New Product SVC Guide
[SM-J510FN]

Rev 2.7

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SAMSUNG ELECTRONICS

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Contents

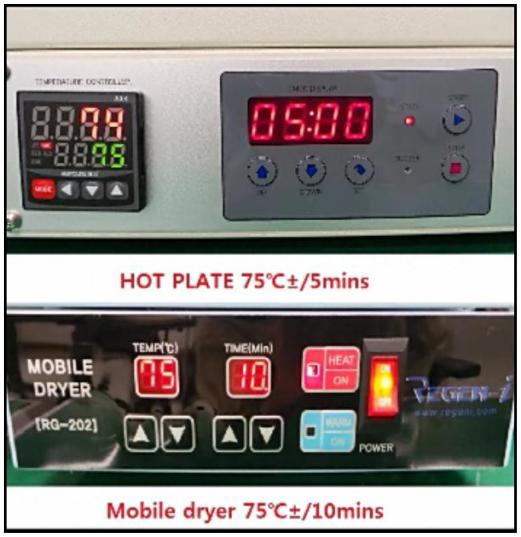
Specification

Item	Spec.		
AP Chipset	Vendor	Cores	Speed
	Qualcomm	Quad-core	1.2 Ghz
Memory	RAM	Flash	
	2GB	16GB	
Display	Size	Resolution	Type
	5.2 inch	720 X 1280, HD	Super AMOLED
CAMERA	Resolution (Main/Front)	Auto Focus(Main)	Video (Main)
	13MP / 5MP	Phase detection	1080p @ 30fps
Network	2G/3G	LTE	
	Support	800/850/900/1800/2100/2600	Cat 4(50Mbps UL / 150Mbps DL)
Sensors	Accelerometer, Proximity, Grip, magnetic (view cover)		
Connectivity	Bluetooth 4.1, WIFI b/g/n, NFC, USB2.0		
Battery & GPS	3,100mAh	A-GPS & GLONASS	
Micro SD & OS	Up to 128GB	Android V6.0 (MM)	
Remarks	New Pocket Type : -	Water Resistance : -	

