

SAMSUNG

Mobile Device SM-A235F/M Common

SERVICE *Manual*

Contents

- Level 2 -

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

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

Back glass Area replacement		Quantity	SVC Code
A/S-TAPE BACK COVER REWORK		1	GH81-22229A
TAPE CAM DECO MAIN		1	GH02-23906A

1-3. JIG

- New : Pressing Pad(TOP) [GH81-20935A](#)
- Common : AOD, Pressing Jig Body, Pressing Pad BTM : GH81-19344A (Common)
Camera Calibration Jig(chart)

1-4. WRT Test Information

- N/A (Not support Water Resistance)

1. SVC Tech Information

1-5. AOD Setting Information

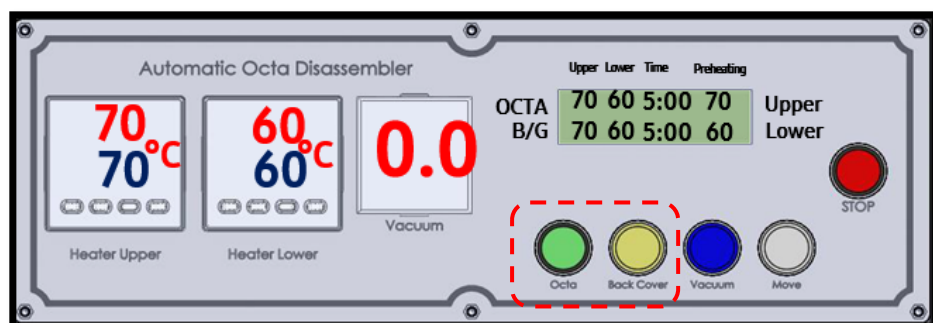
- Temperature & Time

: 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

→ Recommend to use 'Quick mode' for disassembling the back-cover. It doesn't need pre-heating.

* Quick Mode: Push OCTA button + Back-glass button simultaneously.



- Suction pad type & location

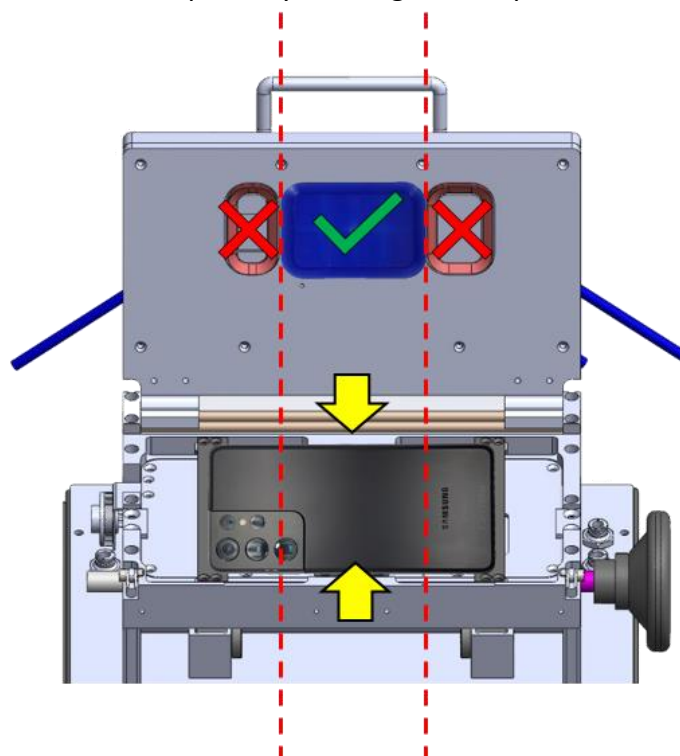
• Change the Center Suction Seal

: 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

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2-1. RAM & Storage size by region

Model name	Region		SKU CODE Rule	RAM	ROM	Remark
				(GB)	(GB)	
SM-A235F	Global	CIS	SM-A235FXXKXXX	6	128	DS
			SM-A235FXXUXXX	4	64	DS
		SEA	SM-A235FXXMXXX	6	128	DS
			SM-A235FXXRXXX	4	128	DS
			SM-A235FXXHXXX	6	128	DS
			SM-A235FXXGXXX	4	128	DS
			SM-A235FXXTXXX	8	128	DS
		SWA	SM-A235FXXHXXX	6	128	DS
			SM-A235FXXGXXX	4	128	DS
			SM-A235FXXDXXX	4	64	DS
			SM-A235FXXKXXX	6	128	DS
		MEA	SM-A235FXXVXXX	4	128	DS
			SM-A235FXXUXXX	4	64	DS
			SM-A235FXXVXXX	4	128	DS
		AFR	SM-A235FXXUXXX	4	64	DS
			SM-A235FXXSXXX	4	128	SS
			SM-A235FXXNXXX	4	64	SS
			SM-A235MXXHXXX	6	128	DS
		LA	SM-A235MXXGXXX	4	128	DS
			SM-A235MXXDXXX	4	64	DS
			SM-A235MXXPXXX	4	128	SS
			SM-A235MXXFXXX	6	128	SS
			SM-A235MXXEXXX	4	128	SS
			SM-A235MXXAXXX	4	64	SS

2. SVC Model Information

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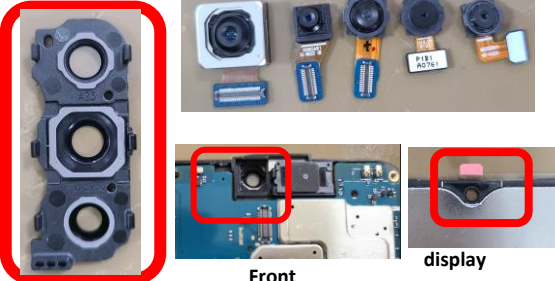
2-2. Disassembly & Reassembly (Important management points)



CTC / LCD FPCB


When detaching LCD, avoid damage to LCD FPCB. Please refer to the picture when disassembling

CAM DECO




Front display

Be careful not to reach the Wide camera, Ultrawide camera, front camera, macro camera, bokeh camera, camera window, Front display, etc during repair



C to C FPCB

Be careful to connect C to C FPCB when assembling main PBA and sub PBA

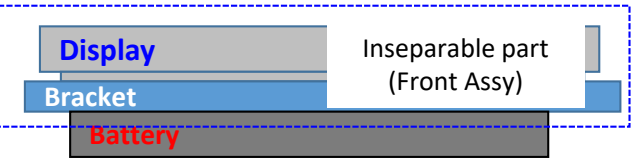


Be careful with coaxial cable shaping during assembly.

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</p> <p>Bracket</p> <p>Battery</p> <p>Inseparable part (Front Assy)</p>	<p>Display and Bracket are inseparable.</p> <p>Battery replacement is required when Front Assy components are defected.</p>

3. Product Function

3-1. Main Function

Item	Description
OS	Android V12.0 (R)
SM-A235F Network	2G GSM : GSM850 / GSM900 / DCS1800 / PCS1900 3G WCDMA : B1 / B5 / B8 4G - FDD : B1 / B3 / B5 / B7 / B8 / B20 / B28 - TDD : B38 / B40 / B41
SM-A235M Network	2G GSM : GSM850 / GSM900 / DCS1800 / PCS1900 3G WCDMA : B1 / B2 / B4 / B5 / B8 4G - FDD : B1 / B2 / B3 / B4 / B5 / B7 / B8 / B12 / B13 / B17 / B26 / B28 / B66 - TDD : B38 / B40 / B41
Battery	5,000 mAh
Processor	SM6225(SDM680) 4x 2.4GHz, 4x 1.9GHz
Connectivity	WiFi802.11 a/b/g/n/ac SISO, BT5.0, USB2.0, GPS(w/ Glonass/Beidu/Galileo/QZSS), NFC
Camera	Rear - Wide : 50MP A/F, OIS, F1.8 - Ultra Wide : 5MP, F2.2 - Macro : 2MP, F2.4 - Bokeh : 2MP, F2.4 Front - Front CAM : 8MP, FF, F2.2
Display	6.6", FHD+, TFT-LCD
RAM	4 / 6 GB
ROM	64 / 128 GB
Sensor	Accelerometer, Compass, Gyro Sensor, Grip Finger Print Sensor

4. Exploded View and Parts List

4-1. Electronical Part List

: Refer to '[01-SM-A235F_Common_Main Part List](#)' file which uploaded separately

4-2. Cellular phone Exploded View

: Refer to '[02-SM-A235F_Common_Exploded View](#)' file which uploaded separately

4-3. Cellular phone Parts list

: Refer to SVC PPL

5. Components Layout

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5-1. Components Layout



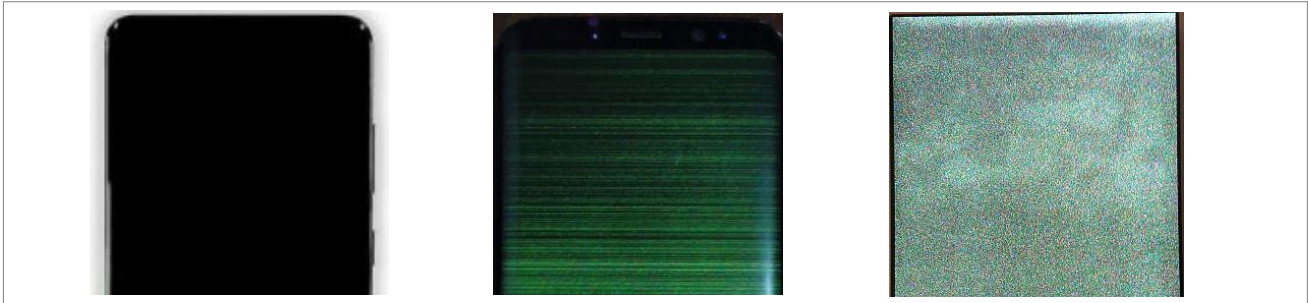
6. Trouble Shooting (L2)

- 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

6-1. Display

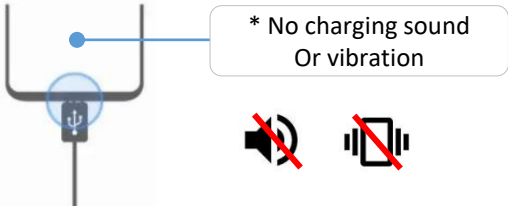
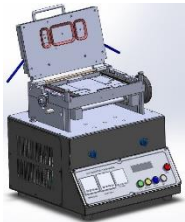
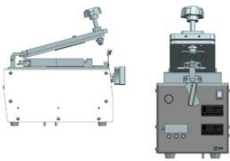



6-1-1. Main Display Black Display

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

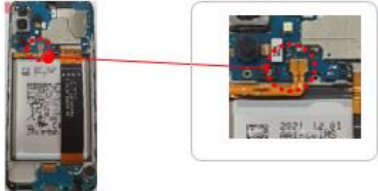
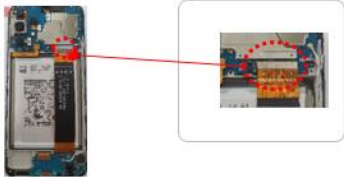

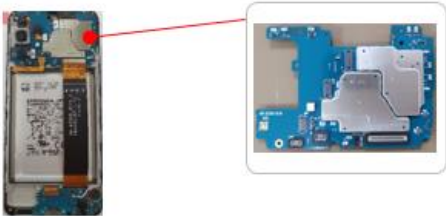



- 2) Defect Decision Conditions
- Noised images on the screen after turning on
 - Check booting sound and no vibration .

- 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.</p> <ul style="list-style-type: none">- Should be no sound and no vibration.- The device keep 'No display' status.
<div><p>[AOD Jig]</p></div> <div><p>[AOD mini]</p></div>	<p>2. Disassemble the device.</p> <ul style="list-style-type: none">- Refer to '<u>Disassembly and assembly video guide for Galaxy A23 LTE</u>' from the GSPN.
<div><p>Water indicator tripped</p></div> <div><p>USB charging port burnt</p></div> <div><p>Cracked case</p></div>	<p>3. Check the disassembled device for OOW.</p> <ul style="list-style-type: none">- Water damage.- Part burnt. (Charging port, PBA, Battery and others)- Broken traces and others.

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

Image	Description
	<p>[Attention]</p> <p>4. Disconnect Battery Connector (Ref. SOC6000) at first.</p>
	<p>5. Check the 'MAIN PBA ↔ CTOC FPCB' connector(Ref. U9002) and connect it again when it connected improperly. After that, connect battery connector again and check the display.</p>
	<p>6. Check 'Capacitors' nearby 'U7017(BL-IC)' on the PBA as below.</p> <ul style="list-style-type: none">- VDD_LCD_1P8=1.8V (C7001)- VSP_5P5=5.5V (C6017)- VSN_5P5=-5.5V (C6018)- VDD_LCD_ELVSS_-4P4=-4.4V (C9028) <p>If each power level is low, change LDO(U7001) or the capacitor.</p>
	<p>7. Change the Master PBA with new one and check the device.</p>
	<p>8. If not, finally, change the Front Assy with new one and check the device.</p>

6-1. Display

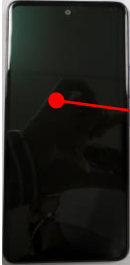
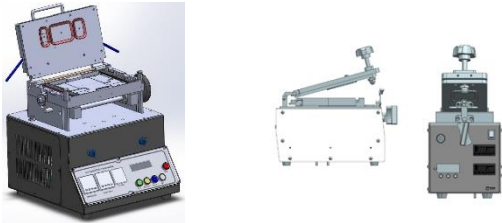

6-1-2. Main Display Bit defect (Horizontal line) (L3)

- 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 if there is any damage of external impact on the device.

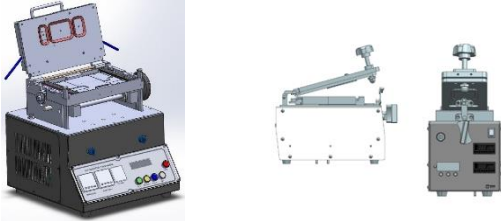

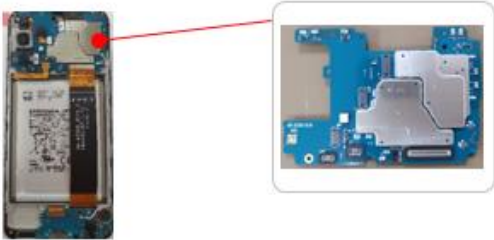
Image	Description
 <div>* Checking external damage of the device</div>	<p>1. Check if there is any damage of external impact on the device. (especially, Front Window)</p>
 <div>[AOD Jig] [AOD mini]</div>	<p>2. Disassemble the device. - Refer to 'Disassembly and assembly video guide for Galaxy A23 LTE' from the GSPN.</p>
 <div>• Exchange the Front Assy</div>	<p>3. Exchange the front Assy(including display module) with new one and check the device.</p>

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.

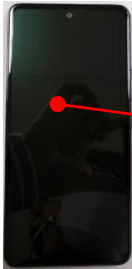
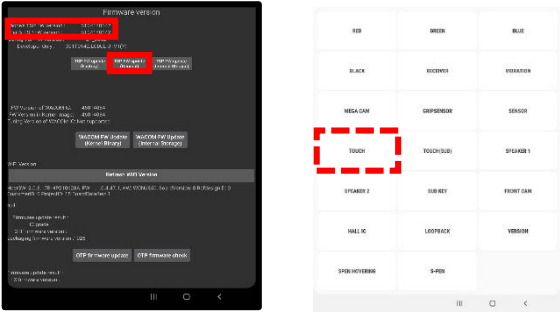
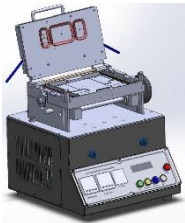
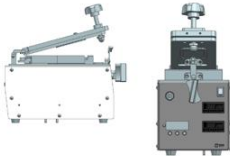



- 2) Defect Decision Conditions
- Description : You can see that symptom when something is changed or something is played on the screen of device. (ex : contents of Youtube[Mosaic Pattern], swap menu block on screen [ICON Crack])
- 3) Repair Guide
- **Caution : Disconnect battery connector first when it shows.**

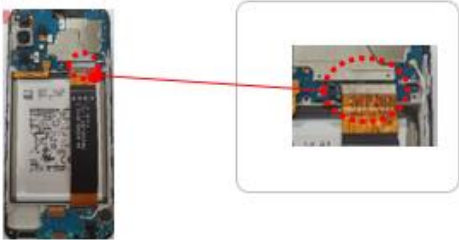

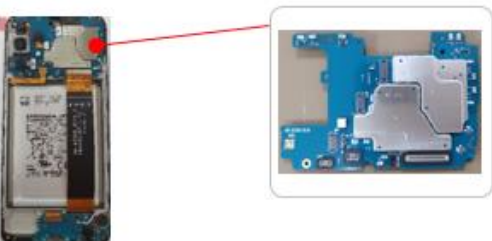
Image	Description
 <div>[AOD Jig] [AOD mini]</div>	1. Disassemble the device. - Refer to ' Disassembly and assembly video guide for Galaxy A23 LTE ' from the GSPN.
 <div>• Exchange the Front <u>Assy</u></div>	2. Exchange the front Assy(including display module) with new one and check the device.
	3. If not, finally, exchange the Main PBA sequentially with new one and check the device.

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 if there is any damage of external impact on the device.

