

SAMSUNG

Mobile Device SM-A045F/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.	-	Force Touch Cal.	-	Optical Finger print Cal.	-
Speaker Cal.	-	Digital Hall IC Cal.	-	TOF Camera Cal.	-
Water Resistance	-	Ranging Sensor Cal	-	UWB Cal	-
Multi Camera Cal.	O	mmWave RF Cal. (Only for USA/Japan)	-		

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

- No parts must to be changed after reassembly. (Hook Type)

1-3. JIG

- N/A

1-4. WRT Test Information

- It does not support water resistance. The test is not available.

1-5. AOD Setting Information

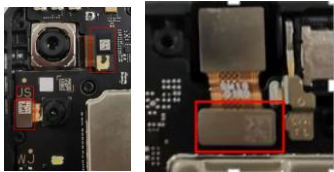
- It does not support AOD.

2. SVC Model Information

2-1. RAM & Storage size by region

Model Name	Region		SKU Code Rule	RAM (GB)	ROM (GB)	Remark
SM-A045F	Global	CIS/MEA	SM-A045FXXDXXX	3	32	DS
			SM-A045FXXGXXX	4	64	DS
		SWA	SM-A045FXXDXXX	3	32	DS
SM-A045M	Latin America		SM-A045FXXDXXX	3	32	DS
			SM-A045FXXHXXX	4	128	DS
			SM-A045FXXAXXX	3	32	SS
			SM-A045FXXEXXX	4	64	SS
			SM-A045FXXFXXX	4	128	SS

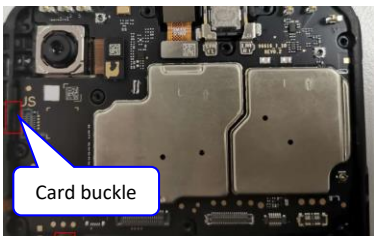
2-2. Disassembly & Reassembly (Important management points)



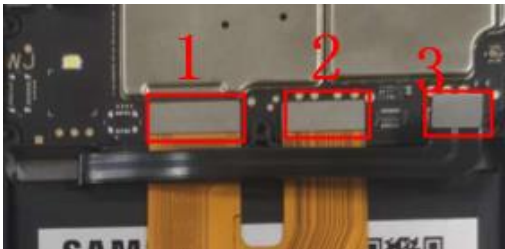
Connect the 3 connector for camera.

[Important management]

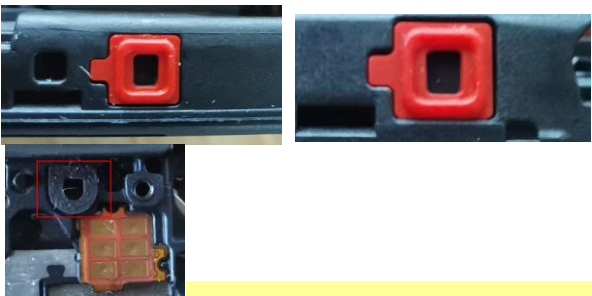
Do NOT use the air, bursh, cotton swab to prevent camera lens damage.
Do not press the camera to prevent damage
Dust proof when disassembling and reassembling the camera



When reassembling the PBA into the Front part, the PBA must first be placed under the left buckle. The PBA is then assembled from left to right



When reassembling PBA, all other connectors except 3 connectors must be connected prior to connecting 3. then connect 3,3 has to be above 1 and 2



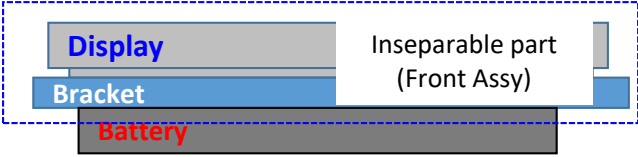
When reassembling the mainboard and battery cover, check whether the MIC rubber sleeve is deformed or damaged

2. SVC Guide Information

2-3. Disassembly & Reassembly (Battery replacement)

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

*** Reusing a removed battery could lead to potential safety hazards**

Type	Structure
	<p>Display and Bracket are inseparable</p> <p>Battery replacement is required when Front Assy components are defected.</p>

3. Product Function

3-1. Main Function

Item	Description
OS	Android V12.0
Network	N/A
Battery	5,000 mAh
Processor	Octa core (2.0GHz(2xA75) + 2.0GHz(6xA55))
Connectivity	GPS, Glonass, Galileo / BT5.0 / USB 2.0 Type-C / Wi-Fi 802.11 a/b/g/n/ac Wi-fi Direct
Camera	Rear : 8M AF (F2.0). 77±3. Camera Bump : 2 Front : 5M FF (F2.4). 76±3
Display	10.36" (263.09mm) Incell 16.7:10. 2000X1200(WUXGA+) TFT Display, 2D CG (Global LTE/Wi-Fi)
RAM	3 GB
ROM	32 GB
Sensors	Accelerometer, proximity, light

4. Exploded View and Parts List

4-1. Electronical Part List

: Refer to '[02-SM-A045F_Common_Main Part List](#)' file which uploaded separately

4-2. Cellular phone Exploded View

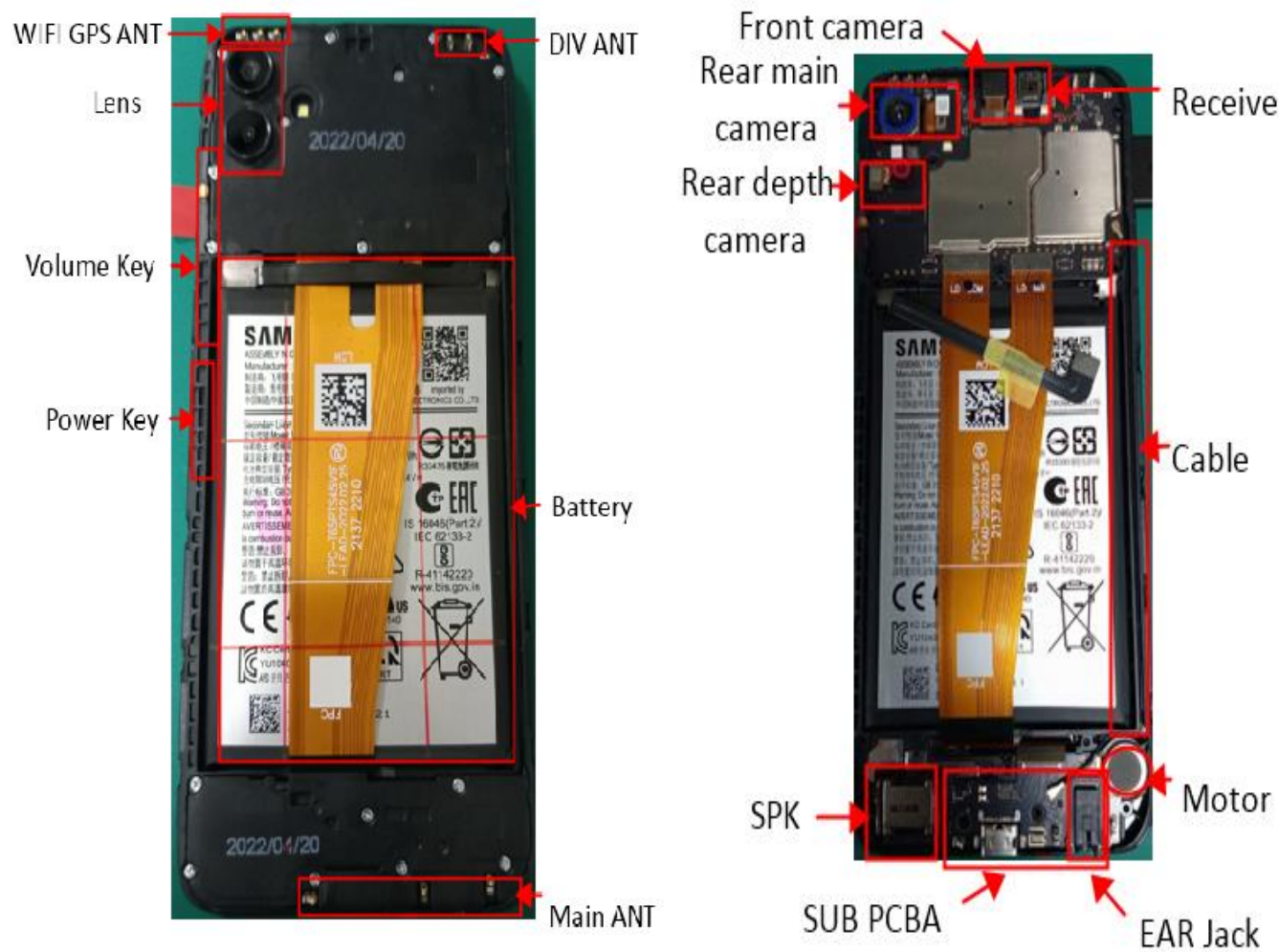
: Refer to '[03-SM-A045F_Common_Exploded View](#)' file which uploaded separately

4-3. Cellular phone Parts list

: Refer to SVC PPL

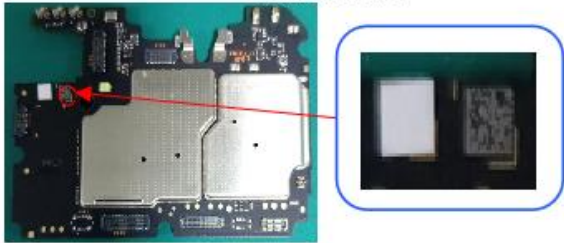

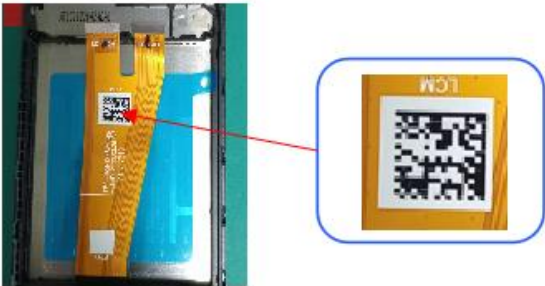
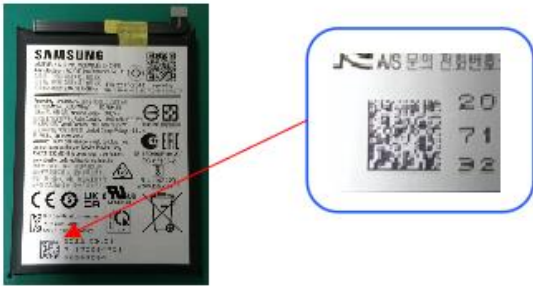



