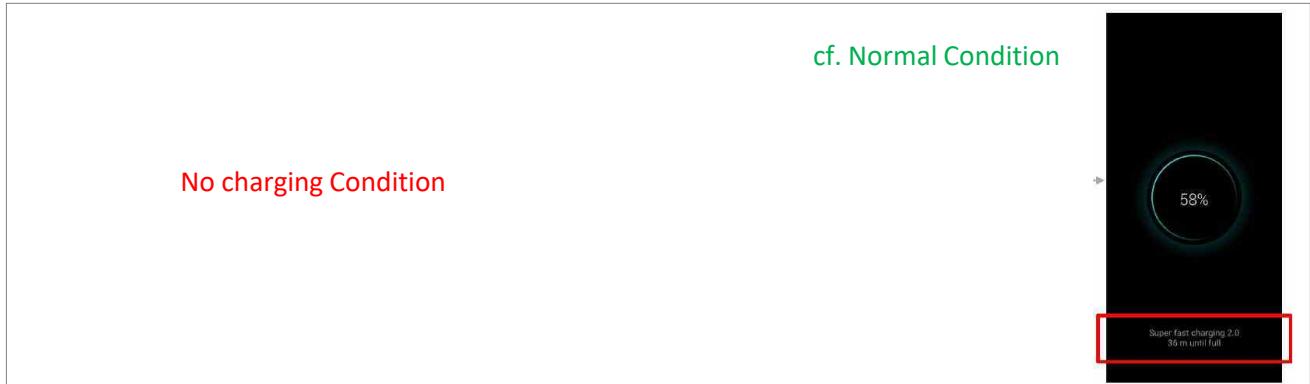
Image	Description
	<p>7. Check the impedance of components(or any defects such as burnt or broken, etc.) nearby 'U10001' on the Secondary PBA(inside interposer) as below.</p> <ul style="list-style-type: none"> - TA10002, TA10001, TA10000 (Vrect / Vout) - ZD10000, ZD10001 (TVS diode) - C10010,C10016,C10017, C10020,C10022,C10024 (CMA,CMB, BST)
	<p>7-1 Check the impedance of components(or any defects such as burnt or broken, etc.) nearby 'U10001' on the Secondary PBA(inside interposer) as below. (only for power sharing problem.)</p> <ul style="list-style-type: none"> - D10001, R10004~7, C10002,C10008~9
	<p>7-2 Check the impedance of components(or any defects such as burnt or broken, etc.) nearby 'U10001' on the Secondary PBA(inside interposer) as below.</p> <ul style="list-style-type: none"> - C10036,C10037 - C10028 - Other components nearby U10001 <p>8. If there is no defects on any components mentioned above, Please detach the MFC IC and swap with new one or replace the PBA.</p>

6-3. Power, Charging

6-3-5. No charging (Wire charging) (L2)

1) Symptom

- Description : No charging after inserted TA.

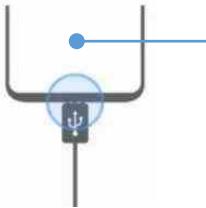
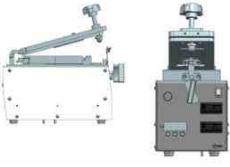


2) Defect Decision Conditions

- Description : No charging notification sound, vibration and UI when inserted TA.

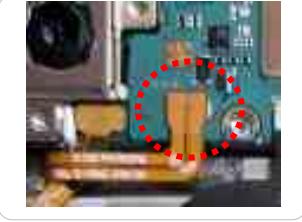
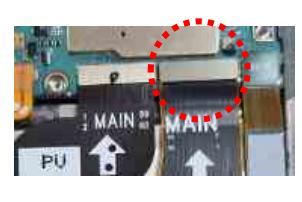
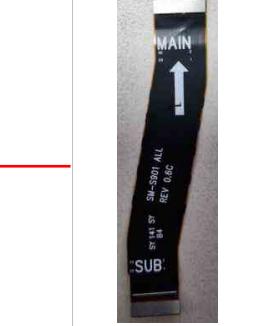
3) Repair Guide

- Caution : Disconnect battery connector first when it shows.

Image	Description
 <div data-bbox="414 1056 645 1119" style="border: 1px solid black; padding: 5px; width: fit-content;"> No charging sound, vibration and UI </div> <div data-bbox="404 1152 577 1214" style="display: flex; justify-content: space-around;">   </div>	<ol style="list-style-type: none"> Check the charging notification sound or vibration when connected to charger. - Should be no sound, no vibration and no UI. - Save the log and analyze it.
 <div data-bbox="213 1541 313 1576" style="margin-left: 20px;">[AOD Jig]</div>  <div data-bbox="505 1541 630 1576" style="margin-left: 20px;">[AOD mini]</div>	<ol style="list-style-type: none"> Disassemble the device. - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.
 <div data-bbox="457 1701 663 1763" style="border: 1px solid black; padding: 5px; width: fit-content;"> USB charging port burnt or corroded </div>	<ol style="list-style-type: none"> Check the disassembled device for OOW. - Water damage. - Part burnt. (Charging port, PBA, Battery and others) - Damaged USB port pin. - Broken traces and others.

6-3. Power, Charging

6-3-5. No charging (Wire charging) (L2)

Image	Description
 	<p>[Attention]</p> <p>4. Disconnect Battery Connector at first.</p>
 	<p>5. Check the 'IF SUB PBA ↔ C2C connector' and connect it again when it connected improperly. After that, connect battery connector again and check wire charging when inserted TA.</p>
 	<p>6. Check the 'MAIN PBA ↔ C2C connector' and connect it again when it connected improperly. After that, connect battery connector again and check wire charging when inserted TA.</p>
 	<p>7. Exchange the IF SUB PBA with new one and check the device.</p>
 	<p>8. If not, exchange the C2C connector with new one and check the device.</p>

6-3. Power, Charging

6-3-5. No charging (Wire charging) (L2)

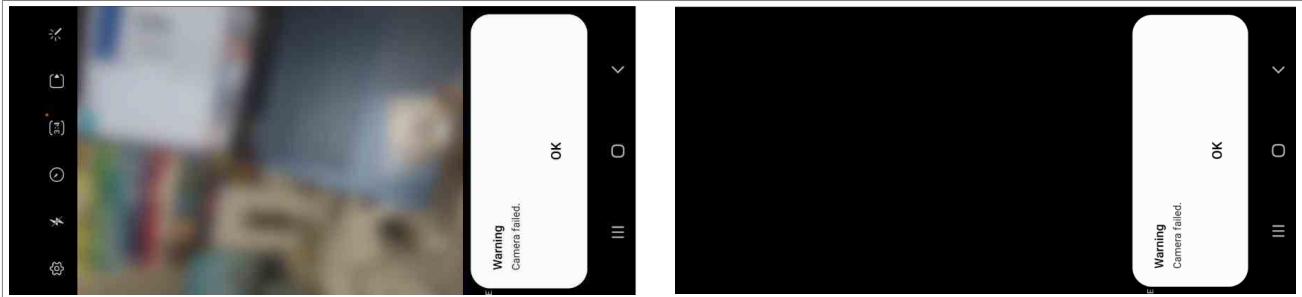
Image	Description
	<p>9. Check 'Capacitors' nearby 'U10000' on the PBA as below.</p> <ul style="list-style-type: none"> - When it is contacted wired charger - VBUS_IF>5.0V (Ref.C10007,C10038,C10039, C7137) - If VBUS_IF voltage level is abnormal, replace the 'Capacitors' and 'U10000'(OVP IC)
	<p>10. If the VBUS_IF voltage level is normal and No charging</p> <ul style="list-style-type: none"> - Replace U7005 (Normal or 15W Charge IC) or U10002 (25W Charge IC) to a new one
	<p>11. If the device is not working normally after replacing the 'capacitors' and 'Charger IC', replace the MAIN PBA</p>

6-4. Camera

6-4-1. Entry Fail(Rear Camera)

1) Symptom

- Description : Black display and can't turn on the rear camera



2) Defect Decision Conditions

- Description : Black display instead of preview image or return to home screen

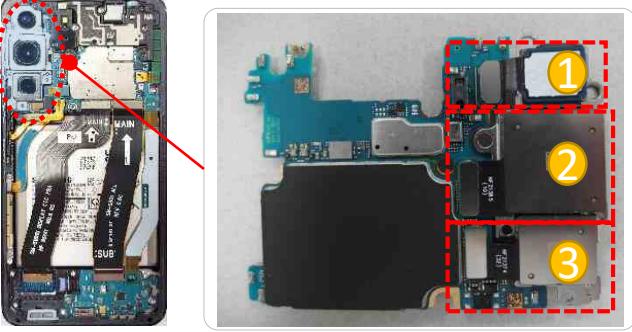
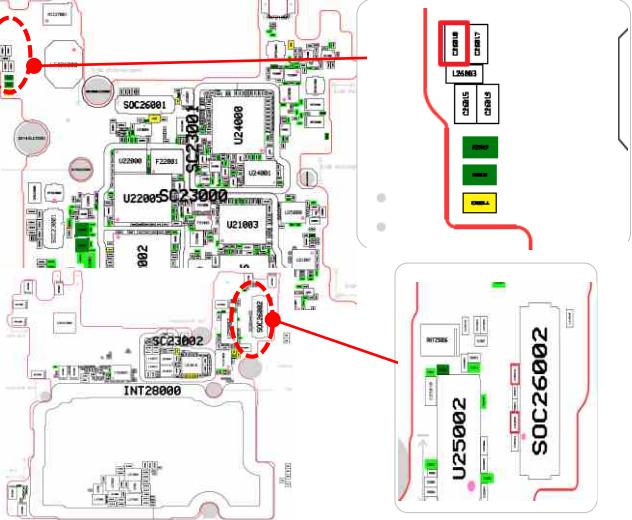
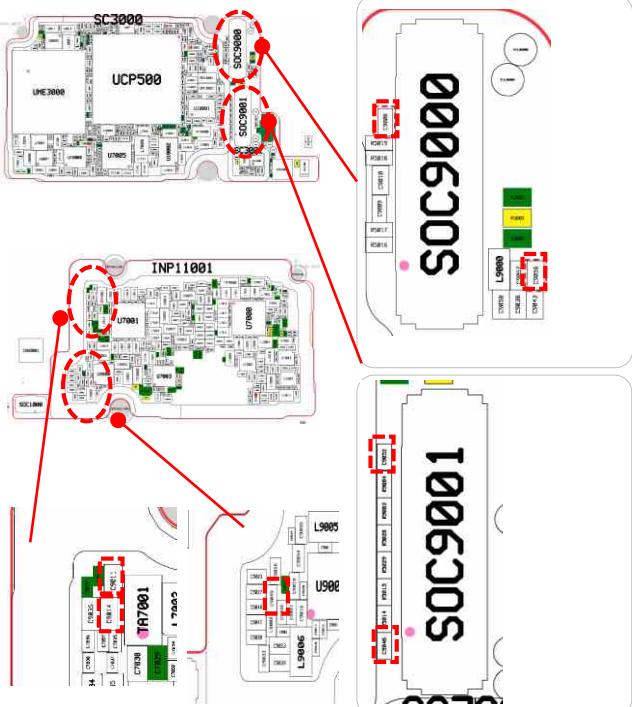
3) Repair Guide

- Caution : Disconnect battery connector first when it shows.

Image	Description
	<p>1. Execute Mega cam test of *#0*# to figure out which camera has defect.</p> <ul style="list-style-type: none"> - Rear : Wide camera Rear2 : Ultra wide camera Rear3 : Tele camera
	<p>2. Disassemble the device.</p> <ul style="list-style-type: none"> - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.
	<p>[Attention]</p> <p>3. Disconnect Battery Connector at first. (SOC23000)</p>

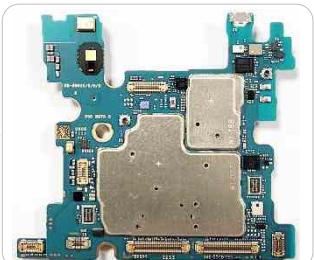
6-4. Camera

6-4-1. Entry Fail(Rear Camera)

Image	Description
	<p>4. Check if the connector is disengaged at first. If connector is okay, replace the camera module with new one and check the device.</p> <ul style="list-style-type: none"> - ① : Ultra wide camera - ② : Wide Camera - ③ : Tele Camera
	<p>5. If Ultra Wide Cam is defective check 'Capacitors' on the PBA as below.</p> <ul style="list-style-type: none"> - VDD_UWCAM_A2P8=2.8V (C26018) - VDD_TELE_UW_IO_1P8=1.8V (C26016) - VDD_UWCAM_1P05=1.05V (C26020)
	<p>6. If Wide Cam or Tele Cam is defective check 'Capacitors' on the PBA as below.</p> <ul style="list-style-type: none"> - VDD_MAINCAM_A2P2=2.2V (C9056) - VDD_MAINCAM_IO_1P8=1.8V (C9008) - VDD_MAINCAM_OP92=0.92V (C9014) - VDD_MAINCAM_PHY_OP92=0.92V (C9011) - VDD_TELECAM_1P05=1.05V (C9052) - VDD_TELE_UW_IO_1P8=1.8V (C9046) - VDD_TELECAM_A2P8=2.8V (C9049)

6-4. Camera

6-4-1. Entry Fail(Rear Camera)

Image	Description
 	<p>7. If camera is still working abnormally, exchange the PBA.</p>

6-4. Camera

6-4-2. Abnormal AF(Rear Camera)

1) Symptom

- Description : Out of focus for rear camera



2) Defect Decision Conditions

- Description : The image of rear camera is out of focus.

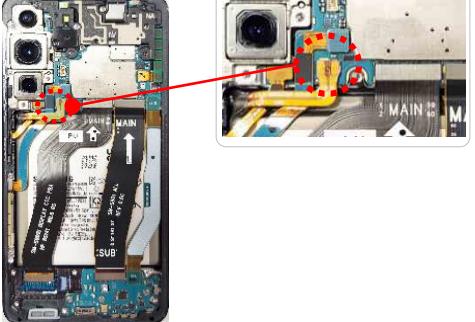
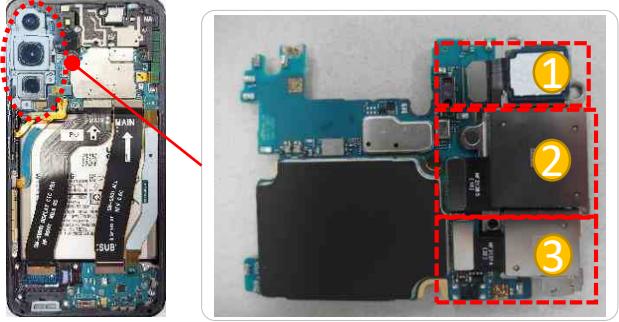
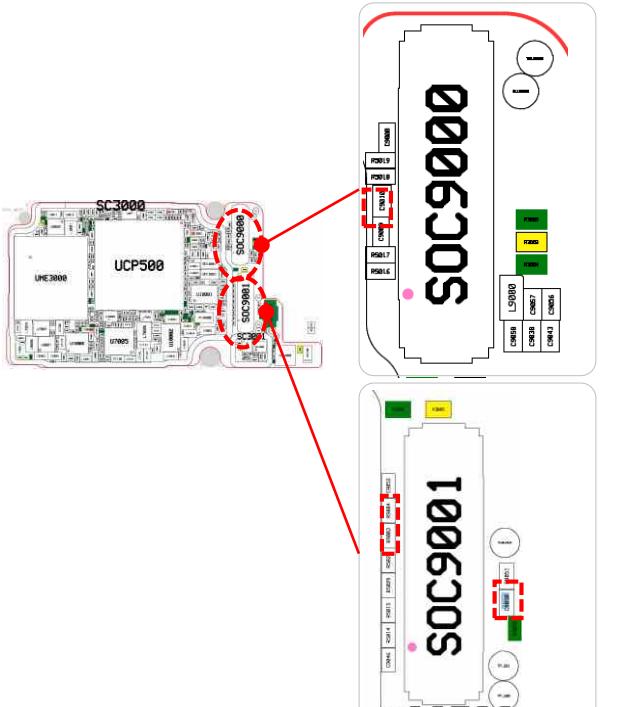
3) Repair Guide

- Caution : **Disconnect battery connector first when it shows.**

Image	Description
	<p>1. Check the camera deco glass. Should be clean and no particle.</p>
	<p>2. Execute Mega cam test of *#0*# to figure out which camera has defect.</p> <ul style="list-style-type: none"> - Rear : Wide camera - Rear2 : Ultra wide camera - Rear3 : Tele camera
<div style="display: flex; justify-content: space-around;"> [AOD Jig] [AOD mini] </div>	<p>3. Disassemble the device.</p> <ul style="list-style-type: none"> - Refer to '<u>Disassembly and assembly video guide for Galaxy S22</u>' from the GSPN.

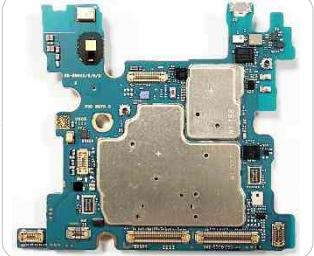
6-4. Camera

6-4-2. Abnormal AF(Rear Camera)

Image	Description
	<p>[Attention]</p> <p>4. Disconnect Battery Connector at first. (SOC23000)</p>
	<p>5. Replace the camera module with new one and check the device.</p> <ul style="list-style-type: none"> - ① : Ultra wide camera - ② : Wide Camera - ③ : Tele Camera
	<p>6. Check the 'Capacitors' and 'Resistors' nearby 'SOC9000' on the PBA as below.</p> <ul style="list-style-type: none"> - VDD_MAINCAM_AF_3P2=3.2V (C9010) - VDD_TELECAM_AF_2P8=2.8V (C9050) - TELE_AF_EEP_SDA_1P8 = 1kohm (R9003) - TELE_AF_EEP_SCL_1P8 = 1kohm (R9004)

6-4. Camera

6-4-2. Abnormal AF(Rear Camera)

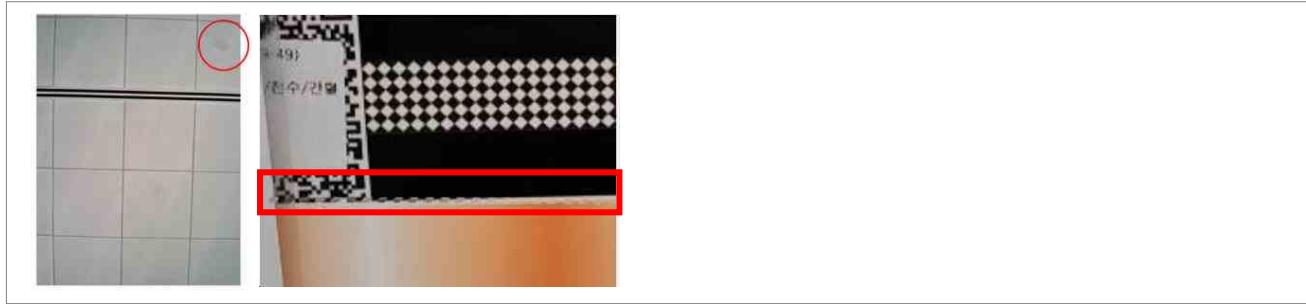
Image	Description
 	<p>7. If camera is still working abnormally, exchange the PBA.</p>

6-4. Camera

6-4-3. Abnormal Preview(Rear Camera) (L2)

1) Symptom

- Description : Abnormal display of rear camera

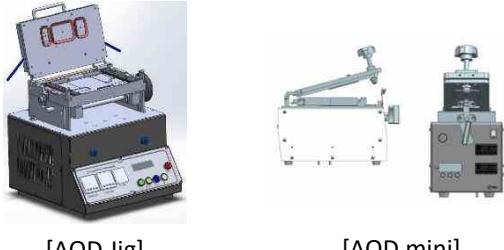


2) Defect Decision Conditions

- Description : Blemishes or dots on image

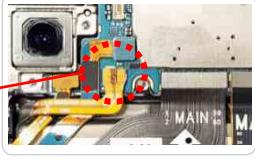
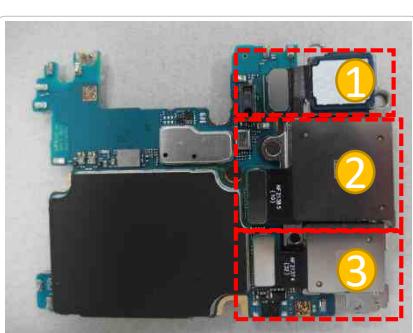
3) Repair Guide

- Caution : Disconnect battery connector first when it shows.