Disassembly & Reassembly

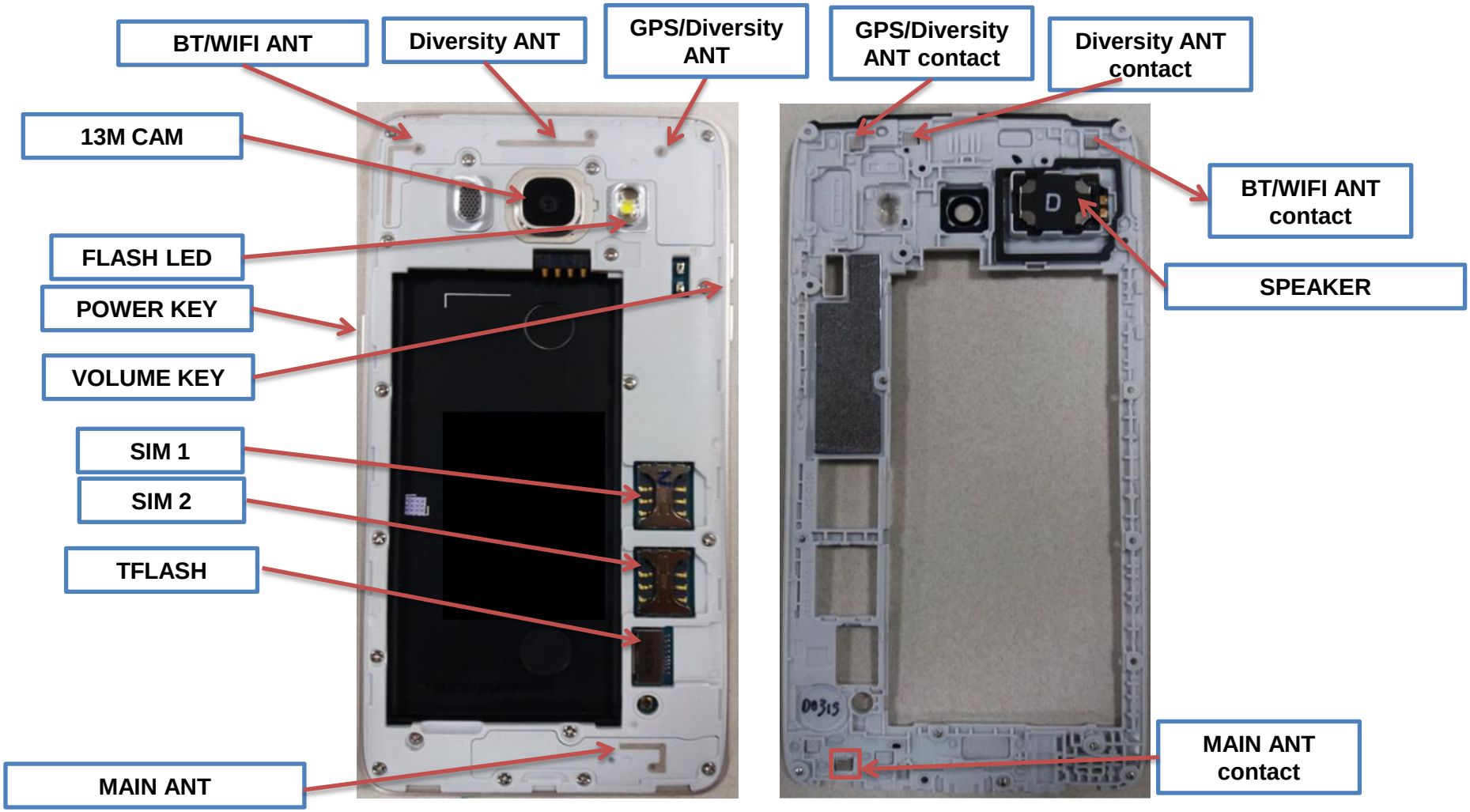
Disassembly & Reassembly

Important management points



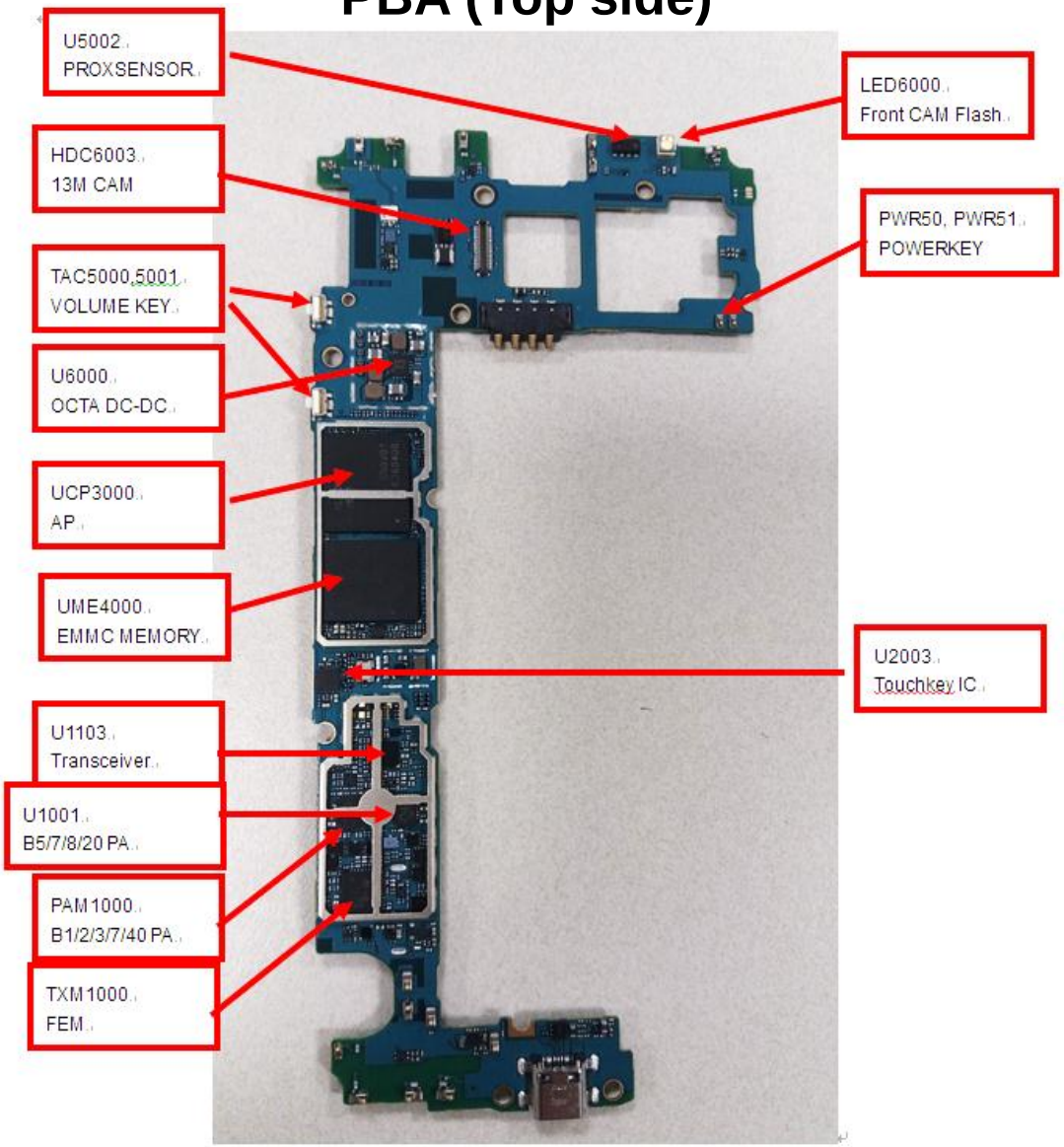
Parts Layout

Rear Case



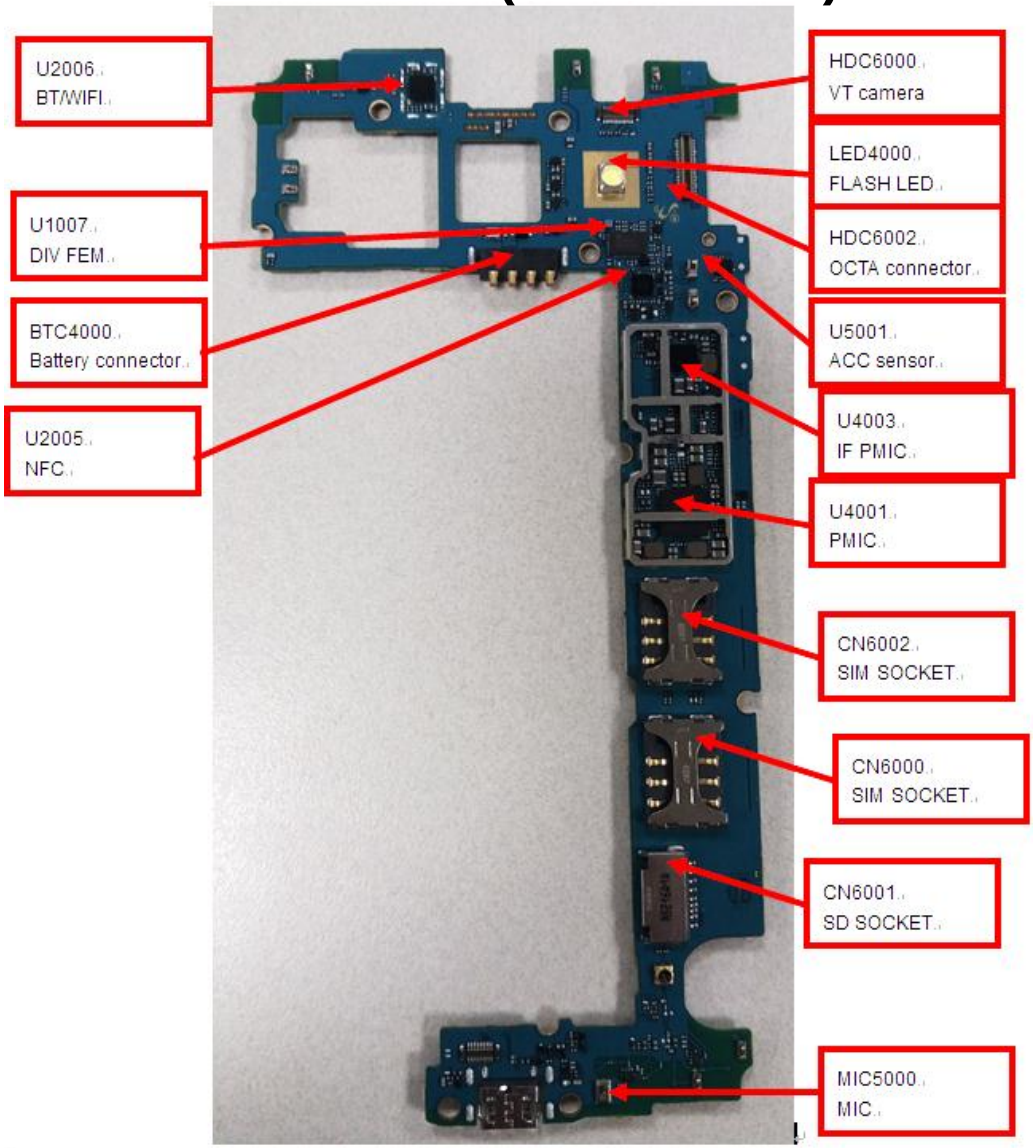
Parts Layout

PBA (Top side)



Parts Layout

PBA (Bottom side)



Troubleshooting

No Power

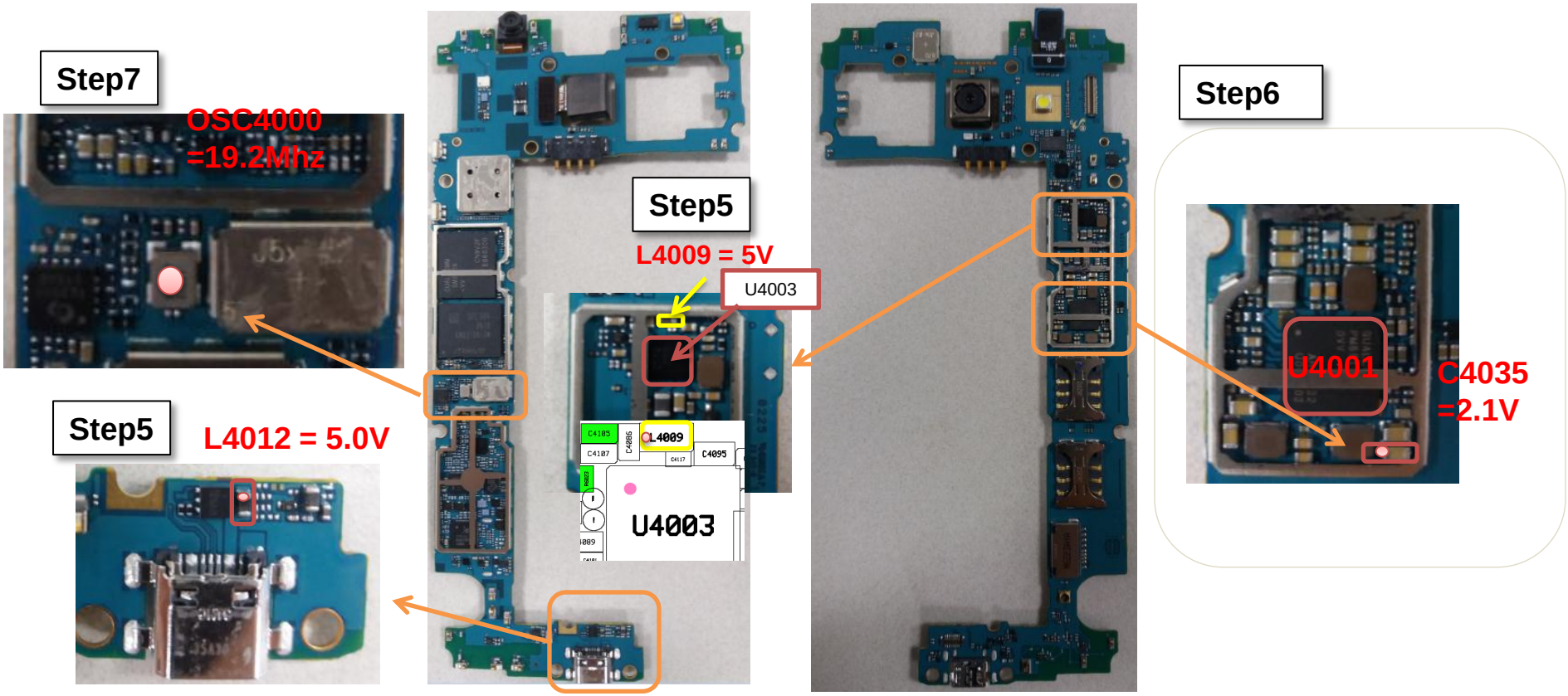
Step	Check point	Result value	Defect point
1	Confirm the defect symptom	-	-
2	** Analyse reasons of No-Power using **the Power & Current test jig** **Power** test mode. 	PASS	Battery, Battery terminal, Physical Key
		Leakage Current fail	Go to **the** step 2.1
		Power On Current fail	Go to the step 3
2.1	Check the Resistance between JIG Power V_Battery / VPH_PWR/ V_BAT and Ground. (C4009,C4083)	Normal (Over dozens of KΩ)	Go to the step 5
		Abnormal	Capacitors for ESD protection
3	It's possible to enter the download mode?	Yes	Go to the step 3.1
		No	Go to the step4
3.1	Check if it's rooted.	Rooted	OOW
		Normal	S/W update
4	Try to do the boot recovery.	Pass	Go to the step 3
		Fail	Go to the step 5
5	Check the voltage of L4012	L4012, L4009 = 5V	Go to the step 6
		If not the correct value	Replace the U4003
6	Check the voltage of C4035(=PMIC Output)	C4035 = 2.1V	Go to the step 7
		If not the correct value	Replace the U4001