5. Components Layout

5-1. Components Layout



5. Components Layout

5-2. QR code Location

Part	Location		
PBA	<div><div>Main board</div><div></div><div>Sub board</div><div></div></div>		
Display	<div></div>		
Battery	<div></div>		
Camera	Front camera	Rear main camera	Rear depth camera
			

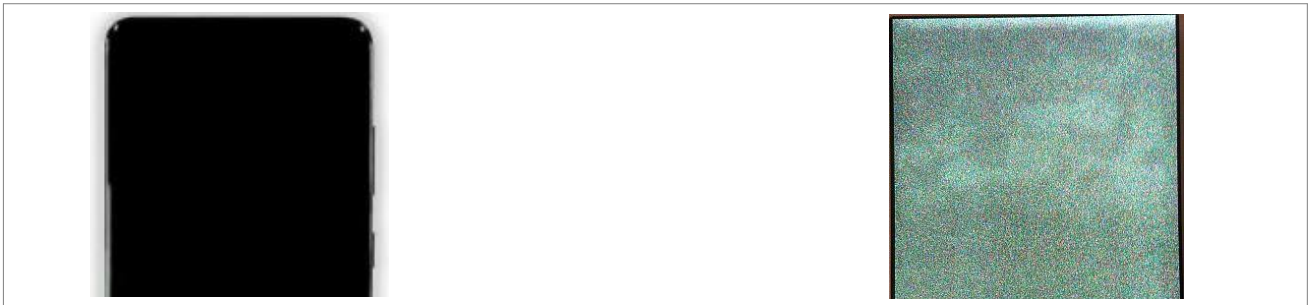
6. Trouble Shooting (L2)

- 6-1. Display
- 6-2. Touch
- 6-3. Power, Charging
- 6-4. Camera
- 6-5. Audio
- 6-6. Sensors
- 6-7. Connectivity (Wi-Fi, GPS)
- 6-8. No SVC
- 6-9. USIM

6-1. Display

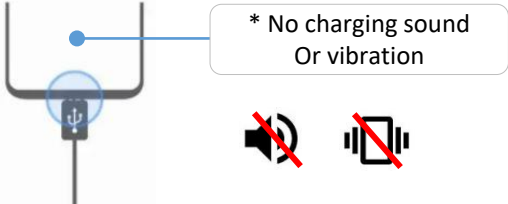


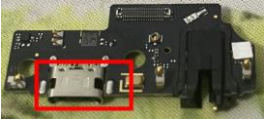

6-1-1. Black Display

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



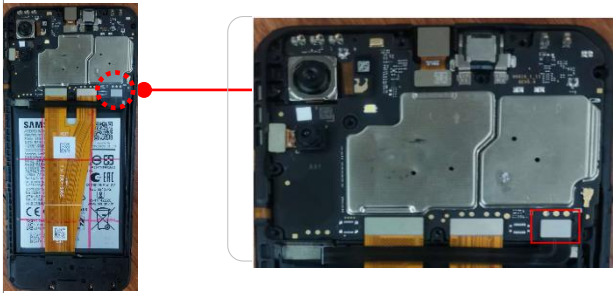
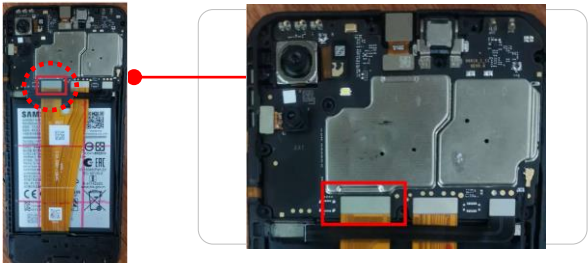
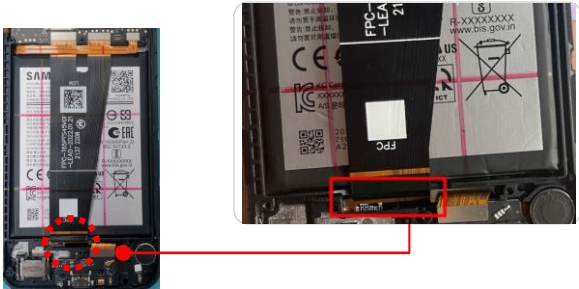

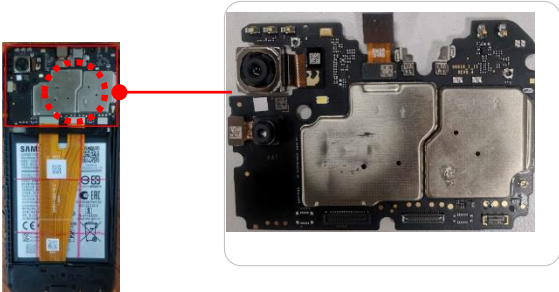
- 2) Defect Decision Conditions
- Noised images on the screen after turning on
 - Check booting sound and no vibration .

- 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.
	<p>2. Disassemble the device.</p> <ul style="list-style-type: none">- Refer to 'Disassembly and assembly video guide for SM-A045' from the GSPN.
<div><p>Water indicator tripped</p><p>USB charging port burnt</p><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. Display

6-1-1. Black Display (L2)

Image		Description
		<p>[Attention]</p> <p>4. Disconnect Battery Connector at first.</p>
		<p>5. Check the 'PBA ↔ Display' connector and connect it again when it connected improperly. After that, connect battery connector again and check the display.</p>
		<p>6. Check the UB C2C connector and connect it again when it connected improperly. After that, connect battery connector again and check the display.</p>
	<p>* Need to change with battery</p>	<p>7. Exchange the display module with new one and check the device.</p>
		<p>8. If not, finally, exchange the PBA with new one and check the device.</p>

6-1. Display

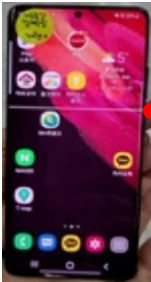


6-1-2. Bit defect (Horizontal line) (L2)

- 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>
	<p>2. Disassemble the device. - Refer to 'Disassembly and assembly video guide for SM-A045' from the GSPN.</p>
 <div>* Need to change with battery</div>	<p>3. Exchange the display module with new one and check the device.</p>

6-1-3. Screen overlap / shaking / flicker (L2)

- 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.**

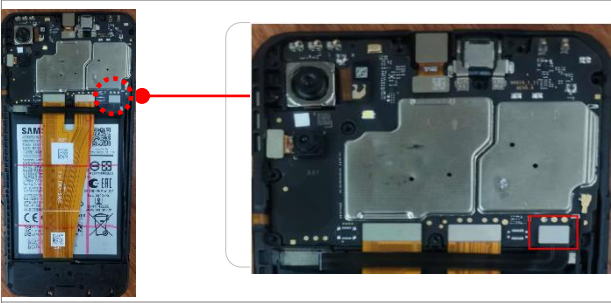
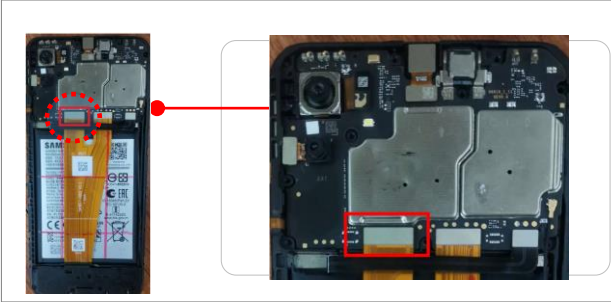
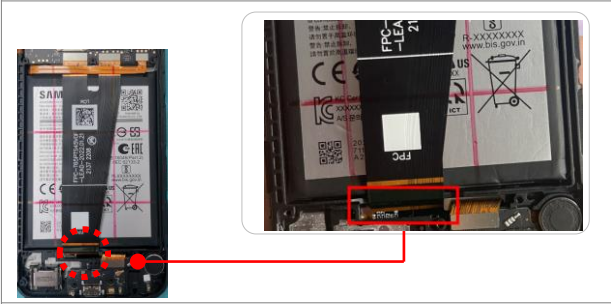

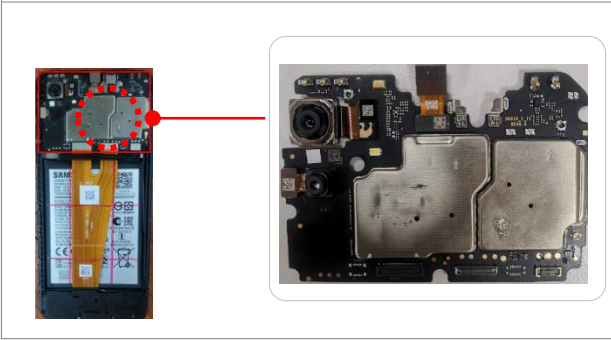
Image	Description
	<p>1. Disassemble the device.</p> <ul style="list-style-type: none">- Refer to 'Disassembly and assembly video guide for SM-A045X' from the GSPN.
	<p>2. Exchange the display module with new one and check the device.</p>
	<p>3. If not, finally, exchange the PBA with new one and check the device.</p>

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>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>3. Disassemble the device.</div> <div>- Refer to 'Disassembly and assembly video guide for SM-A045' from the GSPN.</div>
	<div>4. Exchange the display module. with new one and check the device.</div>

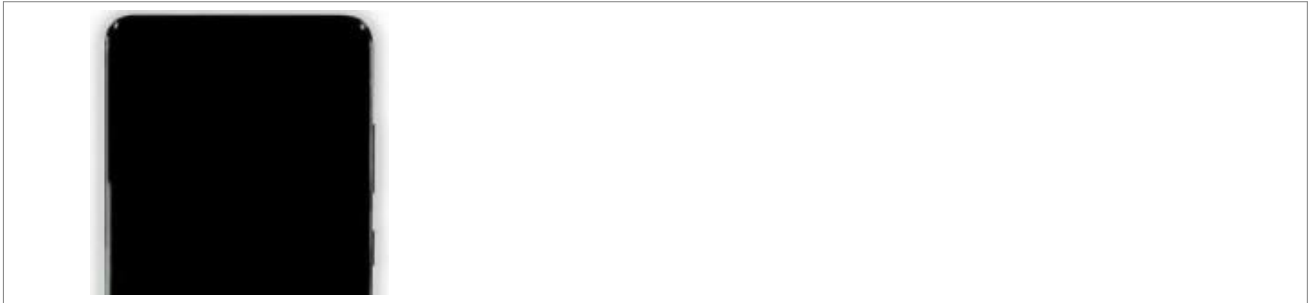
6-2-1. Abnormal touch(Ghost touch)