Image	Description
 <div>* Checking external damage of the device</div>	<div>1. Check if there is any damage of external impact on the device. (especially, Front Window)</div>
	<div>2. If possible, Input key string *#2663#, click TSP FW update(General). After that, check the *#0*# tsp test.</div> <div>If the touch test is not work normally, check the next step.</div>
 <div>[AOD Jig]</div>  <div>[AOD mini]</div>	<div>3. Disassemble the device.</div> <div>- Refer to 'Disassembly and assembly video guide for Galaxy A23 LTE' from the GSPN.</div>
	<div>[Attention]</div> <div>4. Disconnect Battery Connector (Ref. SOC6000) at first.</div>

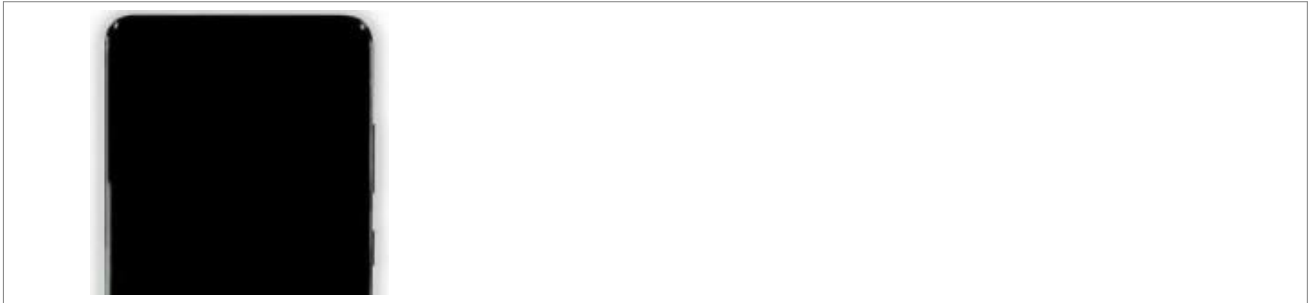
6-2-1. Touch Malfunction

Image	Description
	5. Check the 'MAIN PBA ↔ CTOC FPCB' connector and connect it again when it connected improperly. After that, connect battery connector again and check the display.
	6. Change the Front Assy. with new one and check the device.
	7. If not, finally, change the MAIN PBA with new one and check the device.

6-3. Power, Charging

6-3-1. No Power

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




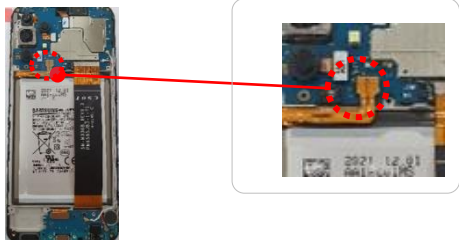
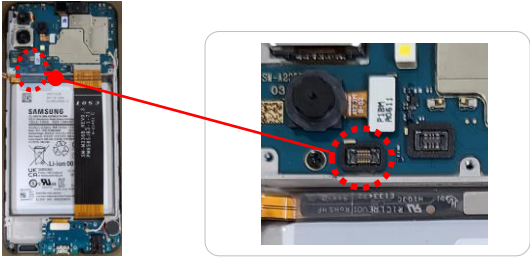

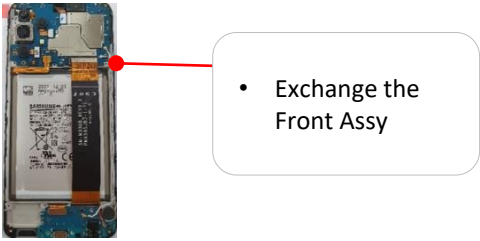
- 2) Defect Decision Conditions
- Description : The phone no any display & vibration after booting.

- 3) Repair Guide
- **Caution : Disconnect battery connector first when it shows.**

Image	Description
	<div>1. Check the charging notification sound or vibration when connected to charger.</div> <div>- Should be no sound and no vibration.</div> <div>- The device keep 'No Power' status.</div>
<div><div>[AOD Jig]</div></div> <div><div>[AOD mini]</div></div>	<div>2. Disassemble the device.</div> <div>- Refer to 'Disassembly and assembly video guide for Galaxy A23' from the GSPN.</div>
<div><div>USB charging port burnt</div></div> <div><div>Water indicator tripped</div></div>	<div>3. Check the disassembled device for OOW.</div> <div>- Water damage.</div> <div>- Part burnt.</div> <div>(Charging port, PBA, Battery and others)</div> <div>- Broken traces and others.</div>

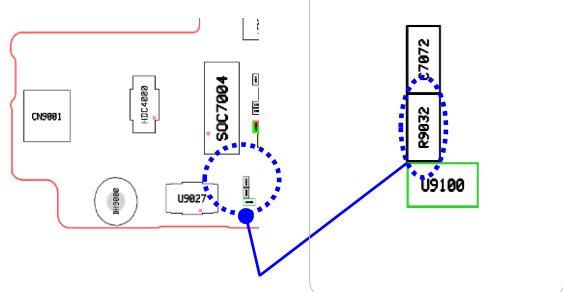
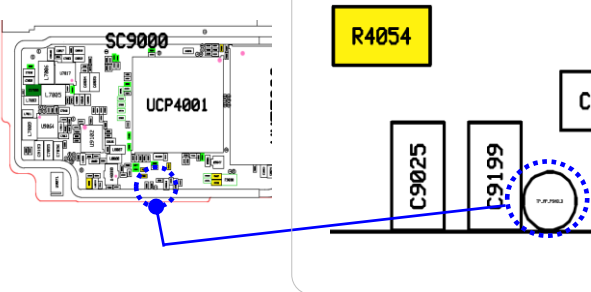
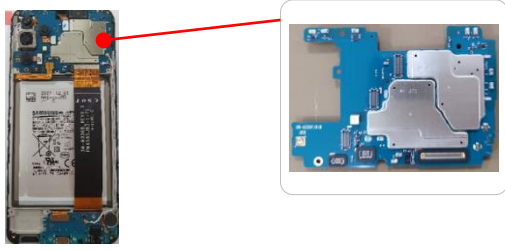
6-3. Power, Charging

6-3-1. No Power

Image	Description
	<p>1. Check battery voltage(C6116) at first. (It's normal over 3.5v) If battery voltage is under 3.5v, charge the phone with charger.</p>
	<p>2. Check the 'PBA ↔ Battery' connector(SOC6000) and connect it again when it connected improperly. After that, check to turn on the phone.</p>
	<p>3. Check the 'PBA ↔ Power key ' contact and key FPCB it After that, check to turn on the phone.</p>
	<p>4. Check the 'PBA ↔ LCD ' connector(U9002) and connect it again when it connected improperly. After that, check to turn on the phone.</p>
	<p>5. Exchange the display module with new one and check the device.</p>

6-3. Power, Charging

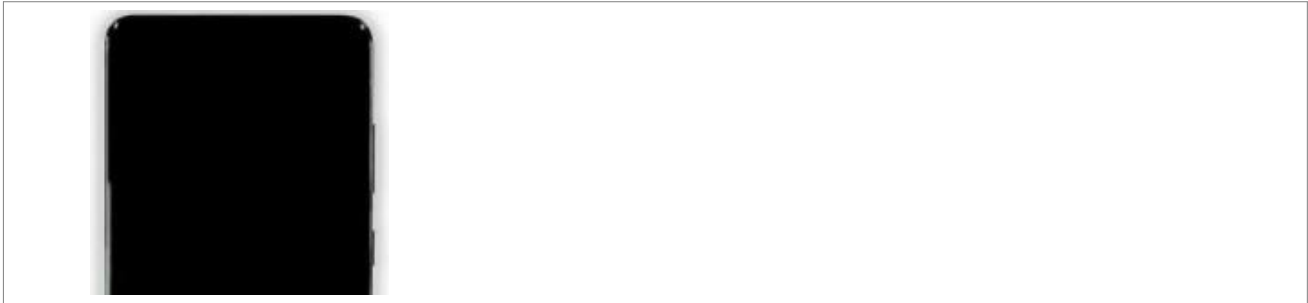
6-3-1. No Power

Image	Description
	<p>1. Check 'Power Key signal' nearby 'U9027' on the PBA as below.</p> <p>→ check R9032 voltage when power key is pressed.</p> <p>R9032 voltage = 3.5V ~ 4.4V → power key is OK.</p> <p>R9032 voltage = 0V → power key is abnormal. Change the power key FPCB.</p>
	<p>2. Check the PS_HOLD signal(TP_AP_PSHOLD) when power key is pressed during 2~3 seconds.</p> <ul style="list-style-type: none">- Check its 'PS_HOLD signal' is changed from 0v to 1.8v.- If its signal is changed, PMIC is OK.
	<p>3. If PS_HOLD signal is 0v after press power key, exchange the PBA.</p>

6-3. Power, Charging

6-3-2. Reboot during Power on (L3)

- 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
	1. Check power on current with Power Supply and ANYWAY JIG.
	1-1. Push down Anyway Jig switch 7,8 1-2. Power supply set to 5v 1-3. During booting, check current.
	2. If current is under 4A, check the battery connector connection and battery condition.

6-3. Power, Charging

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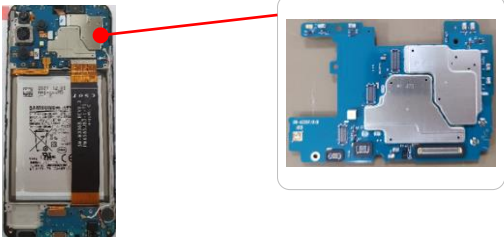
6-3-3. Sudden Discharge in the idle state (L3)

- 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


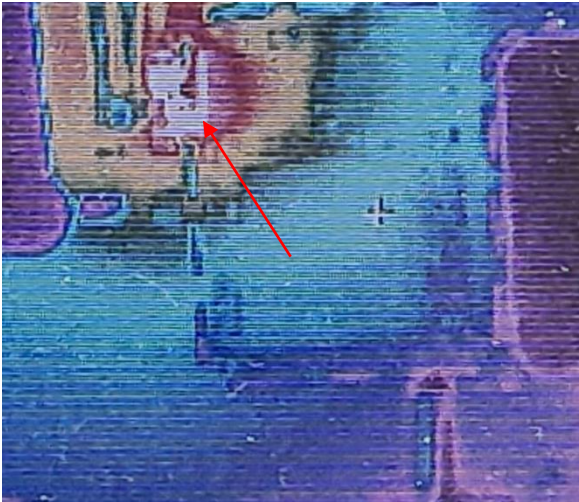
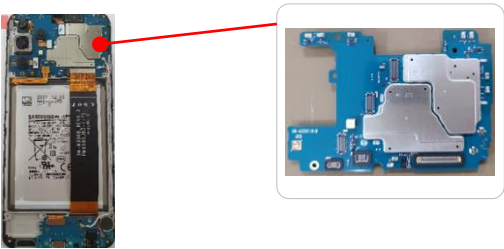
Image	Description
	<div>1. Check Power-off leakage current.</div> <div>1-1. Push down Anyway Jig switch 6,7,8</div> <div>1-2. Check Power-off leakage current.</div>
	<div>2-1. Check sleep current.</div> <div>. Push down Anyway Jig switch 7,8</div> <div>. After booting, Check sleep current.</div> <div>2-2. Check $-1\text{mA} \leq \text{Power-off leakage} \leq 2\text{mA}$</div> <div>2-3. Check sleep current $\leq 13.5\text{mA}$</div>
<div> [AOD Jig]</div> <div> [AOD mini]</div>	<div>3-1. If there is Power-off leakage problem.</div> <div>3-2. Disassemble the device.</div> <div>- Refer to '<u>Disassembly and assembly video guide for Galaxy A23</u>' from the GSPN.</div>

6-3. Power, Charging

6-3-3. Sudden Discharge in the idle state (L3)

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, BAT CON, Sub PBA, LCD 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>

6-3-3. Sudden Discharge in the idle state (L3)

Image	Description
	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.
	(Thermal camera sample image) Search where the hotspot appears.
	6-2. 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.

6-3. Power, Charging

6-3-4. No charging (Wire charging) (L3)


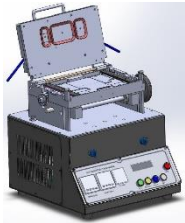
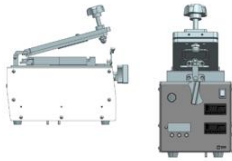

- 1) Symptom
- Description : No charging after inserted TA.

No charging Condition

cf. Normal Condition

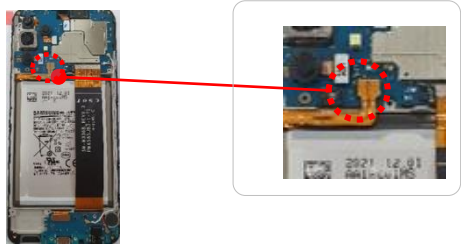
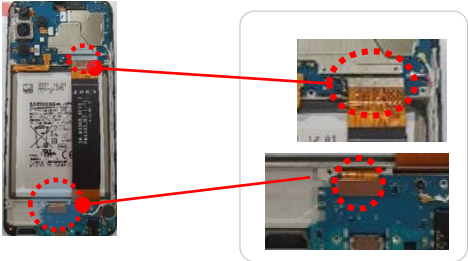


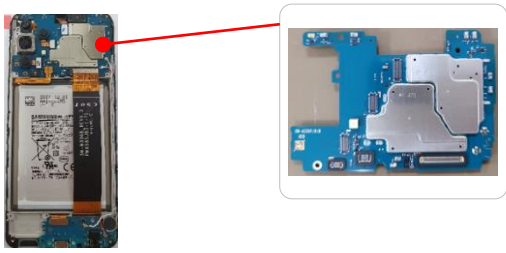


- 2) Defect Decision Conditions
- Description : No charging notification sound, vibration and UI when inserted TA.
- 3) Repair Guide
- Caution : Disconnect battery connector first when it shows.

Image	Description
	<div>1. Check the charging notification sound or vibration when connected to charger.</div> <div>- Should be no sound, no vibration and no UI.</div> <div>- Save the log and analyze it.</div>
<div> [AOD Jig]</div> <div> [AOD mini]</div>	<div>2. Disassemble the device.</div> <div>- Refer to 'Disassembly and assembly video guide for A23' from the GSPN.</div>
<div> USB charging port burnt or corroded</div>	<div>3. Check the disassembled device for OOW.</div> <div>- Water damage.</div> <div>- Part burnt. (Charging port, PBA, Battery and others)</div> <div>- Damaged USB port pin.</div> <div>- Broken traces and others.</div>

6-3. Power, Charging

6-3-4. No charging (Wire charging) (L3)

Image	Description
	<p>[Attention]</p> <p>4. Disconnect Battery Connector at first.</p>
	<p>5. Check the 'IF SUB PBA, MAIN PCB ↔ C to C 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. Exchange the IF SUB PBA with new one and check the device.</p>
	<p>8. If not, exchange the C to C connector with new one and check the device.</p>
	<p>9. If the device is not working normally after replacing the 'capacitors' and 'Charger IC', replace the MAIN PBA</p>

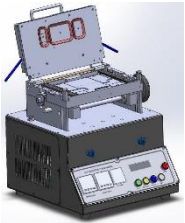
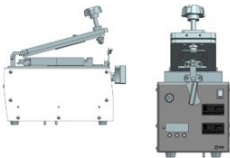
6-4-1. Entry Fail(FRONT Camera)

- 1) Symptom
- Description : Black display and can't turn on the FRONT camera

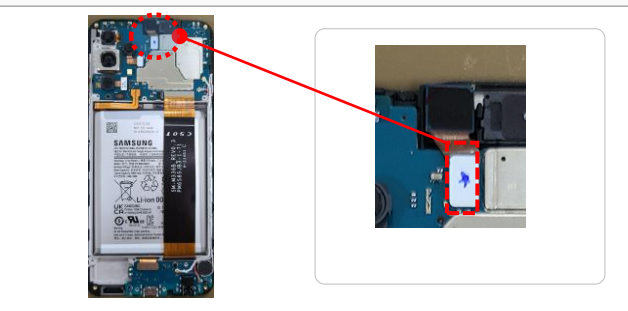
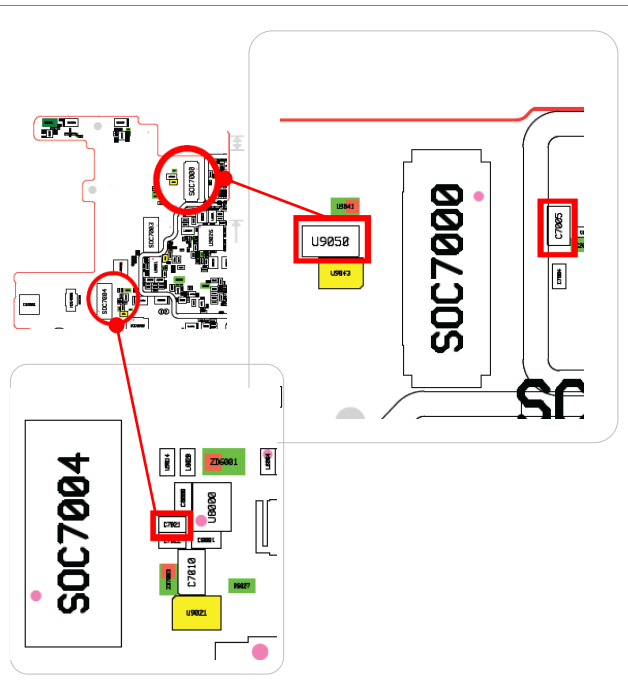
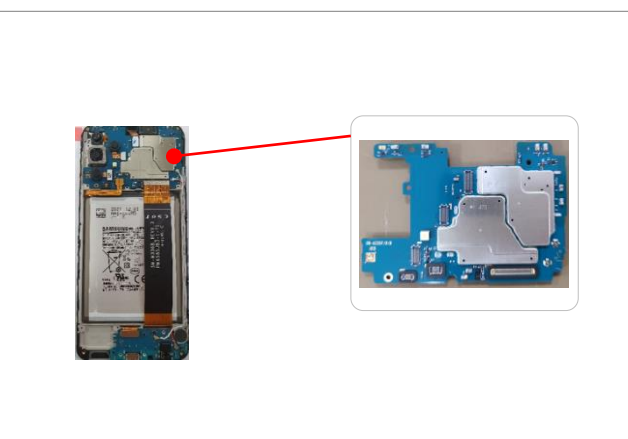


- 2) Defect Decision Conditions
- Description : Black display instead of preview image or return to home screen

- 3) Repair Guide
- Caution : Disconnect battery connector first when it shows.