**** Usage guide of the Power & Current test jig has been uploaded at GSPN. (Power & Current Tester_Rev4_141226.pdf)**

Troubleshooting

No Power (cont')

Step	Check point	Result value	Defect point
7	Check the frequency of OSC4000	19.2MHz	Main chip (UCP3000-1)
		If not the correct value	X-TAL (OSC4000)



Troubleshooting

Power on but no operation (freezing)

Step	Check point	Result value	Defect point
1	Confirm the defect symptom	-	-
2	* * Analyse reasons of No-Power using **the Power & Current test jig**.	PASS	Go to the step 1
		Leakage Current fail	Refer to the No-power Troubleshooting
		Power On Current fail	Go to the step 2.1
2.1	Try to do the boot recovery.	Solved	Boot area in S/W
		Not solved	Go to the step 7
3	It's possible to enter the download mode?	Yes	Go to the step 3.1
		No	Go to the step 4
3.1	Check if it's rooted.	Rooted	OOW
		Normal	Go to the step 4
4	Enter the safe mode, and check if powers up.	Solved	3rd party Apps.
		Not solved	Go to the step 5
5	Perform full reset.	Solved	S/W or 3rd party Apps
		Not solved	Go to the step 6
6	Upgrade software to the latest version.	Solved	S/W
		Not solved	Go to the step 7
7	Check the voltage of C4052(eMMC)	C4052 = 1.8V	PBA
		If not the correct value	Replace the eMCP(eMMC)

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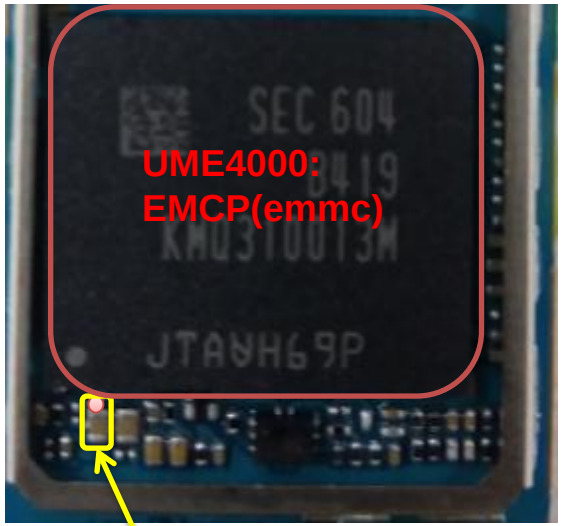
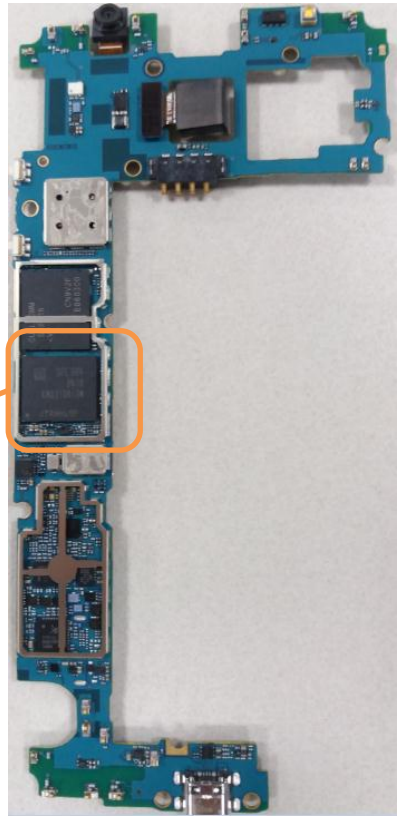
Troubleshooting

Power on but no operation (freezing)

Step 7





Troubleshooting

No Charging

Step	Check point	Result value	Defect point
1	Confirm the defect symptom	-	-
2	Replace a battery.	Solved	Go to the step 2.1
		Not solved	Go to the step 3
2.1	Charge the customer battery during 5min at least.	Solved	Totally discharged battery
		Not solved	Battery
3	** Analyse reasons of No-Charging using **the Power & Current test jig Charging test mode** with no defect charger. (Test battery voltage should be below 85%)	PASS	Go to the step 4
		FAIL	Go to the step 5
4	** Test a customer's charger using **the Power & Current test jig TA test mode**.	PASS	Go to the step 1
		FAIL	Customer's Charger
5	Disassemble and check I/F connector visually	Dust	Clean I/F connector
		Damage	Replace I/F connector
		Normal	Go to the step 6
6	Check the voltage of C4086	C4086 = 5V	Go to the step 7
		If not the correct value	may not connected charger
7	Check the voltage of L4009	L4009, L4012 = 5V	Replace the U4003
		If not the correct value	Replace the L4009, L4012

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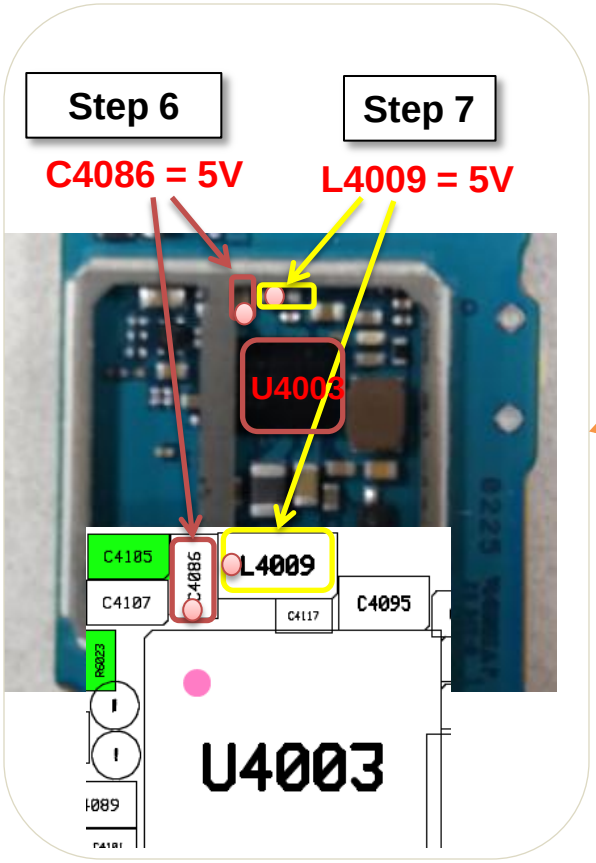
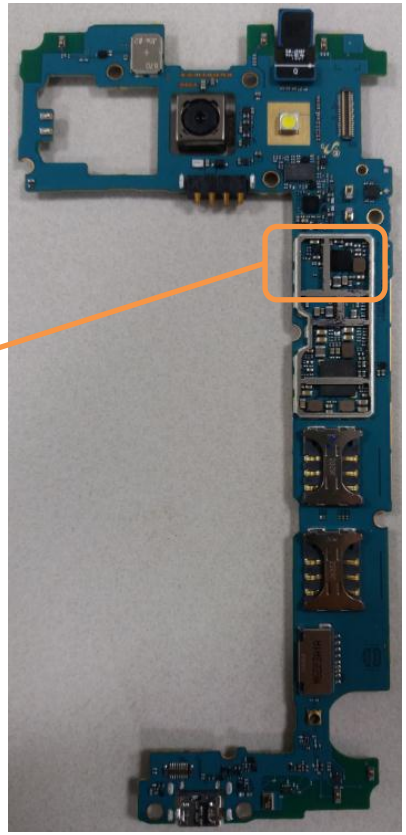
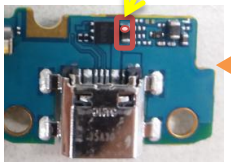
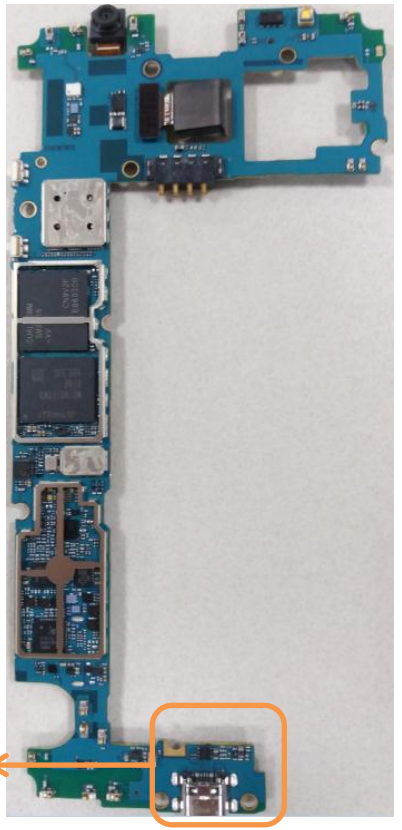
Troubleshooting