Image	Description
	<p>[Attention]</p> <p>5. Disconnect Battery Connector (Ref. SOC401) at first.</p>
	<p>6. Check the 'PBA <=> Display' connector and connect it again when it connected improperly. After that, connect battery connector again and check the display.</p>
	<p>7. Check the UB C2C connector and connect it again when it connected improperly. After that, connect battery connector again and check the display.</p>
 <div data-bbox="399 1259 666 1334">* Need to change with battery</div>	<p>8. Exchange the display module. with new one and check the device.</p>
	<p>9. If not, finally, exchange the PBA. with new one and check the device.</p>

6-3. Power, Charging

6-3-1. No Power

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



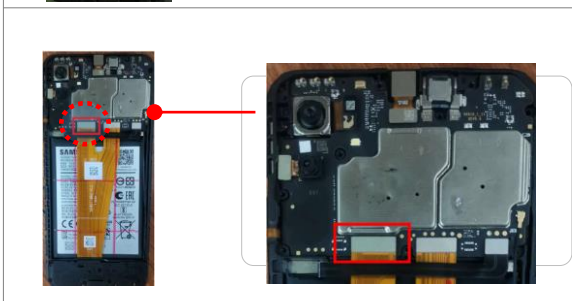
- 2) Defect Decision Conditions
- Description : The phone no any display & vibration after booting.

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

Image	Description
	<p>1. Check the charging notification sound or vibration when connected to charger.</p> <ul style="list-style-type: none">- Should be no sound and no vibration.- The device keep 'No Power' status.
	<p>2. Disassemble the device.</p> <ul style="list-style-type: none">- Refer to '<u>Disassembly and assembly video guide for SM-A045</u>' from the GSPN.
<div></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.

6-3. Power, Charging

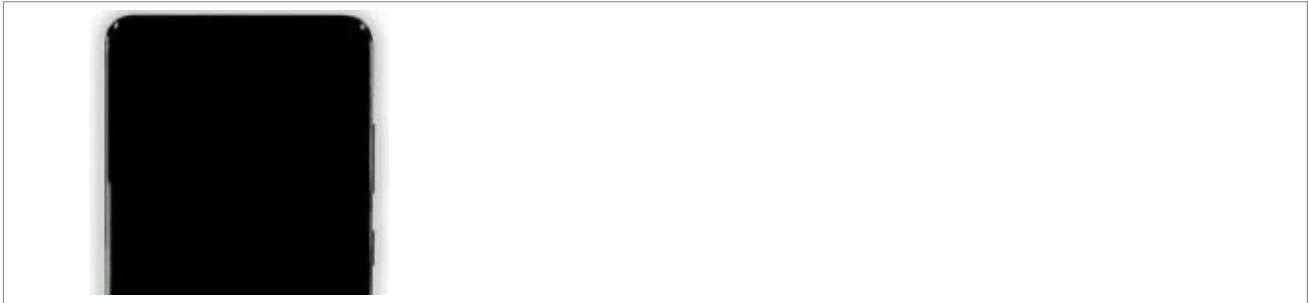
6-3-1. No Power (L2)

Image	Description
	<p>1. Check battery voltage(Ref. C7160) 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(SOC11003) and connect it again when it connected improperly. After that, check to turn on the phone.</p>
	<p>3. Check the 'PBA ↔ Power key ' connector(SOC11000) and connect it again when it connected improperly. After that, check to turn on the phone.</p>
	<p>4. Check the 'PBA ↔ LCD' connector(SOC12002) and connect it again when it connected improperly. After that, check to turn on the phone.</p>
	<p>5. Exchange the Front Assy. with new one and check the device.</p>
	<p>6. If not, finally, exchange the PBA. with new one and check the device.</p>

6-3. Power, Charging

6-3-2. Reboot during Power on

- 1) Symptom
 - Description : reboot during power on



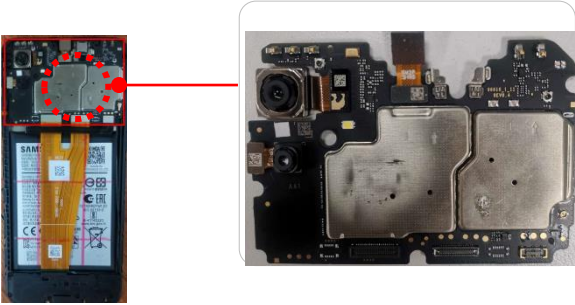
- 2) Defect Decision Conditions
 - Description : The phone is rebooting during power on.

- 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 4.4v 1-3. During booting, check current.
	2. If current is under 4A, check the battery connector connection and battery condition.

6-3. Power, Charging

6-3-2. Reboot during Power on

Image	Description
	<p>3. If not, replace PBA.</p>

6-3. Power, Charging

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

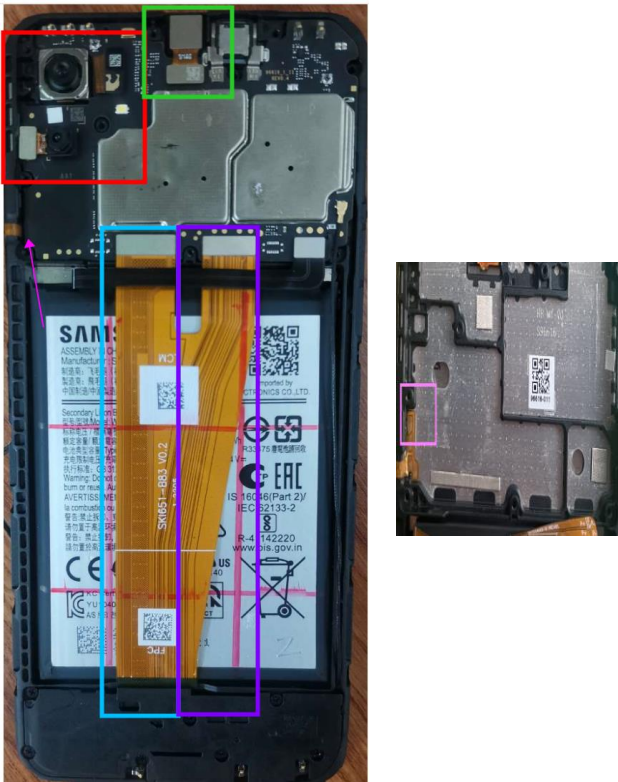
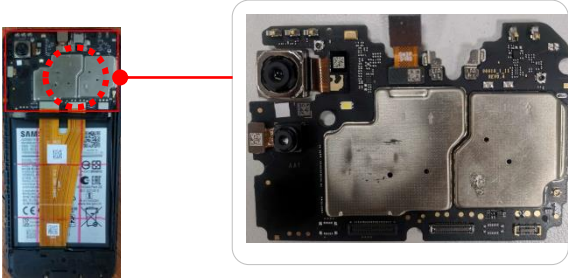
- 1) Symptom
- Description : Battery level decreases rapidly in the idle state.
- 2) Defect Decision Conditions
- Description : Battery level decreases rapidly in the idle state by abnormal current consumption.

3) Repair Guide

Image	Description
	<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>3-1 If there is Power-off leakage problem.</div> <div>3-2. Disassemble the device.</div> <div> - Refer to 'Disassembly and assembly video guide for SM-A045' from the GSPN.</div>


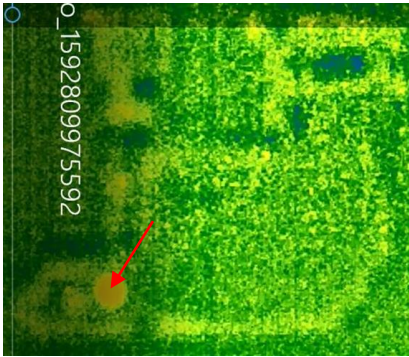
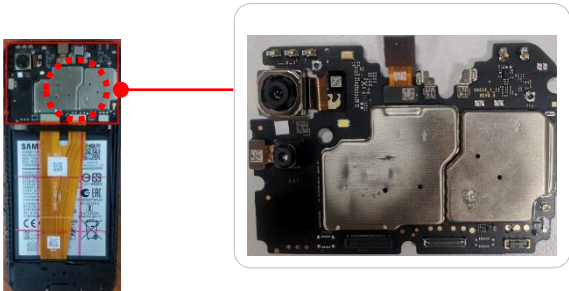
6-3. Power, Charging

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

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

6-3. Power, Charging

6-3-3. Sudden Discharge in the idle state

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)