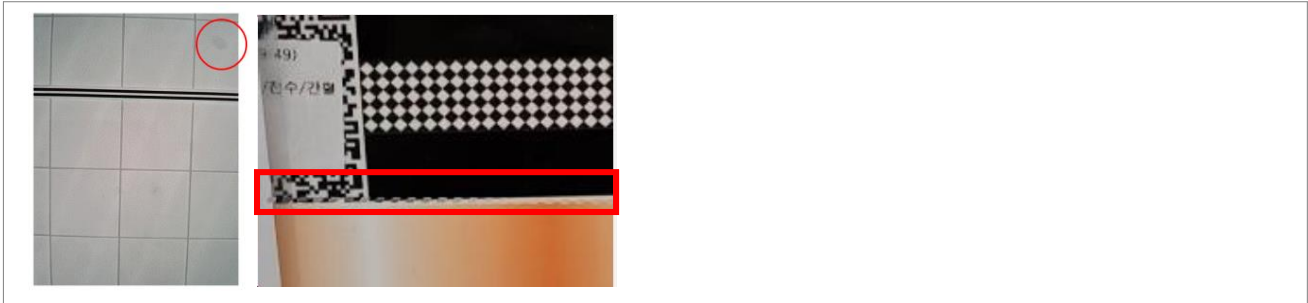
Image	Description
	1. Execute Front Cam test of *#0*#.
<div> [AOD Jig]</div> <div> [AOD mini]</div>	2. Disassemble the device. - Refer to ' Disassembly and assembly video guide for A23 LTE ' from the GSPN.
	[Attention] 3. Disconnect Battery Connector at first. (SOC6000)

6-4-1. 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. (SOC7000)</p>
	<p>5. Check 'Capacitors' on the PBA as below.</p> <ul style="list-style-type: none"> - FCAM_AVDD_2P8=2.8V (U9050) - CAM_VDDIO_1P8=1.8V (C7021) - FCAM_DVDD_1P2=1.2V (C7005)
	<p>6. If camera is still working abnormally, exchange the PBA.</p>

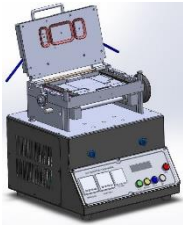
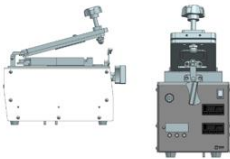

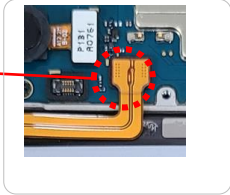
6-4-2. Abnormal Preview(FRONT CAMERA)

- 1) Symptom
 - Description : Abnormal display of FRONT camera

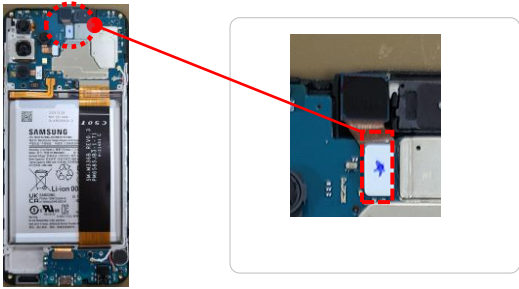


- 2) Defect Decision Conditions
 - Description : Blemishes or dots on image

- 3) Repair Guide
 - Caution : Disconnect battery connector first when it shows.

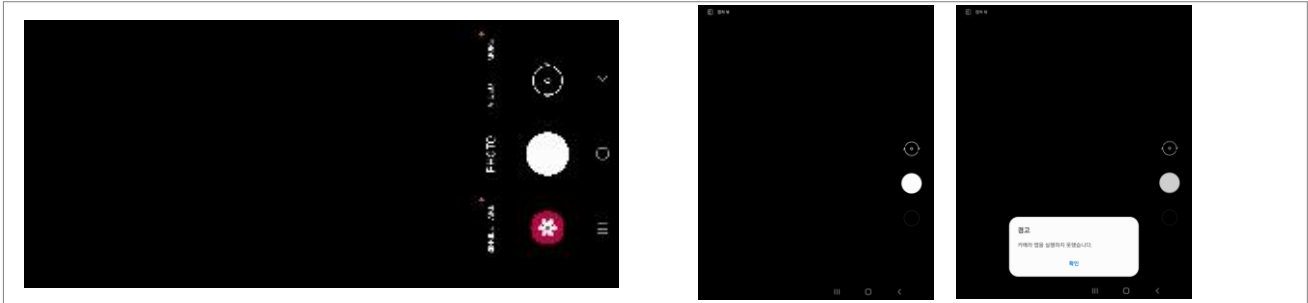
Image	Description
	<div>1. Check the camera hole.<ul style="list-style-type: none">- Should be clean and no particle.</div>
<div> [AOD Jig]</div> <div> [AOD mini]</div>	<div>2. Disassemble the device.<ul style="list-style-type: none">- Refer to 'Disassembly and assembly video guide for A23 LTE' from the GSPN.</div>
<div></div> <div></div>	<div>[Attention]</div> <div>3. Disconnect Battery Connector at first. (SOC6000)</div>

6-4-2. Abnormal Preview(FRONT Camera)

Image	Description
	<p>4. Replace the camera module with new one and check the device. (SOC7000)</p>

6-4-3. Entry Fail(Rear Camera)

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

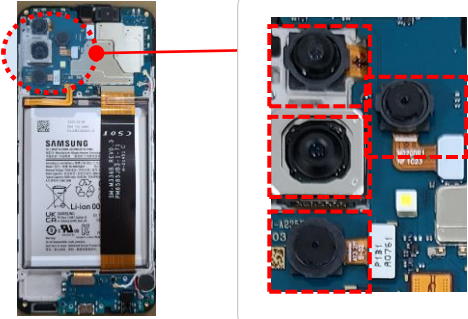
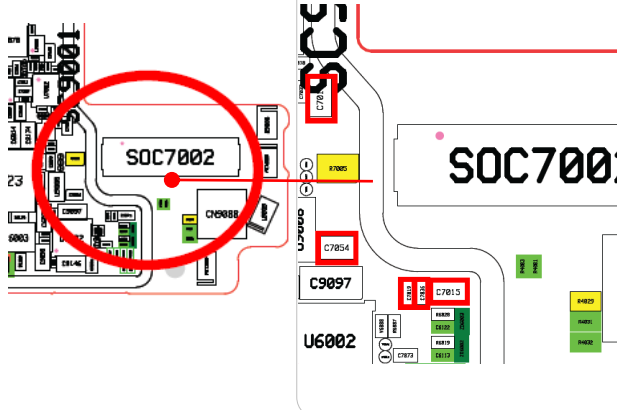
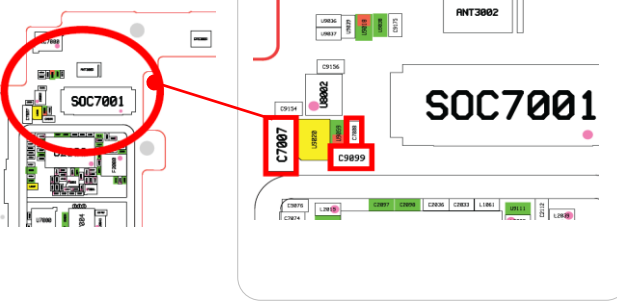
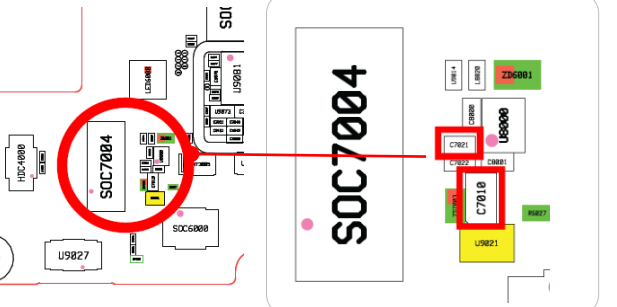


- 2) Defect Decision Conditions
- Description : Black display instead of preview image or return to home screen


- 3) Repair Guide
- Caution : Disconnect battery connector first when it shows.

Image	Description
	<div>1. Execute Mega cam test of *#0*# to figure out which camera has defect.</div> <div>- Rear : Wide camera</div> <div>- Rear2 : Ultra wide camera</div> <div>- Rear3 : Bokeh camera</div> <div>- Rear4 : Macro camera</div>
<div> [AOD Jig]</div> <div> [AOD mini]</div>	<div>2. Disassemble the device.</div> <div>- Refer to 'Disassembly and assembly video guide for Galaxy A23 LTE' from the GSPN.</div>
	<div>[Attention]</div> <div>3. Disconnect Battery Connector at first. (SOC6000)</div>

6-4-3. Entry Fail(Rear 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.</p> <ul style="list-style-type: none">- upper : ULTRA WIDE CAMERA- MIDDLE : WIDE CAMEAR- LOWER : BOKEH CAMERA- RIGHT : MACRO CAMERA
	<p>5. If Wide Cam is defective check 'Capacitors' on the PBA as below.</p> <ul style="list-style-type: none">- RCAM1_AVDD_2P8=2.8V (C7014)- CAM_OIS_VDD_3P3=3.3V (C7054)- CAM_VDDIO_1P8=1.8V (C7036)- RCAM1_AFVDD_2P8=2.8V (C7019)- RCAM1_DVDD_1P05=1.05V (C7015)
	<p>6. If Ultra Wide Cam is defective check 'Capacitors' on the PBA as below.</p> <ul style="list-style-type: none">- RCAM2_AVDD_2P8=2.8V (C7007)- CAM_VDDIO_1P8=1.8V (C7008)- RCAM2_DVDD_1P2=1.2V (C9099)
	<p>7. If BOKEH, MACRO Cam is defective check 'Capacitors' on the PBA as below.</p> <ul style="list-style-type: none">- VDD_RCAM3_4_AVDD_2P8=2.8V (C7010)- RCAM3_4_DVDD_1P8=1.8V (C7022)

6-4-3. Entry Fail(Rear Camera)

Image	Description
	<p>8. If camera is still working abnormally, exchange the PBA.</p>

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

- 1) Symptom
- Description : Out of focus for rear camera

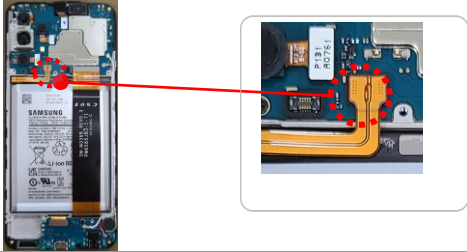
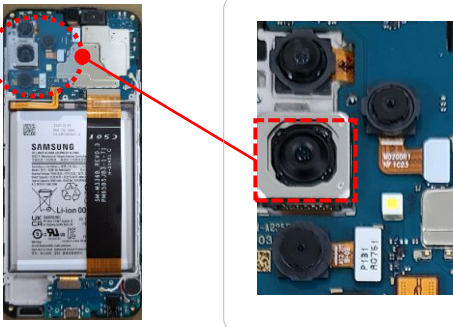
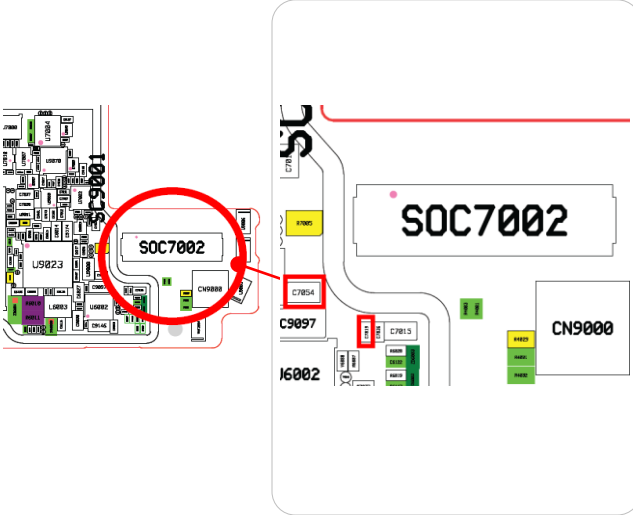
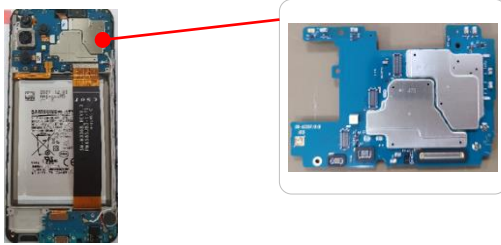


- 2) Defect Decision Conditions
- Description : The image of rear camera is out of focus.

- 3) Repair Guide
- Caution : Disconnect battery connector first when it shows.

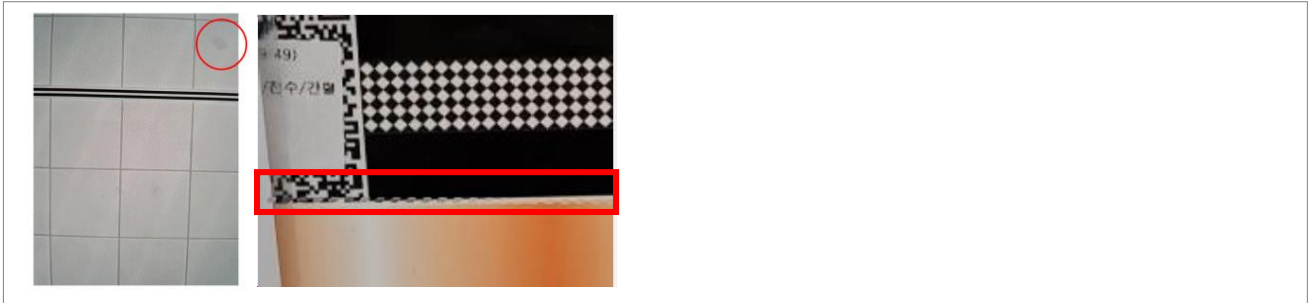
Image	Description
	<div>1. Check the camera deco glass.</div> <div>- Should be clean and no particle.</div>
<div></div>	<div>2. Execute Mega cam test of *#0*# to figure out which camera has defect.</div> <div>- Rear : Wide camera</div>
<div></div> <div>[AOD Jig]</div> <div>[AOD mini]</div>	<div>3. Disassemble the device.</div> <div>- Refer to 'Disassembly and assembly video guide for Galaxy A23 LTE' from the GSPN.</div>

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

Image	Description
	<p>[Attention]</p> <p>4. Disconnect Battery Connector at first. (SOC6000)</p>
	<p>5. Replace the camera module with new one and check the device. - wide camera</p>
	<p>6. Check the 'Capacitors' nearby 'SOC7002' on the PBA as below.</p> <ul style="list-style-type: none">- CAM_OIS_VDD_3P3=3.3V (C7054)- RCAM1_AFVDD_2P8=2.8V (C7019)
	<p>7. If camera is still working abnormally, exchange the PBA.</p>

6-4-5. Abnormal Preview(Rear Camera)

- 1) Symptom
- Description : Abnormal display of rear camera

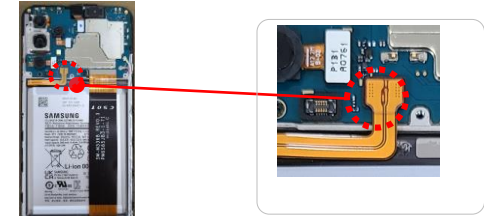
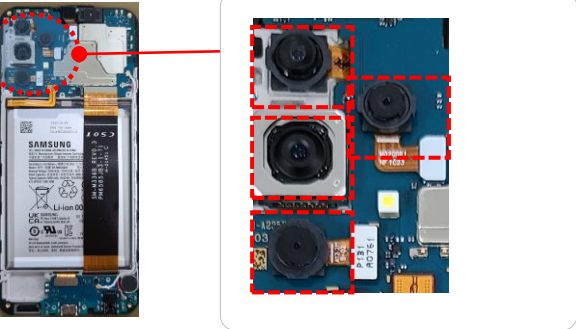


- 2) Defect Decision Conditions
- Description : Blemishes or dots on image

- 3) Repair Guide
- Caution : Disconnect battery connector first when it shows.