Image	Description
	<p>1. Check the camera deco glass and lens. Should be clean and no particle.</p>
	<p>2. Execute Mega cam test of *#0*# to figure out which camera has defect.</p> <ul style="list-style-type: none"> - Rear : Wide camera - Rear2 : Ultra wide camera - Rear3 : Tele camera
 <p>[AOD Jig] [AOD mini]</p>	<p>3. Disassemble the device.</p> <ul style="list-style-type: none"> - Refer to '<u>Disassembly and assembly video guide for Galaxy S22</u>' from the GSPN.

6-4. Camera

6-4-3. Abnormal Preview(Rear Camera) (L2)

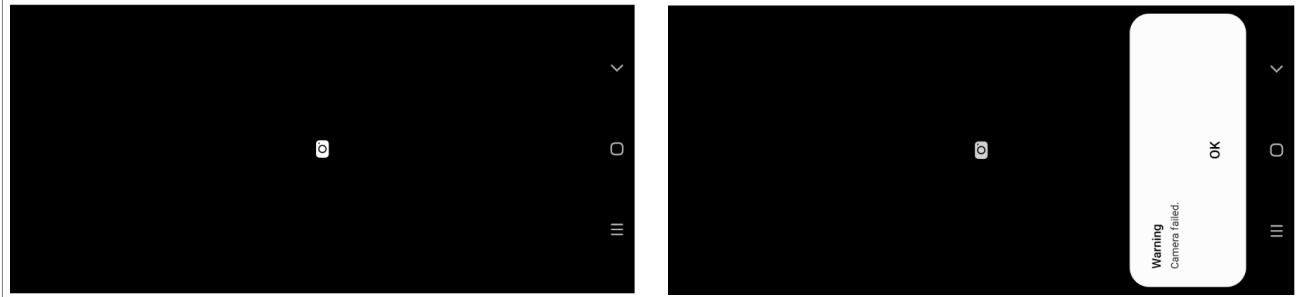
Image	Description
 	<p>[Attention]</p> <p>4. Disconnect Battery Connector at first. (SOC23000)</p>
 	<p>5. Replace the camera module with new one and check the device.</p> <ul style="list-style-type: none"> - ① : Ultra wide camera - ② : Wide Camera - ③ : Tele Camera

6-4. Camera

6-4-4. Entry Fail(Front Camera)

1) Symptom

- Description : Black display and can't turn on the Front camera



2) Defect Decision Conditions

- Description : Black display instead of preview image or return to home screen

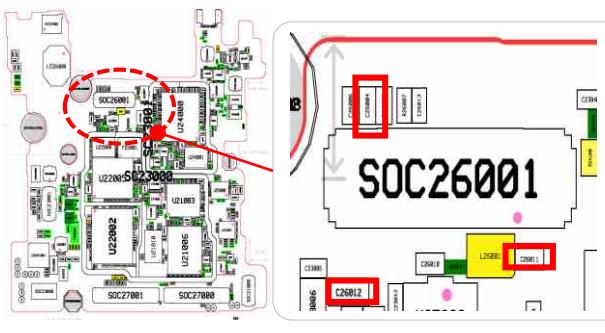
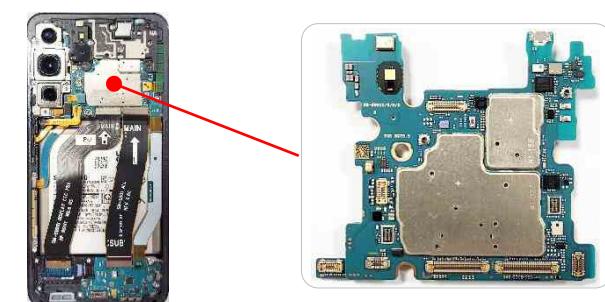
3) Repair Guide

- Caution : Disconnect battery connector first when it shows.

Image	Description
	<p>1. Execute Front Cam test of *#0*#.</p>
<div style="display: flex; justify-content: space-around;"> [AOD Jig] [AOD mini] </div>	<p>2. Disassemble the device. - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.</p>
	<p>[Attention] 3. Disconnect Battery Connector at first. (SOC23000)</p>

6-4. Camera

6-4-4. Entry Fail(Front Camera)

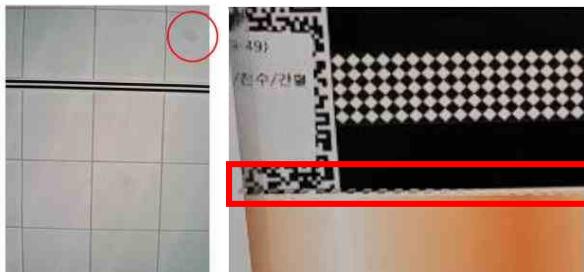
Image	Description
	<p>4. Check if the connector is disengaged at first.</p> <p>If connector is okay, replace the camera module with new one and check the device. (SOC26001)</p>
	<p>6. Check 'Capacitors' on the PBA as below.</p> <ul style="list-style-type: none"> - VDD_VTCAM_IO_1P8=1.8V (C26012) - VDD_VTCAM_1P05=1.05V (C26011) - VDD_VTCAM_A2P8=2.8V (C26004)
	<p>7. If camera is still working abnormally, exchange the PBA.</p>

6-4. Camera

6-4-5. Abnormal Preview(Front Camera) (L2)

1) Symptom

- Description : Abnormal display of front camera

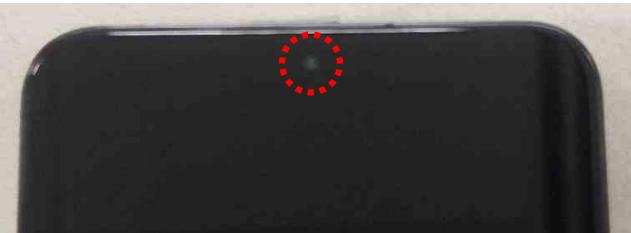
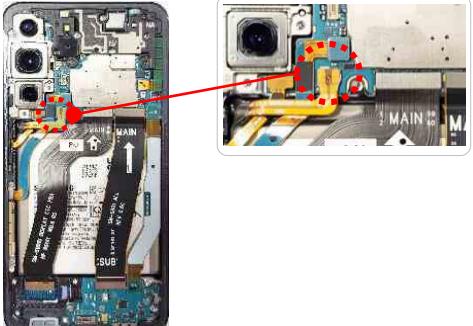


2) Defect Decision Conditions

- Description : Blemishes or dots on image

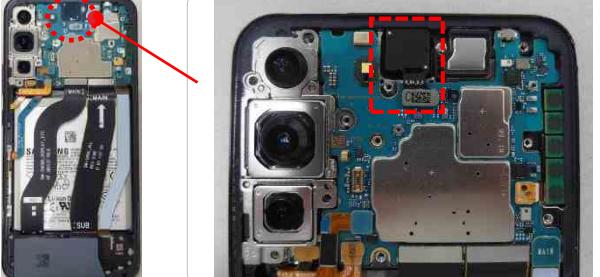
3) Repair Guide

- Caution : Disconnect battery connector first when it shows.

Image	Description
	<p>1. Check the camera hole. - Should be clean and no particle.</p>
 [AOD Jig] [AOD mini]	<p>2. Disassemble the device. - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.</p>
	<p>[Attention]</p> <p>3. Disconnect Battery Connector (SOC23000) at first.</p>

6-4. Camera

6-4-5. Abnormal Preview(Front Camera) (L2)

Image	Description
	<p>4. Replace the camera module with new one and check the device. (SOC26001)</p>

6-5. Audio

6-5-1. Upper SPK sound abnormal

1) Symptom

- Description : Upper SPK sound is low/abnormal

2) Defect Decision Conditions

- Description : The phone sounds abnormally

3) Repair Guide

- Caution : Disconnect battery connector first when it shows.

Image	Description
	<p>1. Execute Speaker test of *#0*# to figure out which speaker has defect. (upper or lower)</p>
 <p>[AOD Jig] [AOD mini]</p>	<p>2. Disassemble the device. - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.</p>

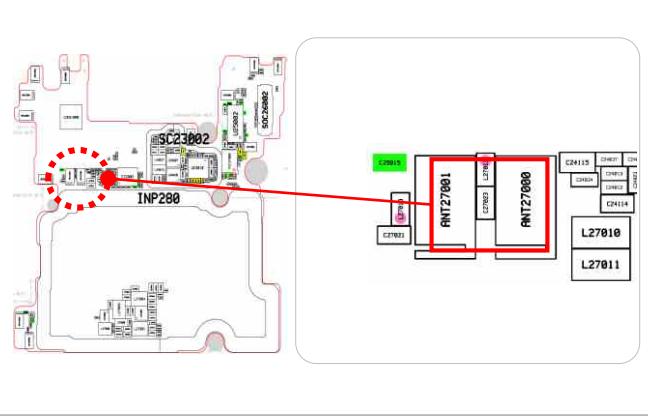
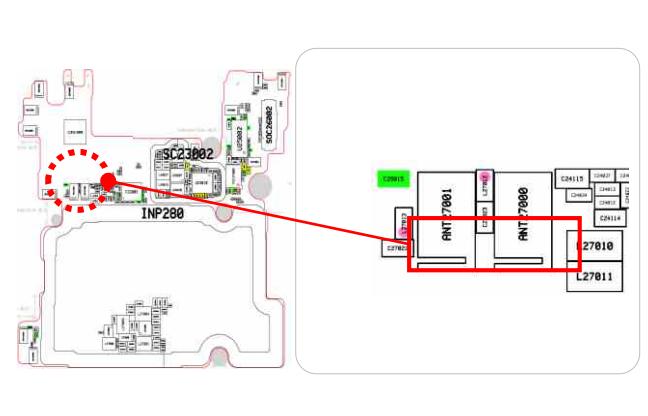
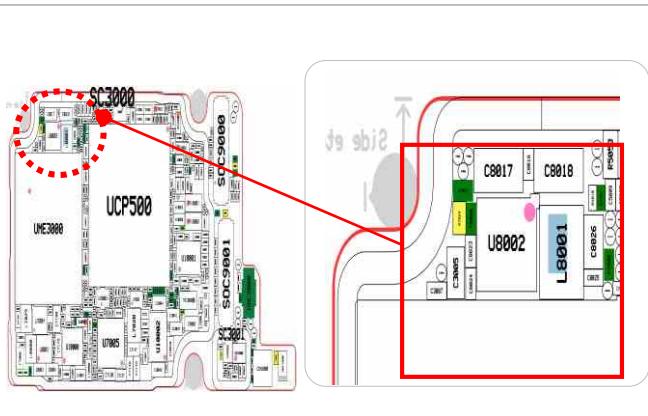
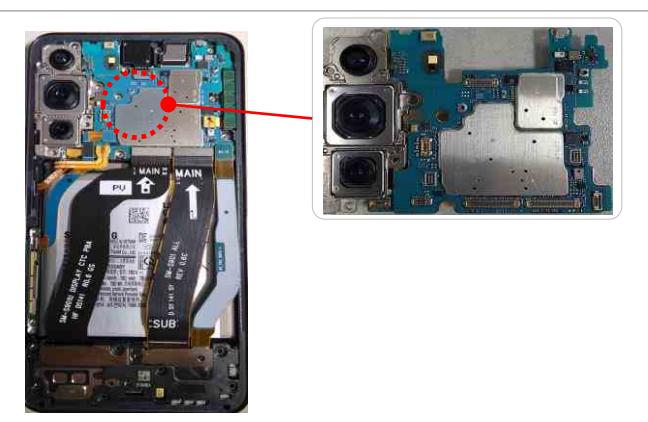
6-5. Audio

6-5-1. Upper SPK sound abnormal

Image	Description
 <div style="display: flex; justify-content: space-around;"> <div data-bbox="429 297 702 515">  <p>Upper SPK</p> </div> <div data-bbox="429 578 702 734">  <p>Lower SPK</p> </div> </div>	<p>Refer to the SPK location.</p>
	<p>3. Check water damage and if not, change to new upper SPK module.</p>
 	<p>4. Check upper SPK module and SPK rubber is ok. (tears and particles)</p>
	<p>5. If it is ok, change to new upper SPK module.</p>

6-5. Audio

6-5-1. Upper SPK sound abnormal

Image	Description
	<p>6. Check below components on the PBA if there is any damage (crack, burnt....) ANT27000, ANT27001 - Change components when you find defects.</p>
	<p>7. Check below components on the PBA if there is any damage (crack, burnt....) L27010, L27011, L27012, L27013, 227023, C27021 - Change components when you find defects.</p>
	<p>8. Check the voltage of Capacitor on the PBA as below. Replace the components if has problem. C8016, C8017, C8018 = 11V at max volume L8001 = VPH_PWR - Change components when you find defects.</p>
	<p>9. If the device is not working normally after exchanging it, exchange the PBA .</p>

6-5. Audio

6-5-2. Lower SPK sound abnormal

1) Symptom

- Description : Lower SPK sound is low/abnormal

2) Defect Decision Conditions

- Description : The phone sounds abnormally

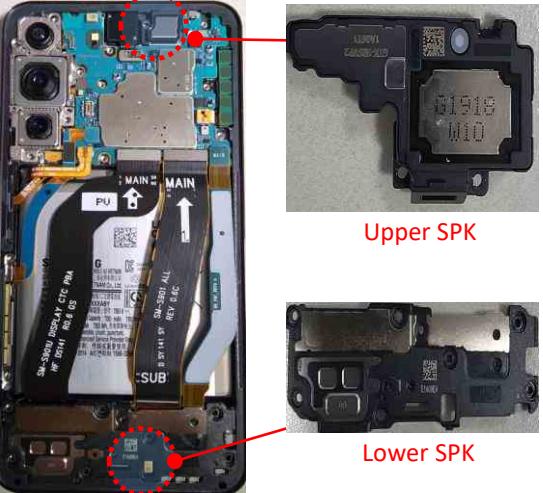
3) Repair Guide

- Caution : Disconnect battery connector first when it shows.

Image			Description
			<p>1. Execute Speaker test of *#0*# to figure out which speaker has defect. (upper or lower)</p>
			<p>2. Disassemble the device. - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.</p>

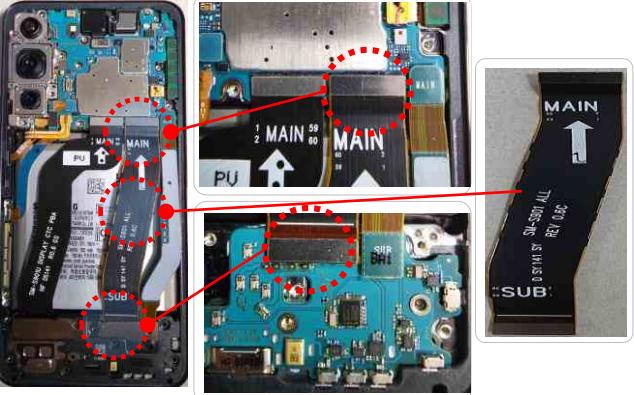
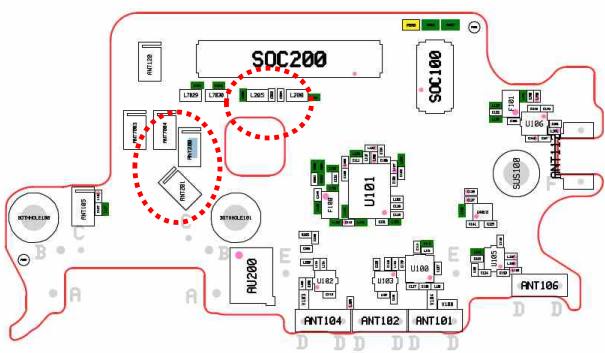
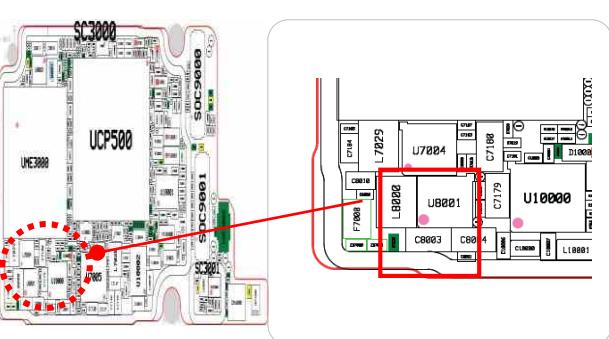
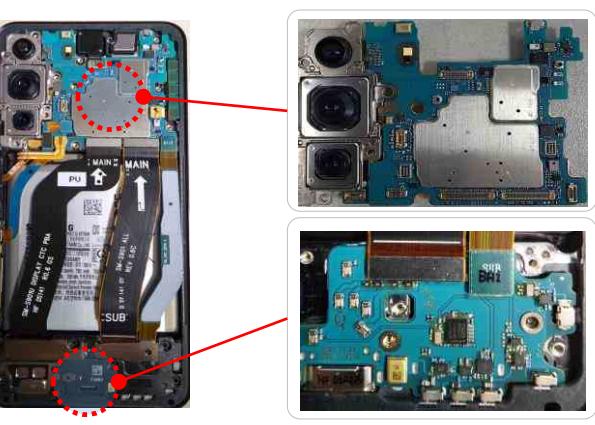
6-5. Audio

6-5-2. Lower SPK sound abnormal

Image	Description
 <p>Upper SPK</p> <p>Lower SPK</p>	<p>Refer to the SPK location.</p>
	<p>3. Check water damage and if not, change to new lower SPK module.</p>
	<p>4. Check lower SPK module and SPK rubber is ok. (tears and particles)</p>
	<p>5. If it is ok, change to new lower SPK module.</p>

6-5. Audio

6-5-2. Lower SPK sound abnormal

Image	Description
	<p>6. Check blow IF USB FPCB Connection and any damage (crack, burnt....)</p> <ul style="list-style-type: none"> - Set the SOC200 & SOC27000 connection. - Replace a IF USB FPCB when you find defects.
	<p>7. Check below components of the SUB PBA if there is any damage (crack, burnt....) ANT200, ANT201, L205, L208</p> <ul style="list-style-type: none"> - Change components when you find defects.
	<p>8. Check the voltage of Capacitor on the PBA as below. Replace the components if has problem. C8001, C8003, C8004 = 11V at max volume L8000 = VPH_PWR</p> <ul style="list-style-type: none"> - Change components when you find defects.
	<p>9. If the device is not working normally after exchanging it, exchange the PBA or SUB PBA.</p>

6-5. Audio

6-5-3. Rx Voice mute

1) Symptom

- Description : While calling, Rx voice is mute.