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

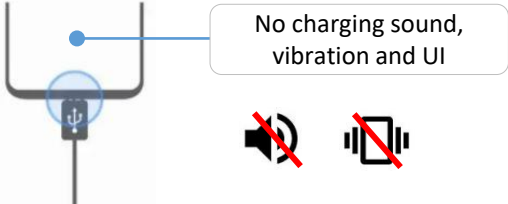

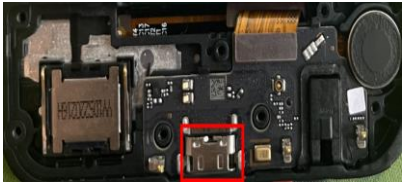
No charging Condition

cf. Normal Condition



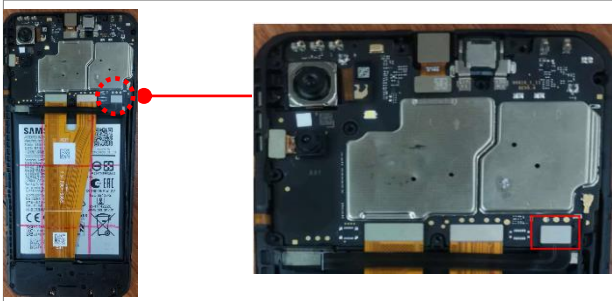
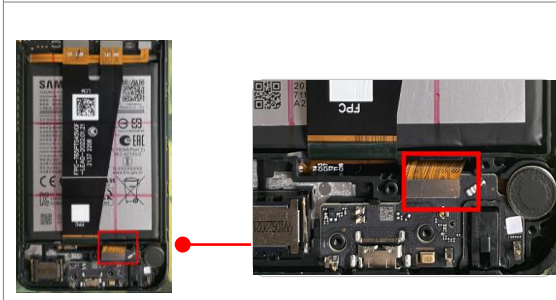
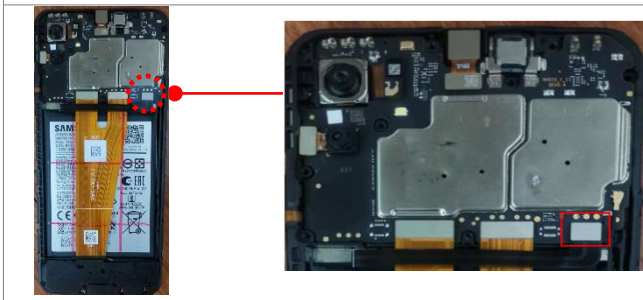
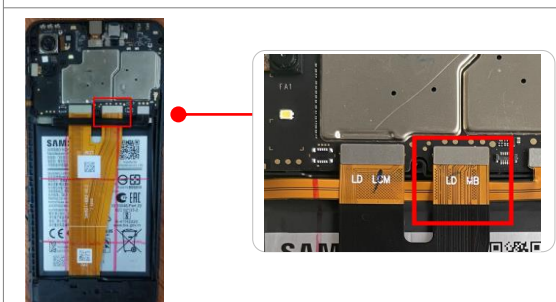
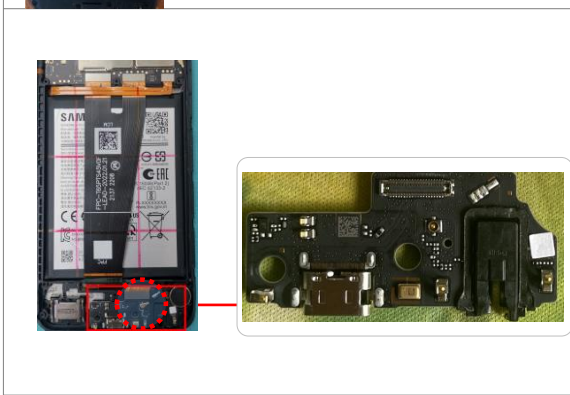
- 2) Defect Decision Conditions
- Description : No charging notification sound, vibration and UI when inserted TA.

- 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>2. Disassemble the device.</div> <div>- Refer to 'Disassembly and assembly video guide for SM-A045' 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.</div> <div>(Charging port, PBA, Battery and others)</div> <div>- Damaged USB port pin.</div> <div>- Broken traces and others.</div>

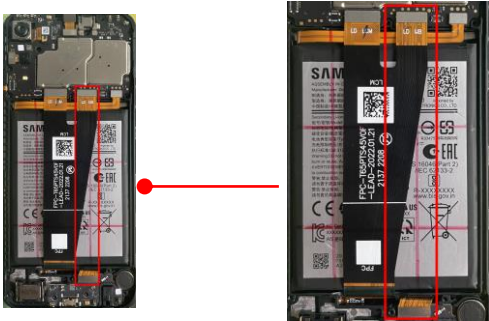
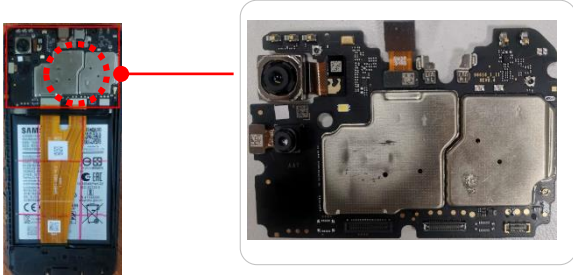
6-3. Power, Charging

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

Image	Description
	<p>[Attention]</p> <p>4. Disconnect Battery Connector at first.</p>
	<p>5. Check the 'IF SUB PBA ↔ C2C connector' and connect it again when it connected improperly. After that, connect battery connector again and check wire charging when inserted TA.</p>
	<p>[Attention]</p> <p>6. Disconnect Battery Connector at first.</p>
	<p>7. Check the 'MAIN PBA ↔ C2C connector' and connect it again when it connected improperly. After that, connect battery connector again and check wire charging when inserted TA.</p>
	<p>8. Exchange the IF SUB PBA with new one and check the device.</p>

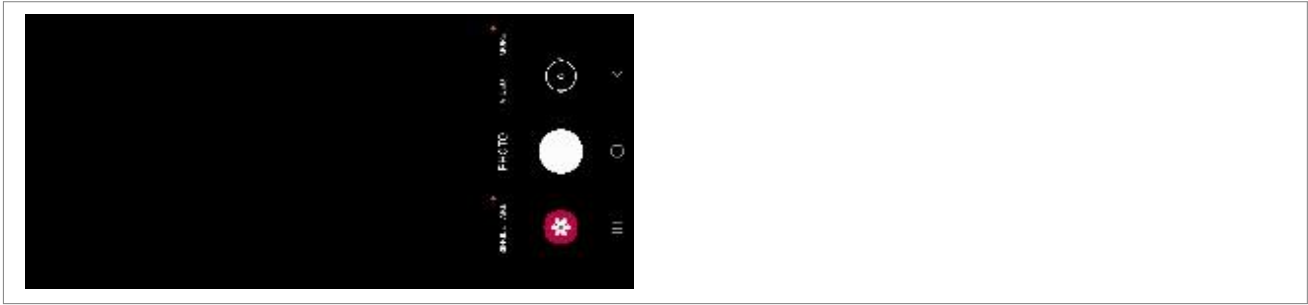
6-3. Power, Charging

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

Image	Description
	<p>9. If not, exchange the C2C connector with new one and check the device.</p>
	<p>13. 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

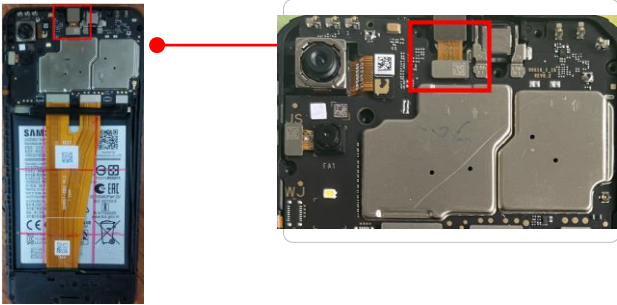
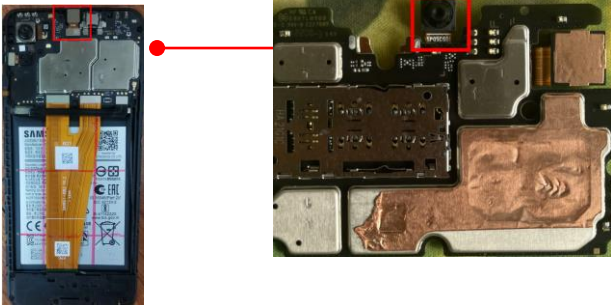
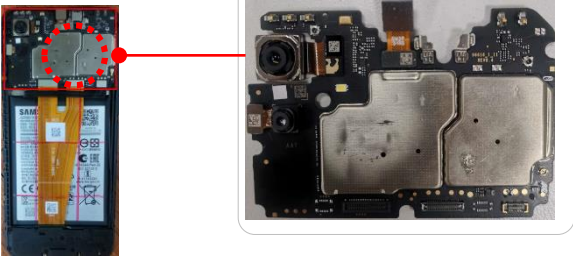


- 2) Defect Decision Conditions
- Description : Black display instead of preview image or return to home screen

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

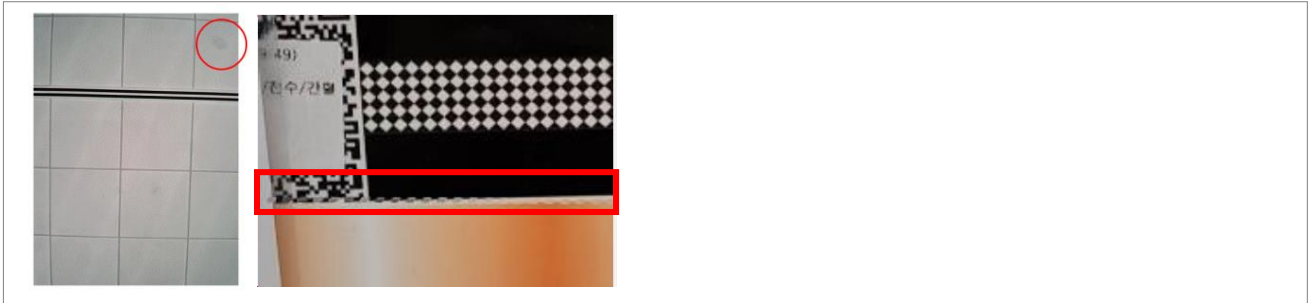
Image	Description
	1. Execute Front Cam test of *#0*#.
	2. Disassemble the device. - Refer to ' Disassembly and assembly video guide for SM-A045 ' from the GSPN.
	[Attention] 3. Disconnect Battery Connector at first.

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

Image	Description
	<p>4. Check if the connector is disengaged at first.</p>
	<p>5. If connector is okay, replace the camera module with new one and check the device.</p>
	<p>6. If not, finally, 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.