Image	Description
	<div>1. Check the camera deco glass and lens.</div> <div>- Should be clean and no particle.</div>
<div></div>	<div>2. Execute Mega cam test of *#0*# to figure out which camera has defect.</div> <div>- Rear : Wide camera</div> <div>- Rear2 : Ultra wide camera</div> <div>- Rear3 : Bokeh camera</div> <div>- Rear4 : Macro camera</div>
<div></div> <div>[AOD Jig]</div> <div>[AOD mini]</div>	<div>3. Disassemble the device.</div> <div>- Refer to '<u>Disassembly and assembly video guide for Galaxy A23 LTE</u>' from the GSPN.</div>

6-4-5. Abnormal Preview(Rear Camera)

Image	Description
	<p>[Attention]</p> <p>4. Disconnect Battery Connector at first. (SOC6000)</p>
	<p>5. Replace the camera module with new one and check the device.</p> <ul style="list-style-type: none">- upper : ULTRA WIDE CAMERA- MIDDLE : WIDE CAMEAR- LOWER : BOKEH CAMERA- RIGHT : MACRO CAMERA

6-5-1. RCV sound abnormal

1) Symptom

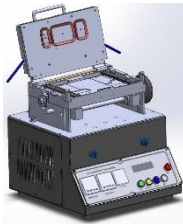
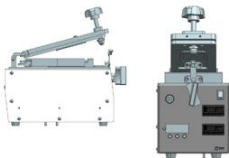
- Description : RCV sound is low/abnormal

2) Defect Decision Conditions

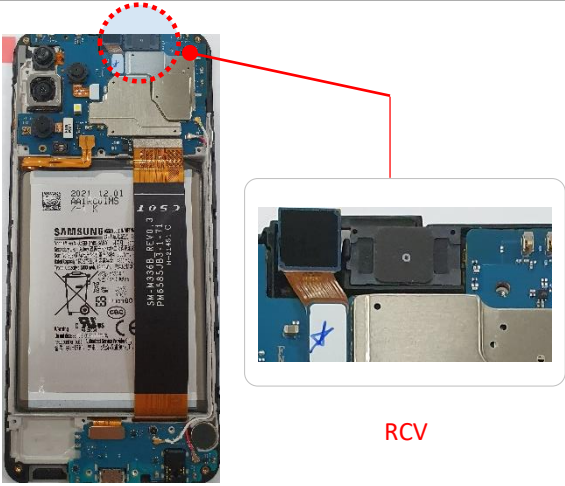


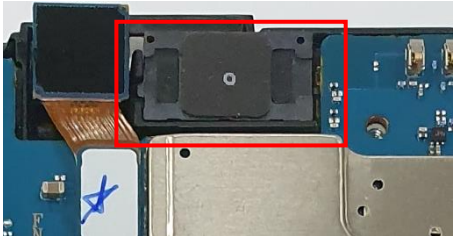
- Description : The phone sounds abnormally

3) Repair Guide

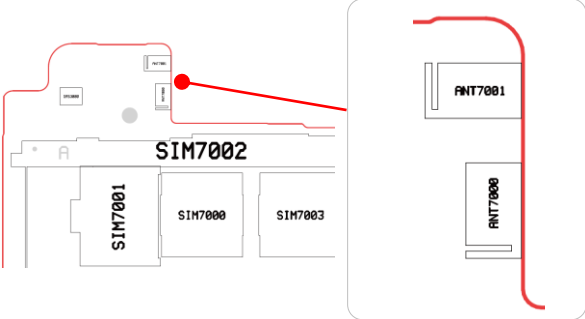
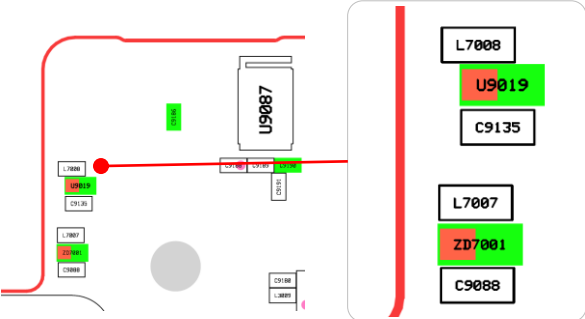
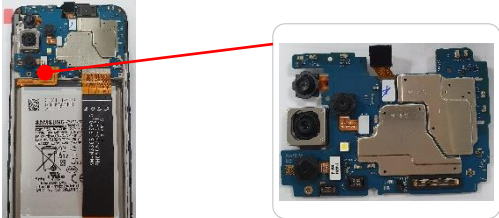
- **Caution : Disconnect battery connector first when it shows.**

Image	Description																					
<table><tr><td>RED</td><td>GREEN</td><td>BLUE</td></tr><tr><td>BLACK</td><td>RECEIVER</td><td>VIBRATION</td></tr><tr><td>MEGA CAM</td><td>GRIPSENSOR</td><td>SENSOR</td></tr><tr><td>TOUCH</td><td>TOUCH(SUB)</td><td>SPEAKER 1</td></tr><tr><td>SPEAKER 2</td><td>SUB KEY</td><td>FRONT CAM</td></tr><tr><td>HALL IC</td><td>MST TEST</td><td>LOOPBACK</td></tr><tr><td>VERSION</td><td>SPEN HOVERING</td><td>S-PEN</td></tr></table>	RED	GREEN	BLUE	BLACK	RECEIVER	VIBRATION	MEGA CAM	GRIPSENSOR	SENSOR	TOUCH	TOUCH(SUB)	SPEAKER 1	SPEAKER 2	SUB KEY	FRONT CAM	HALL IC	MST TEST	LOOPBACK	VERSION	SPEN HOVERING	S-PEN	<p>1. Execute Receiver test of *#0*# to figure out which receiver has defect.</p>
RED	GREEN	BLUE																				
BLACK	RECEIVER	VIBRATION																				
MEGA CAM	GRIPSENSOR	SENSOR																				
TOUCH	TOUCH(SUB)	SPEAKER 1																				
SPEAKER 2	SUB KEY	FRONT CAM																				
HALL IC	MST TEST	LOOPBACK																				
VERSION	SPEN HOVERING	S-PEN																				
<div><p>[AOD Jig]</p></div> <div><p>[AOD mini]</p></div>	<p>2. Disassemble the device.</p> <p>- Refer to '<u>Disassembly and assembly video guide for Galaxy A23 LTE</u>' from the GSPN.</p>																					

6-5-1. RCV sound abnormal

Image	Description
<div><p>RCV</p></div>	<p>3. Refer to the RCV location.</p>
<div></div>	<p>4. Check RCV module and RCV grill is ok. (tears and particles)</p>
<div><p>RCV</p></div>	<p>5. If it is ok, change to new RCV module.</p>

6-5-1. RCV sound abnormal

Image	Description
	<p>9. In case of RCV problem, Check below components of the MAIN PBA if there is any damage (crack, burnt....) ANT7000, ANT7001 L7007, C9088, L7008, C9135 → change components when you find defects.</p>
	<p>10. Check the Bead and Capacitor value on the PBA as below. Replace the components if has problem. L7007, L7008 = Bead(120ohm/100Mhz) C9088, C9135 = 15pF</p>
	<p>11. If the device is not working normally after exchanging it, exchange the PBA .</p>

6-5-2. SPK sound abnormal

1) Symptom

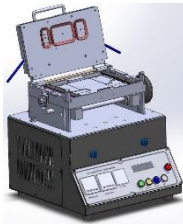
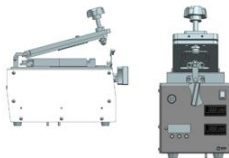
- Description : SPK sound is low/abnormal

2) Defect Decision Conditions

- Description : The phone sounds abnormally

3) Repair Guide

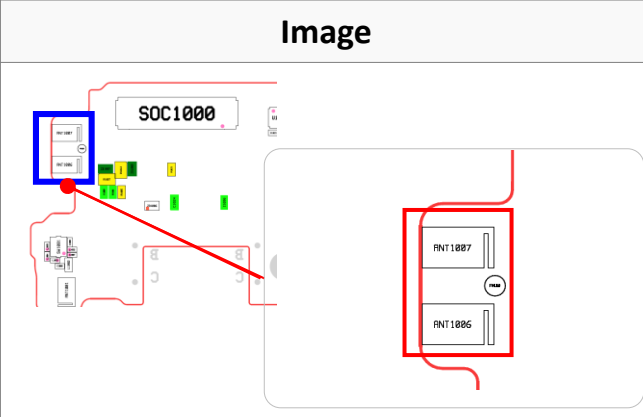
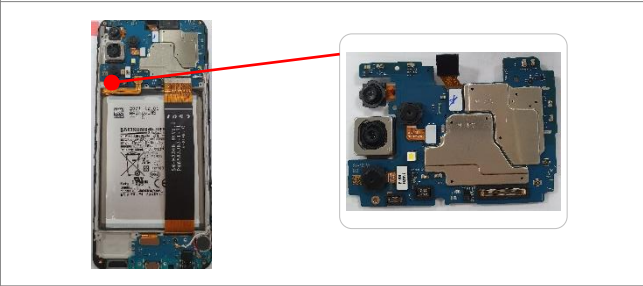
- **Caution : Disconnect battery connector first when it shows.**

Image	Description																					
<table><tr><td>RED</td><td>GREEN</td><td>BLUE</td></tr><tr><td>BLACK</td><td>RECEIVER</td><td>VIBRATION</td></tr><tr><td>MEGA CAM</td><td>GRIPSENSOR</td><td>SENSOR</td></tr><tr><td>TOUCH</td><td>TOUCH(SUB)</td><td>SPEAKER 1</td></tr><tr><td>SPEAKER 2</td><td>SUB KEY</td><td>FRONT CAM</td></tr><tr><td>HALL IC</td><td>MST TEST</td><td>LOOPBACK</td></tr><tr><td>VERSION</td><td>SPEN HOVERING</td><td>S-PEN</td></tr></table>	RED	GREEN	BLUE	BLACK	RECEIVER	VIBRATION	MEGA CAM	GRIPSENSOR	SENSOR	TOUCH	TOUCH(SUB)	SPEAKER 1	SPEAKER 2	SUB KEY	FRONT CAM	HALL IC	MST TEST	LOOPBACK	VERSION	SPEN HOVERING	S-PEN	<p>1. Execute Speaker test of *#0*# to figure out which speaker has defect.</p>
RED	GREEN	BLUE																				
BLACK	RECEIVER	VIBRATION																				
MEGA CAM	GRIPSENSOR	SENSOR																				
TOUCH	TOUCH(SUB)	SPEAKER 1																				
SPEAKER 2	SUB KEY	FRONT CAM																				
HALL IC	MST TEST	LOOPBACK																				
VERSION	SPEN HOVERING	S-PEN																				
<div><p>[AOD Jig]</p></div> <div><p>[AOD mini]</p></div>	<p>2. Disassemble the device.</p> <p>- Refer to '<u>Disassembly and assembly video guide for Galaxy A23 LTE</u>' from the GSPN.</p>																					

6-5-2. SPK sound abnormal

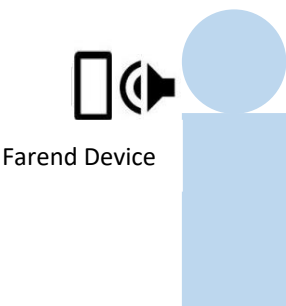
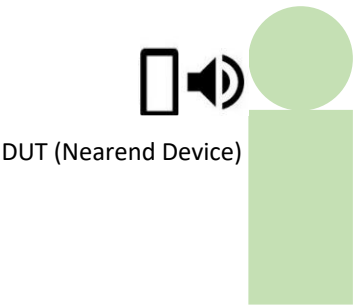
Image	Description
 <p>SPK</p>	Refer to the SPK location.
<p>SPK</p> 	3. Check water damage and if not, change to new SPK module.
	4. Check SPK module and SPK hole is ok. (tears and particles)
<p>SPK</p> 	5. If it is ok, change to new Rear Assy for SPK module.

6-5-2. SPK sound abnormal

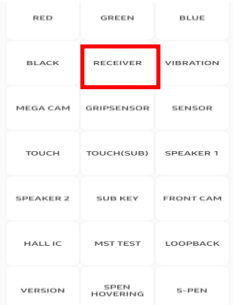
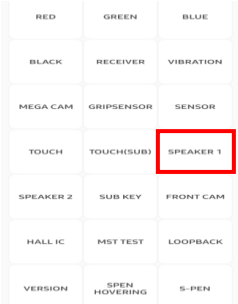
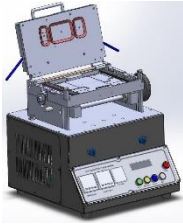
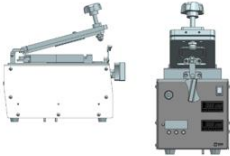
Image	Description
	<p>6. In case of lower SPK problem, Check below components of the SUB PBA if there is any damage (crack, burnt....) ANT1006, ANT1007 → change components when you find defects.</p>
	<p>7. If the device is not working normally after exchanging it, exchange the PBA .</p>

6-5-3. Rx Voice mute

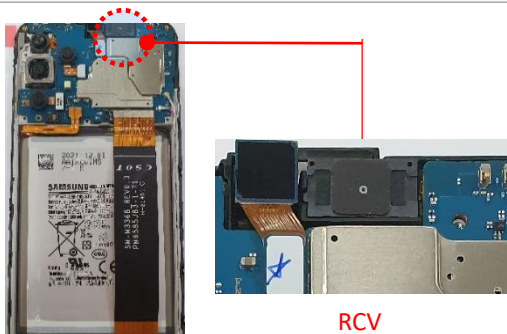
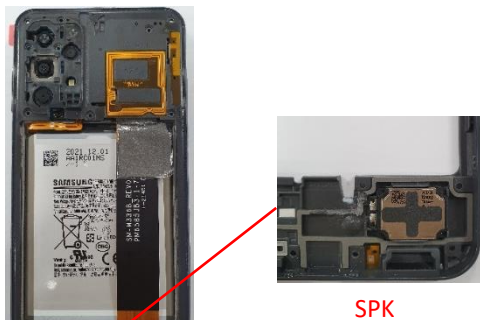
- 1) Symptom
- Description : While calling, Rx voice is mute.
- 2) Defect Decision Conditions
- Description : A person who is calling with a nearend device can't hear Rx voice.



3) Repair Guide

Image	Description
	<div>1-1. RECEIVER test</div> <div>(Problem in RCV call : Handset mode)</div> <div>- *#0#</div> <div>- Select : RECEIVER</div> <div>- Should hear the sound in RCV</div>
	<div>1-2. SPEAKER test</div> <div>(Problem in SPK call : Handsfree mode)</div> <div>- *#0#</div> <div>- Select : SPEAKER</div> <div>- Should hear the sound in SPK</div>
<div> [AOD Jig]</div> <div> [AOD mini]</div>	<div>If there was no sound from RCV or SPK</div> <div>2. Disassemble the device.</div> <div>- Refer to '<u>Disassembly and assembly video guide for Galaxy A23 LTE</u>' from the GSPN.</div>

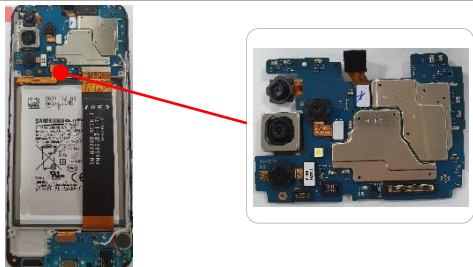

6-5-3. Rx Voice mute

Image	Description																					
 <p>RCV</p>	<p>3-1. Swap the RCV module to normal sample.</p> <p>(Problem in RCV call : Handset mode)</p> <p>- RCV module damaged.</p>																					
 <p>SPK</p>	<p>3-2. Swap the SPK module to normal sample.</p> <p>(Problem in SPK call : Handsfree mode)</p> <p>- SPK module damaged.</p>																					
<table><tr><td>RED</td><td>GREEN</td><td>BLUE</td></tr><tr><td>BLACK</td><td>RECEIVER</td><td>VIBRATION</td></tr><tr><td>MEGA CAM</td><td>GRIPSENSOR</td><td>SENSOR</td></tr><tr><td>TOUCH</td><td>TOUCH(SUB)</td><td>SPEAKER 1</td></tr><tr><td>SPEAKER 2</td><td>SUB KEY</td><td>FRONT CAM</td></tr><tr><td>HALL IC</td><td>MST TEST</td><td>LOOPBACK</td></tr><tr><td>VERSION</td><td>SPEN HOVERING</td><td>S-PEN</td></tr></table>	RED	GREEN	BLUE	BLACK	RECEIVER	VIBRATION	MEGA CAM	GRIPSENSOR	SENSOR	TOUCH	TOUCH(SUB)	SPEAKER 1	SPEAKER 2	SUB KEY	FRONT CAM	HALL IC	MST TEST	LOOPBACK	VERSION	SPEN HOVERING	S-PEN	<p>4-1. RECEIVER test</p> <p>(Problem in RCV call : Handset mode)</p> <p>- *#0#</p> <p>- Select : RECEIVER</p> <p>- Should hear the sound in RCV</p>
RED	GREEN	BLUE																				
BLACK	RECEIVER	VIBRATION																				
MEGA CAM	GRIPSENSOR	SENSOR																				
TOUCH	TOUCH(SUB)	SPEAKER 1																				
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VERSION	SPEN HOVERING	S-PEN																				
<table><tr><td>RED</td><td>GREEN</td><td>BLUE</td></tr><tr><td>BLACK</td><td>RECEIVER</td><td>VIBRATION</td></tr><tr><td>MEGA CAM</td><td>GRIPSENSOR</td><td>SENSOR</td></tr><tr><td>TOUCH</td><td>TOUCH(SUB)</td><td>SPEAKER 1</td></tr><tr><td>SPEAKER 2</td><td>SUB KEY</td><td>FRONT CAM</td></tr><tr><td>HALL IC</td><td>MST TEST</td><td>LOOPBACK</td></tr><tr><td>VERSION</td><td>SPEN HOVERING</td><td>S-PEN</td></tr></table>	RED	GREEN	BLUE	BLACK	RECEIVER	VIBRATION	MEGA CAM	GRIPSENSOR	SENSOR	TOUCH	TOUCH(SUB)	SPEAKER 1	SPEAKER 2	SUB KEY	FRONT CAM	HALL IC	MST TEST	LOOPBACK	VERSION	SPEN HOVERING	S-PEN	<p>4-2. SPEAKER test</p> <p>(Problem in SPK call : Handsfree mode)</p> <p>- *#0#</p> <p>- Select : SPEAKER</p> <p>- Should hear the sound in SPK</p>
RED	GREEN	BLUE																				
BLACK	RECEIVER	VIBRATION																				
MEGA CAM	GRIPSENSOR	SENSOR																				
TOUCH	TOUCH(SUB)	SPEAKER 1																				
SPEAKER 2	SUB KEY	FRONT CAM																				
HALL IC	MST TEST	LOOPBACK																				
VERSION	SPEN HOVERING	S-PEN																				