No Charging









Troubleshooting

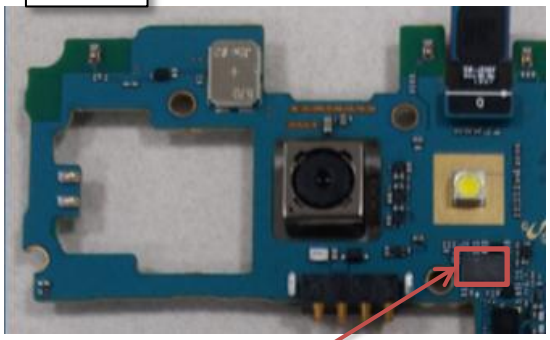
Call Problem (with RF equipment)

Step	Check point	Result value		Defect point
1	Confirm the defect symptom	-		-
2	RF radiation test	Pass		Network or Settings
		Fail		Go to the next step
3	RF calibration	Pass		Go to the step 4
		Fail		Go to the step 5
4	RF radiation test	Pass		Repaired
		Fail		Except PBA (Coaxial cable, Antenna, Shielding condition)
5	A type of failure LB PAM(U1001) TRANSCEIVER(U1103) TXMODULE(TXM1000) MB/HB PAM(PAM1000) LFEM(U1007) FILTER(F1007: B1) FILTER(F1009: B3, DCS) FILTER(F1004: B40) FILTER(F1006: B7) FILTER(F1008: B2, PCS) FILTER(F1002: B5, GSM850) FILTER(F1001: B8, GSM900) FILTER(F1000: B20)	TX	2G	LB PAM,TRANSCEIVER, TXMODULE, FILTERs
			3G	MB/HB PAM,TRANSCEIVER, TXMODULE, FILTERs
			LTE	MB/HB PAM,TRANSCEIVER, TXMODULE, FILTERs
		RX	2G	TXMODULE, TRANSCEIVER, LFEM, FILTERs
			3G	TXMODULE, TRANSCEIVER, LFEM, FILTERs
			LTE	TXMODULE, TRANSCEIVER, LFEM, FILTERs

Troubleshooting

Call Problem

Step5



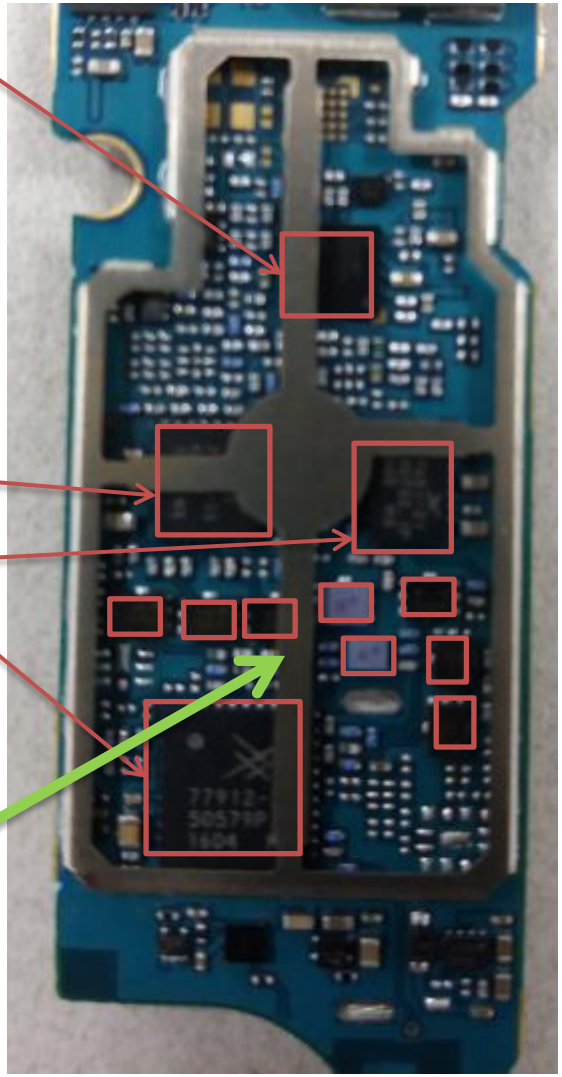
U1103 (Transceiver)

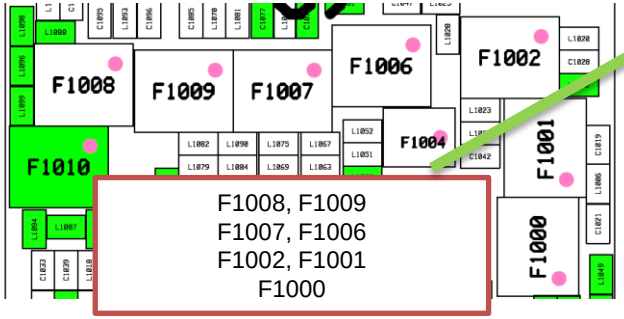
U1007 (LFEM)

PAM1000

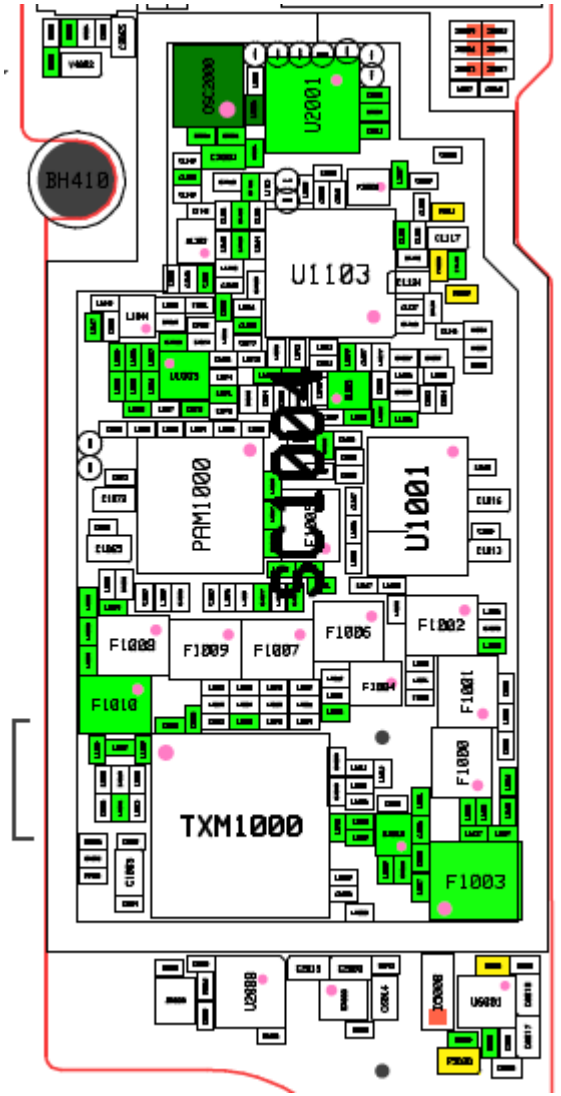
U1001 (LB PAM)

TXM1000





F1008, F1009
F1007, F1006
F1002, F1001
F1000



Call Problem (without RF equipment)