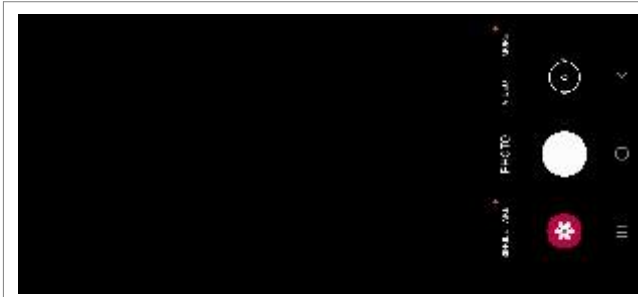
Image	Description
	<div>1. Check the camera hole.</div> <div>- Should be clean and no particle.</div>
	<div>2. Disassemble the device.</div> <div>- Refer to 'Disassembly and assembly video guide for SM-A045' from the GSPN.</div>
	<div>[Attention]</div> <div>3. Disconnect Battery Connector (SOC11003) at first.</div>

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

Image	Description
	<p>4. Replace the camera module with new one and check the device. (SOC9003)</p>

6-4-3. Abnormal Preview(Front Camera)

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

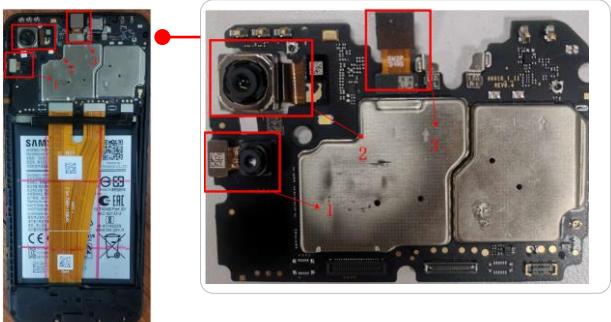
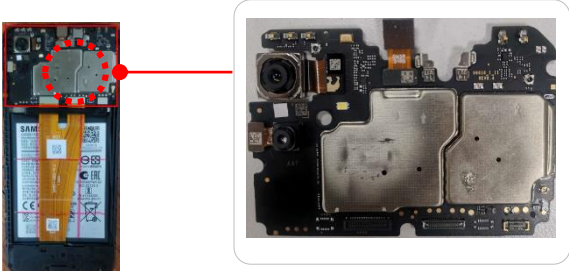


- 2) Defect Decision Conditions
- Description : Black display instead of preview image or return to home screen

- 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 : Tele camera</div>
	<div>2. Disassemble the device.</div> <div>- Refer to 'Disassembly and assembly video guide for SM-A045' from the GSPN.</div>
	<div>[Attention]</div> <div>3. Disconnect Battery Connector at first.</div>

6-4-3. Abnormal Preview(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.</p> <ul style="list-style-type: none">- 1 : Depth camera- 2 :Main camera- 3 : Front camera
	<p>5. If not, finally, exchange the PBA.</p>

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

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

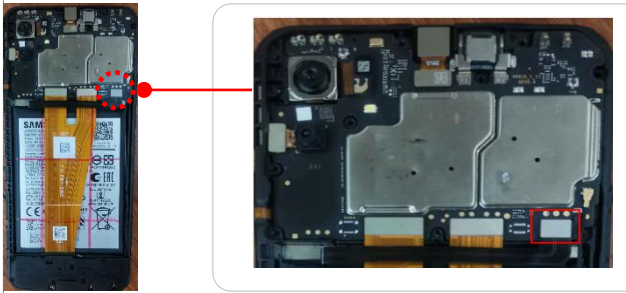
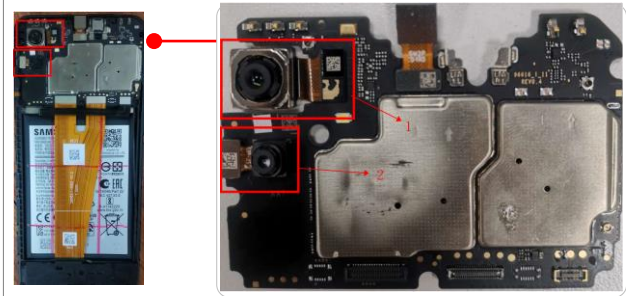
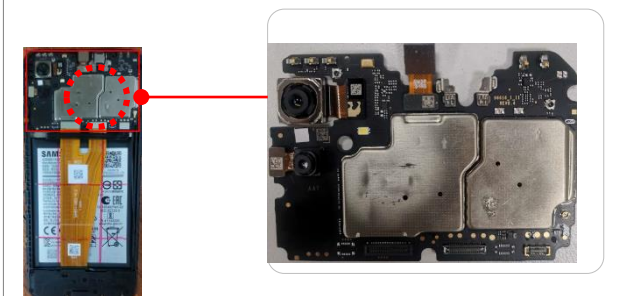


- 2) Defect Decision Conditions
- Description : The image of rear camera is out of focus.

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

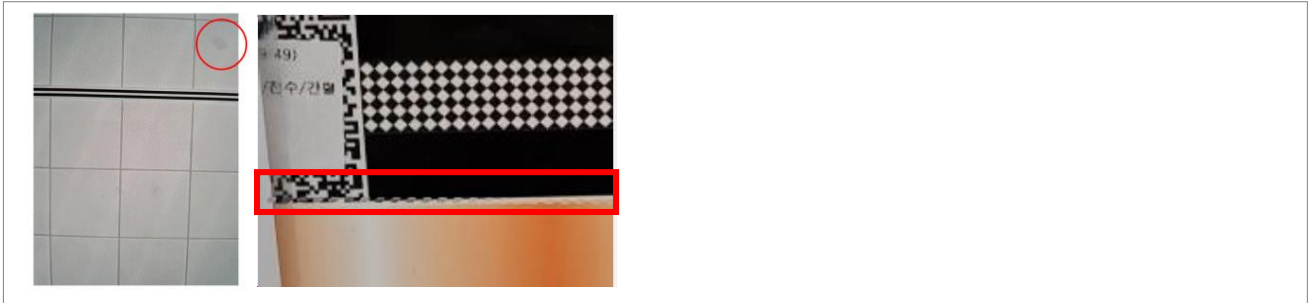
Image	Description
	<div>1. Check the camera deco glass.</div> <div>- Should be clean and no particle.</div>
	<div>2. Execute Mega cam test of *#0*# to figure out which camera has defect.</div> <div>- Rear : Main camera</div> <div>- Rear2 : Depth camera</div> <div>- Rear3 : Macro camera</div>
	<div>3. Disassemble the device.</div> <div>- Refer to 'Disassembly and assembly video guide for SM-A045' from the GSPN.</div>

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

Image		Description
		<p>[Attention]</p> <p>4. Disconnect Battery Connector at first.</p>
		<p>5. Replace the camera module with new one and check the device.</p> <ul style="list-style-type: none">- 1 : Main camera- 2 : Depth camera
		<p>6. If the device is not working normally with new resistors, 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. - Should be clean and no particle.</div>
	<div>2. Execute Mega cam test of *#0*# to figure out which camera has defect. - Rear : Main camera - Rear2 : Depth camera - Rear3 : Macro camera</div>
	<div>3. Disassemble the device. - Refer to 'Disassembly and assembly video guide for SM-A045' from the GSPN.</div>

6-5-1. SPK sound abnormal

1) Symptom



- Description : SPK sound is low/abnormal

2) Defect Decision Conditions

- Description : The phone sounds abnormally

3) Repair Guide

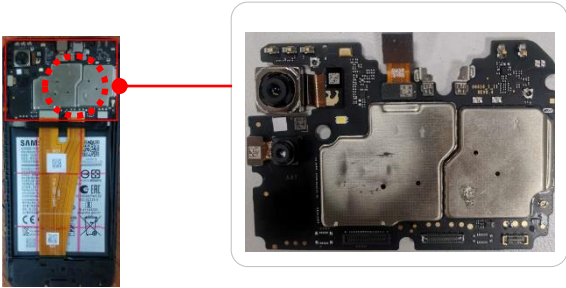
- **Caution : Disconnect battery connector first when it shows.**

Image	Description
	1. Execute Speaker test of *#0*# to figure out which speaker has defect. (upper or lower)
	2. Disassemble the device. - Refer to ' Disassembly and assembly video guide for SM-A045 ' from the GSPN.

6-5-1. SPK sound abnormal

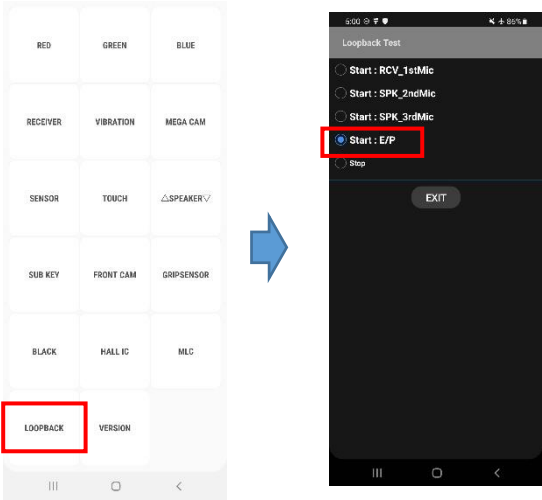

Image	Description
 <p>Upper SPK</p> <p>Lower SPK</p>	<p>Refer to the SPK location.</p>
 <p>Upper SPK</p>	<p>3. Check upper SPK module and if it is ok, change to new upper SPK module.</p>
	<p>4. Check lower SPK module and spk rubber is ok. (tears and particles)</p>
 <p>Lower SPK</p>	<p>5. If it is ok, change to new lower SPK module.</p>

6-5-1. SPK sound abnormal

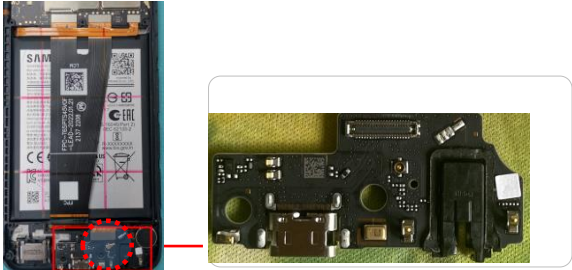
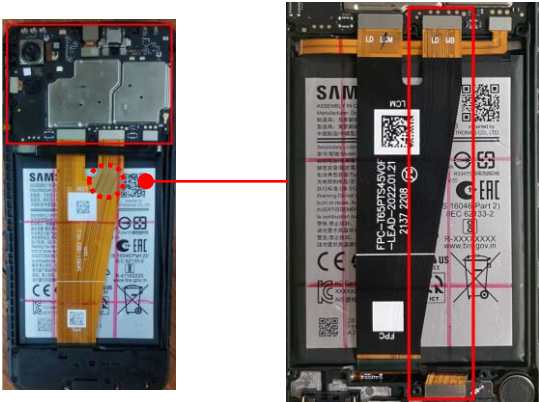
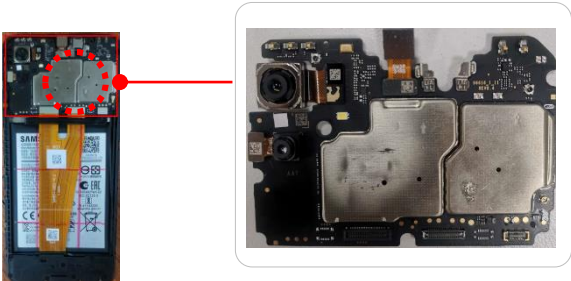
Image	Description
	6. If not, finally, exchange the <u>PBA</u> .