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 (Ref. U9027) at first.</p>
	<p>6. Check SMD status and resolder on PBA.</p> <p>(Problem in RCV call : Handset mode)</p> <ul style="list-style-type: none">- RCV module contacts (ANT7000, ANT7001)- RCV series inductor (L7007, L7008)- RCV shunt capacitor (C9088, C9135)
	<p>7. Check SMD status and resolder on SUB PBA and PBA.</p> <p>(Problem in SPK call : Handsfree mode)</p> <ul style="list-style-type: none">- SPK module contacts on SUB PBA (ANT1006, ANT1007)- AMP series inductor on PBA (L7013, L7014)
	<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 : SPEAKER- Should hear the sound in SPK

6-5-3. Rx Voice mute

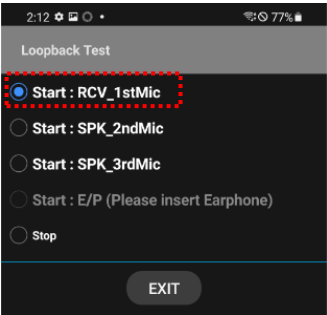
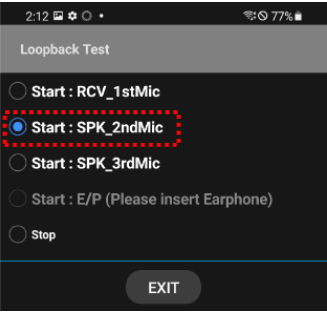
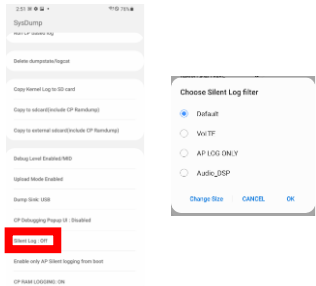
Image	Description																																										
	<p>If there was no sound from RCV</p> <p>10. Swap the MAIN PBA to normal sample. (Problem in RCV call : Handset mode)</p> <ul style="list-style-type: none">- RCV amp damaged.- or AP damaged.																																										
	<p>If there was no sound from SPK</p> <p>11. Swap the SUB PBA to normal sample. (Problem in SPK call : Handsfree mode)</p> <ul style="list-style-type: none">- SPK amp damaged(SUB PBA)- or AP damaged.																																										
<div><table><tr><td>RED</td><td>GREEN</td><td>BLUE</td></tr><tr><td>BLACK</td><td>RECEIVER</td><td>VIBRATION</td></tr><tr><td>MEGA CAM</td><td>GRIPSENSOR</td><td>SENSOR</td></tr><tr><td>TOUCH</td><td>TOUCH(SUB)</td><td>SPEAKER 1</td></tr><tr><td>SPEAKER 2</td><td>SUB KEY</td><td>FRONT CAM</td></tr><tr><td>HALL IC</td><td>MST TEST</td><td>LOOPBACK</td></tr><tr><td>VERSION</td><td>SPEN HOVERING</td><td>S-PEN</td></tr></table><table><tr><td>RED</td><td>GREEN</td><td>BLUE</td></tr><tr><td>BLACK</td><td>RECEIVER</td><td>VIBRATION</td></tr><tr><td>MEGA CAM</td><td>GRIPSENSOR</td><td>SENSOR</td></tr><tr><td>TOUCH</td><td>TOUCH(SUB)</td><td>SPEAKER 1</td></tr><tr><td>SPEAKER 2</td><td>SUB KEY</td><td>FRONT CAM</td></tr><tr><td>HALL IC</td><td>MST TEST</td><td>LOOPBACK</td></tr><tr><td>VERSION</td><td>SPEN HOVERING</td><td>S-PEN</td></tr></table></div>	RED	GREEN	BLUE	BLACK	RECEIVER	VIBRATION	MEGA CAM	GRIPSENSOR	SENSOR	TOUCH	TOUCH(SUB)	SPEAKER 1	SPEAKER 2	SUB KEY	FRONT CAM	HALL IC	MST TEST	LOOPBACK	VERSION	SPEN HOVERING	S-PEN	RED	GREEN	BLUE	BLACK	RECEIVER	VIBRATION	MEGA CAM	GRIPSENSOR	SENSOR	TOUCH	TOUCH(SUB)	SPEAKER 1	SPEAKER 2	SUB KEY	FRONT CAM	HALL IC	MST TEST	LOOPBACK	VERSION	SPEN HOVERING	S-PEN	<p>12. 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>SPEAKER test (Problem in SPK call : Handsfree mode)</p> <ul style="list-style-type: none">- *#0#- Select : SPEAKER- Should hear the sound in SPK
RED	GREEN	BLUE																																									
BLACK	RECEIVER	VIBRATION																																									
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6-5-4. Rx Voice swing/low/noise

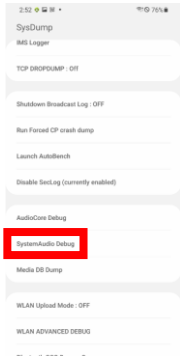


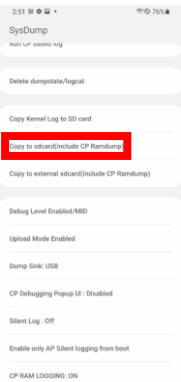
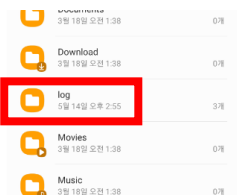
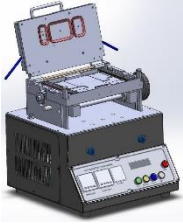
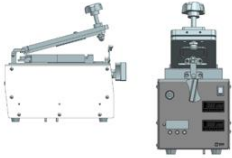

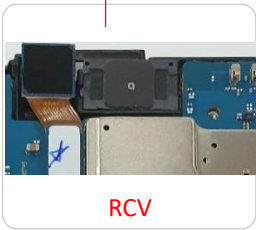
- 1) Symptom
- Description : While calling, Rx voice is swinging, low or noisy.
- 2) Defect Decision Conditions
- Description : A person who is calling with a nearend device can hear something wrong in Rx voice.
(voice is swinging, low or noisy)



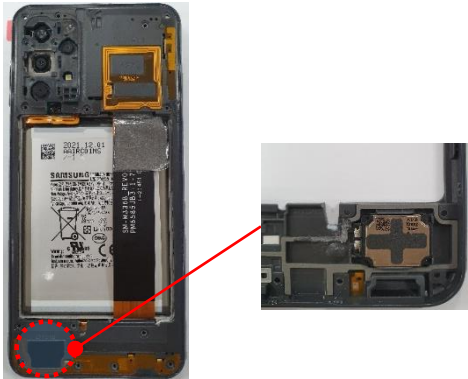
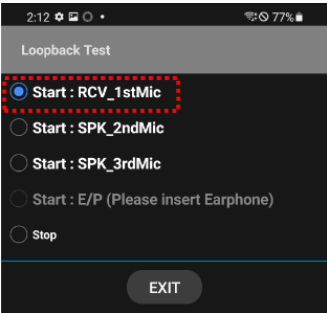
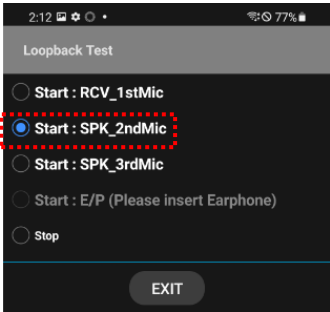
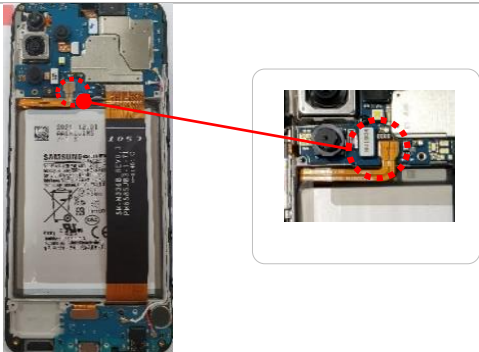
3) Repair Guide

Image	Description
	<div>1-1. RCV loopback test</div> <div>(Problem in RCV call : Handset mode)</div> <div>- *#0283#</div> <div>- Select Start : RCV_1stMIC</div> <div>- Do test : say something into a 1st mic(lower mic).</div> <div>- Should hear the voice clearly through the RCV without noise.</div>
	<div>1-2. SPK loopback test</div> <div>(Problem in SPK call : Handsfree mode)</div> <div>- *#0283#</div> <div>- Select Start : SPK_2ndMIC</div> <div>- Do test : say something into a 2nd mic(upper mic).</div> <div>- Should hear the voice clearly through the SPK(lower spk) without noise.</div>
	<div>If it's ok in the loopback test (if the voice was heard clearly from RCV or SPK without noise),</div> <div>2. get dumps while calling.</div> <div>- *#9900#</div> <div>- Silent log : off → on (Default select)</div>

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

Image	Description
 	<p>2. get dumps while calling</p> <ul style="list-style-type: none">- SystemAudio Debug- ABOX DUMP- ADM off → on- Call test
  	<p>2. get dumps while calling.</p> <ul style="list-style-type: none">- After finishing test, ADM on → off- COPY TO SDCARD- *#9900#- Copy to sdcards(include CP Ramdump)- After finishing copy dumps, share the log folder to HW engineer.
 <p>[AOD Jig]</p>  <p>[AOD mini]</p>	<p>If there was a loopback test problem (if the voice was low or noisy from RCV or SPK),</p> <p>3. Disassemble the device.</p> <ul style="list-style-type: none">- Refer to 'Disassembly and assembly video guide for Galaxy A23 LTE' from the GSPN.
  <p>RCV</p>	<p>4-1. Swap the RCV module to normal sample.</p> <p>(Problem in RCV call : Handset mode)</p> <ul style="list-style-type: none">- RCV module damaged.

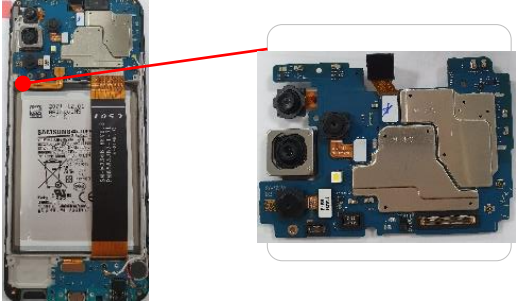

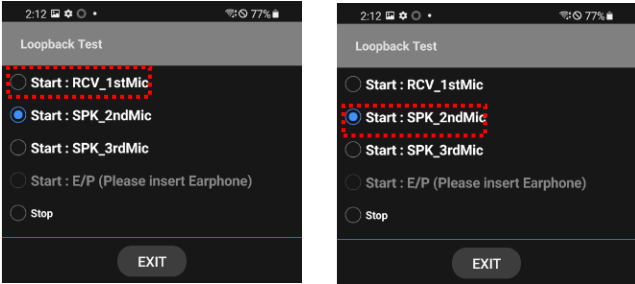

6-5-4. Rx Voice swing/low/noise

Image	Description
	<p>4-2. Swap the lower SPK module to normal sample.</p> <p>(Problem in SPK call : Handsfree mode)</p> <ul style="list-style-type: none">- SPK module damaged.
	<p>5-1. 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>5-2. 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 without noise.
	<p>If there was a loopback test problem (if the voice was low or noisy from RCV or SPK),</p> <p>[Attention]</p> <p>6. Disconnect Battery Connector (Ref. U9027) at first.</p>

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

Image	Description
	<p>7. Check SMD status and resolder on PBA.</p> <p>(Problem in RCV call : Handset mode)</p> <ul style="list-style-type: none">- RCV module contacts (ANT7000, ANT7001)- RCV series inductor (L7007, L7008)- RCV shunt capacitor (C9088, C9135)
	<p>7-2. Check SMD status and resolder on SUB PBA.</p> <p>(Problem in SPK call : Handsfree mode)</p> <ul style="list-style-type: none">- SPK module contacts on SUB PBA (ANT1006, ANT1007)- AMP series inductor on PBA (L7013, L7014)
	<p>8-1. 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>8-2. 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 without noise.

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

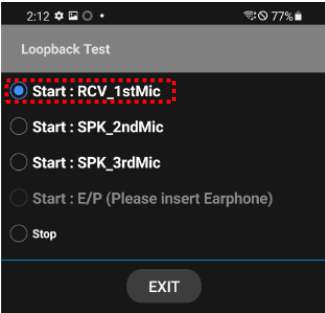
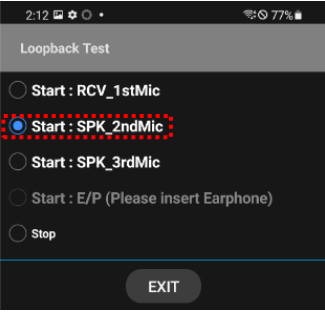
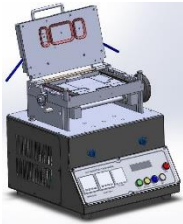
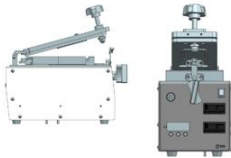
Image	Description
	<p>If there was a loopback test problem (if the voice was low or noisy from RCV or SPK),</p> <p>9-1. Swap the MAIN PBA to normal sample. (Problem in RCV call : Handset mode)</p> <ul style="list-style-type: none">- RCV amp damaged.- or AP damaged.
	<p>9-2. Swap the SUB PBA to normal sample. (Problem in SPK call : Handsfree mode)</p> <ul style="list-style-type: none">- SPK amp damaged- AP damaged.
	<p>10. 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>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 there was a loopback test problem (if the voice was low or noisy from RCV / SPK),</p> <p>11. Swap the Sub FPCB to a normal sample.</p> <ul style="list-style-type: none">- C to C FPCB damaged.

6-5-5. Tx Voice mute



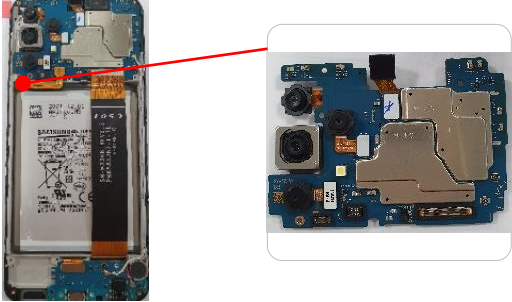
- 1) Symptom
- Description : While calling, Tx voice is Mute.
- 2) Defect Decision Conditions
- Description : A person who is calling with a farend device can't hear Rx voice.



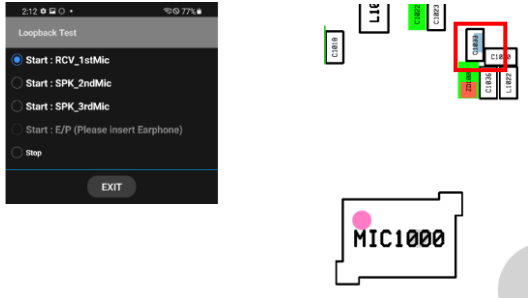
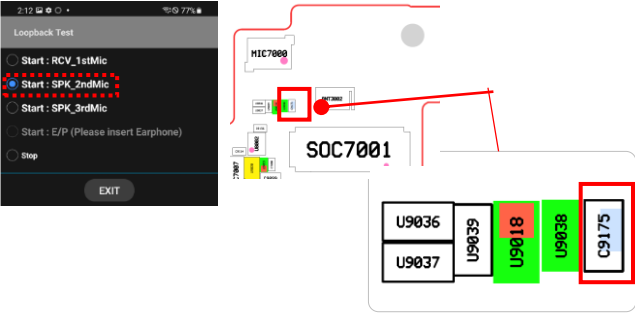

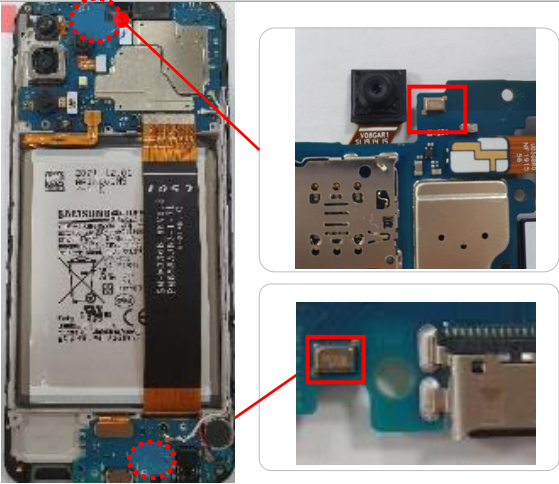
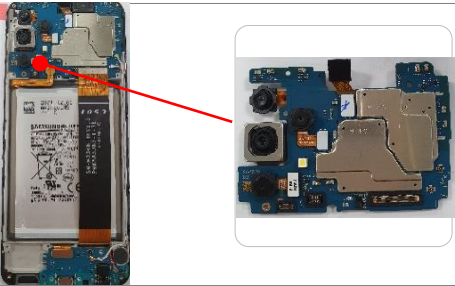
3) Repair Guide

Image	Description
	1-1. 1 st mic loopback test - *#0283# - Select Start : RCV_1stMIC - Do test : say something into a 1 st mic (lower mic). - Should hear the voice through the RCV
	1-2. 2 nd mic loopback test - *#0283# - Select Start : SPK_2ndMIC - Do test : say something into a 2 nd mic (upper mic). - Should hear the voice through the SPK.
<div><p>[AOD Jig]</p><p>[AOD mini]</p></div>	If there was no sound in loopback test, 2. Disassemble the device. - Refer to ' <u>Disassembly and assembly video guide for Galaxy A23 LTE</u> ' from the GSPN.