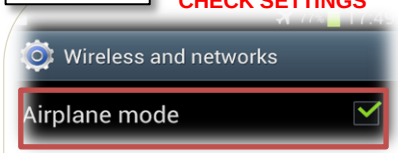
Step	Check point	Result value	Defect point
1	Confirm the defect symptom	-	-
2	Check the settings (airplane mode, Mobile networks)	Abnormal	Settings
		Normal	Go to the next step
3	Check the debug screen *#0011# (Compare to normal device)	Abnormal	Go to the next step
		Normal	Network
4	Check the RF parts except PBA. (Antenna, Shielding condition, etc..)	Broken, dust, corrosion	RF parts
		Loose fitting	Connection
		Normal	Go to the next step
5	Check the status visually(crack, missing, Corrosion..etc) of RF components. (compare to normal PBA) TRANSCEIVER(U1103) TXMODULE(TXM1000) LB PAM(U1001) MB/HB PAM(PAM1000) APT MODULATOR(U1004)	Abnormal	RF components.
		Normal	CP(Call Processor) (UCP3000-1) CP PMIC(U4001)

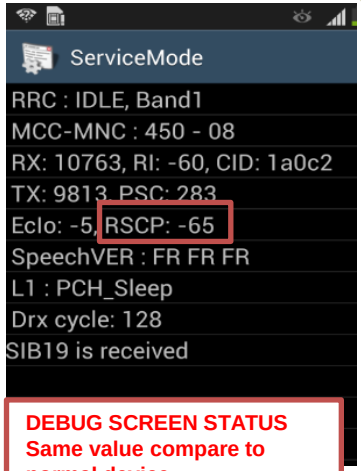
Troubleshooting

Call Problem

Step2,3

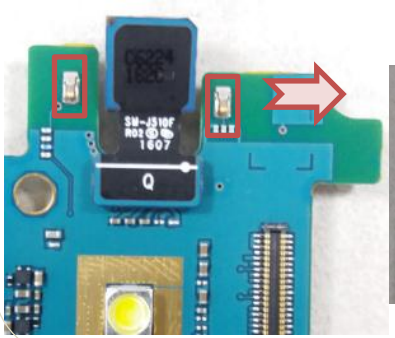
CHECK SETTINGS



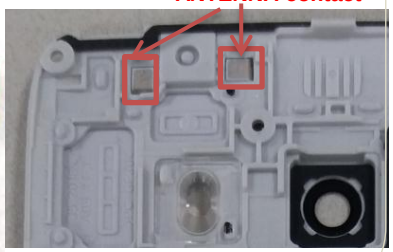


DEBUG SCREEN STATUS
Same value compare to normal device.

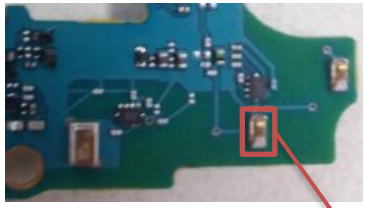
Step4



Diversity
ANTENNA contact



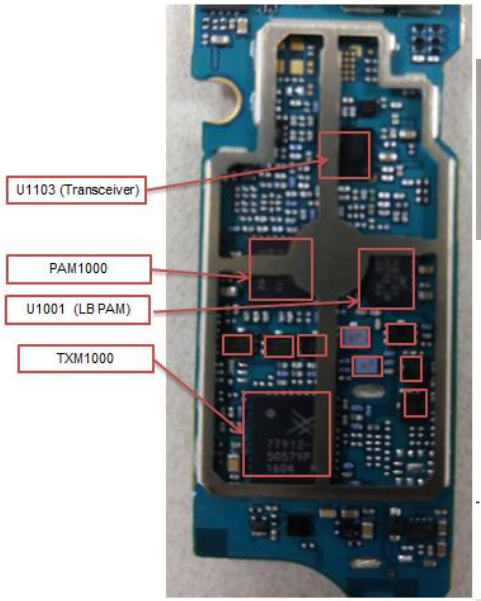
Step4

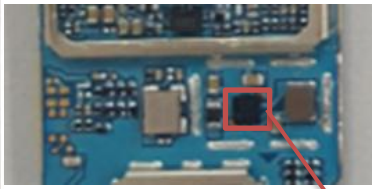


Main
ANTENNA contact

ANT. Contact (for main RF)

Step5





U1004
(APT
MODUL
ATOR)

Troubleshooting

Sound Problem

Step.	Check point	Result value	Defect point
1	Confirm the defect symptom.	-	-
2	*#0*# → speaker	No sound	Go to the next step
		Normal	S/W or Settings
3	Replace the speaker, and also replace the Assy case-rear to use a new speaker tape.	Solved	speaker
		Not solved	Go to the next step
4	Activate the speaker path. (*#0*# → Speaker)	-	-
5	Check the signal at two of speaker contacts. (Using oscilloscope) Notice : It should be measured when the speaker path is activated on.	Same signal compared with a good PBA	Go to step 6
		No signal	Go to step 7
6	Check if the SPK is contacted to PBA well, and assemble the phone again.	Solved	Assembly error
		Not solved	Go to step 3
7	Check if the SPK is contacted to PBA well, and If yes, replace the PMIC.	Solved	PMIC
		Not solved	Go to step 3