2) Defect Decision Conditions

- Description : A person who is calling with a nearend device can't hear Rx voice.

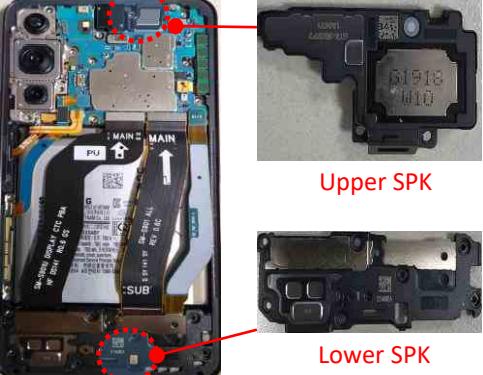
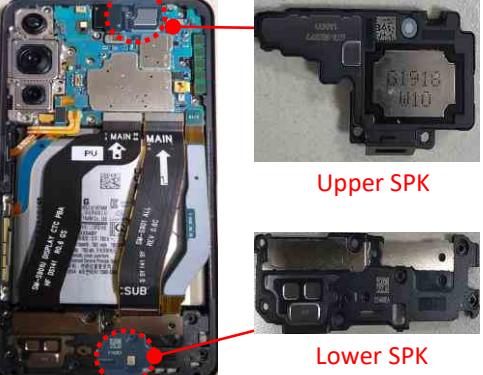


3) Repair Guide

Image	Description
	<p>1-1. RECEIVER test (Problem in RCV call : Handset mode)</p> <ul style="list-style-type: none"> - *#0*# - Select : RECEIVER - Should hear the sound in RCV
	<p>1-2. SPEAKER test (Problem in SPK call : Handsfree mode)</p> <ul style="list-style-type: none"> - *#0*# - Select : Lower SPK or Upper SPK - Should hear the sound at lower SPK - Should hear the sound at upper SPK
 <p>[AOD Jig] [AOD mini]</p>	<p>If there was no sound from RCV or SPK</p> <p>2. Disassemble the device.</p> <ul style="list-style-type: none"> - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.

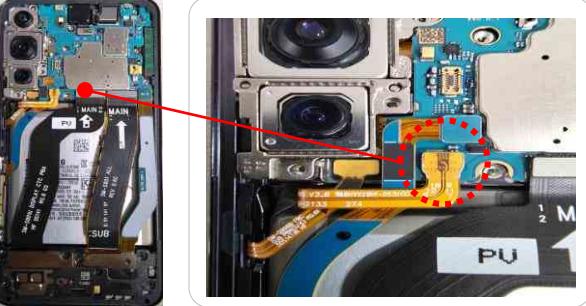
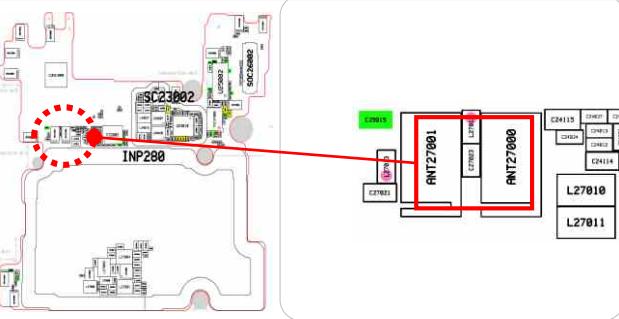
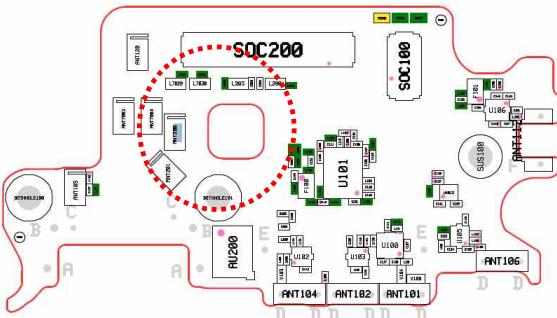
6-5. Audio

6-5-3. Rx Voice mute

Image	Description
 <p>Upper SPK</p> <p>Lower SPK</p>	<p>3-1. Swap the upper SPK module to normal sample. (Problem in RCV call : Handset mode) - Upper SPK module damaged.</p>
 <p>Upper SPK</p> <p>Lower SPK</p>	<p>3-2. Swap the lower SPK module to normal sample. (Problem in SPK call : Handsfree mode) - Lower SPK module damaged.</p>
	<p>4-1. RECEIVER test (Problem in RCV call : Handset mode)</p> <ul style="list-style-type: none"> - *#0*# - Select : RECEIVER - Should hear the sound in RCV
	<p>4-2. SPEAKER test (Problem in SPK call : Handsfree mode)</p> <ul style="list-style-type: none"> - *#0*# - Select : Lower SPK or Upper SPK - Should hear the sound at lower SPK - Should hear the sound at upper SPK

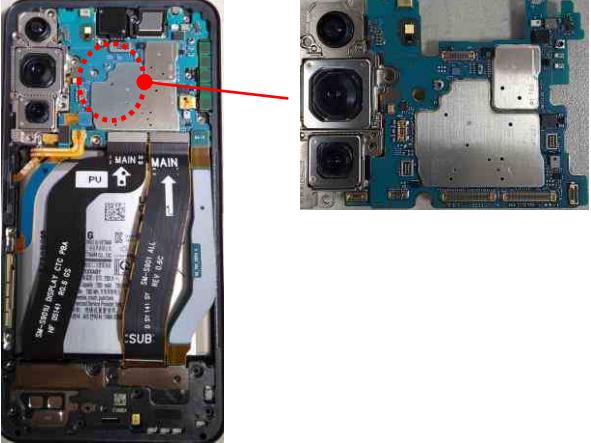
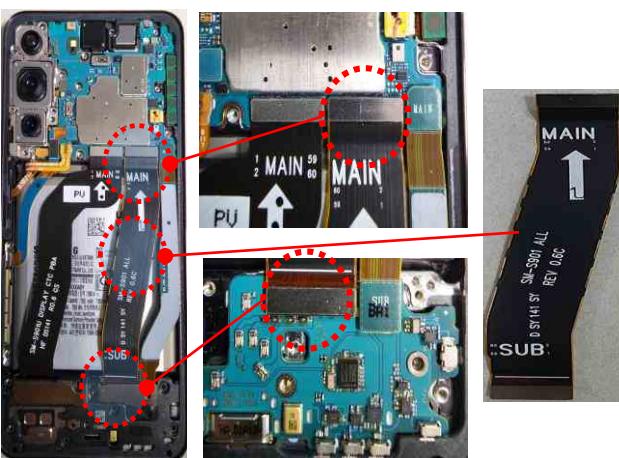
6-5. Audio

6-5-3. Rx Voice mute

Image	Description
	<p>If there was no sound from RCV or SPK</p> <p>[Attention]</p> <p>5. Disconnect Battery Connector at first. (Ref. SOC24003)</p>
	<p>6. Check SMD status and resolder on PBA.</p> <p>(Problem in RCV call : Handset mode)</p> <p>(Problem in SPK call : Handsfree mode at Upper SPK)</p> <ul style="list-style-type: none"> - RCV module contacts ANT27000, ANT27001 - AMP out series inductors L27010, L27011
	<p>7. Check SMD status and resolder on SUB PBA.</p> <p>(Problem in SPK call : Handsfree mode at Lower SPK)</p> <ul style="list-style-type: none"> - Lower SPK module contacts ANT200, ANT201 - AMP series inductor L205, L208
	<p>8. RECEIVER test</p> <p>(Problem in RCV call : Handset mode)</p> <ul style="list-style-type: none"> - *#0*# - Select : RECEIVER - Should hear the sound in RCV
	<p>9. SPEAKER test</p> <p>(Problem in SPK call : Handsfree mode)</p> <ul style="list-style-type: none"> - *#0*# - Select : Lower SPK or Upper SPK - Should hear the sound at lower SPK - Should hear the sound at upper SPK

6-5. Audio

6-5-3. Rx Voice mute

Image	Description																																										
	<p>If there was no sound from RCV or upper SPK</p> <p>10. Swap the PBA to normal sample.</p> <p>(Problem in RCV call : Handset mode)</p> <ul style="list-style-type: none"> - RCV AMP damaged or AP damaged 																																										
	<p>If there was no sound from lower SPK</p> <p>11. Swap the SUB PBA or IF USB FPCB or PBA one by one to normal sample.</p> <p>(Problem in SPK call : Handsfree mode)</p> <ul style="list-style-type: none"> - SUB PBA or IF USB FPCB damaged - Lower SPK AMP or AP damaged(Main PBA) 																																										
<table border="1" data-bbox="138 1379 375 1917"> <tr> <td>RED</td> <td>GREEN</td> <td>BLUE</td> </tr> <tr> <td>RECEIVER</td> <td>VIBRATION</td> <td>MEGA CAM</td> </tr> <tr> <td>SENSOR</td> <td>TOUCH</td> <td>SPEAKER</td> </tr> <tr> <td>SUB KEY</td> <td>FRONT CAM</td> <td>GRIPSENSOR</td> </tr> <tr> <td>BLACK</td> <td>HALL IC</td> <td>MLC</td> </tr> <tr> <td>LOOPBACK</td> <td>VERSION</td> <td></td> </tr> <tr> <td>III</td> <td>O</td> <td><</td> </tr> </table> <table border="1" data-bbox="426 1379 663 1917"> <tr> <td>RED</td> <td>GREEN</td> <td>BLUE</td> </tr> <tr> <td>RECEIVER</td> <td>VIBRATION</td> <td>MEGA CAM</td> </tr> <tr> <td>SENSOR</td> <td>TOUCH</td> <td>SPEAKER</td> </tr> <tr> <td>SUB KEY</td> <td>FRONT CAM</td> <td>GRIPSENSOR</td> </tr> <tr> <td>BLACK</td> <td>HALL IC</td> <td>MLC</td> </tr> <tr> <td>LOOPBACK</td> <td>VERSION</td> <td></td> </tr> <tr> <td>III</td> <td>O</td> <td><</td> </tr> </table>	RED	GREEN	BLUE	RECEIVER	VIBRATION	MEGA CAM	SENSOR	TOUCH	SPEAKER	SUB KEY	FRONT CAM	GRIPSENSOR	BLACK	HALL IC	MLC	LOOPBACK	VERSION		III	O	<	RED	GREEN	BLUE	RECEIVER	VIBRATION	MEGA CAM	SENSOR	TOUCH	SPEAKER	SUB KEY	FRONT CAM	GRIPSENSOR	BLACK	HALL IC	MLC	LOOPBACK	VERSION		III	O	<	<p>12. RECEIVER test</p> <p>(Problem in RCV call : Handset mode)</p> <ul style="list-style-type: none"> - *#0*# - Select : RECEIVER - Should hear the sound in RCV <p>SPEAKER test</p> <p>(Problem in SPK call : Handsfree mode)</p> <ul style="list-style-type: none"> - *#0*# - Select : Lower SPK or Upper SPK - Should hear the sound at lower SPK - Should hear the sound at upper SPK
RED	GREEN	BLUE																																									
RECEIVER	VIBRATION	MEGA CAM																																									
SENSOR	TOUCH	SPEAKER																																									
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6-5. Audio

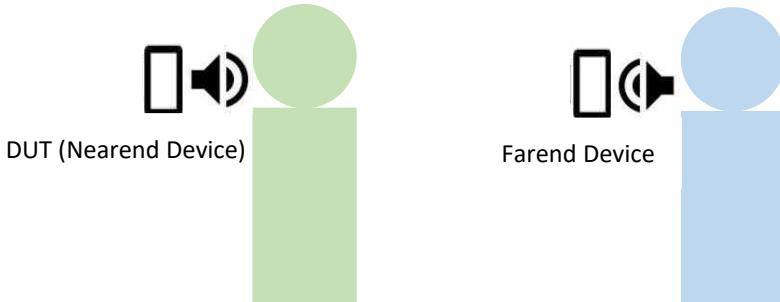
6-5-4. Rx Voice swing/low/noise

1) Symptom

- Description : While calling, Rx voice is swinging, low or noisy.

2) Defect Decision Conditions

- Description : A person who is calling with a nearend device can hear something wrong in Rx voice. (voice is swinging, low or noisy)

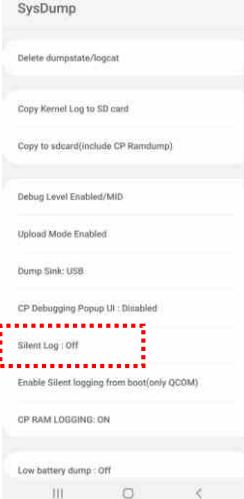
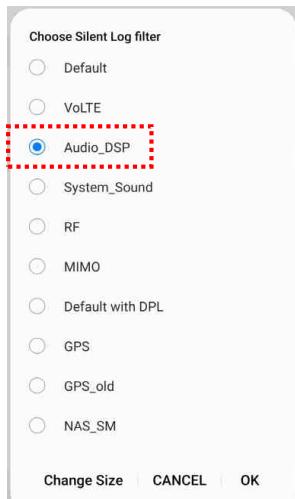
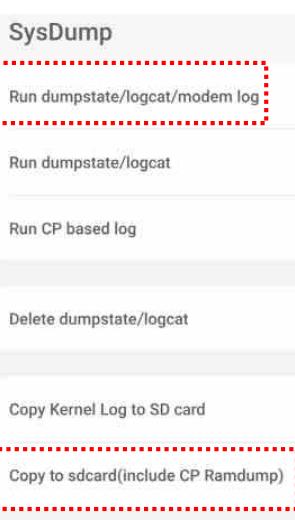
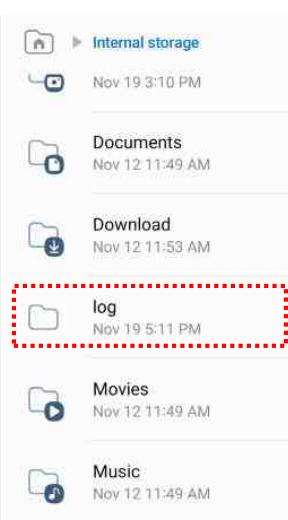
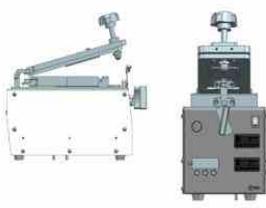


3) Repair Guide

Image	Description
	<p>1-1. RCV loopback test (Problem in RCV call : Handset mode)</p> <ul style="list-style-type: none"> - *#0283# - Select Start : RCV_1stMIC - Do test : say something into a 1st MIC(lower MIC). - Should hear the voice clearly through the RCV without noise.
	<p>1-2. SPK loopback test (Problem in SPK call : Handsfree mode)</p> <ul style="list-style-type: none"> - *#0283# - Select Start : SPK_2ndMIC - Do test : say something into a 2nd MIC(upper MIC). - Should hear the voice clearly through the SPK(lower SPK) without noise.
	<p>If it's ok in the loopback test (if the voice was heard clearly from RCV or SPK without noise),</p> <p>2-1. Setting to get dumps while calling.</p> <ul style="list-style-type: none"> - *#9900# - Debug Level Enabled/MID - Select Debug Level-> MID

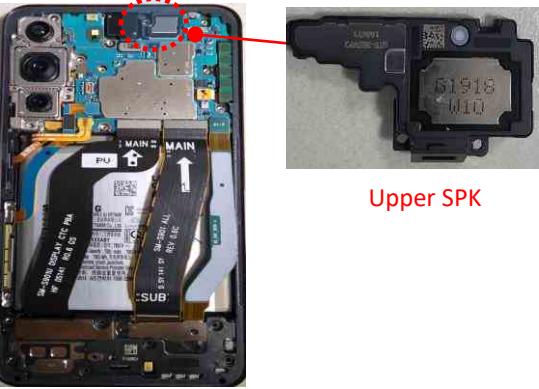
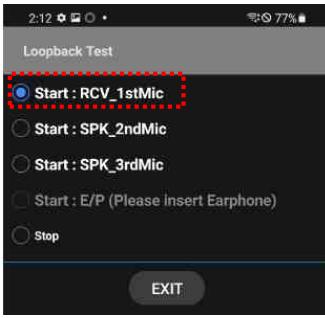
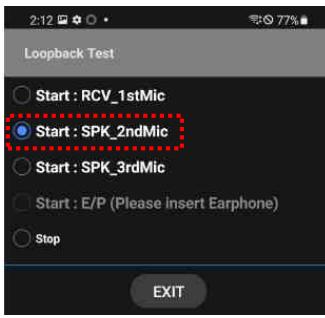
6-5. Audio

6-5-4. Rx Voice swing/low/noise

Image	Description
 	<p>2-2. Setting to get dumps while calling.</p> <ul style="list-style-type: none"> - *#9900# - Silent log : off -> on (Default select) - Choose Silent Log filter -> Audio_DSP
 	<p>3. Getting dumps after call test.</p> <ul style="list-style-type: none"> - *#9900# - Run dumpstate/logcat/modem log - Copy to sdcard/include CP Ramdump - After finishing copy dumps, share the log folder to HW engineer.
  <p>[AOD Jig] [AOD mini]</p>	<p>If there was a loopback test problem (if the voice was low or noisy from RCV or SPK),</p> <p>4. Disassemble the device.</p> <ul style="list-style-type: none"> - Refer to '<u>Disassembly and assembly video guide for Galaxy S22</u>' from the GSPN.