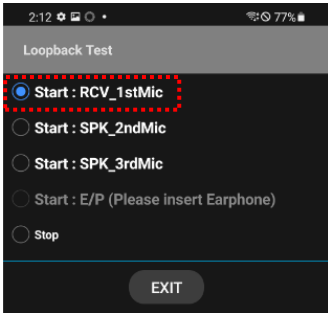

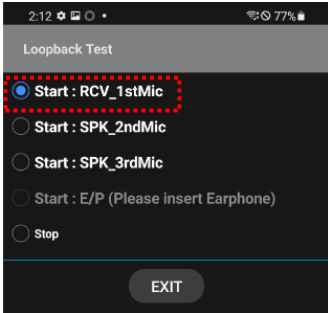
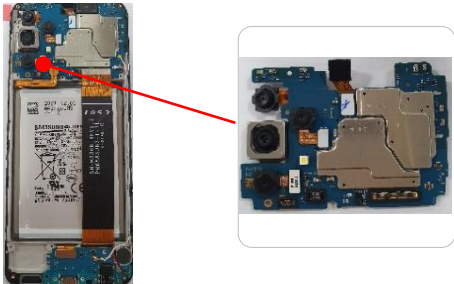
6-5-5. Tx Voice mute

Image	Description
	<p>3. If there was no sound in 1st mic loopback test, swap the C to C FPCB to a normal sample.</p> <ul style="list-style-type: none">- C to C FPCB damaged.
	<p>4. Swap the SUB PBA to normal sample.</p> <p>(For 1st mic)</p> <ul style="list-style-type: none">- SUB PBA damaged
	<p>5. If there was no sound in 1st mic loopback test, swap the PBA to normal sample.</p> <ul style="list-style-type: none">- AP damaged.


6-5-5. Tx Voice mute

Image	Description
 <p>The screenshot shows the 'Loopback Test' menu with options: Start : RCV_1stMic, Start : SPK_2ndMic, Start : SPK_3rdMic, Start : E/P (Please insert Earphone), and Stop. The 'EXIT' button is at the bottom. The schematic diagram shows MIC1000 connected to various components.</p>	<p>3-1. Check mic bias voltage and clk of 1st mic on SUB PBA.</p> <ul style="list-style-type: none">- *#0283#- Select Start : RCV_1stMIC- Check mic bias voltage : 1.8V (C1033)
 <p>The screenshot shows the 'Loopback Test' menu with 'Start : SPK_2ndMic' selected. The schematic diagram shows SOC7001 connected to various components, including U9036, U9037, U9039, U9018, U9038, and C9175.</p>	<p>3-2. Check mic bias voltage and clk of 2nd mic on PBA.</p> <ul style="list-style-type: none">- *#0283#- Select Start : SPK_2ndMIC- Check mic bias voltage : 1.8V (C9175)
 <p>The photograph shows a smartphone disassembled to show internal components. Red dashed circles and arrows highlight the microphone area.</p>	<p>[Attention]</p> <p>4. Disconnect Battery Connector (Ref. U9027) at first.</p>
 <p>The photograph shows a smartphone disassembled to show internal components. Red dashed circles and arrows highlight the microphone area.</p>	<p>If it's ok that mic bias voltage,</p> <p>5. Swap the 1st and 2nd mic to a normal sample.</p> <ul style="list-style-type: none">- 1st and 2nd mic damaged.
 <p>The photograph shows a smartphone disassembled to show internal components. Red dashed circles and arrows highlight the microphone area.</p>	<p>If it's not ok that mic bias of 2nd mic,</p> <p>6. Swap the PBA to normal sample.</p> <ul style="list-style-type: none">(For 2nd mic)- AP damaged

6-5-5. Tx Voice mute

Image	Description
	<p>If it's not ok that mic bias voltage of 1st mic,</p> <p>7. Swap the SUB PBA to normal sample. (For 1st mic) - SUB PBA damaged</p>
	<p>8. Retest 1st mic loopback - *#0283# - Select Start : RCV_1stMIC - Do test : say something into a mic. - Should hear the voice.</p>
	<p>9. If there was no sound in 1st mic loopback test, swap the C to C FPCB to a normal sample. - C to C FPCB damaged.</p>
	<p>10. Retest 1st mic loopback - *#0283# - Select Start : RCV_1stMIC - Do test : say something into a mic. - Should hear the voice.</p>
	<p>11. If there was no sound in 1st mic loopback test, swap the PBA to a normal sample. - AP damaged.</p>

6-5-5. Tx Voice mute

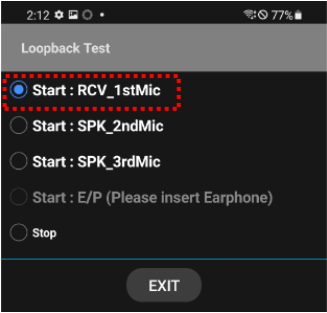
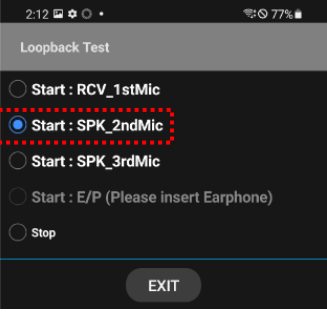
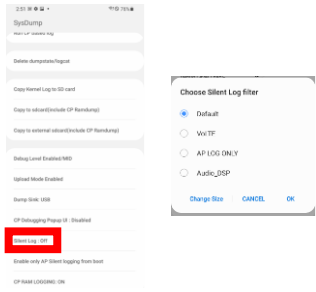
Image	Description
	<p>If it's not ok that mic bias voltage of 1st mic,</p> <p>12. Swap the SUB PBA to normal sample. (For 1st mic)</p> <p>- SUB PBA damaged</p>

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

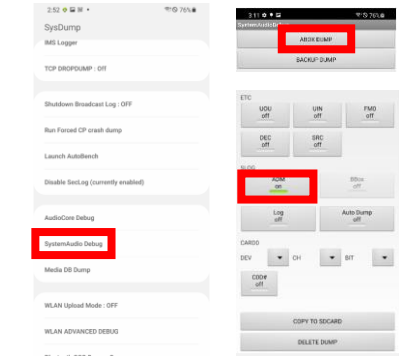
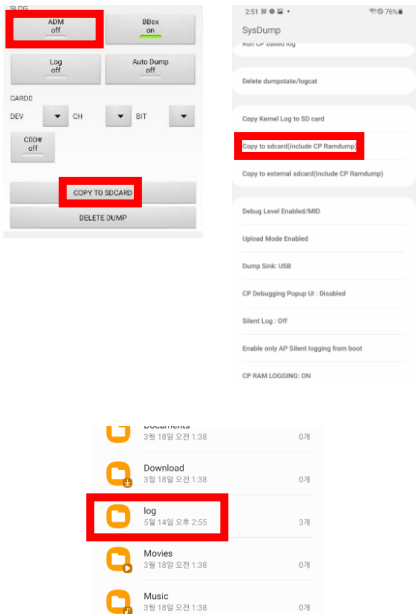
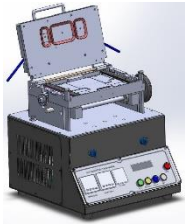
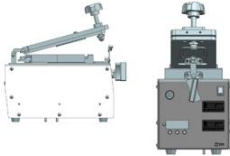


- 1) Symptom
- Description : While calling, Tx voice is swinging, low or noisy.
- 2) Defect Decision Conditions
- Description : A person who is calling with a farend device can hear something wrong in Rx voice.
(voice is swinging, low or noisy)



3) Repair Guide

Image	Description
	<div>1-1. 1st mic sealing test</div> <div>- *#0283#</div> <div>- Select Start : RCV_1stMIC</div> <div>- Do test in normal situation(1st test) and then retest after blocking a 1st mic(lower mic) hole(2nd test).</div> <div>: say something into a 1st mic(lower mic).</div> <div>- Should hear the voice in 1st test, and shouldn't hear the voice in 2nd test.</div>
	<div>1-2. 2nd mic sealing test</div> <div>- *#0283#</div> <div>- Select Start : SPK_2ndMIC</div> <div>- Do test in normal situation(1st test) and then retest after blocking a 2nd mic(upper mic) hole(2nd test).</div> <div>: say something into a 2nd mic(upper mic).</div> <div>- Should hear the voice in 1st test, and shouldn't hear the voice in 2nd test.</div>
	<div>If it's ok in the mic sealing test (if the voice wasn't heard in 2nd test),</div> <div>2. get dumps while calling.</div> <div>- *#9900#</div> <div>- Silent log : off → on (Default select)</div>

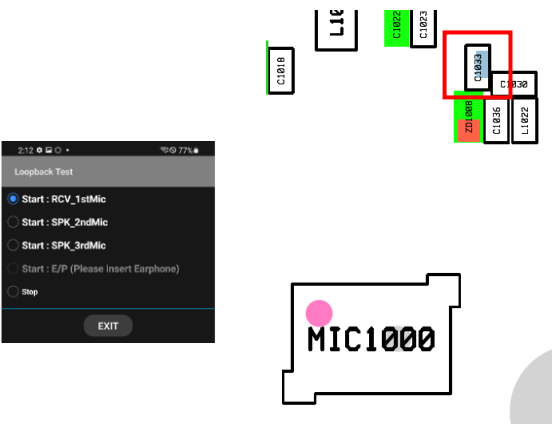
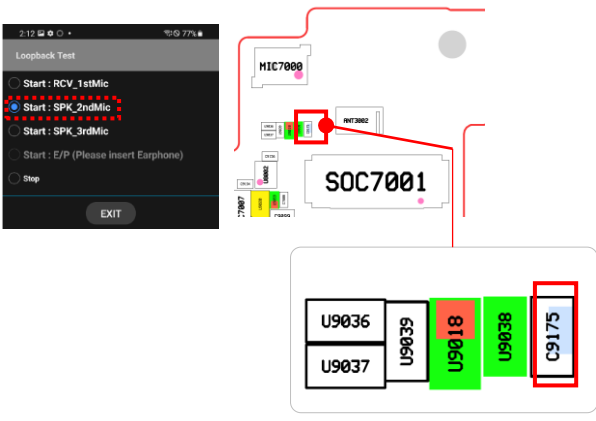
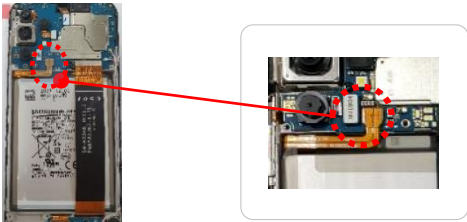
6-5-6. Tx Voice swing/low/noise

Image	Description
	<p>2. get dumps while calling</p> <ul style="list-style-type: none">- SystemAudio Debug- ABOX DUMP- ADM off → on- Call test
	<p>2. get dumps while calling.</p> <ul style="list-style-type: none">- After finishing test, ADM on → off- COPY TO SDCARD- *#9900#- Copy to sdcard(include CP Ramdump)- After finishing copy dumps, share the log folder to SAMSUNG.
 <p>[AOD Jig]</p>  <p>[AOD mini]</p>	<p>If there was a mic sealing problem (if the voice was heard in 2nd test),</p> <p>3. Disassemble the device.</p> <ul style="list-style-type: none">- Refer to 'Disassembly and assembly video guide for Galaxy A23 LTE' from the GSPN.
 	<p>[Attention]</p> <p>4. Disconnect Battery Connector (Ref. U9027) at first.</p>

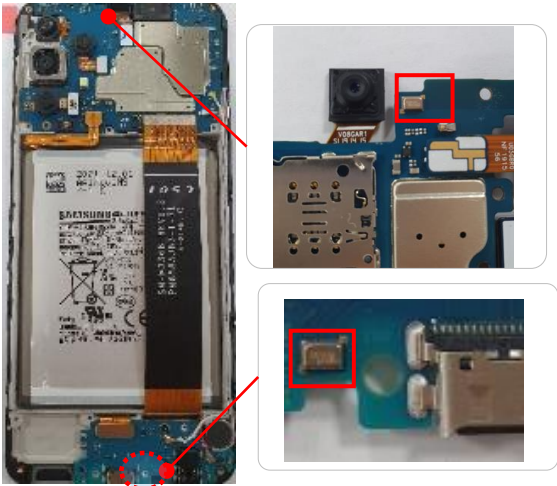
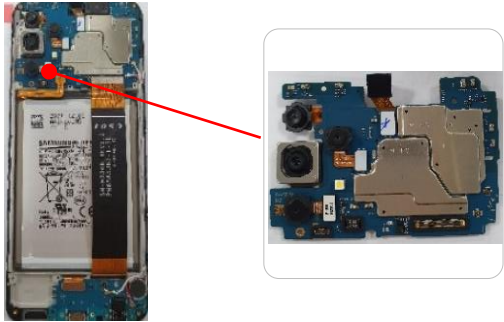
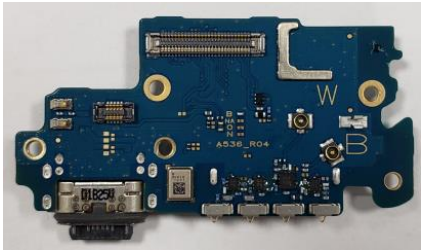
6-5-6. Tx Voice swing/low/noise

Image	Description
<div><p>2nd mic rubber</p><p>1st mic rubber</p></div>	<p>5. If there was a mic sealing problem(if the voice was heard in 2nd test), check 1st and 2nd mic rubber on the rear Assy.</p> <p>- Mic rubber damaged.</p>
<div></div>	<p>6. Change mic sealing rubber if there was a problem.</p>
<div></div>	<p>7. Swap C to C and check that works properly.</p>
<div></div>	<p>8. Swap the SUB PCB and check that works properly.</p>

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

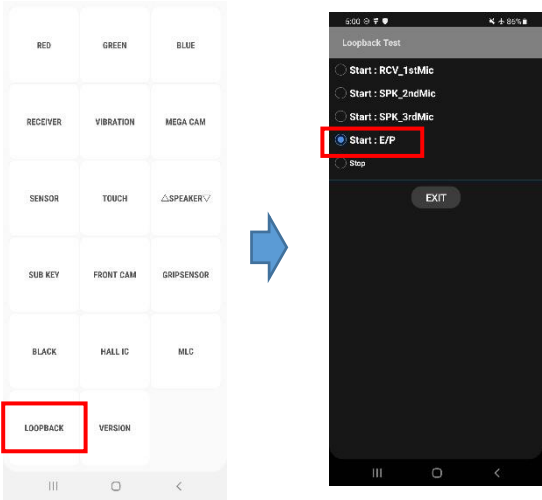
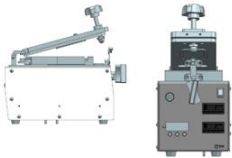
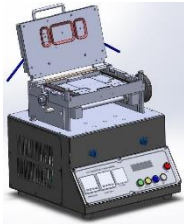
Image	Description
 <p>The image shows a schematic diagram of the SUB PBA with components L16, C1027, C1022, C1033, C1036, L1022, and C1030. A red box highlights C1033 and C1030. Below the diagram is a screenshot of the 'Loopback Test' menu with options: Start : RCV_1stMic (selected), Start : SPK_2ndMic, Start : SPK_3rdMic, Start : E/P (Please insert Earphone), and Stop. An 'EXIT' button is at the bottom. To the right of the screenshot is a callout box labeled 'MIC1000' with a pink dot.</p>	<p>10-1. Check mic bias voltage and clk of 1st mic on SUB PBA.</p> <ul style="list-style-type: none">- *#0283#- Select Start : RCV_1stMIC- Check mic bias voltage : 1.8V (C1033)
 <p>The image shows a schematic diagram of the PBA with components MIC7000, SOC7001, and U9036. A red box highlights SOC7001. Below the diagram is a screenshot of the 'Loopback Test' menu with options: Start : RCV_1stMic, Start : SPK_2ndMic (selected), Start : SPK_3rdMic, Start : E/P (Please insert Earphone), and Stop. An 'EXIT' button is at the bottom. To the right of the screenshot is a callout box showing components U9036, U9037, U9039, U9018, U9038, and C9175, with a red box highlighting C9175.</p>	<p>10-2. Check mic bias voltage and clk of 2nd mic on PBA.</p> <ul style="list-style-type: none">- *#0283#- Select Start : SPK_2ndMIC- Check mic bias voltage : 1.8V (C9175)
 <p>The image shows a photograph of the device's internal components. A red arrow points to the battery connector, which is labeled U9027. A callout box shows a close-up of the battery connector.</p>	<p>[Attention]</p> <p>11. Disconnect Battery Connector (Ref. U9027) at first.</p>

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



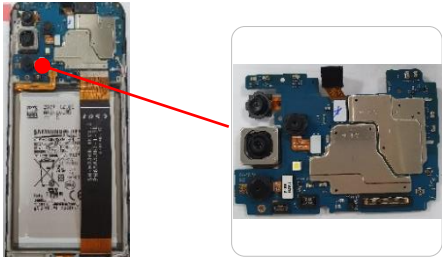
Image	Description
	<p>If it's ok that mic bias voltage,</p> <p>12. Swap the 1st and 2nd mic to a normal sample.</p> <p>- 1st and 2nd mic damaged.</p>
	<p>If it's not ok that mic bias voltage of 2nd mic,</p> <p>13. Swap the PBA to normal sample.</p> <p>(For 2nd mic)</p> <p>- AP damaged</p>
	<p>If it's not ok that mic bias voltage of 1st mic,</p> <p>14. Swap the SUB PBA to normal sample.</p> <p>(For 1st mic)</p> <p>- SUB PBA damaged</p>

6-5-7. Earphone sound abnormal (L3)

- 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
	<div>1. Execute test mode (*#0*#) on call mode and goes to LOOPBACK – Start E/P mode. . Check loopback mode is working properly.</div>
<div></div> <div>[AOD Jig] [AOD mini]</div>	<div>2. Disassemble the device. - Refer to '<u>Disassembly and assembly video guide for Galaxy A23 LTE</u>' from the GSPN.</div>

6-5-7. Earphone sound abnormal (L3)

Image	Description
	3. Try to swap new SUB PBA and check that is working properly.
	4. Try to swap C to C and check that is working properly.
	5. If the device is not working normally after exchanging it, exchange the PBA

6-6-1. Magnetic Sensor Problem

1) Symptom

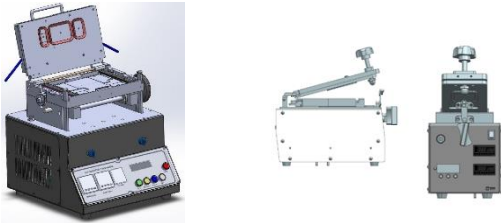
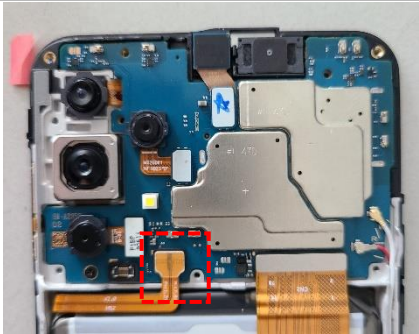
- Description : Magnetic Sensor does not work.