Troubleshooting

Sound Problem

Step3

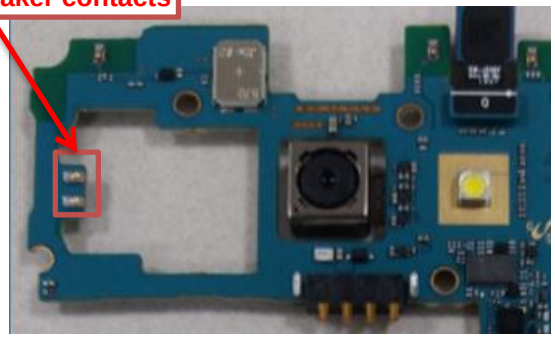
Assy case-rear

Speaker

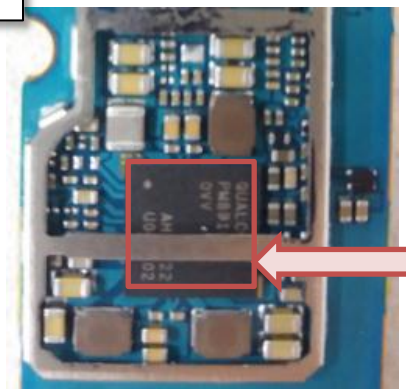
Step6

Assy PBA

Speaker contacts



Step7



U4001
PMIC

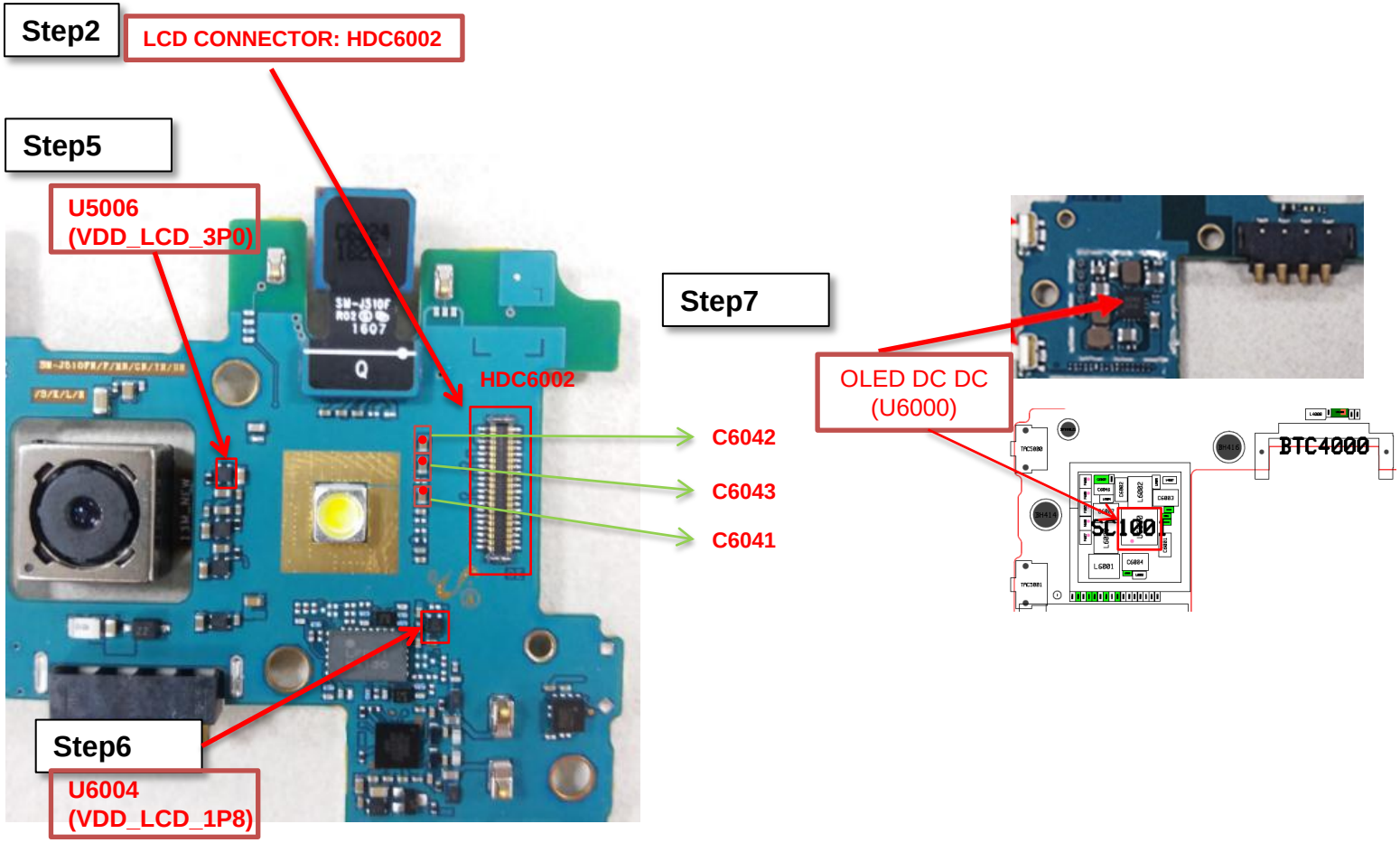
Troubleshooting

Display Problem

Step	Check point	Result value	Defect point
1	Confirm the defect symptom	-	-
2	Check the AMOLED connector (HDC6002)	Broken, dust, corrosion	AMOLED connector (HDC6002)
		Loose fitting	Connection
		Normal	Go to step 3
3	Replace the AMOLED	Solved	AMOLED
		Not solved	Go to step 4
4	Connect a AMOLED, and display on with a power supply (power supply voltage : 4.0V)	-	-
5	Check the voltage of C6039 = 3.0V Notice. It should be measured when the display is activated on	If not the correct value	LDO(U5006) (VDD_LCD_3P0)
		C6039=3.0V	Go to step 6
6	Check the voltage of C6038 = 1.8V Notice. It should be measured when the display is activated on	If not the correct value	LDO(U6004) (VDD_LCD_1P8)
		C6038=1.8V	Go to step 7
7	Check the voltage of following chips (C6051,C6052,C6050) Notice. It should be measured when the display is activated on	If not the correct value C6041 = +7.6V C6043 = 4.6V C6042 = -4.0V	OLED DC DC (U6000)

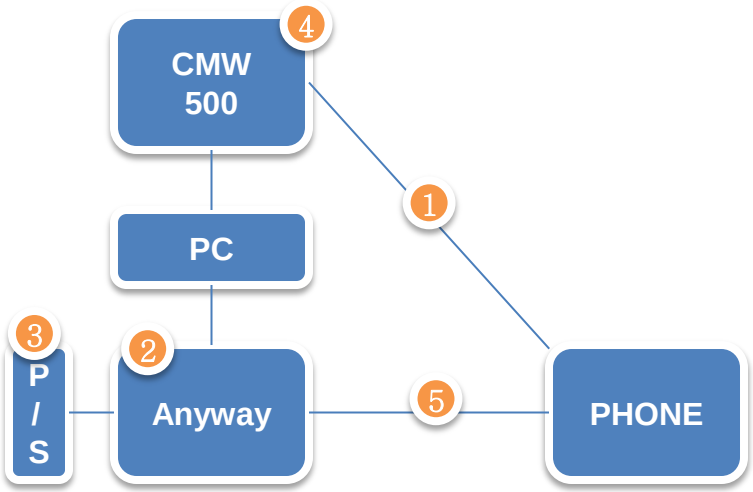
Troubleshooting

Display Problem



RF Calibration Preparation

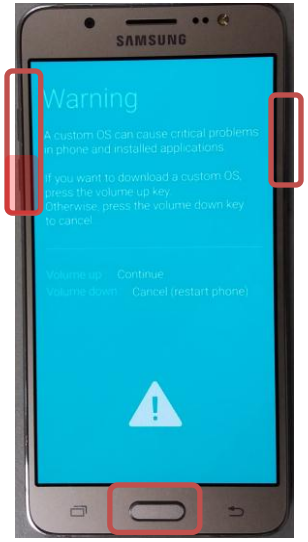
Item	Quantity	Code
1 RF cable (Instrument to divider)	1	GH81-11962G
2 Anyway JIG	1	-
3 Power Supply	1	E3632A
4 RF Equipment	1	CMW500
5 IF cable	1	GH81 – 10952A
Connection Diagram		



S/W Download

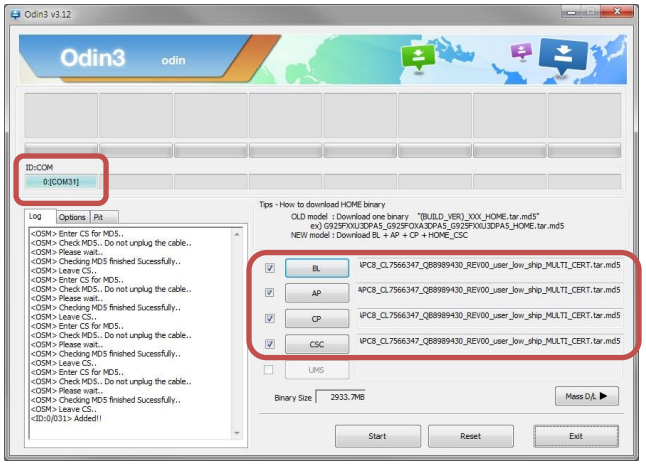
How to enter the S/W download mode

1. Turn off the device
2. Press 3 buttons simultaneously
   (Volume down + Home + Power on)
3. Press volume up button after ‘Warning’ message.
4. Connect the USB cable after ‘Downloading’ message.



How to download S/W

1. Run the Odin tool with 3.11+ and check the device is connected to Odin.
2. Select each 4 S/W files.
   (BL,AP,CP,CSC)
3. Press the start button in the Odin.
4. Automatically reboot the phone when the downloading is completed.



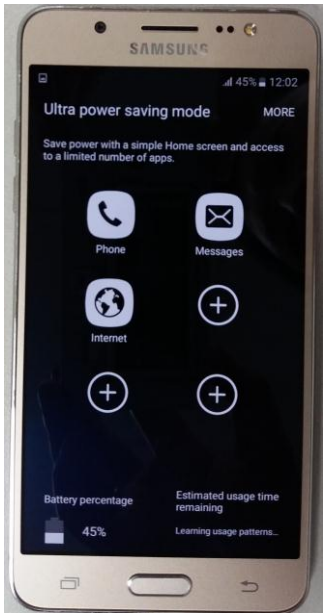
Hard reset : press Volume Down+Power key during 7 sec.

Ultra power saving mode

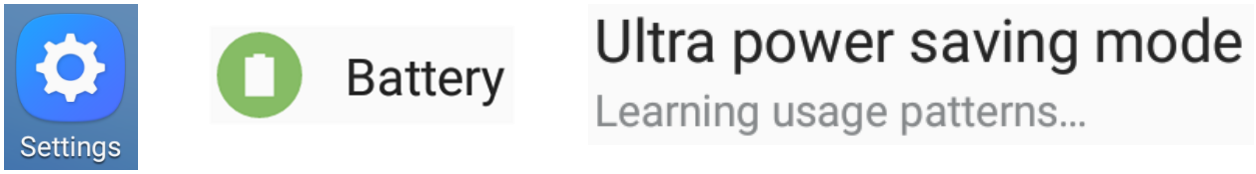
No more need to worry

Power Saving Mode
(+Ultra Power Saving Mode)
Enhancing power for important situations

Use the Power Saving Mode to save and extend your battery life so you no longer have to worry about missing important calls when your phone is running low on battery. In addition, the new Ultra Power Saving Mode changes your screen to black and white and shuts down all unnecessary features to dramatically minimize battery consumption.