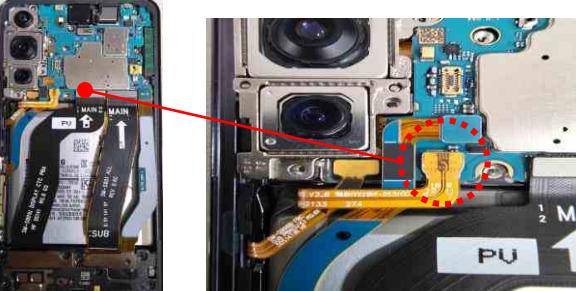
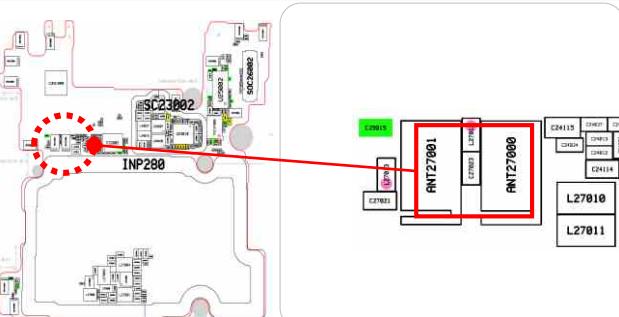
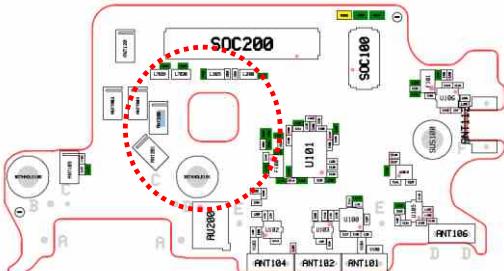
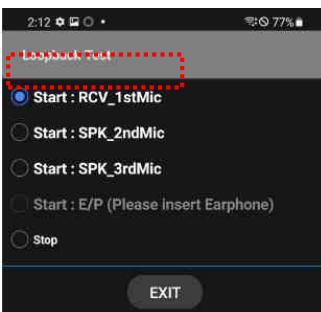
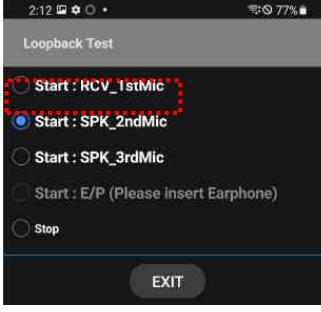
6-5. Audio

6-5-4. Rx Voice swing/low/noise

Image	Description
 Upper SPK	<p>5-1. Swap the upper SPK module to normal sample. (Problem in RCV call : Handset mode) - Upper SPK module damaged.</p>
 Lower SPK	<p>5-2. Swap the lower SPK module to normal sample. (Problem in SPK call : Handsfree mode) - Lower SPK module damaged.</p>
	<p>6-1. RCV loopback test (Problem in RCV call : Handset mode) - *#0283# - Select Start : RCV_1stMIC - Do test : say something into a 1st MIC(lower MIC). - Should hear the voice clearly through the RCV without noise.</p>
	<p>6-2. SPK loopback test (Problem in SPK call : Handsfree mode) - *#0283# - Select Start : SPK_2ndMIC - Do test : say something into a 2nd MIC(upper MIC). - Should hear the voice clearly through the SPK(lower SPK) without noise.</p>

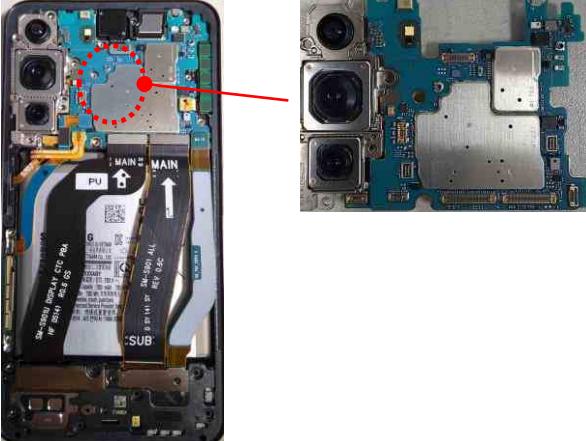
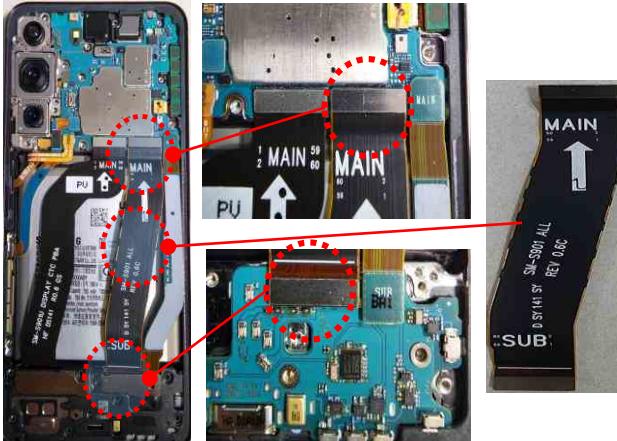
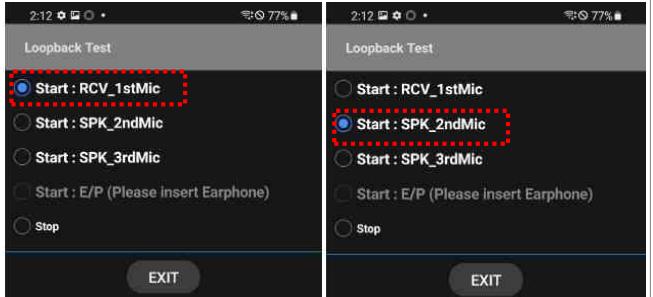
6-5. Audio

6-5-4. Rx Voice swing/low/noise

Image	Description
	<p>If there was a loopback test problem (if the voice was low or noisy from RCV or SPK),</p> <p>[Attention]</p> <p>7. <u>Disconnect Battery Connector</u> (Ref. SOC24003) at first.</p>
	<p>8-1. Check SMD status and resolder on PBA.</p> <p>(Problem in RCV call : Handset mode)</p> <p>(Problem in SPK call : Handsfree mode at Upper SPK)</p> <ul style="list-style-type: none"> - RCV module contacts ANT27000, ANT27001 - AMP out series inductors L27010, L27011
	<p>8-2. Check SMD status and resolder on SUB PBA.</p> <p>(Problem in SPK call : Handsfree mode)</p> <ul style="list-style-type: none"> - Lower SPK module contacts ANT200, ANT201 - AMP series inductor L205, L208
	<p>9-1. RCV loopback test</p> <p>(Problem in RCV call : Handset mode)</p> <ul style="list-style-type: none"> - *#0283# - Select Start : RCV_1stMIC - Do test : say something into a 1st MIC(lower MIC). - Should hear the voice clearly through the RCV without noise.
	<p>9-2. SPK loopback test</p> <p>(Problem in SPK call : Handsfree mode)</p> <ul style="list-style-type: none"> - *#0283# - Select Start : SPK_2ndMIC - Do test : say something into a 2nd MIC(upper MIC). - Should hear the voice clearly through the SPK(lower SPK) without noise.

6-5. Audio

6-5-4. Rx Voice swing/low/noise

Image	Description
	<p>If there was a loopback test problem (If the voice was low or noisy from RCV or SPK),</p> <p>10-1. Swap the PBA to normal sample. (Problem in RCV call : Handset mode) - RCV amp damaged or AP damaged.</p>
	<p>If there was no sound from lower SPK</p> <p>10-2. Swap the SUB PBA or IF USB FPCB or PBA one by one to normal sample. (Problem in SPK call : Handsfree mode) - SUB PBA or IF USB FPCB damaged - Lower SPK AMP or AP damaged(Main PBA)</p>
	<p>11. RCV loopback test (Problem in RCV call : Handset mode) - *#0283# - Select Start : RCV_1stMIC - Do test : say something into a 1st MIC(lower MIC). - Should hear the voice clearly through the RCV without noise.</p> <p>SPK loopback test (Problem in SPK call : Handsfree mode) - *#0283# - Select Start : SPK_2ndMIC - Do test : say something into a 2nd MIC(upper MIC). - Should hear the voice clearly through the SPK(lower SPK) without noise.</p>

6-5. Audio

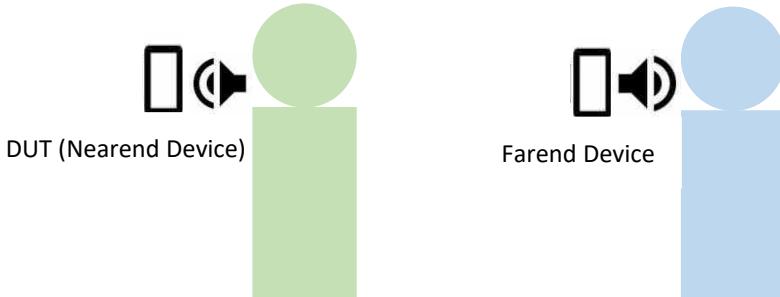
6-5-5. Tx Voice mute

1) Symptom

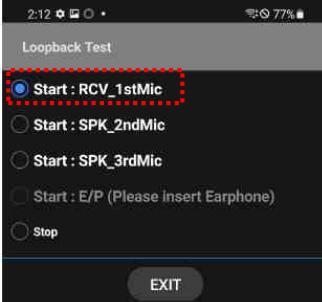
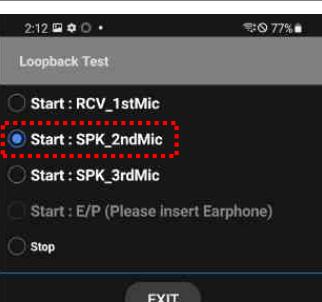
- Description : While calling, Tx voice is Mute.

2) Defect Decision Conditions

- Description : A person who is calling with a farend device can't hear Rx voice.

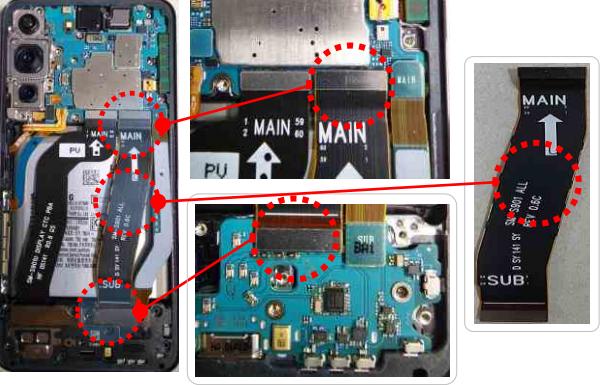
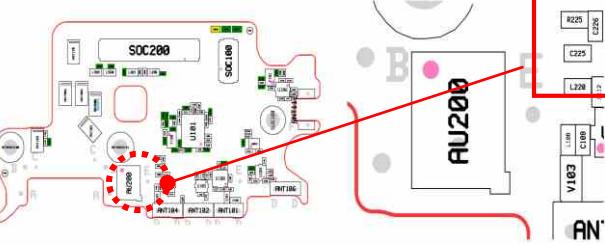
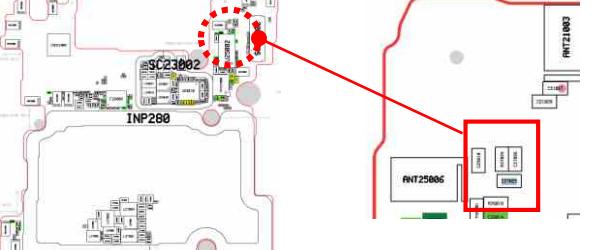
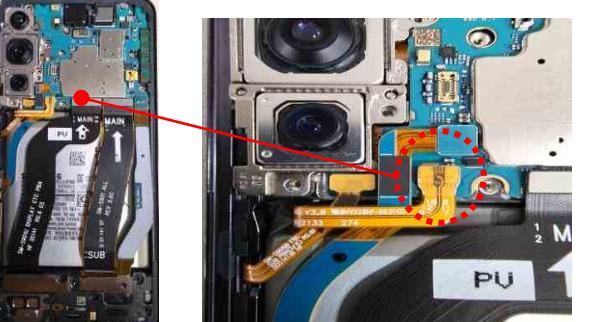
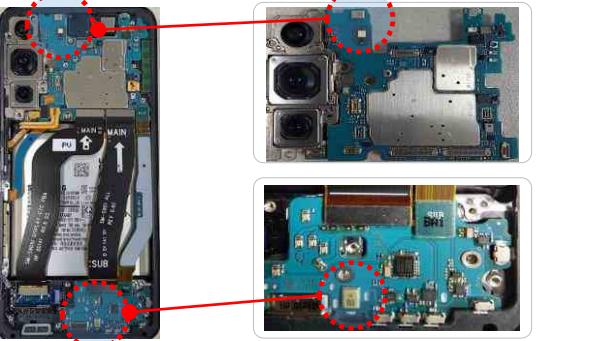


3) Repair Guide

Image	Description
	<p>1-1. 1st mic loopback test</p> <ul style="list-style-type: none"> - *#0283# - Select Start : RCV_1stMIC - Do test : say something into a 1st MIC (lower MIC). - Should hear the voice through the RCV
	<p>1-2. 2nd mic loopback test</p> <ul style="list-style-type: none"> - *#0283# - Select Start : SPK_2ndMIC - Do test : say something into a 2nd MIC (upper MIC). - Should hear the voice through the SPK (lower SPK).
 <p>[AOD Jig] [AOD mini]</p>	<p>If there was no sound in loopback test,</p> <p>2. Disassemble the device.</p> <ul style="list-style-type: none"> - Refer to '<u>Disassembly and assembly video guide for Galaxy S22</u>' from the GSPN.

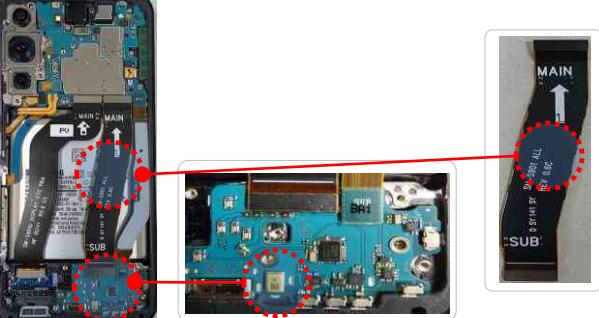
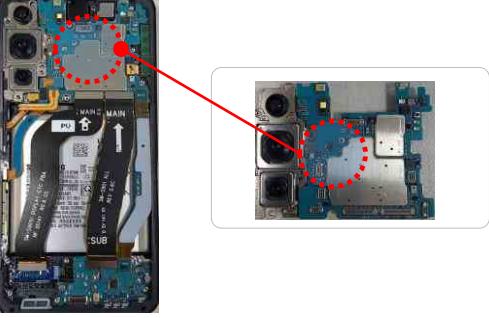
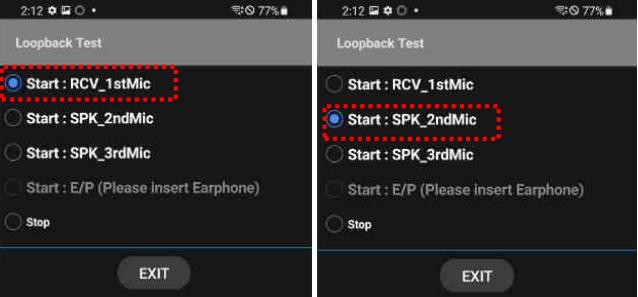
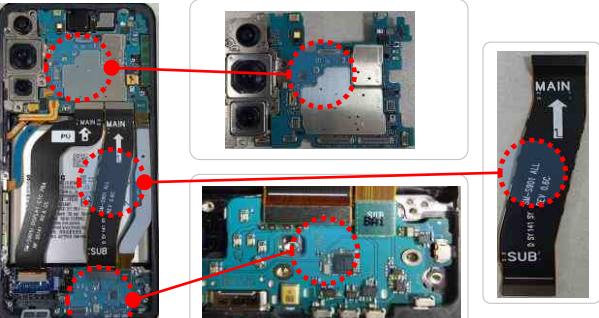
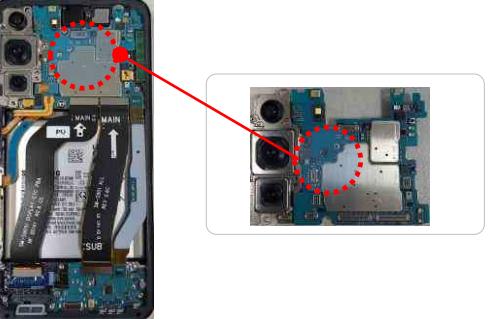
6-5. Audio

6-5-5. Tx Voice mute

Image	Description
	<p>3. Check blow IF USB FPCB Connection and any damage (crack, burnt....)</p> <ul style="list-style-type: none"> - Set the SOC200 & SOC25000 connection. - Replace a IF USB FPCB when you find defects.
	<p>4-1. Check MIC bias voltage and data of 1st MIC on SUB PBA.</p> <ul style="list-style-type: none"> - *#0283# - Select Start : RCV_1stMIC - Check MIC bias voltage : 1.8V (C225) - Check MIC data : R225
	<p>4-2. Check MIC bias voltage and data of 2nd MIC on PBA.</p> <ul style="list-style-type: none"> - *#0283# - Select Start : SPK_2ndMIC - Check MIC bias voltage : 1.8V (C27025) - Check MIC data : R27025
	<p>[Attention]</p> <p>5. Disconnect Battery Connector at first. (Ref. SOC23000)</p>
	<p>If it's ok that MIC bias voltage,</p> <p>6. Swap the 1st and 2nd MIC to a normal sample.</p> <ul style="list-style-type: none"> - 1st and 2nd MIC damaged.

6-5. Audio

6-5-5. Tx Voice mute

Image	Description
	<p>If it's not ok that MIC bias of 1st MIC,</p> <p>7-1. Swap the SUB PBA or IF USB FPCB to normal sample. (For 1st MIC) - SUB PBA or IF USB FPCB damaged</p>
	<p>If it's not ok that MIC bias voltage of 1st and 2nd MIC,</p> <p>7-2. Swap the PBA to normal sample. (For both MIC) - PMIC or PBA damaged</p>
	<p>8. Retest 1st MIC loopback - *#0283# - Select Start : RCV_1stMIC and SPK_2ndMIC - Do test : say something into a MIC. - Should hear the voice.</p>
	<p>If there was no sound in 1st MIC loopback test,</p> <p>9-1. Swap the PBA, SUB PBA and IF USB FPCB one by one to a normal sample. - AP or SUB PBA or IF USB FPCB damaged.</p>
	<p>If there was no sound in 2nd MIC loopback test,</p> <p>9-2. Swap the PBA to a normal sample. - AP damaged.</p>

6-5. Audio

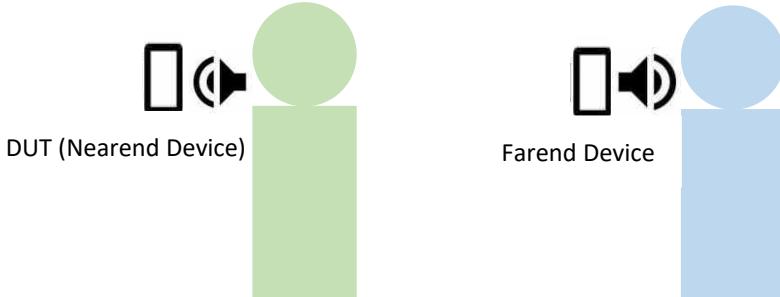
6-5-6. Tx Voice swing/low/noise

1) Symptom

- Description : While calling, Tx voice is swinging, low or noisy.