6-5-2. Earphone sound abnormal

- 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.**

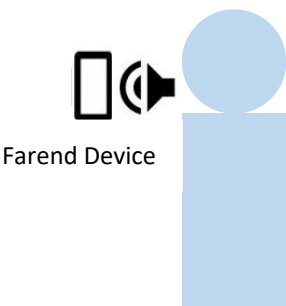
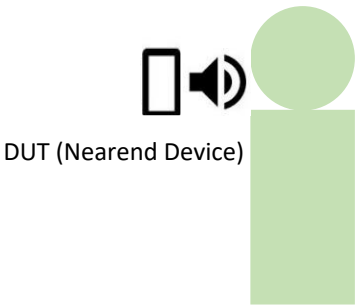
Image	Description
	<div>1. Execute test mode (*#0*#) on call mode and goes to LOOPBACK – Start E/P mode. . Check loopback mode is working properly.</div>
	<div>2. Disassemble the device. - Refer to '<u>Disassembly and assembly video guide for SM-A045</u>' from the GSPN.</div>

6-5-2. Earphone sound abnormal

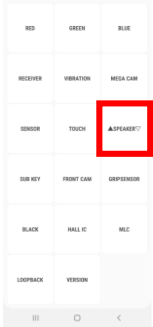
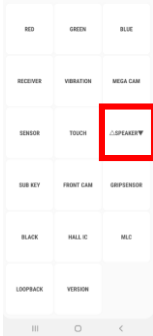

Image	Description
	<p>3. Try to swap new Sub PBA and check that is working properly.</p>
	<p>4. Try to swap C to C fpcb and check that is working properly.</p>
	<p>5. If the device is not working normally after exchanging it, exchange the <u>PBA</u></p>

6-5-3. Rx Voice mute

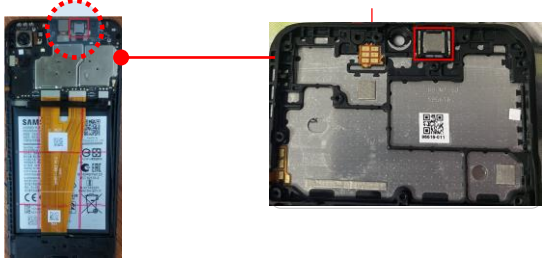
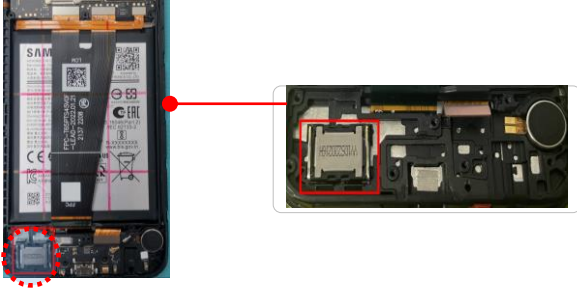

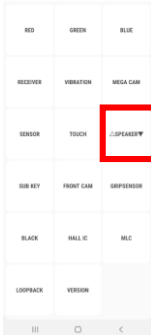
- 1) Symptom
- Description : While calling, Rx voice is mute.
- 2) Defect Decision Conditions
- Description : A person who is calling with a nearend device can't hear Rx voice.



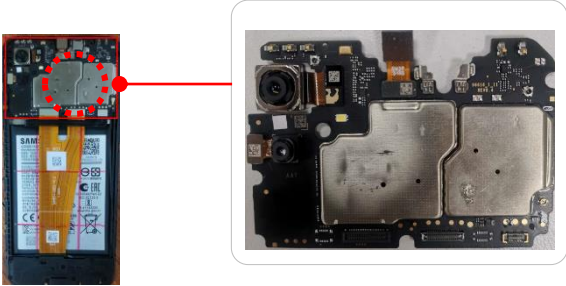
3) Repair Guide

Image	Description
	<div>1-1. SPEAKER test</div> <div>(Problem in RCV call : Handset mode)</div> <div>- *#0#</div> <div>- Select : ▲SPEAKER▼</div> <div>▲SPEAKER▼ : Sound from upper and lower</div> <div>△SPEAKER▼ : Sound from lower</div> <div>▲SPEAKER▽ : Sound from upper</div> <div>- Should hear the sound in RCV(upper spk)</div>
	<div>1-2. SPEAKER test</div> <div>(Problem in SPK call : Handsfree mode)</div> <div>- *#0#</div> <div>- Select : △SPEAKER▼</div> <div>▲SPEAKER▼ : Sound from upper and lower</div> <div>△SPEAKER▼ : Sound from lower</div> <div>▲SPEAKER▽ : Sound from upper</div> <div>- Should hear the sound in SPK(lower spk)</div>
	<div>If there wasn't no sound from RCV or SPK</div> <div>2. Disassemble the device.</div> <div>- Refer to 'Disassembly and assembly video guide for SM-A045' from the GSPN.</div>

6-5-3. Rx Voice mute

Image	Description
	<p>3-1. Swap the upper SPK module to normal sample. (Problem in RCV call : Handset mode) - RCV(upper spk) module damaged.</p>
	<p>3-2. Swap the lower SPK module to normal sample. (Problem in SPK call : Handsfree mode) - SPK(lower spk) module damaged.</p>
	<p>4-1. SPEAKER test (Problem in RCV call : Handset mode) - *#0# - Select : ▲SPEAKER▼ ▲SPEAKER▼ : Sound from upper and lower △SPEAKER▼ : Sound from lower ▲SPEAKER▼ : Sound from upper - Should hear the sound in RCV(upper spk)</p>
	<p>4-2. SPEAKER test (Problem in SPK call : Handsfree mode) - *#0# - Select : △SPEAKER▼ ▲SPEAKER▼ : Sound from upper and lower △SPEAKER▼ : Sound from lower ▲SPEAKER▼ : Sound from upper - Should hear the sound in SPK(lower spk)</p>

6-5-3. Rx Voice mute

Image	Description
	<p>5. If not, finally, exchange the PBA.</p>

6-5-4. Tx Voice mute






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



3) Repair Guide

Image	Description
<p>A screenshot of the 'Loopback Test' menu on a smartphone. The menu has a dark background with white text. The options are: 'Start : RCV_1stMic' (selected with a blue dot), 'Start : SPK_2ndMic', 'Start : SPK_3rdMic', 'Start : E/P (Please insert Earphone)', and 'Stop'. An 'EXIT' button is at the bottom.</p>	<div>1-1. 1st mic loopback test</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 through the RCV (upper spk).</div>
<p>A screenshot of the 'Loopback Test' menu on a smartphone. The menu has a dark background with white text. The options are: 'Start : RCV_1stMic', 'Start : SPK_2ndMic' (selected with a blue dot), 'Start : SPK_3rdMic', 'Start : E/P (Please insert Earphone)', and 'Stop'. An 'EXIT' button is at the bottom.</p>	<div>1-2. 2nd mic loopback test</div> <div>- *#0283#</div> <div>- Select Start : RCV_2ndMIC</div> <div>- Do test : say something into a 2nd mic (upper mic).</div> <div>- Should hear the voice through the SPK (lower spk).</div>
<p>A photograph of a blue repair guide cover. The cover is rectangular and has a white border. It is lying flat on a light-colored surface.</p>	<div>If there was a no sound in loopback test,</div> <div>2. Disassemble the device.</div> <div>- Refer to 'Disassembly and assembly video guide for SM-A045' from the GSPN.</div>

6-5-4. Tx Voice mute

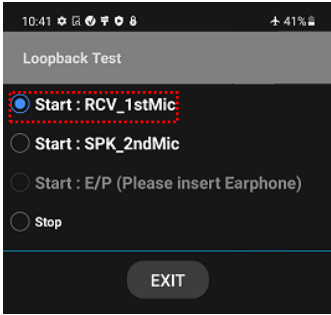
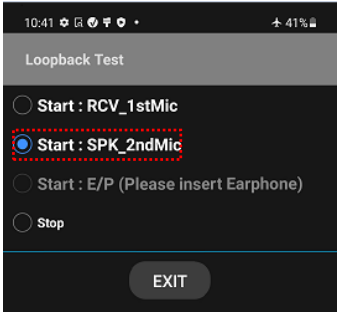
Image	Description
	<p>3. If there was a no sound in 1st mic loopback test, swap the C to C FPCB to a normal sample.</p> <ul style="list-style-type: none">- C to C FPCB damaged.
<div></div>	<p>4. Swap the SUB PBA to normal sample.</p> <p>(For 1st mic)</p> <ul style="list-style-type: none">- SUB PBA damaged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

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

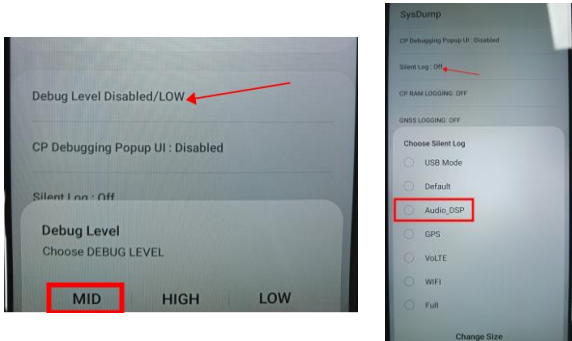
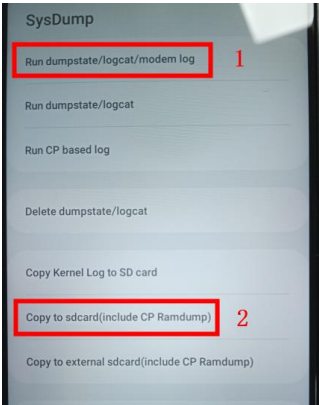