Entering Path :



Settings → Battery → Ultra power saving mode

Camera

Smarter 'Selfie' Functions

Enjoy Selfie with better quality and with more friend

Wide selfie

Perfect for group selfie & splendid scenery

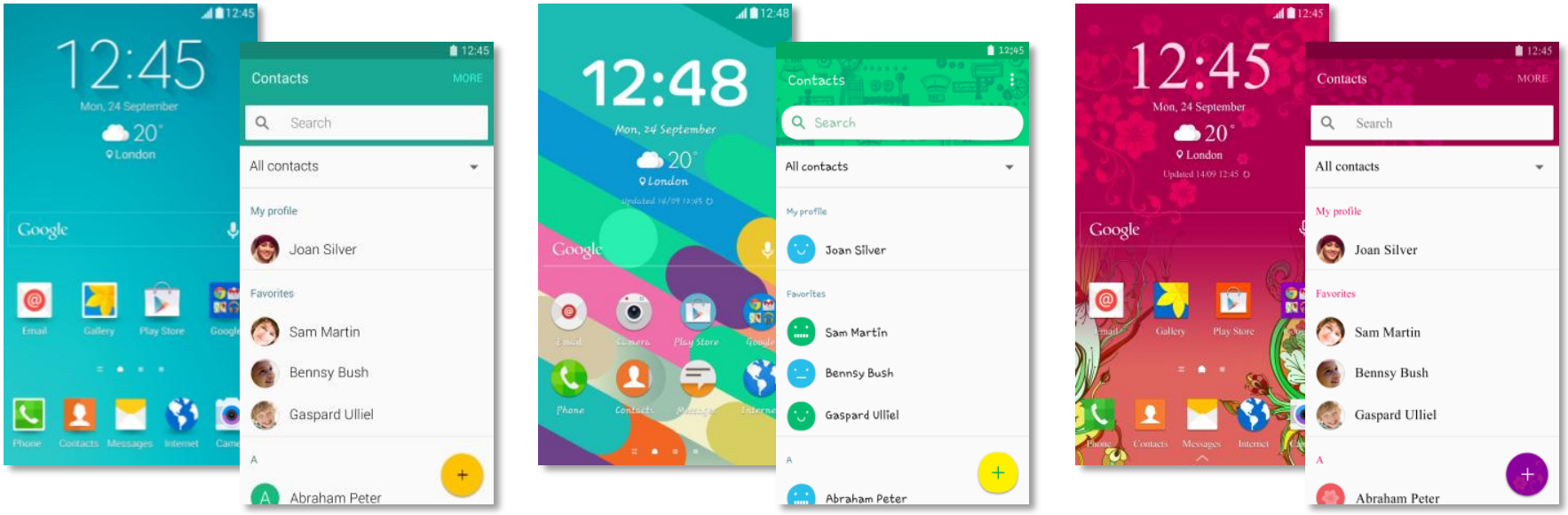
Palm gesture selfie

Take selfie automatically with palm gesture

Entering Path : CAMERA

Downloadable Themes

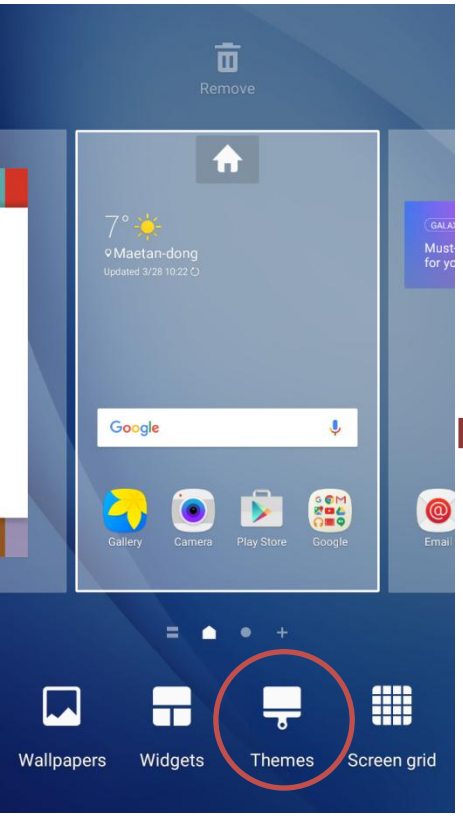
Home Screen, Lock Screen and preinstalled applications can be customized with downloadable themes.

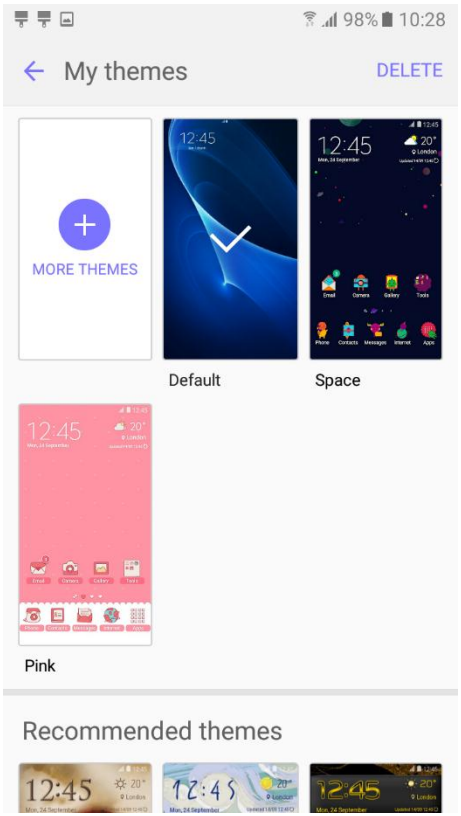


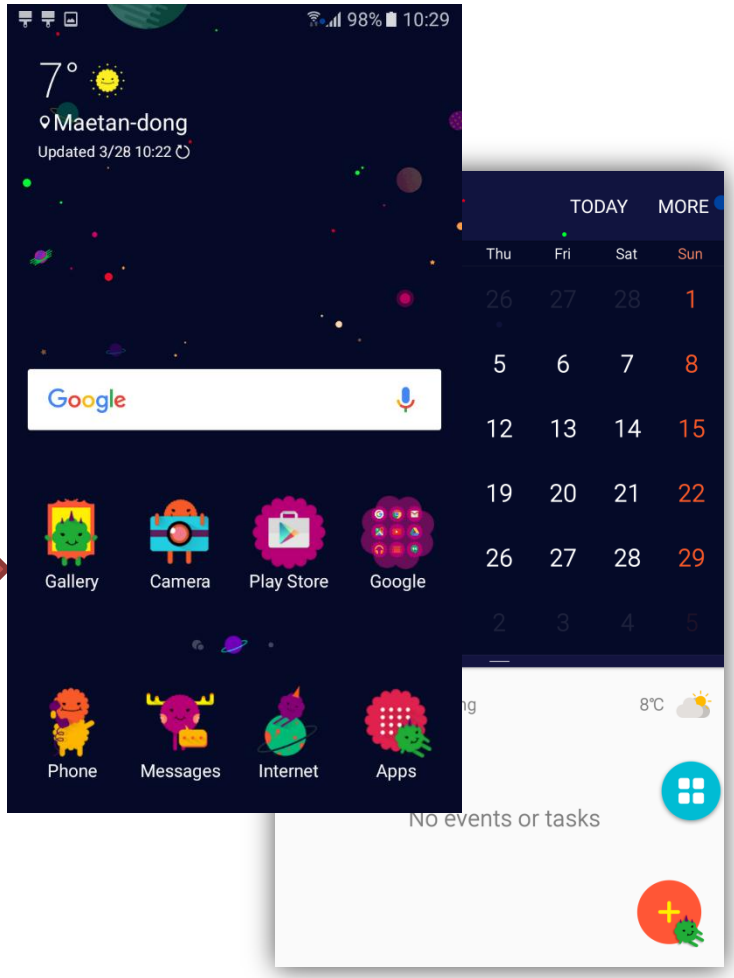
Key Features

Downloadable Themes

To change theme, long press empty space on the Home Screen and tap “Themes”. More themes can be downloaded from Theme Store.