2) Defect Decision Conditions

- Description : A person who is calling with a farend device can hear something wrong in Rx voice.
(voice is swinging, low or noisy)

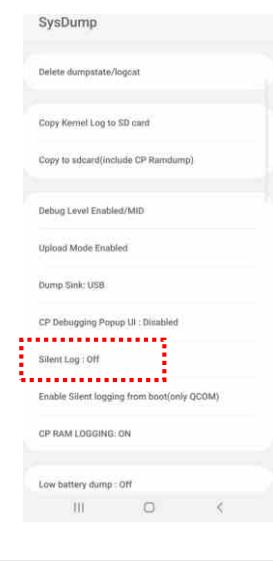
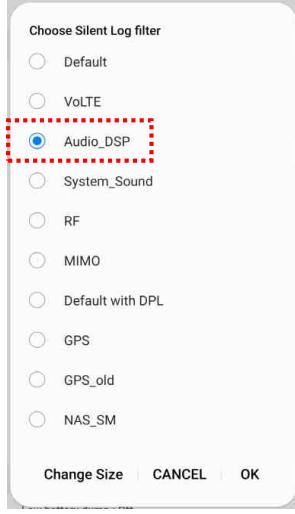
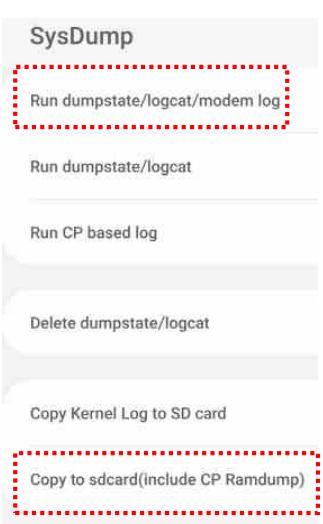
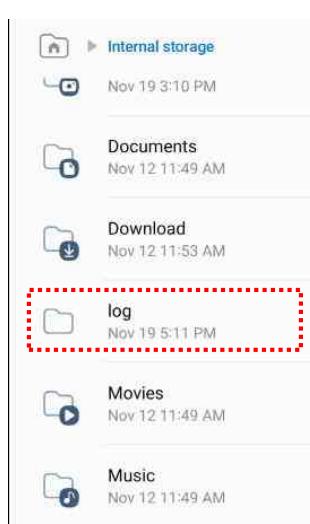
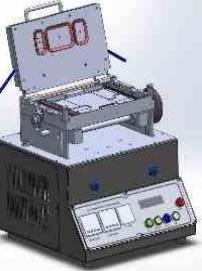
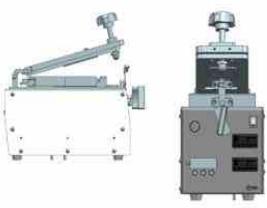


3) Repair Guide

Image	Description
	1-1. 1st MIC sealing test <ul style="list-style-type: none"> - *#0283# - Select Start : RCV_1stMIC - Do test in normal situation(1st test) and then retest after blocking a 1st MIC(lower MIC) hole(2nd test). : say something into a 1st MIC(lower MIC). - Should hear the voice in 1st test, and shouldn't hear the voice in 2nd test.
	1-2. 2nd MIC sealing test <ul style="list-style-type: none"> - *#0283# - Select Start : SPK_2ndMIC - Do test in normal situation(1st test) and then retest after blocking a 2nd MIC(upper MIC) hole(2nd test). : say something into a 2nd MIC(upper MIC). - Should hear the voice in 1st test, and shouldn't hear the voice in 2nd test.
	If it's ok in the MIC sealing test (if the voice wasn't heard in 2 nd test), 2-1. Setting to get dumps while calling. <ul style="list-style-type: none"> - *#9900# - Debug Level Enabled/MID - Select Debug Level-> MID

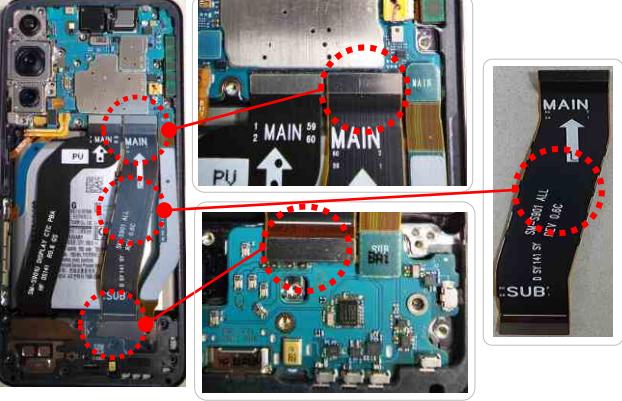
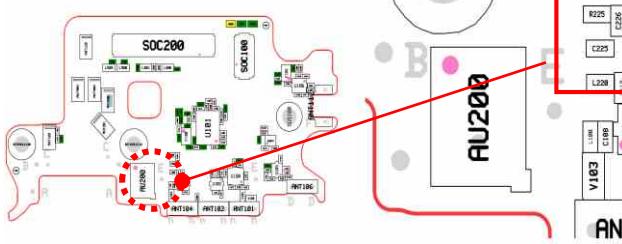
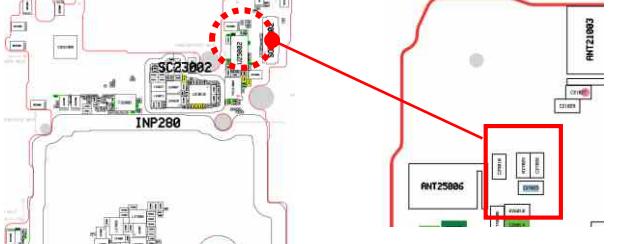
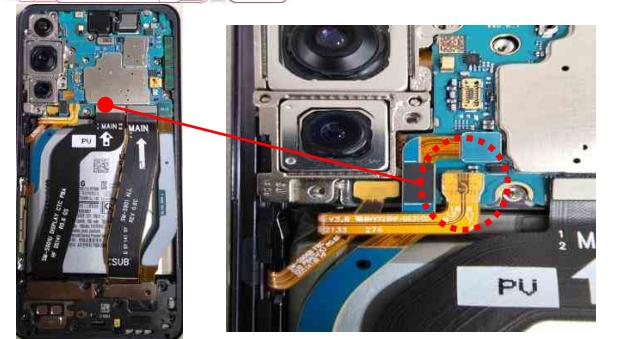
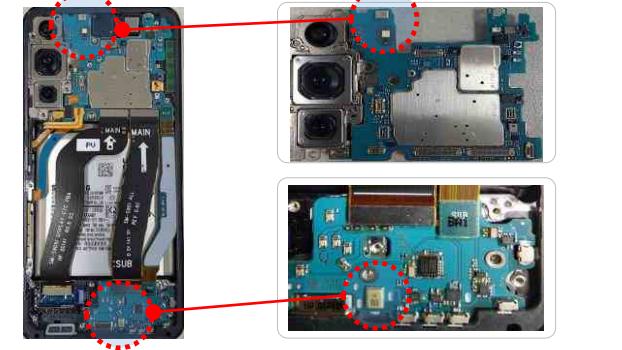
6-5. Audio

6-5-6. Tx Voice swing/low/noise

Image	Description
 	<p>2-2. Setting to get dumps while calling.</p> <ul style="list-style-type: none"> - *#9900# - Silent log : off -> on (Default select) - Choose Silent Log filter -> Audio_DSP
 	<p>3. Getting dumps after call test.</p> <ul style="list-style-type: none"> - *#9900# - Run dumpstate/logcat/modem log - Copy to sdcard(include CP Ramdump) - After finishing copy dumps, share the log folder to HW engineer.
  <p>[AOD Jig] [AOD mini]</p>	<p>If there was a loopback test problem (if the voice was low or noisy from RCV or SPK),</p> <p>4. Disassemble the device.</p> <ul style="list-style-type: none"> - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.

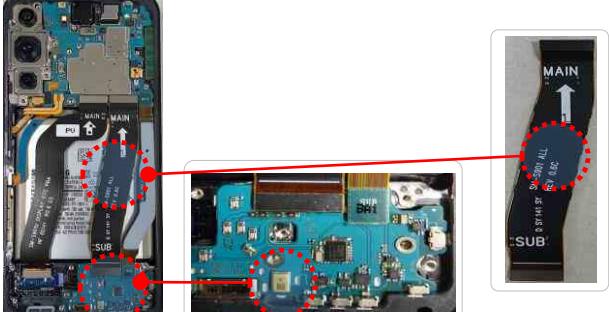
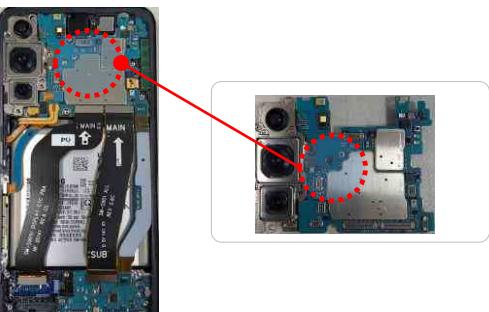
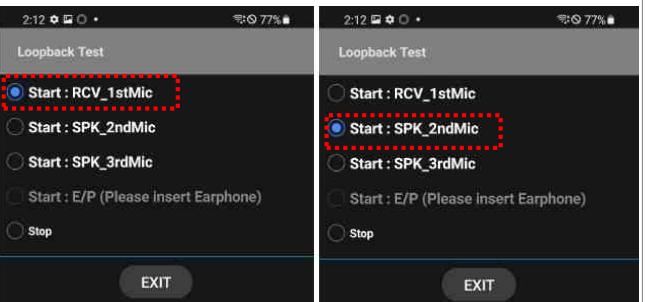
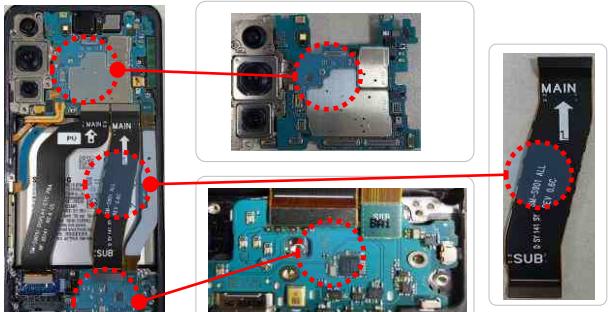
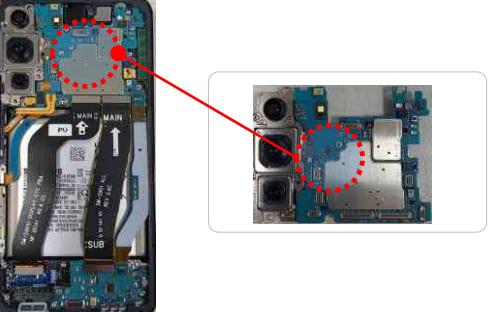
6-5. Audio

6-5-6. Tx Voice swing/low/noise

Image	Description
	<p>5. Check blow IF USB FPCB Connection and any damage (crack, burnt....)</p> <ul style="list-style-type: none"> - Set the SOC200 & SOC25000 connection. - Replace a IF USB FPCB when you find defects.
	<p>6-1. Check MIC bias voltage and data of 1st MIC on SUB PBA.</p> <ul style="list-style-type: none"> - *#0283# - Select Start : RCV_1stMIC - Check MIC bias voltage : 1.8V (C225) - Check MIC data : R225
	<p>6-2. Check MIC bias voltage and data of 2nd MIC on PBA.</p> <ul style="list-style-type: none"> - *#0283# - Select Start : SPK_2ndMIC - Check MIC bias voltage : 1.8V (C27025) - Check MIC data : R27025
	<p>[Attention]</p> <p>7. Disconnect Battery Connector at first. (Ref. SOC23000)</p>
	<p>If it's ok that MIC bias voltage,</p> <p>8. Swap the 1st and 2nd MIC to a normal sample.</p> <ul style="list-style-type: none"> - 1st and 2nd MIC damaged.

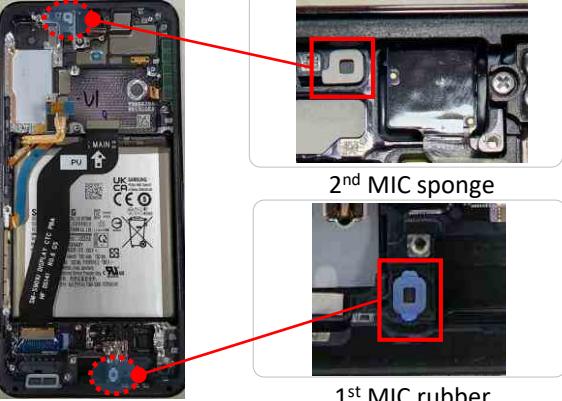
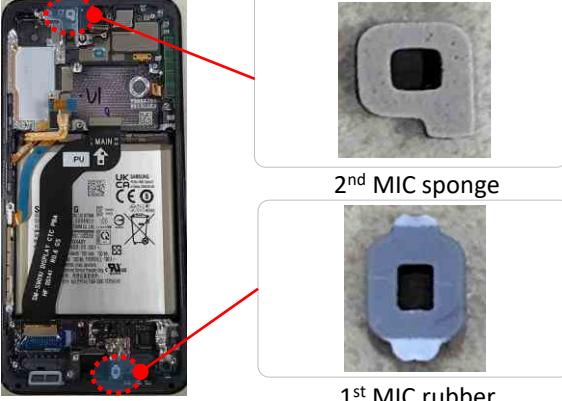
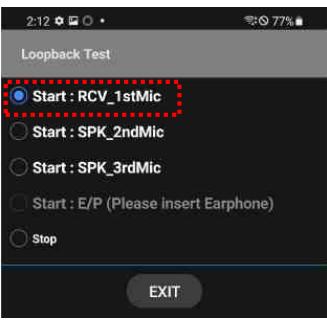
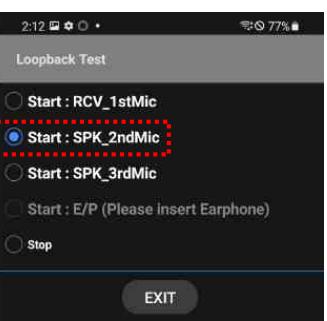
6-5. Audio

6-5-6. Tx Voice swing/low/noise

Image	Description
	<p>If it's not ok that MIC bias of 1st MIC,</p> <p>9-1. Swap the SUB PBA or IF USB FPCB to normal sample. (For 1st MIC) - SUB PBA or IF USB FPCB damaged</p>
	<p>If it's not ok that MIC bias voltage of 1st and 2nd MIC,</p> <p>9-2. Swap the PBA to normal sample. (For both MIC) - PMIC or PBA damaged</p>
	<p>10. Retest 1st MIC and 2nd MIC loopback - #0283# - Select Start : RCV_1stMIC and SPK_2ndMIC - Do test : say something into a MIC. - Should hear the voice.</p>
	<p>11-1. If there was no sound in 1st MIC loopback test, swap the PBA, SUB PBA and IF USB FPCB one by one to a normal sample. - AP or SUB PBA or IF USB FPCB damaged.</p>
	<p>11-2. If there was no sound in 2nd MIC loopback test, swap the PBA to a normal sample. - AP damaged.</p>

6-5. Audio

6-5-6. Tx Voice swing/low/noise

Image	Description
	<p>12. If there was a MIC sealing problem(if the voice was heard in 2nd test), check 1st and 2nd MIC rubber on the front assy.</p> <ul style="list-style-type: none"> - MIC rubber or sponge damaged.
	<p>13. Change MIC sealing rubber if there was a problem.</p>
	<p>14-1. 1st MIC sealing test again</p> <ul style="list-style-type: none"> - *#0283# - Select Start : RCV_1stMIC - Do test in normal situation(1st test) and then retest after blocking a 1st MIC(lower MIC) hole(2nd test). : say something into a 1st MIC(lower MIC). - Should hear the voice in 1st test, and shouldn't hear the voice in 2nd test.
	<p>14-2. 2nd mic sealing test again</p> <ul style="list-style-type: none"> - *#0283# - Select Start : SPK_2ndMIC - Do test in normal situation(1st test) and then retest after blocking a 2nd MIC(upper MIC) hole(2nd test). : say something into a 2nd MIC(upper MIC). - Should hear the voice in 1st test, and shouldn't hear the voice in 2nd test.

6-5. Audio

6-5-7. Earphone sound abnormal (L2)

1) Symptom

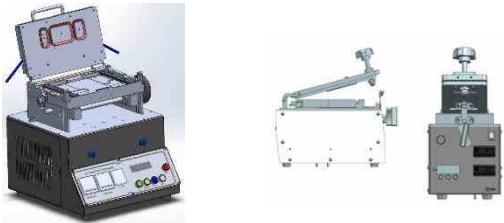
- Description : Earphone sound is low/abnormal

2) Defect Decision Conditions

- Description : Earphone sound is ok when you swap new one.

3) Repair Guide

- Caution : Disconnect battery connector first when it shows.

Image	Description
	<p>1. Execute test mode (*#0*#) on call mode and goes to LOOPBACK – Start E/P mode. - Check loopback mode is working properly.</p>
 <p>[AOD Jig] [AOD mini]</p>	<p>2. Disassemble the device. - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.</p>

6-5. Audio

6-5-7. Earphone sound abnormal (L2)

Image	Description
 	<p>3. Try to swap SUB PBA and check that is working properly.</p>
 	<p>4. Try to swap IF USB FPCB and check that is working properly.</p>
 	<p>5. If the device is not working normally after exchanging them, exchange the PBA.</p>

6-6. Sensor

6-6-1. 6Axis Sensor Problem

1) Symptom

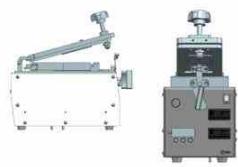
- Description : 6Axis Sensor does not work.

2) Defect Decision Conditions

- Description : No response.

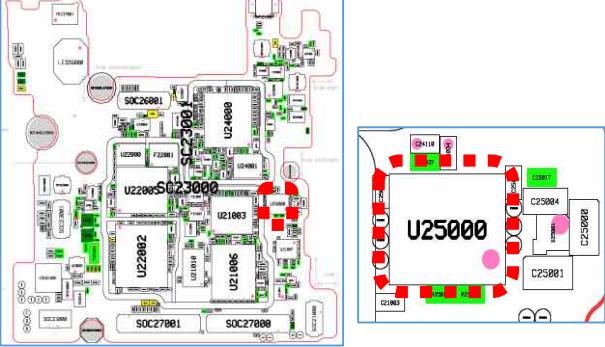
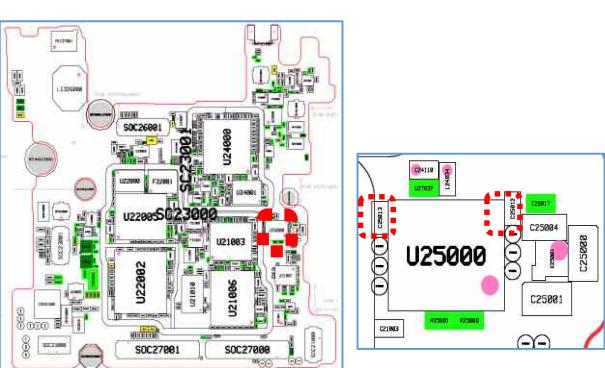
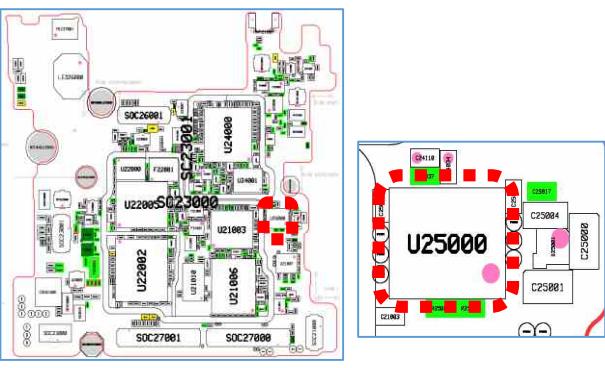
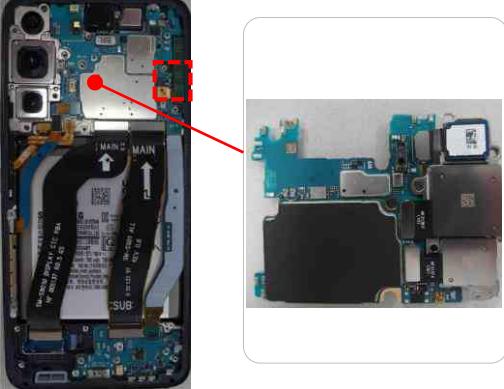
3) Repair Guide

- Caution : Disconnect battery connector first when it shows.