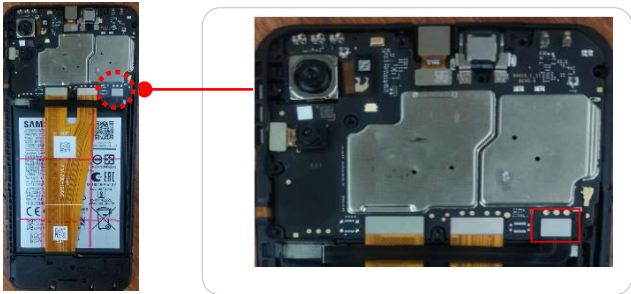
- 1) Symptom
- Description : While calling, Tx voice is swinging, low or noisy.
- 2) Defect Decision Conditions
- Description : A person who is calling with a farend device can hear something wrong in Rx voice.
(voice is swinging, low or noisy)



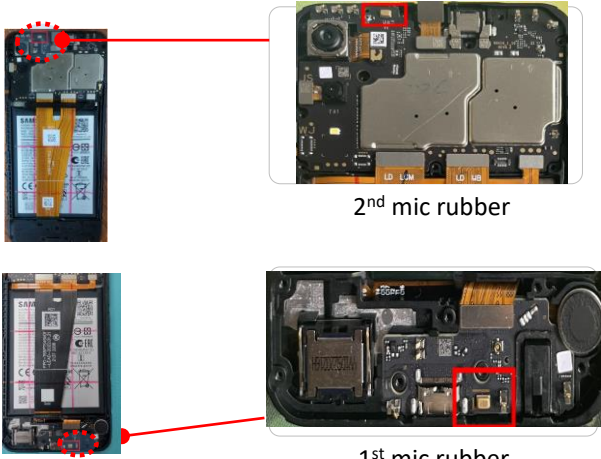

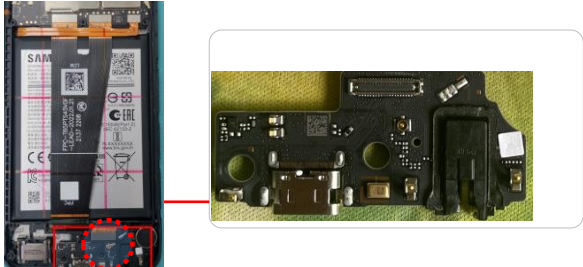
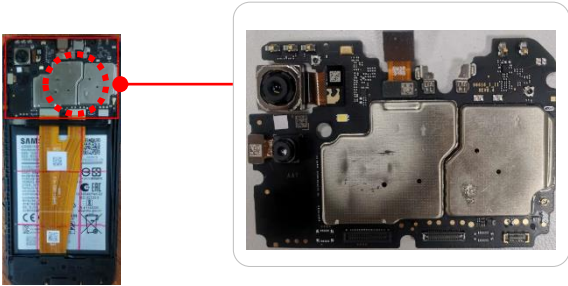
3) Repair Guide

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 : RCV_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>

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


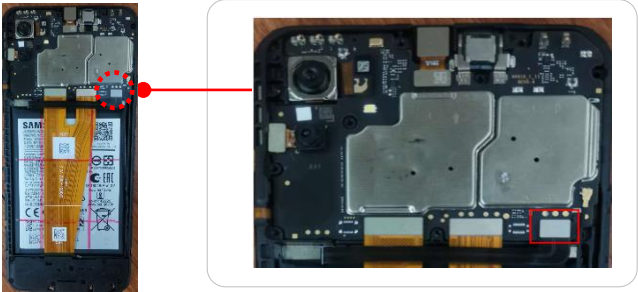
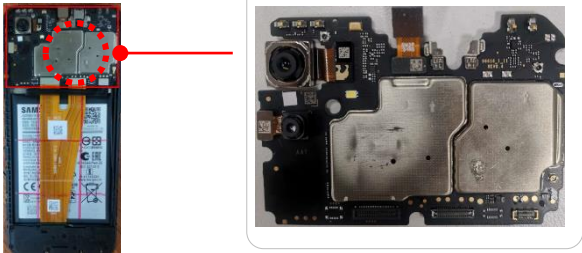
Image	Description
	<p>If it's ok in the mic sealing test (if the voice wasn't heard in 2nd test),</p> <p>2. get dumps while calling.</p> <ul style="list-style-type: none">- *#9900#- Debug Level : LOW → MID- Silent log : off → on (Audio_DSP select)- Call test
	<p>2. get dumps while calling</p> <ul style="list-style-type: none">- After finishing test- *#9900#- Run dumpstate/logcat/modem log- Copy to sdcard(include CP Ramdump)- After finishing copy dumps, share the log folder to SAMSUNG.
	<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 SM-A045' from the GSPN.
	<p>[Attention]</p> <p>4. Disconnect Battery Connector at first.</p>

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

Image	Description
 <p>2nd mic rubber</p> <p>1st mic rubber</p>	<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 front assy.</p> <p>- Mic rubber is damaged.</p>
	<p>6. Change mic sealing rubber if there was a problem.</p>
	<p>7. Swap the SUB and check that works well.</p>
	<p>8. Swap tha main PBA and check that works well.</p>

6-6-1. Sensors and Sensor Hub Problem

- 1) Symptom
- Description : Any or all Sensors do not work. (6Axis, Magnetic, Barometer, Proximity/Ambient Light)
- 2) Defect Decision Conditions
- Description : No response.
- 3) Repair Guide
- Caution : Disconnect battery connector first when it shows.

Image	Description
	<div>1. Disassemble the device.</div> <div>- Refer to '<u>Disassembly and assembly video guide for SM-A045'</u> from the GSPN.</div>
	<div>[Attention]</div> <div>2. Disconnect Battery Connector at first.</div>
	<div>3. Exchange the PBA with new one and check the device.</div>

6-7. Connectivity (Wi-Fi, GPS)

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 Wi-Fi signal bar than normal device.
- Setting → Wi-Fi → SCAN : Number of APs is less than normal device when searching AP

3) Repair Guide

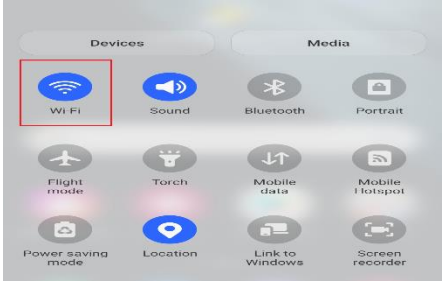

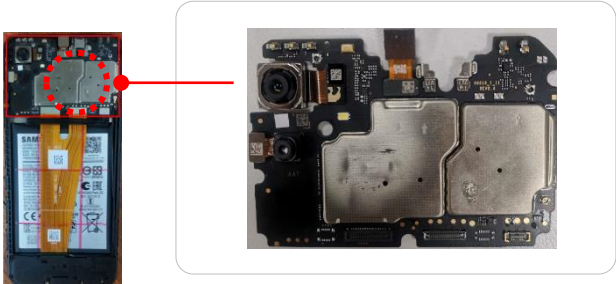
- **Caution : Disconnect battery connector first when it shows.**

Image	Description
	<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.
	<p>2. Disassemble the device.</p> <ul style="list-style-type: none">- Refer to 'Disassembly and assembly video guide for SM-A045' from the GSPN.
	<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.

6-7. Connectivity (Wi-Fi, GPS)

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6-7-1. Wi-Fi Connection Problem

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>2. Check the backglass</div> <div>- If there is a magnetic on the backglass, remove it</div>
	<div>3-1 . Replace the PBA</div>

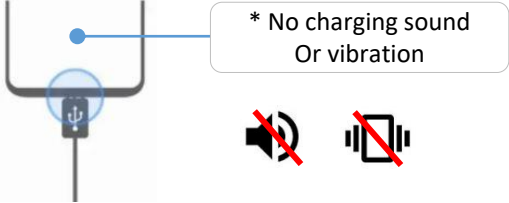


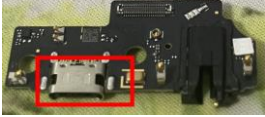

6-7. Connectivity (Wi-Fi, GPS)

6-7-2. GPS Problem

- 1) Symptom
- Description : Description : Received GPS signal problem after GPS On.

- 2) Defect Decision Conditions
- The phone shows GPS on without problem after rebooting.
 - But It won't receive GPS signal after GPS On.
 - Also, it shows weak performance than normal device while driving or using map

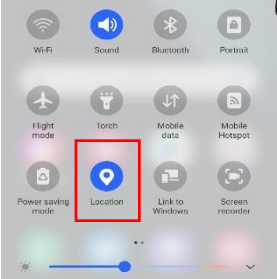
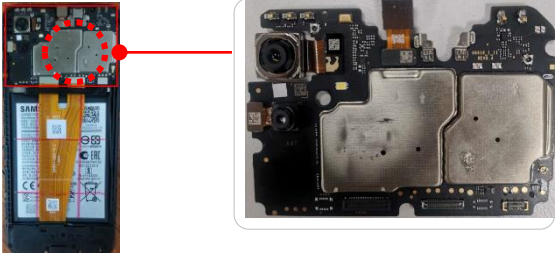
- 3) Repair Guide
- **Caution : Disconnect battery connector first when it shows.**

Image	Description
	<p>1. Check 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.
	<p>2. Disassemble the device.</p> <ul style="list-style-type: none">- Refer to '<u>Disassembly and assembly video guide for SM-A045</u>' from the GSPN.
<div><p>Water indicator tripped</p><p>USB charging port burnt</p><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.

6-7. Connectivity (Wi-Fi, GPS)

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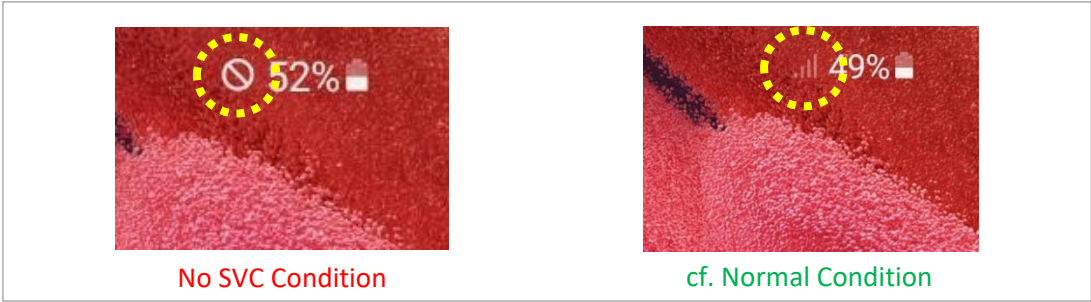
6-7-2. GPS Problem

Image	Description
	1-1. Check GPS is working properly - Setting - enable GPS function
	1-2. If not, replace 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.