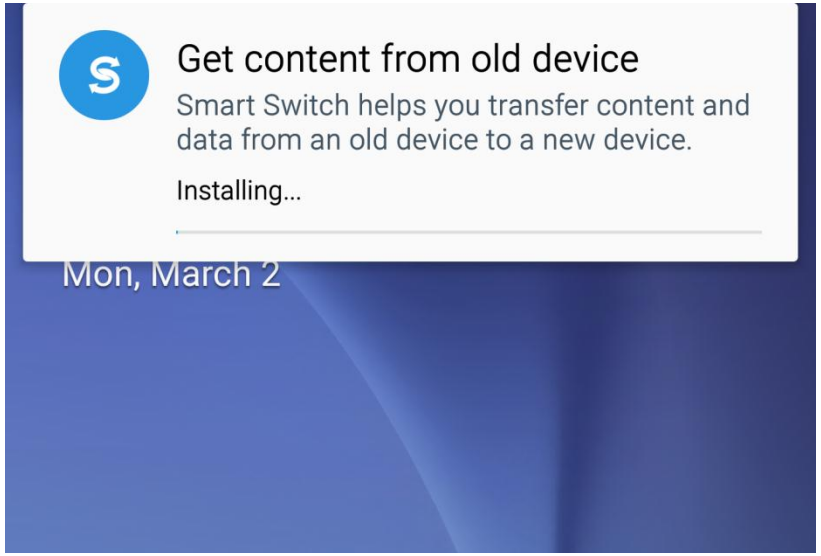


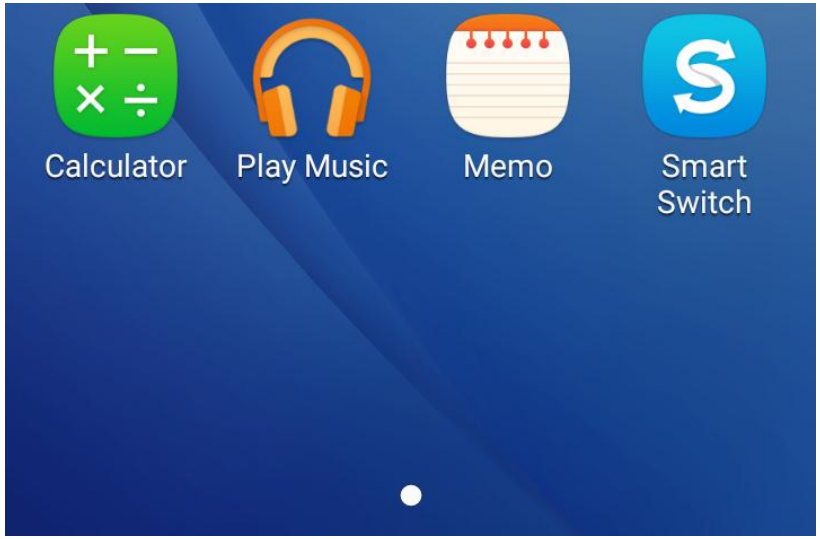
Smart Switch

Smart Switch helps switching to a new phone by transferring data from old device.

Supports importing data from either Android or iOS devices.

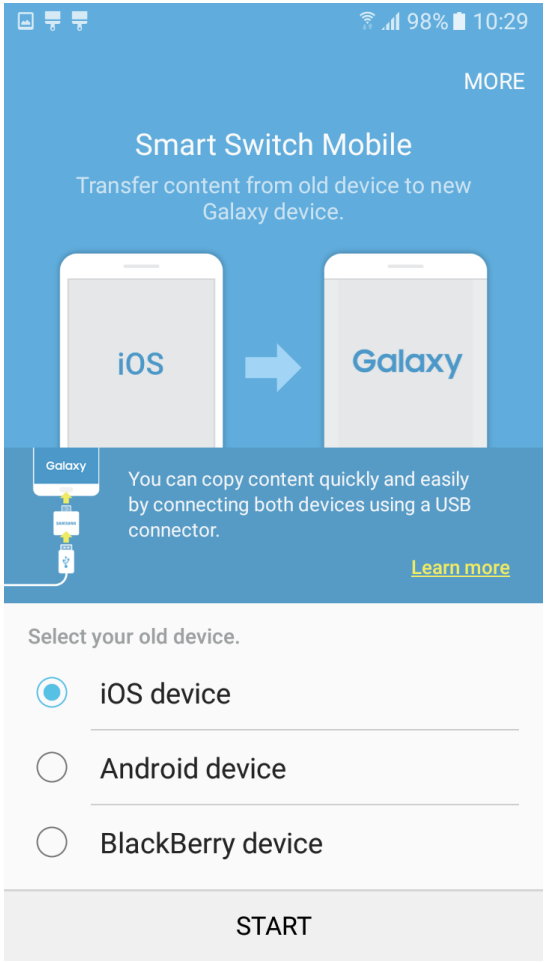
After user set up Zero device for the first time, he receive notification suggesting to install Smart Switch to initiate data transfer

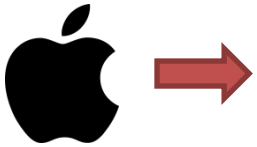


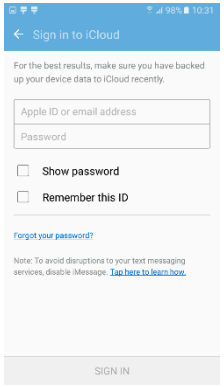


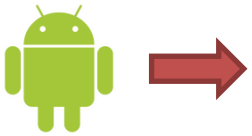
Key Features

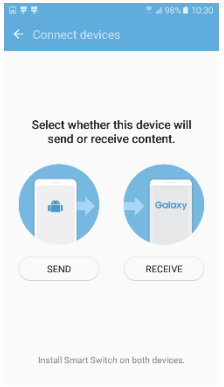
Smart Switch

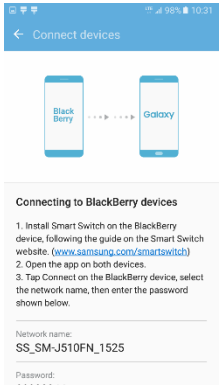










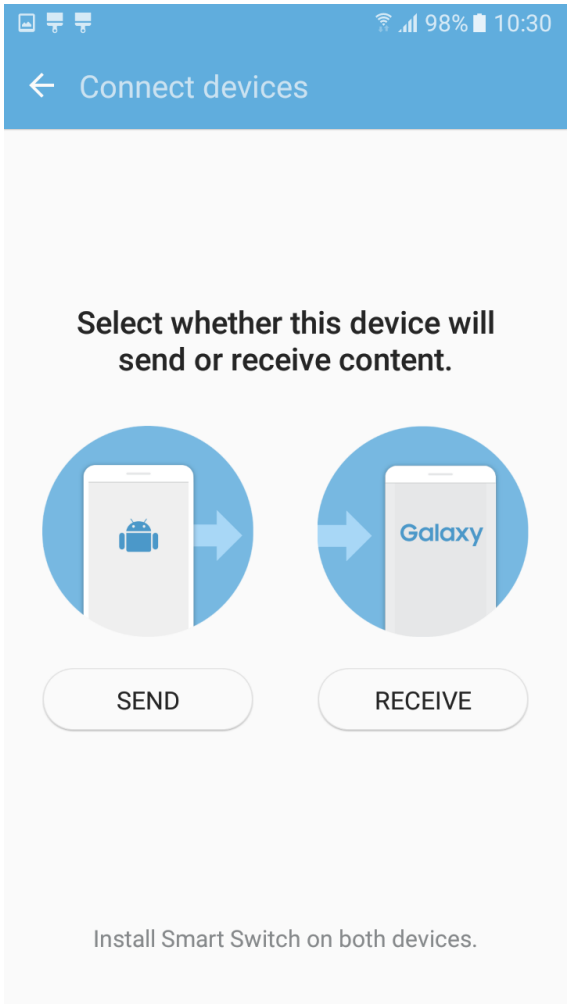


Key Features

Smart Switch

1. Install Smart Switch on sending device.
2. Press “SEND” on sending device and “RECEIVE” on receiving device.

The devices would pair through audio signal and initiate data transfer.



SVC Technical Information

Basic Information

AP Chipset	CP Chipset	IF Cable	RF Cable	RF Divider
Qualcomm MSM8916		GH81-10952A (7PIN)	GH81-11962G (pi : 1.35T)	-

Charger Spec	Charging Current Standard	New Pocket Type	Water Resistance
Adaptor (5.0 V-1.55A)	650~1550mA	-	-

SVC Jig List for SM-J510

Item	Code	Item	Code
Mobile Dryer	GH81-11901B	ACRYL JIG REWORK FOAM	GH81-12065A
Hot Plate	GH81-12712E	OCTA Disass'y Jig Upper	GH81-12833A
OCTA Disass'y Holder	GH81-12119A	Double Sided Tape	GH81-12126A
Glass Absorber	GH81-11902A	Pressing JIG Body	GH81-11903A
TSP tape Attaching JIG	GH81-11905A	Pressing Pad(for OCTA)	**GH81-13537P**