Image	Description
 [AOD Jig]	<p>1. Disassemble the device. - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.</p>
 [AOD mini]	<p>[Attention] 2. Disconnect Battery Connector at first.</p>

6-6. Sensor

6-6-1-1. 6Axis Sensor Problem

Image	Description
	<p>3. Check U25000's package, SMD and part normal status. (crack, open, short, etc.)</p>
	<p>4. When the power is turned on Check 'Capacitors' nearby 'U26001' on the PBA as below. - VDD_SENSOR_1P8=1.8V (Ref. C25012, C25013)</p>
	<p>5. If the power level is normal Replace the U25000 part with new one and check the device.</p>
	<p>6. If the power is abnormal or abnormal even after the U25000 replacement. Replace Master PBA and check the device.</p>

6-6. Sensor

6-6-2. Magnetic Sensor Problem

1) Symptom

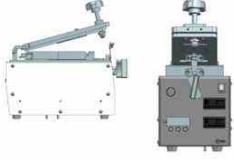
- Description : Magnetic Sensor does not work.

2) Defect Decision Conditions

- Description : No response.

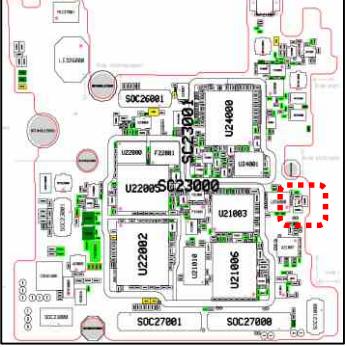
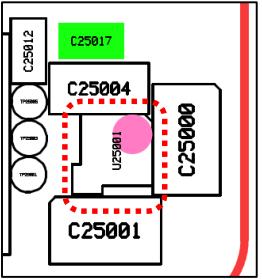
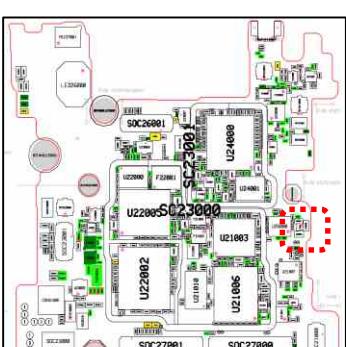
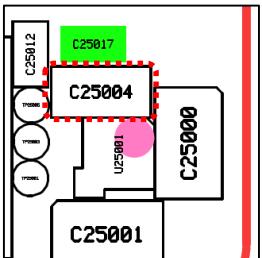
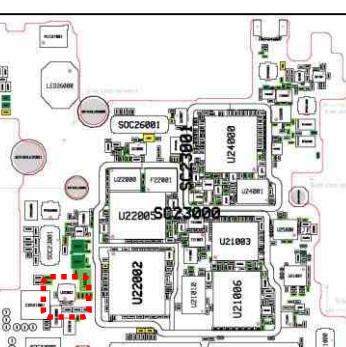
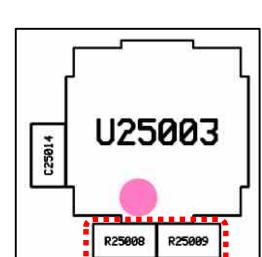
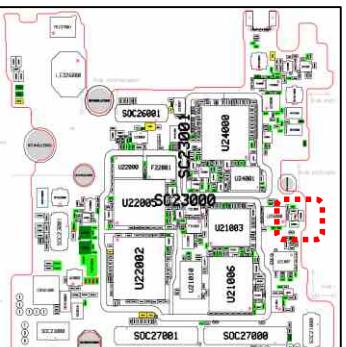
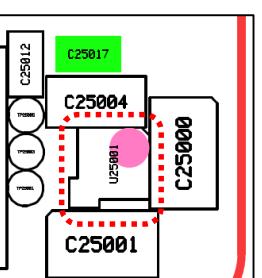
3) Repair Guide

- Caution : Disconnect battery connector first when it shows.

Image	Description
 [AOD Jig]	<p>1. Disassemble the device. - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.</p>
 [AOD mini]	<p>[Attention] 2. Disconnect Battery Connector at first.</p>

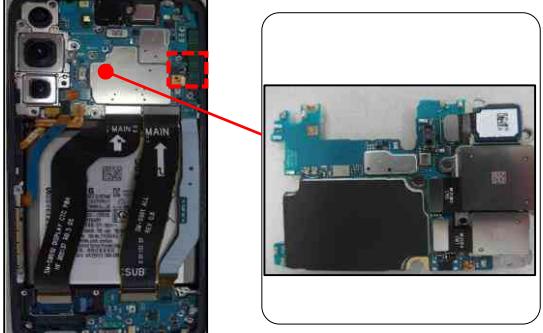
6-6. Sensor

6-6-2-1. Magnetic Sensor Problem

Image	Description
 	<p>3. Check U25001's package, SMD and part normal status. (crack, open, short, etc.)</p>
 	<p>4. When the power is turned on Check 'Capacitors' nearby 'U25001' on the PBA as below. - VDD_SENSOR_1P8=1.8V (Ref. C25004)</p>
 	<p>5. If the power level is normal, Check SCL, SDA pin waveform connected to the resistor. (Ref. R25008, R25009)</p>
 	<p>6. If there's no waveform, Replace the U25001 part with new one and check the device.</p>

6-6. Sensor

6-6-2-2. Magnetic Sensor Problem

Image	Description
	<p>7. If the power is abnormal or abnormal even after the U25001 replacement. Replace Master PBA and check the device.</p>

6-6. Sensor

6-6-3. Barometer Sensor Problem

1) Symptom

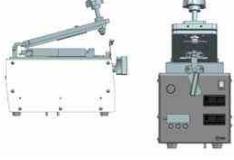
- Description : Barometer Sensor does not work.

2) Defect Decision Conditions

- Description : No response.

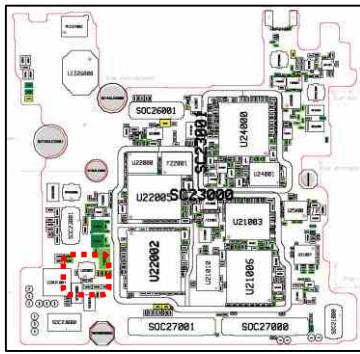
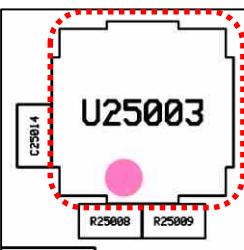
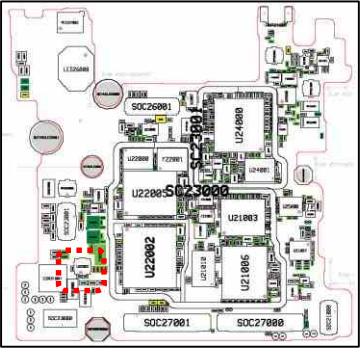
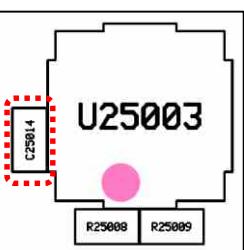
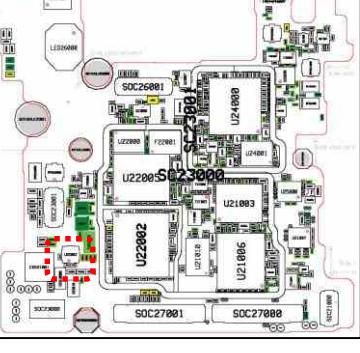
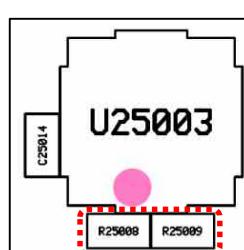
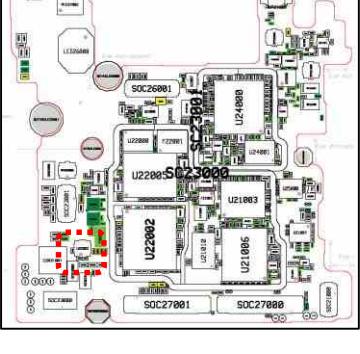
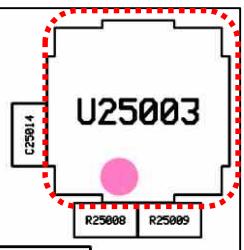
3) Repair Guide

- Caution : Disconnect battery connector first when it shows.

Image	Description
 [AOD Jig]	<p>1. Disassemble the device. - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.</p>
 [AOD mini]	<p>[Attention] 2. Disconnect Battery Connector at first.</p>

6-6. Sensor

6-6-3-1. Barometer Sensor Problem

Image	Description
 	<p>3. Check U25003's package, SMD and part normal status. (crack, open, short, etc.)</p>
 	<p>4. When the power is turned on Check 'Capacitors' nearby 'U25003' on the PBA as below. - VDD_SENSOR_1P8=1.8V (Ref. C25014)</p>
 	<p>5. If the power level is normal, Check SCL, SDA pin waveform connected to the resistor. (Ref. R25008, R25009)</p>
 	<p>6. If there's no waveform, Replace the U25003 part with new one and check the device.</p>

6-6. Sensor

6-6-3-2. Barometer Sensor Problem

Image	Description
 	<p>7. If the power is abnormal or abnormal even after the U25003 replacement,</p> <p>Replace Master PBA and check the device.</p>

6-6. Sensor

6-6-4. Proximity/Ambient Light Sensor Problem

1) Symptom

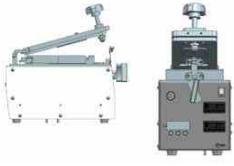
- Description : Proximity/Ambient Light Sensor does not work.

2) Defect Decision Conditions

- Description : No response.

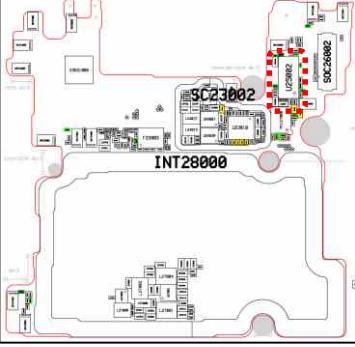
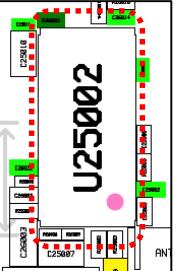
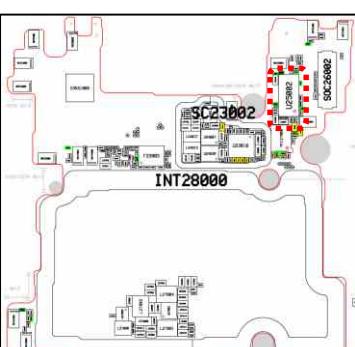
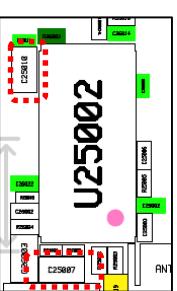
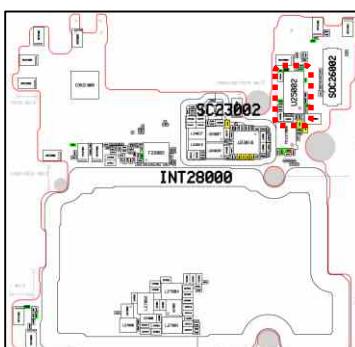
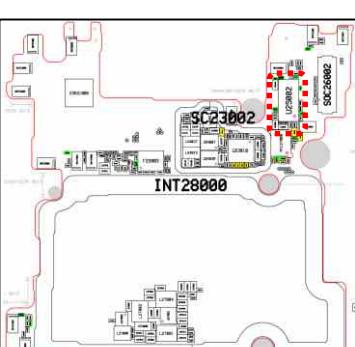
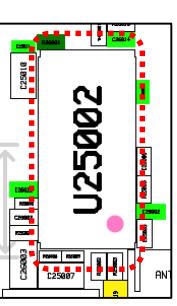
3) Repair Guide

- Caution : Disconnect battery connector first when it shows.

Image	Description
 [AOD Jig]	<p>1. Disassemble the device. - Refer to '<u>Disassembly and assembly video guide for Galaxy S22</u>' from the GSPN.</p>
 [AOD mini] 	<p>[Attention] 2. Disconnect Battery Connector at first.</p>

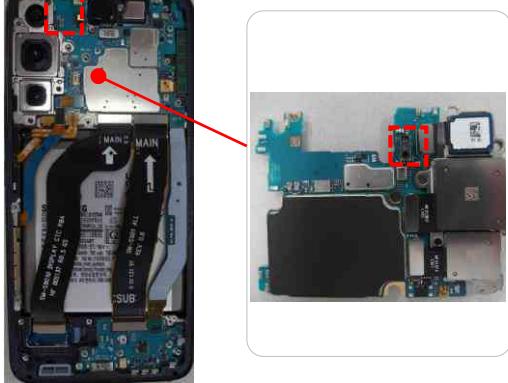
6-6. Sensor

6-6-4-1. Proximity/Ambient Light Sensor Problem [under Cover display]

Image	Description
 	<p>3. Check U25002's package, SMD and part normal status. (crack, open, short, etc.)</p>
 	<p>4. When the power is turned on Check 'Capacitors' nearby 'U25002' on the PBA as below.</p> <ul style="list-style-type: none"> - VDD_SENSOR_1P8=1.8V (Ref. C25007) - VDD_PROXY_LED_3P3=3.3V (Ref. C25010)
 	<p>5. If the "VDD_SENSOR_1P8" power level is normal, Check SCL, SDA pin waveform connected to the resistor. (Ref. R25006, R25007)</p>
 	<p>6. If there's no waveform, Replace the U25002 part with new one and check the device.</p>

6-6. Sensor

6-6-4-2. Proximity/Ambient Light Sensor Problem [under Cover display]

Image	Description
	<p>7. If any one of the two power level is abnormal, or abnormal even after the U25002 replacement, Replace Master PBA and check the device.</p>

6-6. Sensor

6-6-5. Hall Sensors

1) Symptom

- Description : Hall Sensor do not work.

2) Defect Decision Conditions

- No response or always on.
- The screen does not turn off when the Samsung certified flip cover is closed.
- When Samsung certified LED cover is closed, LED does not appear on cover.

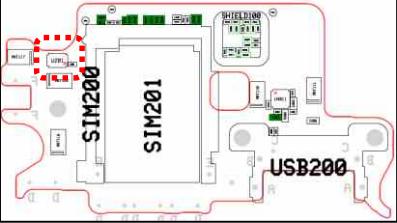
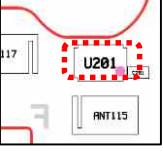
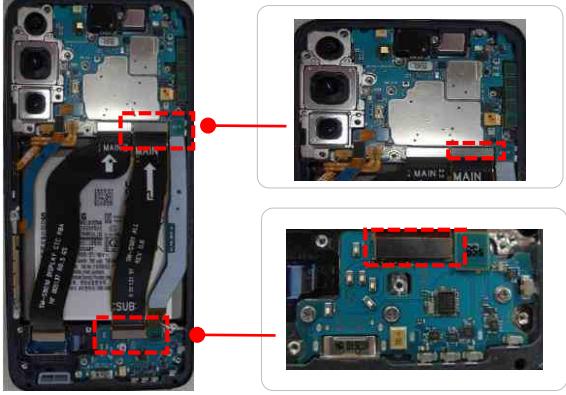
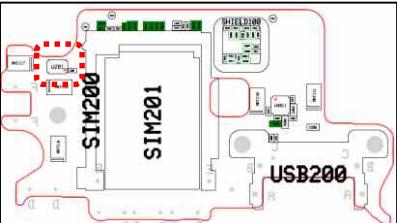
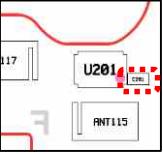
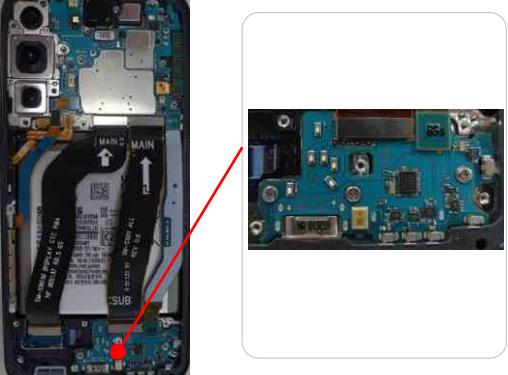
3) Repair Guide

- Caution : **Disconnect battery connector first when it shows.**

Image	Description
 [AOD Jig]	<p>1. Disassemble the device. - Refer to '<u>Disassembly and assembly video guide for Galaxy S22</u>' from the GSPN.</p>
 [AOD mini]	<p>[Attention] 2. Disconnect Battery Connector at first.</p>

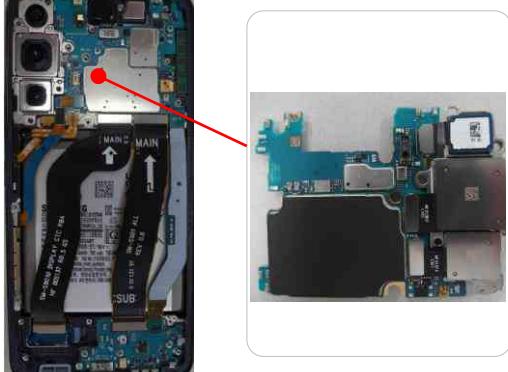
6-6. Sensor

6-6-5-1. Hall Sensor

Image	Description
 	<p>3. Check U201's part in Sub PBA assy SMD and part normal status. (crack, open, short, etc.)</p>
	<p>4. Check connection Master PBA with FPCB Assy and Connection Sub PBA Assy with FPBC assy.</p>
 	<p>5. When the power is turned on Check 'Capacitors' nearby 'SOC25000' on the PBA as below. - VREG_S10B_1P8=1.8V (Ref. C201)</p>
	<p>6. If the "VREG_S10B_1P8" power level is normal, Replace the Sub PCB Assy with new one and check the device.</p>

6-6. Sensor

6-6-5-2. Hall Sensor

Image	Description
	<p>7. If the power is abnormal or abnormal even after Sub assy replacement, Replace Master PBA and check the device.</p>

6-6. Sensor

6-6-6. Finger Print Sensor Problem

1) Symptom

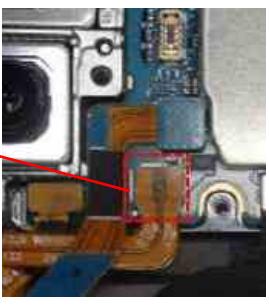
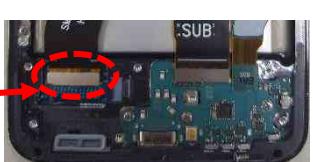
- Description : Finger Print Sensor does not work.

2) Defect Decision Conditions

- Description : No response when you touch finger print sensing area.

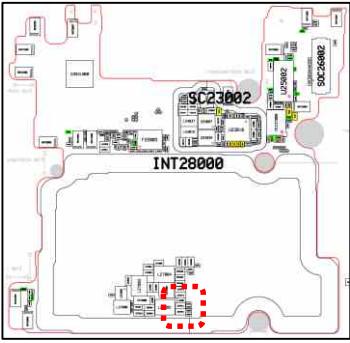
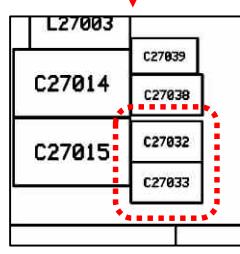
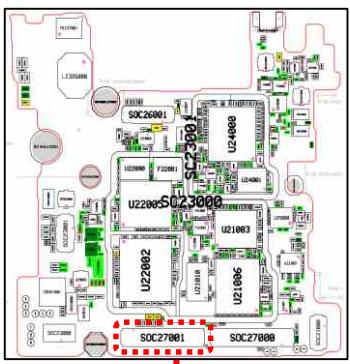
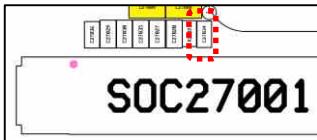
3) Repair Guide

- Caution : Disconnect battery connector first when it shows.