2) Defect Decision Conditions

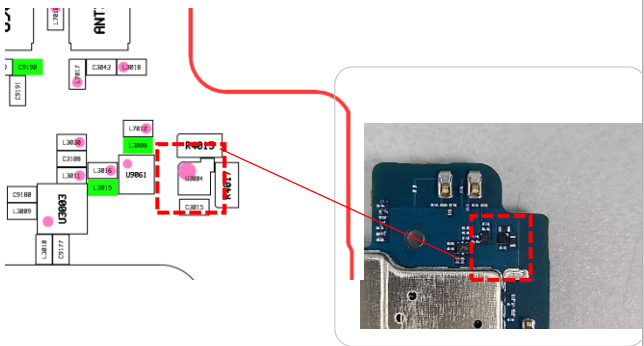
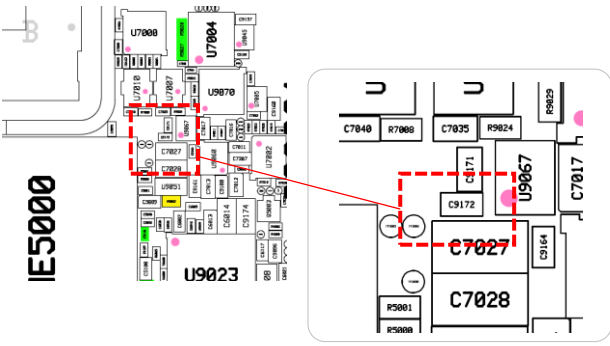
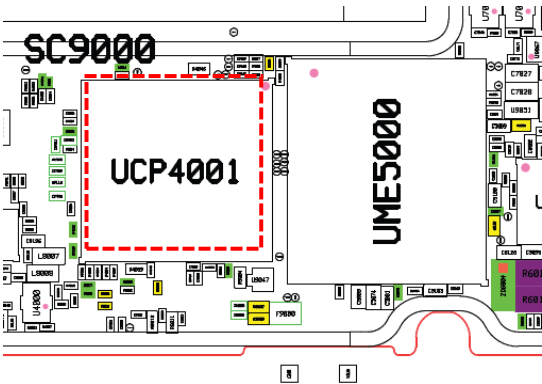
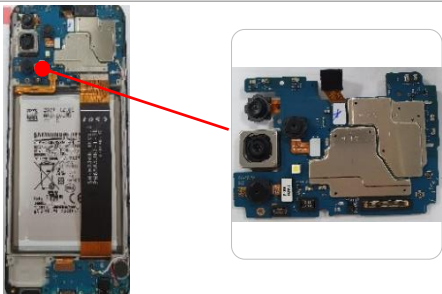
- Description : No response.

3) Repair Guide

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

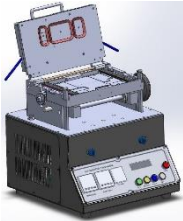
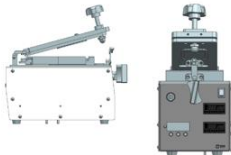
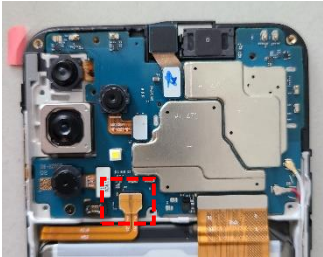
Image	Description
	<p>1. Disassemble the device.</p> <p>- Refer to '<u>Disassembly and assembly video guide for Galaxy A23 LTE</u>' from the GSPN.</p>
	<p>[Attention]</p> <p>2. Disconnect Battery Connector at first.</p>

6-6-1. Magnetic Sensor Problem

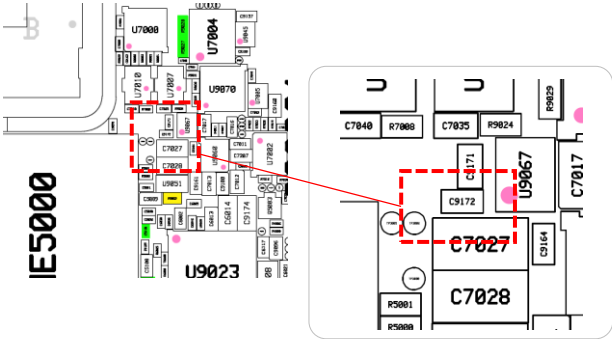
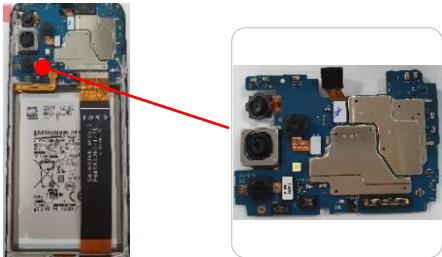
Image	Description
	<p>3. Check U3004 appearance(broken, chipping, scratch) on the PBA is OK. If so, replace U3004.</p>
	<p>4. Check 'Capacitors' on the PBA as below. - VDD_SENSOR_1P8=1.8V (Ref. C9172)</p>
	<p>5. If not, replace UCP4001 and check the device.</p>
	<p>6. If not, finally, Exchange the Master PBA with new one and check the device.</p>

6-6-2. ACC&GYRO SENSOR

- 1) Symptom
 - Description : ACC&GYRO Sensor does not work.
- 2) Defect Decision Conditions
 - Description : No response.
- 3) Repair Guide
 - **Caution : Disconnect battery connector first when it shows.**

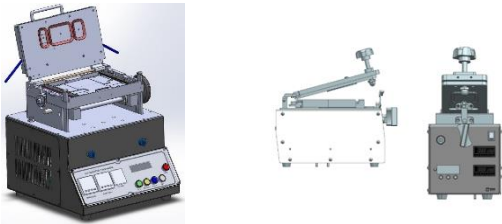
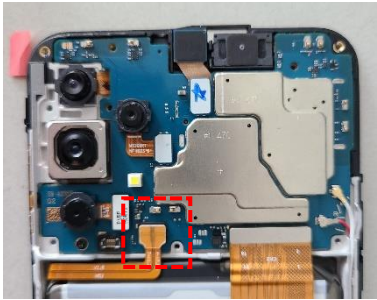
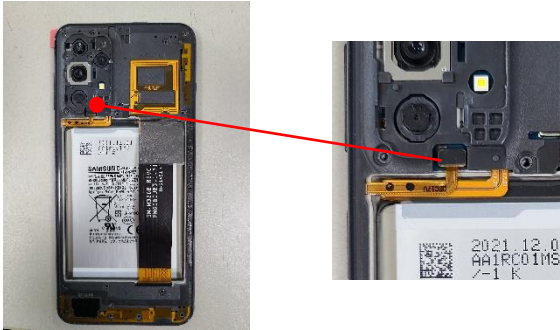
Image	Description
<div> [AOD Jig]</div> <div> [AOD mini]</div>	<div>1. Disassemble the device.<ul style="list-style-type: none">- Refer to '<u>Disassembly and assembly video guide for Galaxy A23 LTE</u>' from the GSPN.</div>
<div></div>	<div>[Attention]</div> <div>2. Disconnect Battery Connector at first.</div>

6-6-2-1. ACC&GYRO SENSOR

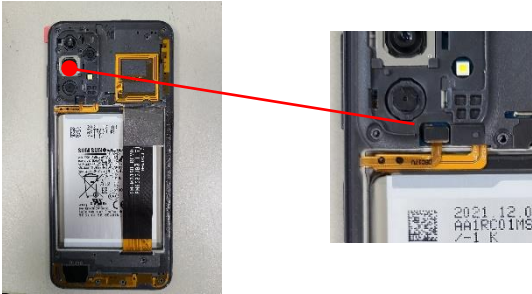
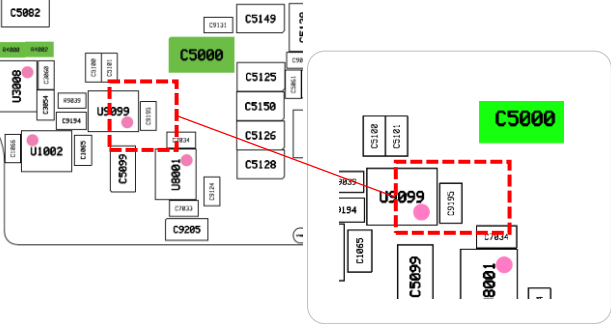
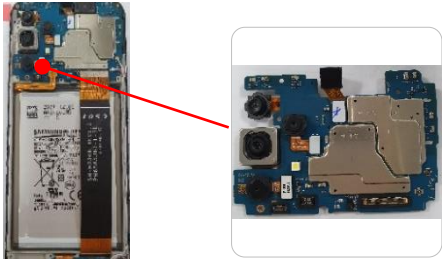
Image	Description
	<p>3. Check 'Capacitors' on the PBA as below.</p> <ul style="list-style-type: none">- VDD_SENSOR_1P8=1.8V (Ref. C9172)
	<p>4. Exchange the PBA with new one and check the device.</p>

6-6-3. 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
<div><div>[AOD Jig] [AOD mini]</div></div>	<div>1. Disassemble the device.</div> <div>- Refer to '<u>Disassembly and assembly video guide for Galaxy</u>' from the GSPN.</div>
<div></div>	<div>[Attention]</div> <div>2. Disconnect Battery Connector at first.</div>
<div></div>	<div>3. Check the 'PBA ↔ Finger Key' connector and connect it again when it connected improperly.</div> <div>After that, connect battery connector again and check the Finger Print Sensor.</div>

6-6-4. Finger Print Sensor Problem

Image	Description
	<p>4. Disconnect Key connector and pretest with new Finger-Key first.</p> <p>If Finger module is trouble then disassemble SUS cover / Water proof tape.</p>
	<p>5. Check 'Capacitors' on the PBA as below.</p> <ul style="list-style-type: none">- VDD_BTP_3P3=3.3V (Ref. C9195)
	<p>6. If not, finally, exchange the PBA with new one and check the device.</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

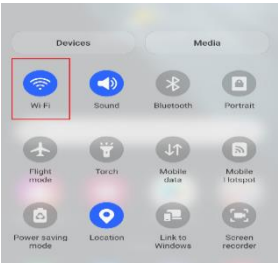
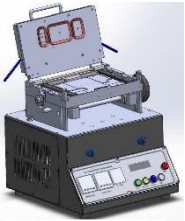



2) Defect Decision Conditions

- 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 → WIFI → SCAN : Number of APs is less than normal device when searching AP

3) Repair Guide





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

Image	Description
	<div>1. Check Wi-Fi Function On</div> <div>- Enable Wi-Fi function.</div> <div>- If it is ok, turn off the phone.</div>
<div> [AOD Jig]</div> <div> [AOD mini]</div>	<div>2. Disassemble the device.</div> <div>- Refer to '<u>Disassembly and assembly video guide for Galaxy A23 LTE</u>' from the GSPN.</div>
	<div>3. Disconnect Battery Connector.</div>

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


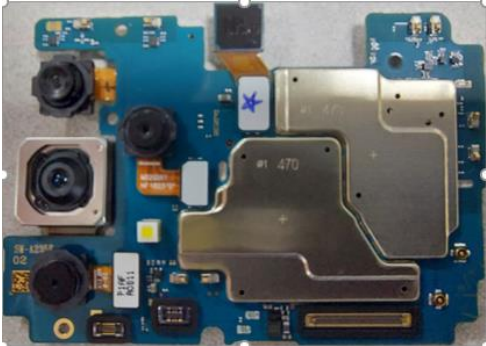
CONFIDENTIAL

6-7-1. Wi-Fi Connection Problem

Image	Description
	<p>4-1. Check the Wi-Fi antenna1 clip and change when you find defects (U9085)</p> <ul style="list-style-type: none">- Crack- Open- Damaged or broken traces and others
	<p>4-2 Check the Wi-Fi antenna2 clip and change when you find defects (U9087)</p> <ul style="list-style-type: none">- Crack- Open- Damaged or broken traces and others
	<p>5-1. Check the antenna1 matching components and change when you find defects (L7019, C2134, L2048)</p> <ul style="list-style-type: none">- Crack- Open- Damaged or broken traces and others
	<p>5-2 Check the antenna2 matching components and change when you find defects (C9188, C9189, C9191)</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

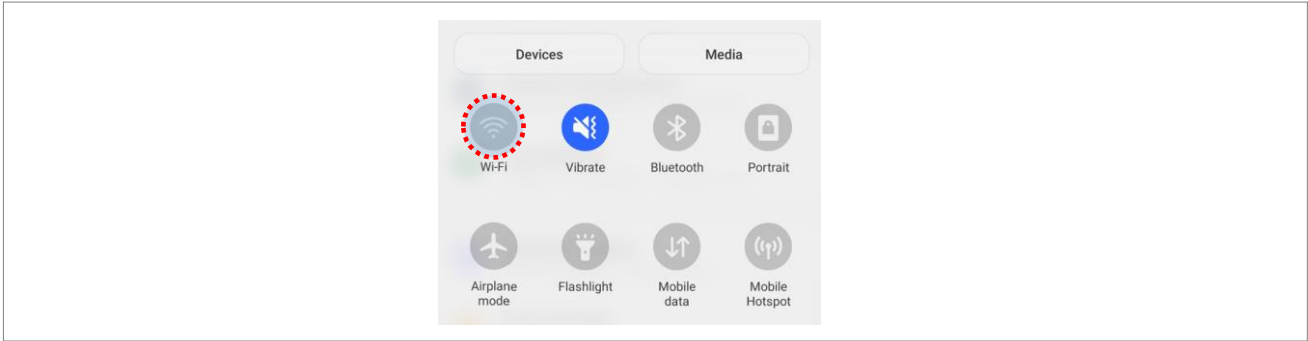
Image	Description
<div><div><ul style="list-style-type: none">• Rear Assy</div></div>	6. Replace the Rear Assy with new one and check the Wi-Fi
<div></div>	7. If not, finally, Replace the Master PBA with new one and check the Wi-Fi

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

CONFIDENTIAL

6-7-2. Wi-Fi On Problem

- 1) Symptom
 - Description : Can not enable Wi-Fi function




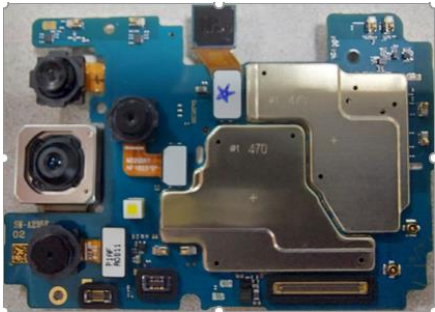
- 2) Defect Decision Conditions
 - Description : You can not enable Wi-Fi function and Wi-Fi don't work

- 3) Repair Guide
 - **Caution : Disconnect battery connector first when it shows.**

Image	Description
	<p>1. Check Wi-Fi Function On after reboot</p> <p>- If it is not ok, turn off the phone.</p>
<div><div><p>[AOD Jig]</p></div><div><p>[AOD mini]</p></div></div>	<p>2. Disassemble the device.</p> <p>- Refer to '<u>Disassembly and assembly video guide for Galaxy A23 LTE</u>' from the GSPN.</p>
	<p>3. Disconnect Battery Connector.</p>

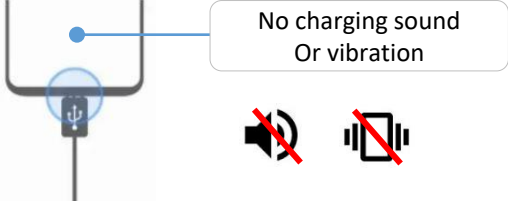
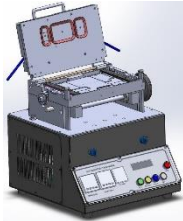
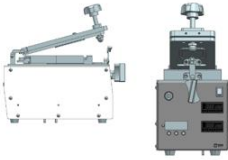