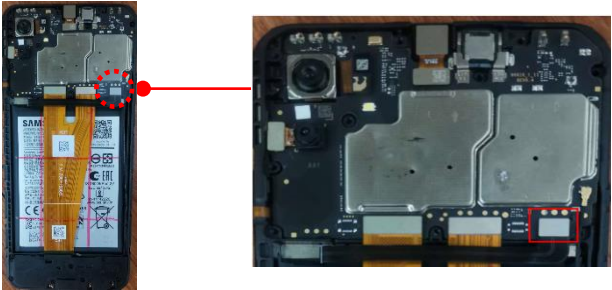


2) Defect Decision Conditions

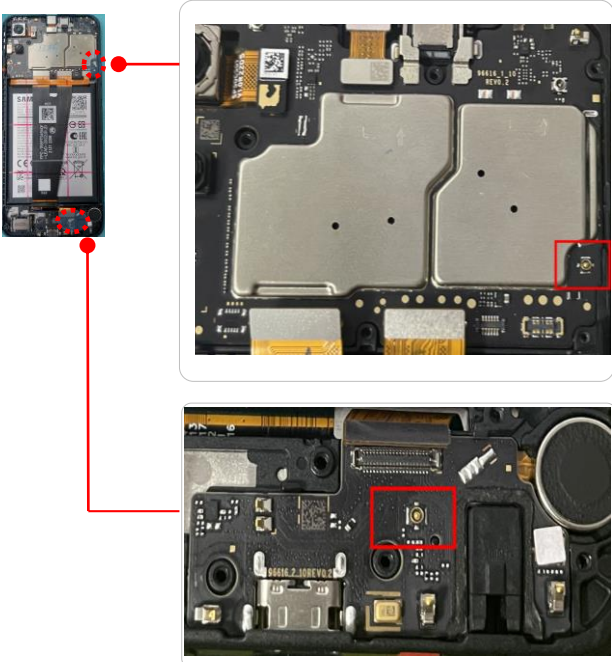
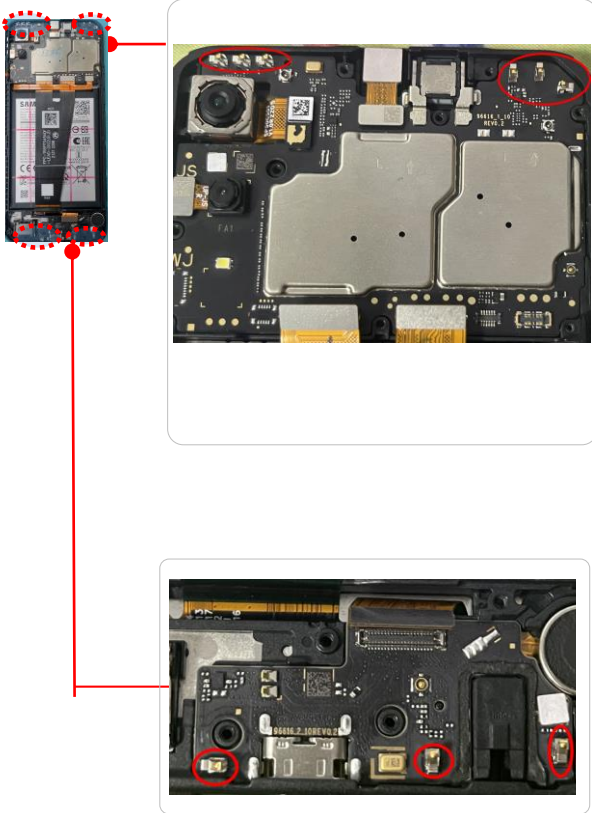
- The phone continues to show this prohibition mark after rebooting or turning on and off airplane mode.
- Other phones around the phone maintain the normal condition.

3) Repair Guide

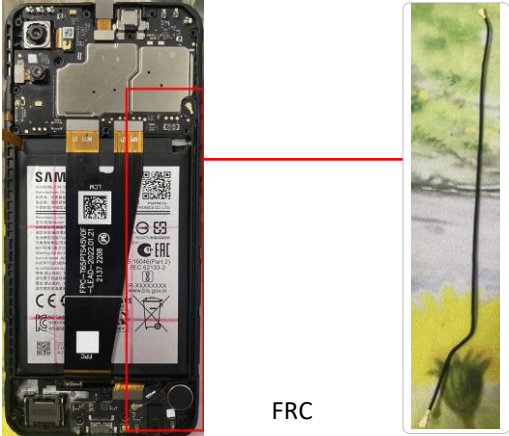
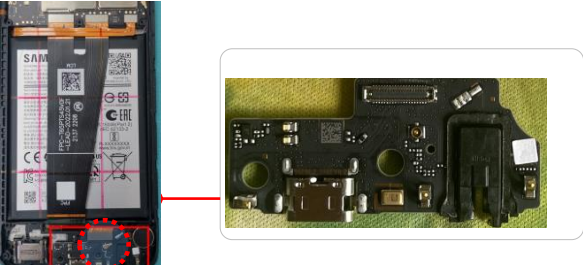
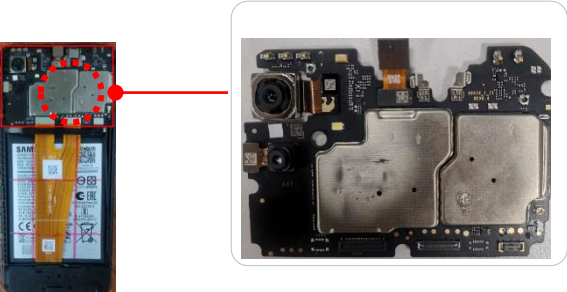
- **Caution : Disconnect battery connector first when it shows.**

Image	Description
	1. Disassemble the device. - Refer to ' <u>Disassembly and assembly video guide for SM-A045</u> ' from the GSPN.
	[Attention] 2. Disconnect Battery Connector at first.

6-8-1. NO SVC

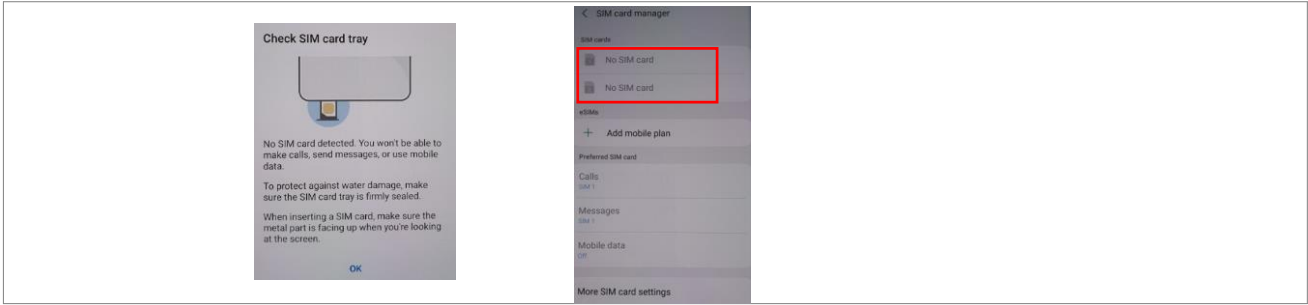
Image	Description
	<p>3. Check Antenna FPCB connectors are OK.</p> <p>Also, check FPCB condition.</p> <ul style="list-style-type: none">- Broken traces and others.- Little particles or dust which can disturb connections.
	<p>4. Check Antenna C-clip is damaged.</p> <p>Also, check antenna contact points.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

6-8-1. NO SVC

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

6-9-1. Abnormal USIM

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


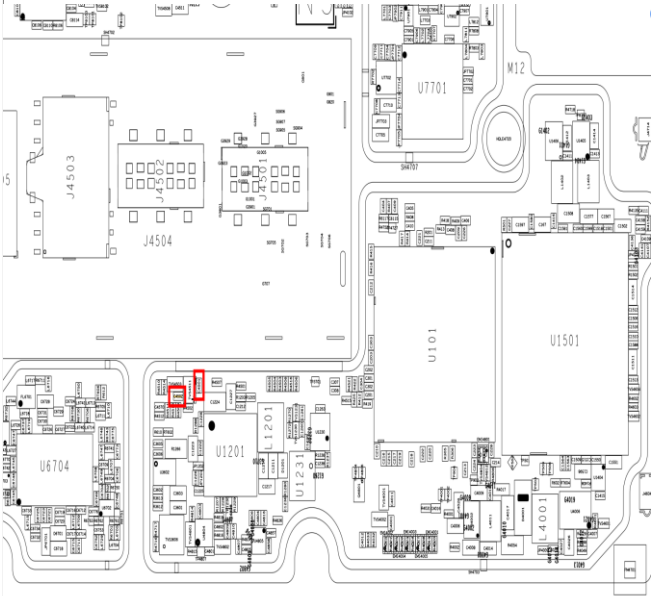
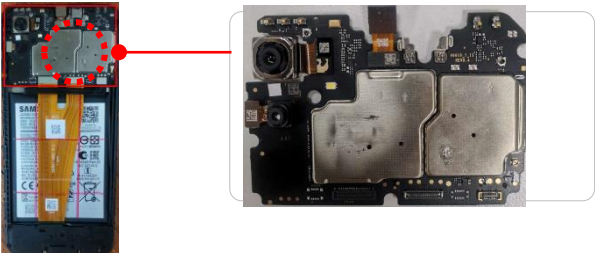


- 2) Defect Decision Conditions
 - Description : The changed SIM card is not recognized.

- 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>2. Disassemble the device.<ul style="list-style-type: none">- Refer to 'Disassembly and assembly video guide for SM-A045' from the GSPN.</div>
	<div>[Attention] 3. Disconnect Battery Connector (Ref. SOC11003) at first.</div>

6-9-1. Abnormal USIM

Image	Description
	<p>4. Check the Sub FPCB for cracks or damage. Replace the Sub FPCB with new one and check the device.</p>
	<p>5. Check the voltage of PBA</p> <ul style="list-style-type: none">- C4501 = 1.8 or 3.0V- C4502 = 1.8 or 3.0V
	<p>6. If the voltage is 1.8V or 3.0V, replace the PBA</p>

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