Image	Description
 [AOD Jig]	<p>1. Disassemble the device. - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.</p>
 	<p>[Attention] 2. Disconnect Battery Connector at first.</p>
 	<p>3. Check the 'PBA ↔ Display' connector and connect it again when it connected improperly. After that, connect battery connector again and check the Finger Print Sensor</p>

6-6. Sensor

6-6-6. Finger Print Sensor Problem (L2)

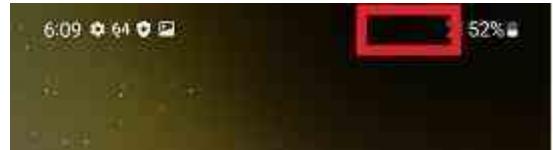
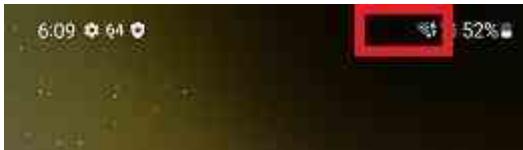
Image	Description
 	<p>4. Connect the battery connector and turn on the power. When the power is turned on, Check 'Capacitor voltage' on the PBA as below.</p> <ul style="list-style-type: none"> - VBAT=3.7~4.2V (Ref. C27032, C27033) - VDD_BTP_1P8=1.8V (Ref. C27034) <p>IF there is problem, change the PBA and check the device.</p>
 	<p>5. IF there is no problem with VBAT and VDD_BTP_1P8, Use a new Display A'ssy.</p>

6-7. Connectivity (WiFi, GPS, NFC)

6-7-1. Wi-Fi Connection Problem

1) Symptom

- Description : Wi-Fi Connection Problem after Wi-Fi On.
No Connection to AP or frequent disconnection

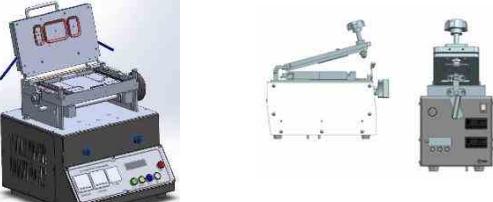
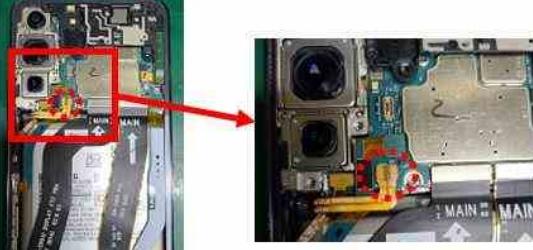


2) Defect Decision Conditions

- The phone shows Wi-Fi on without problem after rebooting.
But It won't connect to AP or will be disconnected automatically after connection.
Also, It shows weak wifi signal bar than normal device.
- Setting → connections → Wi-Fi : Number of APs is less than normal device when searching AP

3) Repair Guide

- Caution : Disconnect battery connector first when it shows.

Image	Description
	<p>1. Check Wi-Fi Function On - Enable Wi-Fi function. - If it is ok, turn off the phone.</p>
 [AOD Jig] [AOD mini]	<p>2. Disassemble the device. - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.</p>
	<p>3. Disconnect Battery Connector.</p>

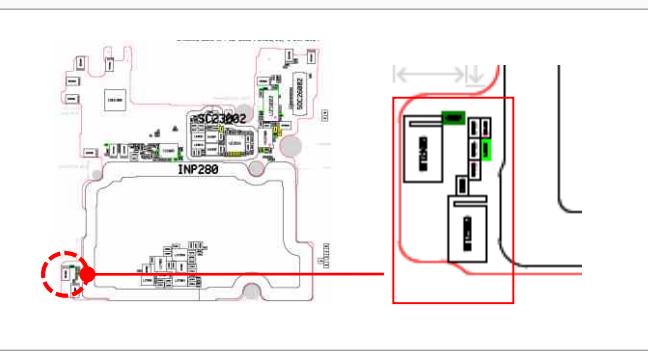
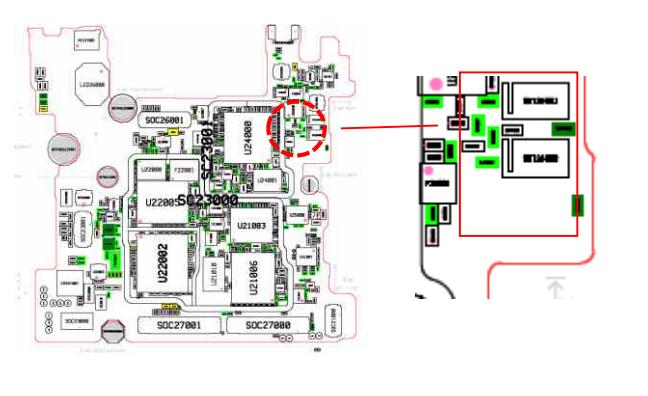
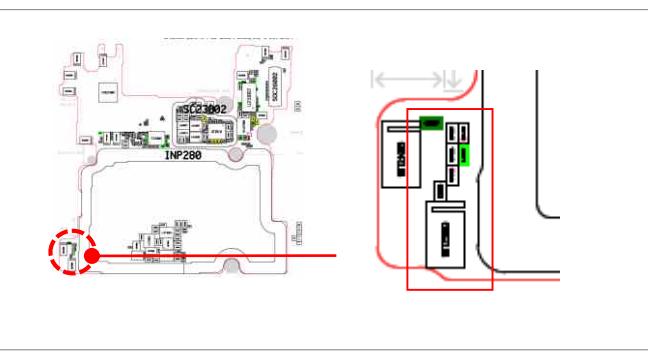
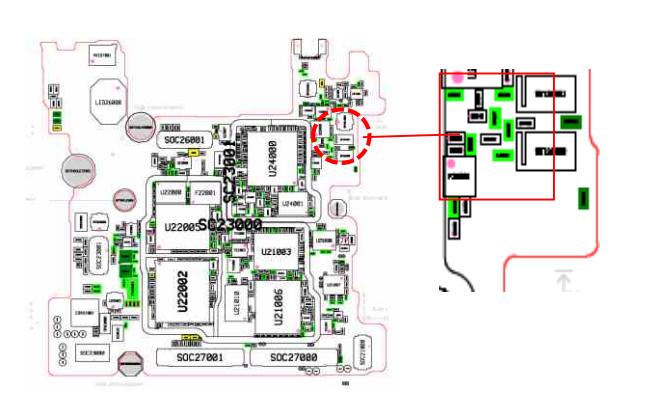
6-7. Connectivity (WiFi, GPS, NFC)

6-7-1. Wi-Fi Connection Problem

Image	Description
	<p>4. Check Wi-Fi LDS ANT</p> <ul style="list-style-type: none">- Find defects on WIFI LDS ANT(Pattern crack, damage, deviation, etc.)- Change Rear assay
	<p>5. Check Wi-Fi antenna contacts</p> <ul style="list-style-type: none">- Find defects on Wi-Fi antenna contacts.- Re-solder or change WI-FI Antenna contacts.

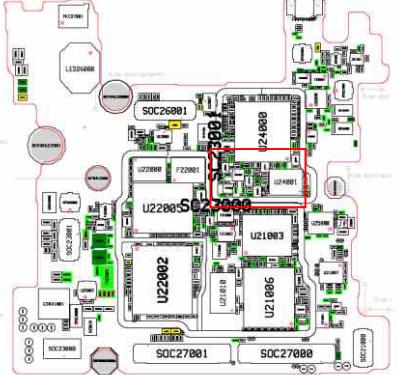
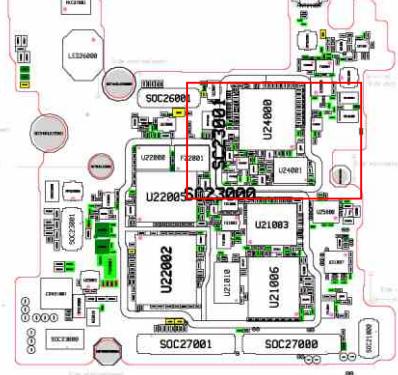
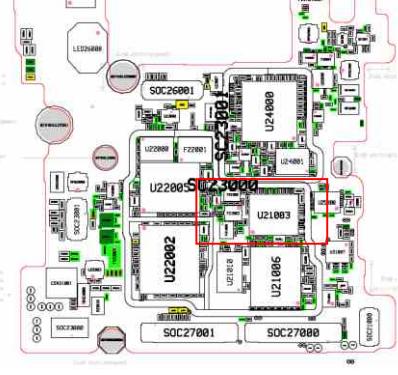
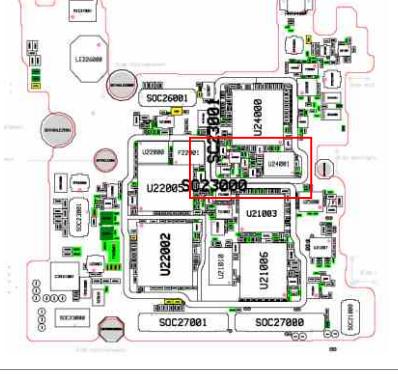
6-7. Connectivity (WiFi, GPS, NFC)

6-7-1. Wi-Fi Connection Problem

Image	Description
	<p>6-1. Check the Wi-Fi antenna1 clip and change when you find defects (ANT21005, ANT25003 with Master PBA)</p> <ul style="list-style-type: none"> - Crack - Open - Damaged or broken traces and others
	<p>6-2 Check the Wi-Fi antenna2 clip and change when you find defects (ANT24000, ANT24001 with Master PBA)</p> <ul style="list-style-type: none"> - Crack - Open - Damaged or broken traces and others
	<p>7-1. Check the antenna1 matching components and change when you find defects (L21042,C21036,C21033,C21102,C25016 with Master PBA)</p> <ul style="list-style-type: none"> - Crack - Open - Damaged or broken traces and others
	<p>7-2 Check the antenna2 matching components and change when you find defects (C24015,C24101 with Master PBA)</p> <ul style="list-style-type: none"> - Crack - Open - Damaged or broken traces and others

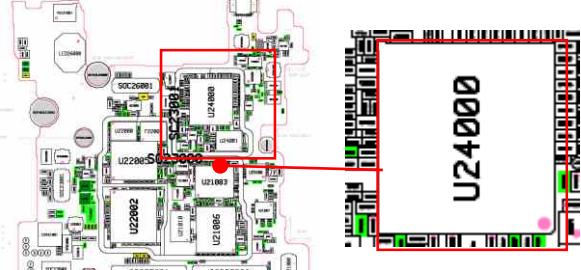
6-7. Connectivity (WiFi, GPS, NFC)

6-7-1. Wi-Fi Connection Problem

Image	Description
	<p>8-1. Check the Diplexer, Filter and its matching components of WIFI ANT1 and change when you find defects (C21111,C21038,F21001, C21034,C21035,C21033,L24033,F24003, C24109,L24034,C24110)</p> <ul style="list-style-type: none"> - Crack - Open - Damaged or broken traces and others
	<p>8-2. Check the Diplexer, Filter and its matching components of WIFI ANT2 and change when you find defects (C24103,L24025,F24001, L24028,C24106,L24021,C24104,C24094)</p> <ul style="list-style-type: none"> - Crack - Open - Damaged or broken traces and others
	<p>9-1. Check the switch, external LNA and its matching components of WIFI 2.4GHz and change when you find defects (U24002, L24005,C24090,C24089,C24041,L24022, U24006,C24072,C24073,U24004,L24002, L24004,C24096,C24091,L24017,U24003, C24067,C24066)</p> <ul style="list-style-type: none"> - Crack - Open - Damaged or broken traces and others
	<p>9-2. Check the FEM, Filter and its matching components of WiFi 5GHz and change when you find defects (U24001,L24001,F24005, C24124,L24000,F24004,C24123,C24039, C24038)</p> <ul style="list-style-type: none"> - Crack - Open - Damaged or broken traces and others

6-7. Connectivity (WiFi, GPS, NFC)

6-7-1. Wi-Fi Connection Problem

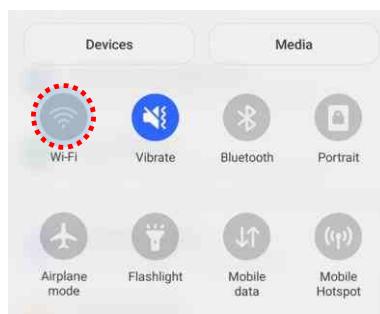
Image	Description
	<p>10. Check the Wi-Fi IC and change when you find defects (U24000)</p> <ul style="list-style-type: none">- Crack- Open- Damaged or broken traces and others

6-7. Connectivity (WiFi, GPS, NFC)

6-7-2. Wi-Fi On Problem

1) Symptom

- Description : Can not enable Wi-Fi function

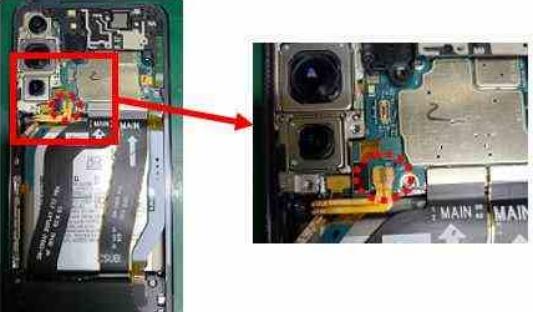


2) Defect Decision Conditions

- Description : You can not enable Wi-Fi function and Wi-Fi don't work

3) Repair Guide

- Caution : Disconnect battery connector first when it shows.

Image	Description
	<p>1. Check Wi-Fi Function On after reboot - If it is not ok, turn off the phone.</p>
 [AOD Jig] [AOD mini]	<p>2. Disassemble the device. - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.</p>
	<p>3. Disconnect Battery Connector.</p>

6-7. Connectivity (WiFi, GPS, NFC)

6-7-2. Wi-Fi On Problem

Image	Description
	
	<p>4. Replace the Master PBA with new one and check the Wi-Fi.</p>

6-7. Connectivity (WiFi, GPS, NFC)

6-7-3. GPS Problem

1) Symptom

- Description : Received GPS signal problem after GPS On.

2) Defect Decision Conditions

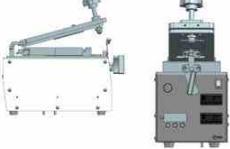
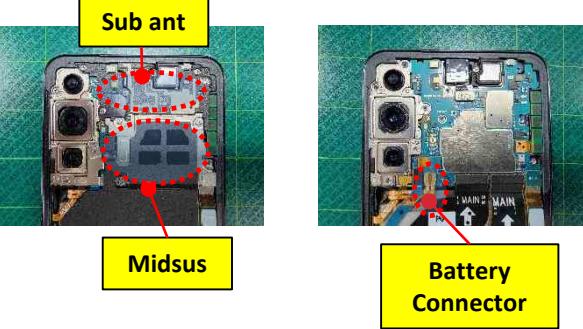
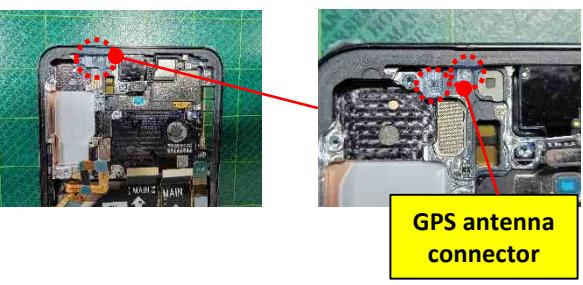
- The phone shows GPS on without problem after rebooting.

But It won't receive GPS signal after GPS On.

Also, it shows weak performance than normal device while driving or using map

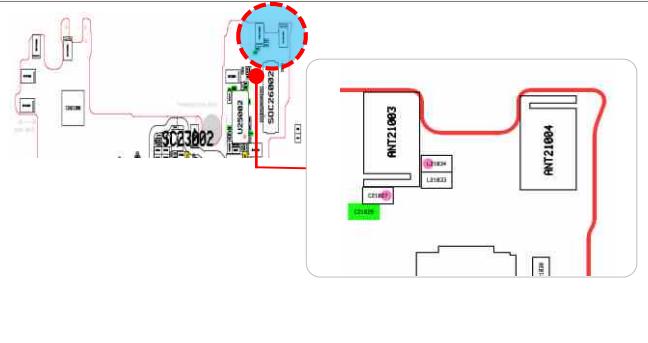
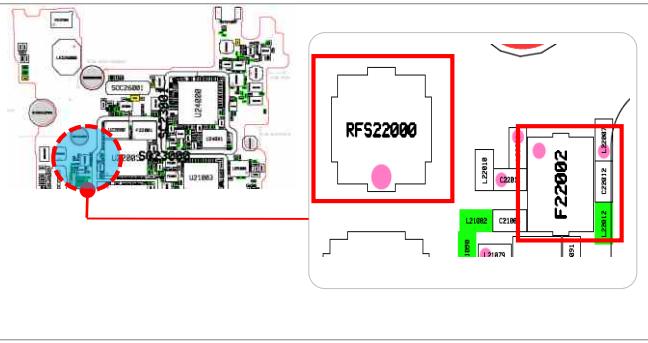
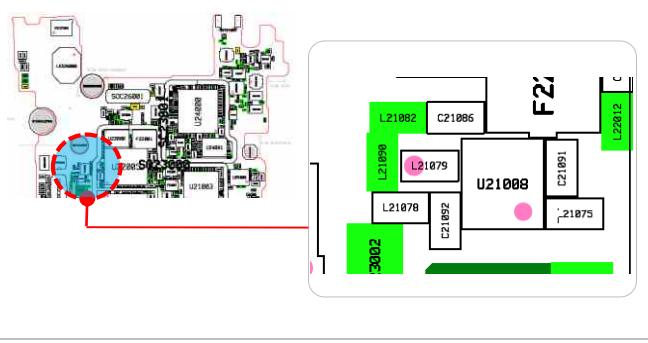
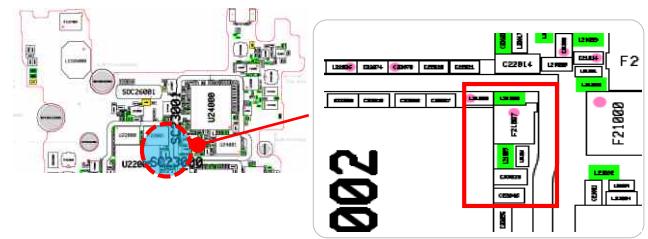
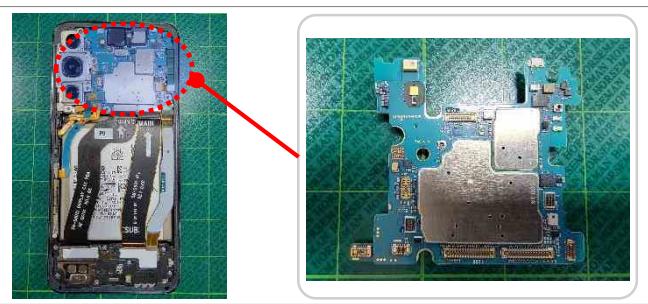
3) Repair Guide

- Caution : Disconnect battery connector first when it shows.