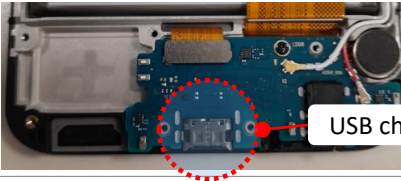
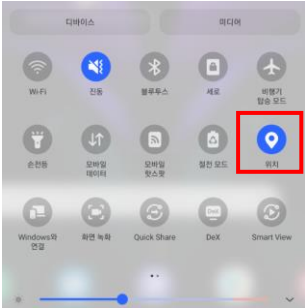
6-7. Connectivity (WiFi, GPS, NFC)

6-7-2. Wi-Fi On Problem

Image	Description
	<p>4. Check the Wi-Fi IC and change when you find defects (U9044)</p> <ul style="list-style-type: none">- Crack- Open- Damaged or broken traces and others
	<p>5. If not, finally, Replace the Master PBA with new one and check the Wi-Fi</p>


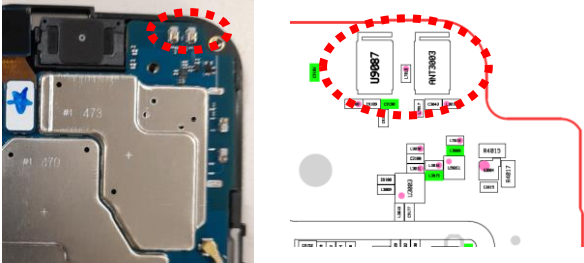
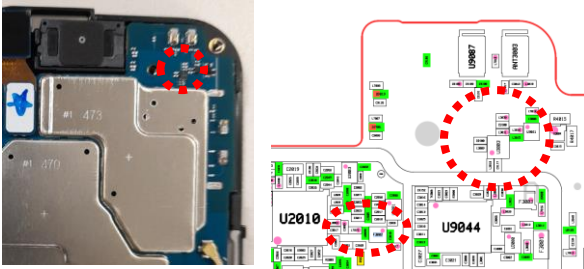
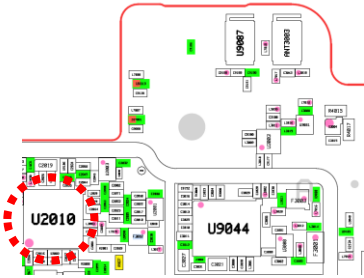

6-7-3. GPS Problem

- 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
	<div>1. Check the charging notification sound or vibration when connected to charger.</div> <div>- Should be no sound and no vibration.</div> <div>- The device keep 'No display' status.</div>
<div> [AOD Jig]</div> <div> [AOD mini]</div>	<div>2. Disassemble the device.</div> <div>- Refer to 'Disassembly and assembly video guide for Galaxy A23 LTE' from the GSPN.</div>
<div></div> <div></div>	<div>3. Check the disassembled device for OOW.</div> <div>- Water damage.</div> <div>- Part burnt. (Charging port, PBA, Battery and others)</div> <div>- Broken traces and others.</div>
	<div>4. Check GPS is working properly</div> <div>- Setting - enable GPS function</div>

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

6-7-3. GPS Problem

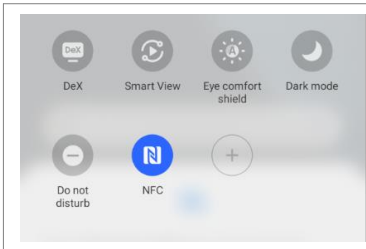
Image	Description
	<p>5. Check the MFA GPS ANT</p> <ul style="list-style-type: none">- Crack on MFA pattern- Change Rear when you find defects
	<p>6. Check GPS antenna clip (ANT3003) and change when you find defects around it.</p> <ul style="list-style-type: none">- Crack- Open- Damaged or broken traces and others
	<p>7. Check Filter & Series Comp & LNA (L7017, C3043, L3018, L7012, U9061, L3016, L3030, C3108, L3011, U3003, C9180, L3009, L3010, C9177, L3017, F3002, L7015, C3009, L3003, C3017) and change when you find defects.</p> <ul style="list-style-type: none">- Crack- Open- Damaged or broken traces and others
	<p>8. Change Transceiver IC (U2010) and change when you find defect.</p>
	<p>9. If the device is not working normally with new component, exchange the Main PBA</p> <ul style="list-style-type: none">- Crack- Open- Damaged or broken traces and others

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

6-7-4. NFC (SWA, SEA(except Indonesia) does not support 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



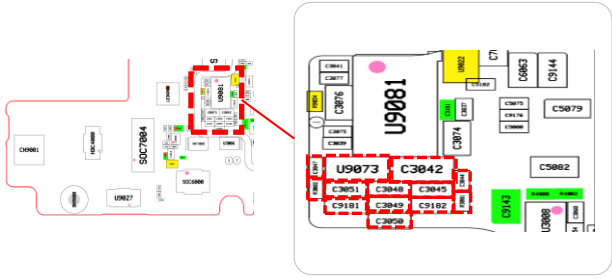
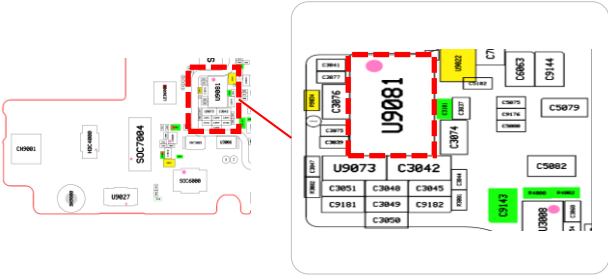
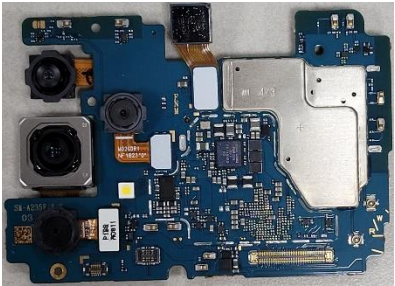
- **Caution : Disconnect battery connector first when it shows.**

Image		Description
		1. Check the back cover. if there is metal material that interrupt NFC antenna, remove it. Recheck NFC function.
<div></div> <div>[AOD Jig] [AOD mini]</div>		2. Disassemble the device. - Refer to ' <u>Disassembly and assembly video guide for Galaxy A23</u> ' from the GSPN.
<div></div> <div>NFC Ant connector NFC Ant</div>		3. Check the NFC Antenna and Antenna contact.

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

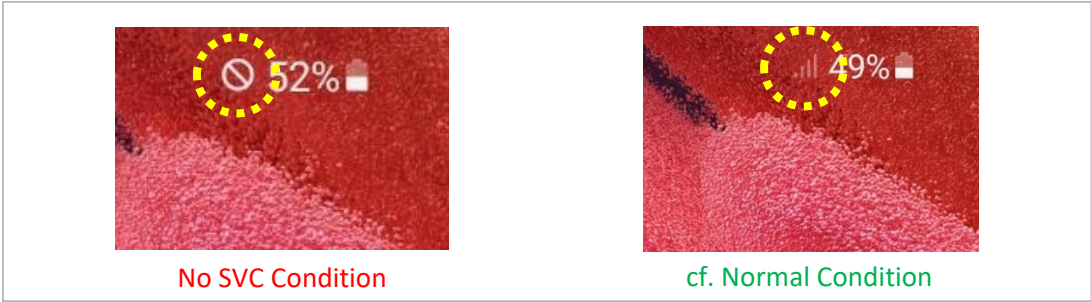
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6-7-4. NFC (SWA, SEA(except Indonesia) does not support NFC)

Image	Description
	4. Replace Rear Assy and check NFC.
	5. Check NFC antenna Contact. (ANT3005, U3006) If there is Damage, replace contact
	6. Check C3044, C3047, C3045, C3051, C9182, C9181, C3048, C3049, C3050, R3001, R3002, C3042, U9073. if there is crack or open, replace capacitor.
	7. Check and change the NFC IC(U9081) - Crack - Open - Damaged or broken traces and others if there is crack or open, replace NFC IC.
	8. If the device is not working normally with new component, exchange the PBA.

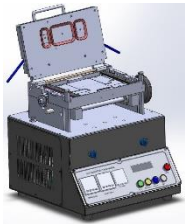
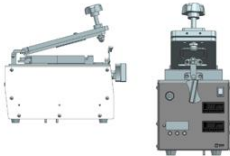
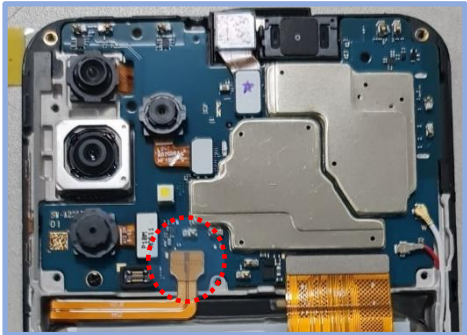
6-8-1. NO SVC

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

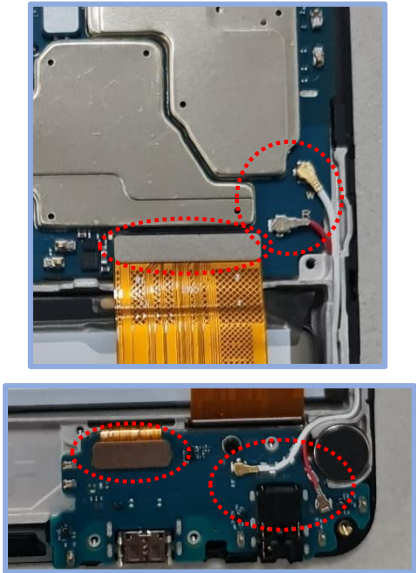
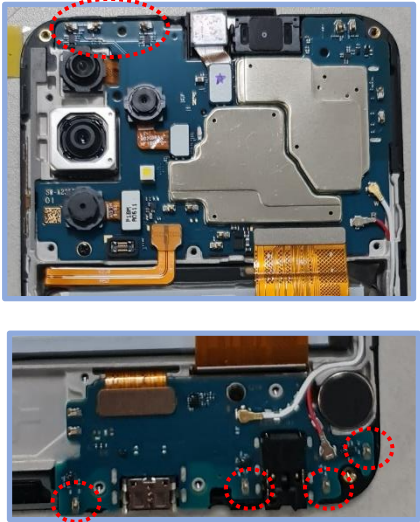
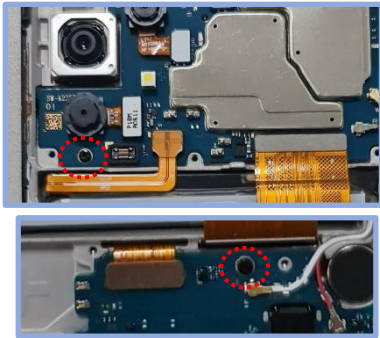


- 2) Defect Decision Conditions
- The phone continues to show this prohibition mark after rebooting or turning on and off airplane mode.
- Other phones around the phone maintain the normal condition.


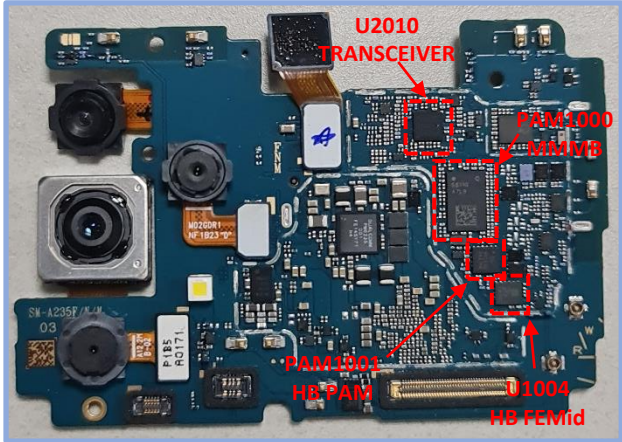
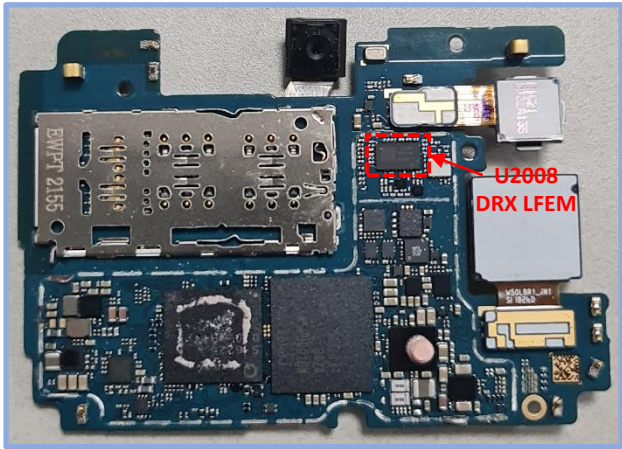
- 3) Repair Guide
- **Caution : Disconnect battery connector first when it shows.**

Image	Description
<div><p>[AOD Jig]</p></div> <div><p>[AOD mini]</p></div>	<div>1. Disassemble the device.</div> <div>- Refer to '<u>Disassembly and assembly video guide for Galaxy A23</u>' from the GSPN</div>
	<div>[Attention]</div> <div>2. Disconnect Battery Connector at first.</div>

6-8-1. NO SVC

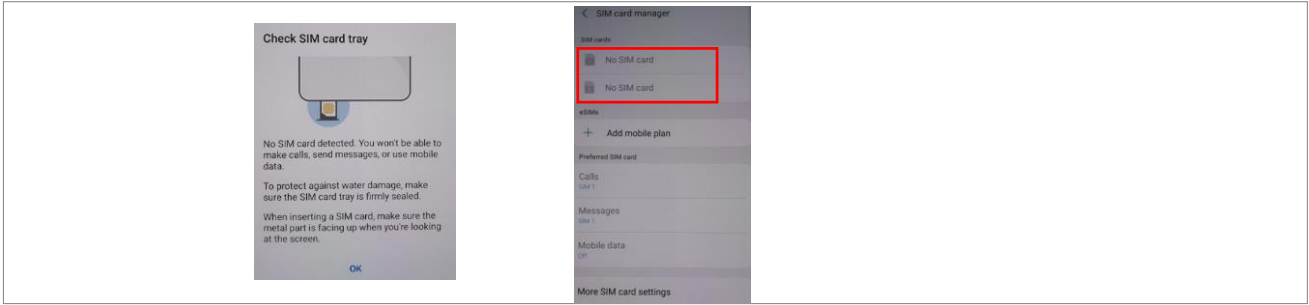
Image	Description
	<p>3. Check C to C FPCB connectors and Coaxial cables are OK.</p> <p>Also, check their condition.</p> <ul style="list-style-type: none">- Broken traces and others.- Little particles or dust which can disturb connections.
	<p>4. Check Antenna C-clip is damaged.</p> <p>Also, check antenna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

6-8-1. NO SVC

Image	Description
	6. If not, exchange the SUB PBA with new one and check the device
 	7. 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. If not, exchange the PBA.

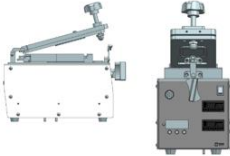
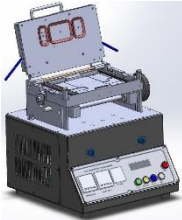
6-9-1. Abnormal USIM

- 1) Symptom
 - Description : USIM card is not recognized.

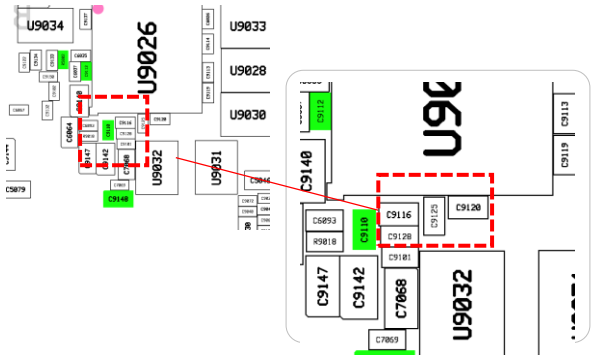
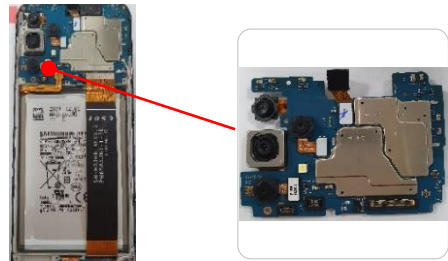


- 2) Defect Decision Conditions
 - Description : The changed SIM card is not recognized.

- 3) Repair Guide
 - **Caution : Disconnect battery connector first when it shows.**

Image	Description
	<div>1. Check the USIM Card.<ul style="list-style-type: none">- Check if there is any problem using a normal SIM card.</div>
<div></div> <div>[AOD Jig] [AOD mini]</div>	<div>2. Disassemble the device.<ul style="list-style-type: none">- Refer to '<u>Disassembly and assembly video guide for Galaxy A23 LTE</u>' from the GSPN.</div>
	<div>[Attention]</div> <div>3. Disconnect Battery Connector at first. (SOC6000)</div>

6-9-1. Abnormal USIM

Image	Description
	<p>4. Check 'Capacitors' on the PBA as below.</p> <ul style="list-style-type: none">- VREG_L20A_UIM2_1P8_3P0 = 1.8V or 3.0V (Ref. C9125)
	<p>5. After that, check the device is working normally.</p> <p>If not, exchange the MAIN PBA.</p> <p>After that, check the device is working normally.</p>

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