Image	Description
	<p>1. Check GPS Function On</p> <ul style="list-style-type: none"> - Enable GPS function. - If it is ok, turn off the phone.
 	<p>2. Disassemble the device.</p> <ul style="list-style-type: none"> - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.
	<p>3. Separate Midsus, Sub ant.</p> <p>Disconnect Battery Connector first.</p> <p>And separate PCB board after disconnect other connector.</p>
	<p>4. Check GPS antenna contacts</p> <ul style="list-style-type: none"> - Find defects on GPS antenna contacts. - Change Front Ass'y when you find appearance defects with GPS antenna contacts and around contacts.

6-7. Connectivity (WiFi, GPS, NFC)

6-7-3. GPS Problem

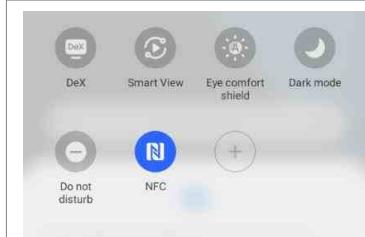
Image	Description
	<p>5. Check GPS antenna clip (ANT21003) and change when you find defects around it. (L21033, L21034, C21027, ANT21004, C21029)</p> <ul style="list-style-type: none"> - Crack - Open - Damaged or broken traces and others
	<p>6. Check RF Connector, Extractor and LC (RFS22000, L22010, C22011, L22011, C22012, F22002, L22007) and change when you find defects.</p> <ul style="list-style-type: none"> - Crack - Open - Damaged or broken traces and others
	<p>7. Check GPS LNA and LC(U21008, C21086, L21079, L21075, L21078, C21091, C21092) and change when you find defects.</p> <ul style="list-style-type: none"> - Crack - Open - Damaged or broken traces and others
	<p>8. Check SAW FILTER and LC(F21007, L21080, L21081) and change when you find defects.</p> <ul style="list-style-type: none"> - Crack - Open - Damaged or broken traces and others
	<p>9. If the device is not working normally with new component, exchange the PBA.</p>

6-7. Connectivity (WiFi, GPS, NFC)

6-7-4. NFC

1) Symptom

- Description : NFC tag read failure or card emulation failure after NFC On.



2) Defect Decision Conditions

- Check quick panel and check NFC on.
If there isn't NFC icon it can appear by quick panel layout.
- NFC tag read fail or card emulation fail when NFC On.

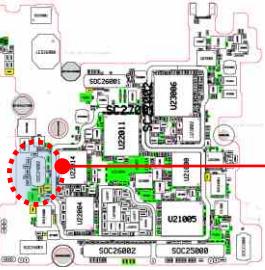
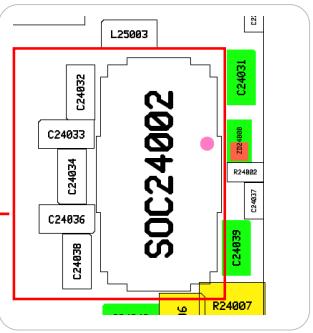
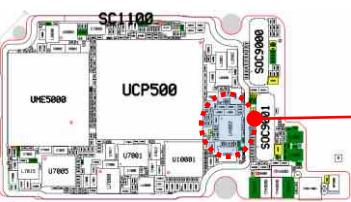
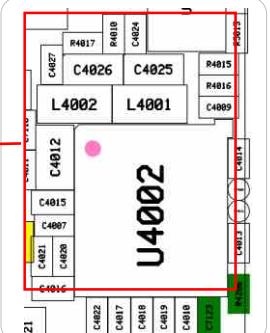
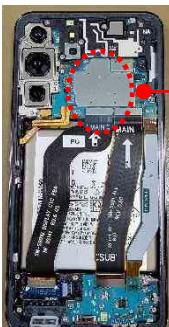
3) Repair Guide

- Caution : Disconnect battery connector first when it shows.

Image	Description
<p>A photograph of a black Samsung Galaxy S22 smartphone from the back. The camera module and 'SAMSUNG' logo are visible. A small white rectangular sticker on the back has the text 'CONFIDENTIAL - For internal use only. Not for photo sharing. Do not share. Do not reuse.'</p>	<p>1. Check the backglass and cover. if there is metal material that interrupt NFC antenna, remove it. Recheck NFC function.</p>
<p>[AOD Jig] [AOD mini]</p> <p>Two photographs of disassembly tools. The left image shows a large 'AOD Jig' with a transparent top lid. The right image shows a smaller 'AOD mini' unit.</p>	<p>2. Disassemble the device. - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.</p>
<p>A photograph of the Samsung Galaxy S22's internal circuit board. A red dashed circle highlights a specific area near the bottom center. To the right, a close-up image shows the 'NFC Ant connector' labeled with a white box.</p>	<p>3. Check the NFC Antenna and Antenna connector connected properly.</p>

6-7. Connectivity (WiFi, GPS, NFC)

6-7-4. NFC

Image	Description
 	<p>4. Replace NFC antenna and check NFC.</p>
 	<p>5. Check NFC antenna Contact (SOC24002), Capacitors C24032, C24033, C24034, C24036, C24038. If there is Damage, replace component.</p>
 	<p>6. Check component L4001, L4002, C4025, C4026, C4024, C4027, R4010, R4017. If there is Damage, replace component</p> <p>7. Replace NFC IC U4002.</p>
 	<p>8. If the device is not working normally with new component, exchange the PBA.</p>

6-8. NO SVC

6-8-1. NO SVC

1) Symptom

- Description : A prohibition mark shows on the right of the status bar instead of the antenna bars.



2) Defect Decision Conditions

- The phone continues to show this prohibition mark after rebooting or turning on and off airplane mode.
- Other phones around the phone maintain the normal condition.

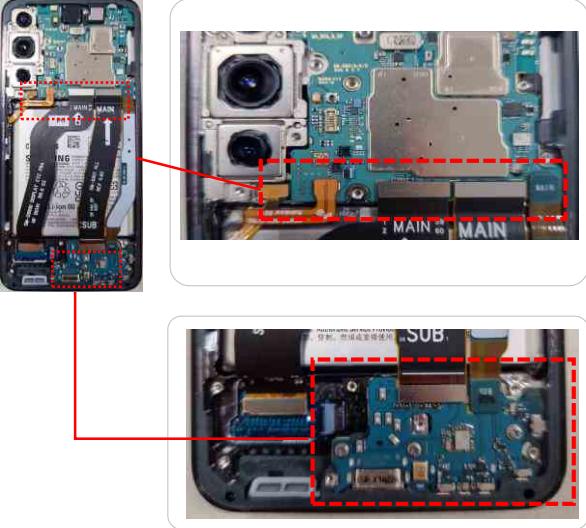
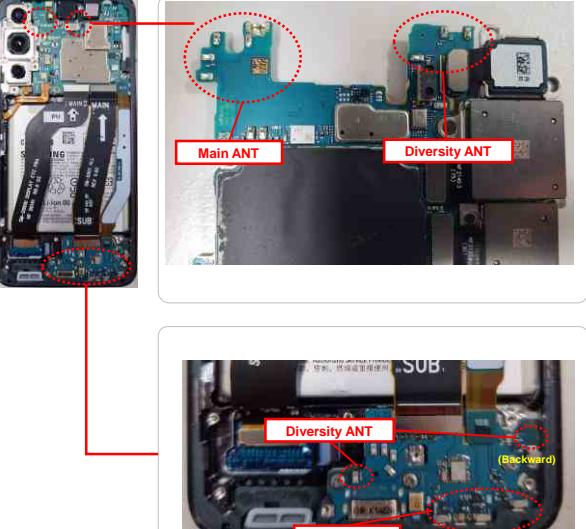
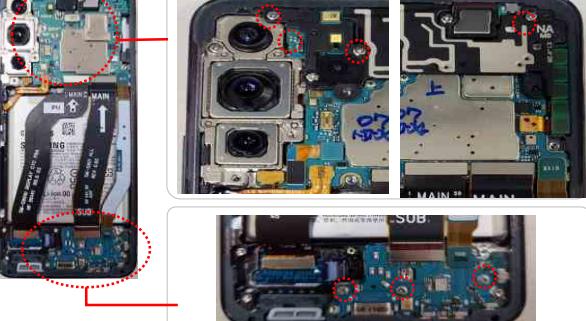
3) Repair Guide

- **Caution : Disconnect battery connector first when it shows.**

Image	Description
 [AOD Jig]	<p>1. Disassemble the device. - Refer to 'Disassembly and assembly video guide for Galaxy S22' from the GSPN.</p>
 [AOD mini]	<p>[Attention] 2. Disconnect Battery Connector at first.</p>

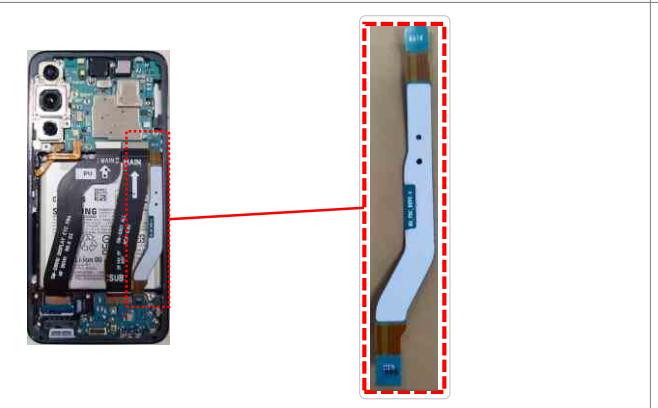
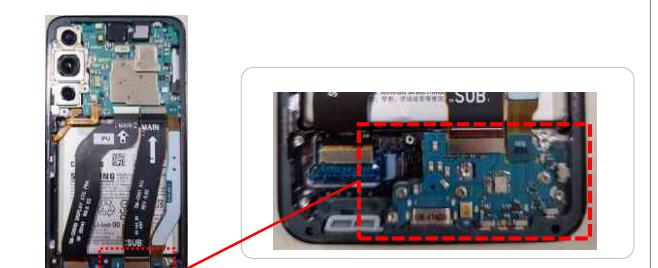
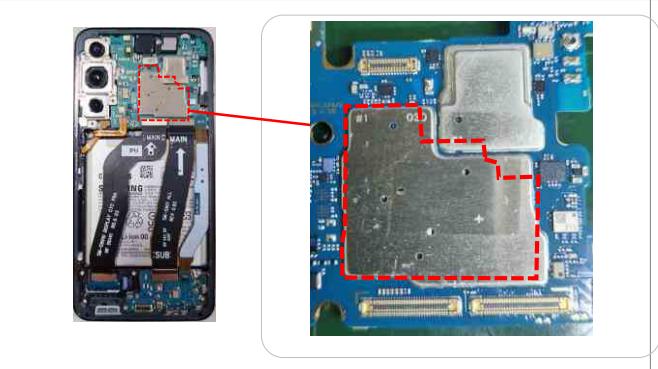
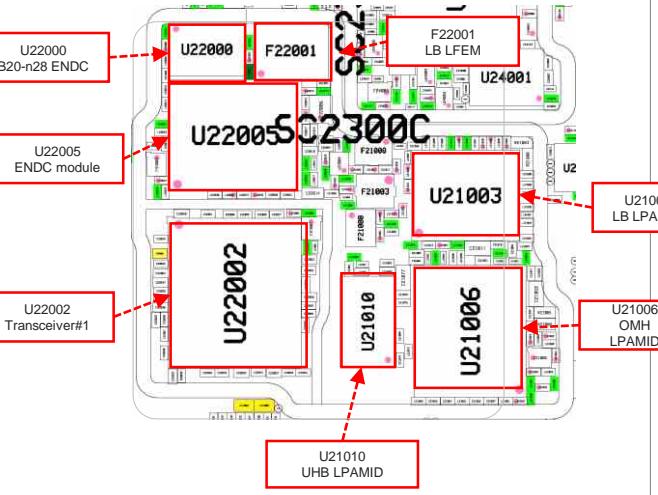
6-8. NO SVC

6-8-1. NO SVC

Image	Description
	<p>3. Check Antenna FPCB connectors are OK.</p> <p>Also, check FPCB condition.</p> <ul style="list-style-type: none"> - Broken traces and others. - Little particles or dust which can disturb connections.
	<p>4. Check Antenna C-clip is damaged.</p> <p>Also, check antenna contact points.</p>
	<p>5. Check Antenna screw is loosen.</p>

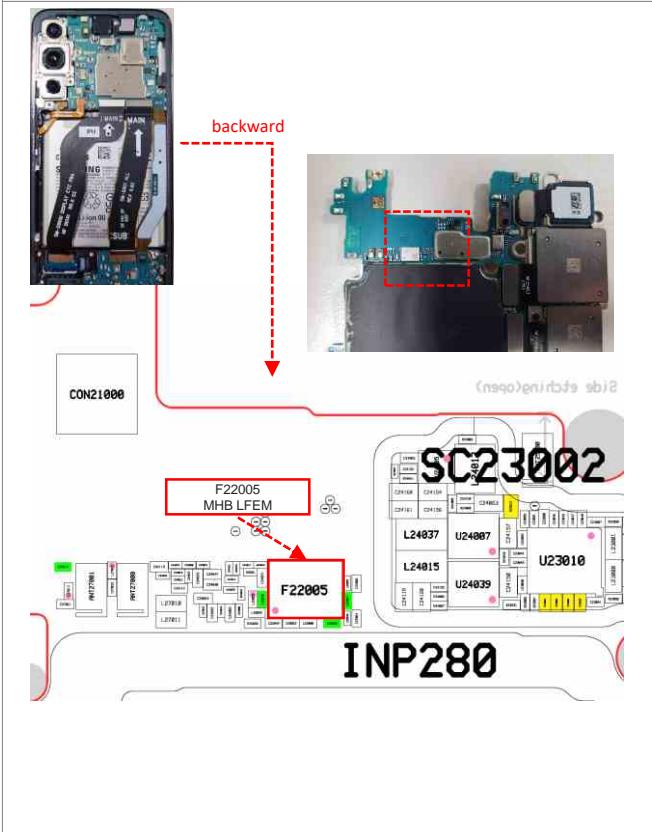
6-8. NO SVC

6-8-1. NO SVC

Image	Description
 FRC Cable	<p>6-1. Exchange the FRC with new one and check the device is working normally.</p>
	<p>6-2. If not, exchange the SUB PBA with new one and check the device</p>
	<p>7. Check the soldering status of RF chips and other electronic components on the secondary PBA, and resolder it if the soldering status is not ok. After that, check the device is working normally.</p>
	

6-8. NO SVC

6-8-1. NO SVC

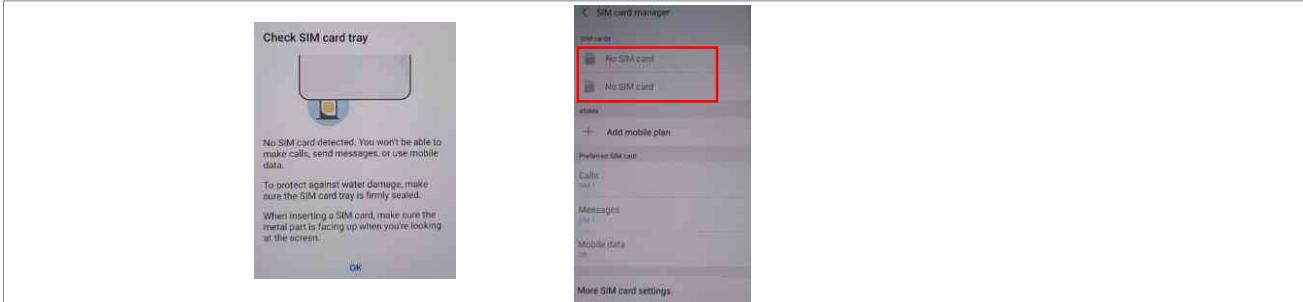
Image	Description
	<p>8. Check the soldering status of RF chips and other electronic components on the master PBA, and resolder it if the soldering status is not ok. After that, check the device is working normally.</p> <p>If not, exchange the PBA.</p>

6-9. USIM

6-9-1. Abnormal USIM

1) Symptom

- Description : USIM card is not recognized.



2) Defect Decision Conditions

- Description : The changed SIM card is not recognized.

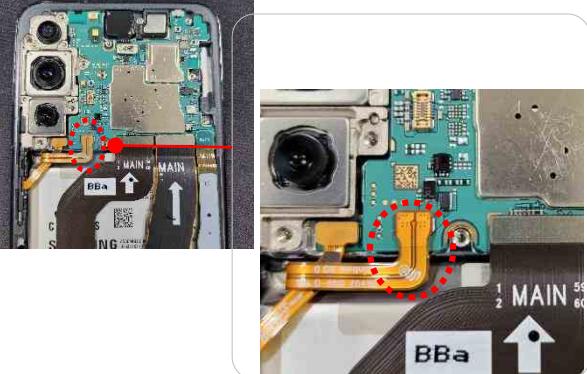
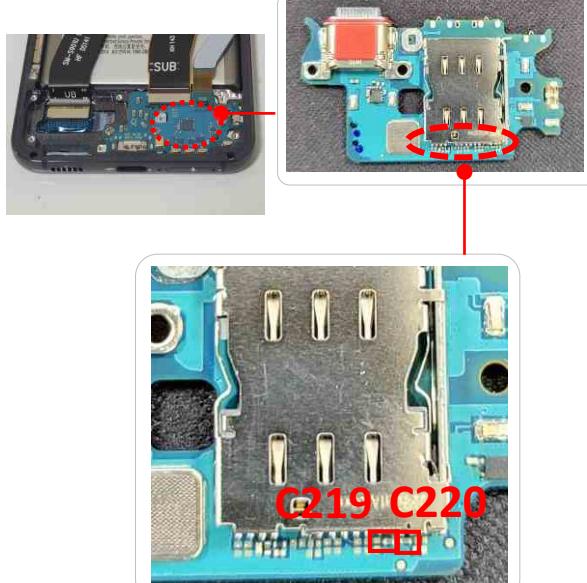
3) Repair Guide

- Caution : **Disconnect battery connector first when it shows.**

Image	Description
	<p>1. Check the USIM Card. Check if there is any problem using a normal SIM card.</p>
 [AOD Jig] [AOD mini]	<p>2. Disassemble the device. - Refer to '<u>Disassembly and assembly video guide for Galaxy S22</u>' from the GSPN.</p>
	<p>3. Disconnect the SIM card slot.</p>

6-9. USIM

6-9-1. Abnormal USIM

Image	Description
	<p>[Attention]</p> <p>4. Disconnect Battery Connector at first. (Ref. SOC23000)</p>
	<p>5. Check the voltage of IF SUB PBA</p> <ul style="list-style-type: none"> - C219 = 1.8 or 3.0V - C220 = 1.8 or 3.0V <p>If the voltage checked is abnormal, replace the IF SUB PBA with new one and check the device.</p>
	<p>6. If it is abnormal to replace the IF SUB PBA, please replace IF SUB FPCB.</p>

6-9. USIM

6-9-1. Abnormal USIM

Image	Description
	<p>7. After that, check the device is working normally. If not, exchange the MAIN PBA. After that, check the device is working normally.</p>

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