

New Product SVC Guide

[SM-A320F]

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Specification

Item	Spec.		
AP Chipset	Vendor	Cores	Speed
	LSI	Octa-core	1.6 Ghz
Memory	RAM		Flash
	2GB		16GB
Display	Size	Resolution	Type
	4.7 inch	720 X 1280, HD	Super AMOLED
CAMERA	Resolution (Main/Front)	Auto Focus	Video (Main)
	13MP / 8MP	Contrast AF	1080p @ 60fps
Network	2G/3G	LTE	
	Support	800/850/900/1800/1900/2100/2600	Cat6 (50Mbps UL / 300Mbps DL)
Sensors	Accelerometer, Barometer, Fingerprint, Gyro, Geomagnetic, Hall, RGB Light, Proximity		
	New :		
Connectivity	Bluetooth 4.2, WIFI a/b/g/n/ac, NFC, USB2.0, USB C-type, MST		
Battery & GPS	2,350mAh		A-GPS & GLONASS
Micro SD & OS	Up to 256GB		Android V6.0 (MM)
Remark	Back glass Type		Water Resistance : IP68

Disassembly & Reassembly



Disassembly & Reassembly

Important management points

Disassembly

1

Heating condition of back glass disassembly
 - SOC 68% ↓ : 70°C, 10~20min
 - SOC 68% ↑ : 60°C, 10~20min



2

1) Unscrew 9 Point
 2) disassemble SIM Tray from device



⚠ Caution

1) Be care of scratch

⚠ Caution

1) Be care of scratch

7

Detach All connectors. (7 Point)
 - Sensor / Battery / OCTA / Power key / Home key / Touch key / Earjack



⚠ Caution

1) Be care of connector/cable damage

8

1) Detach Main PBA from Front



⚠ Caution

1) Be care of PBA damage

Reassembly

1

Attach and then Press Home key on Front.



⚠ Caution

1) Be care of Homekey FPCB connector
 2) Be care of press power/time

2

Attach Battery on Front.

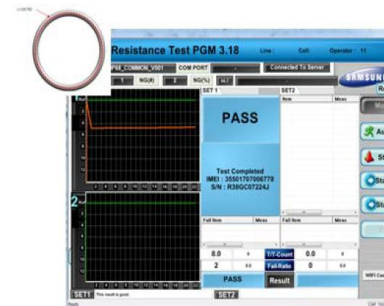


⚠ Caution

1) Be care of tilt

15

Use O-ring(GH81-14271A) on IF CON
 Reassemble & Re WRT

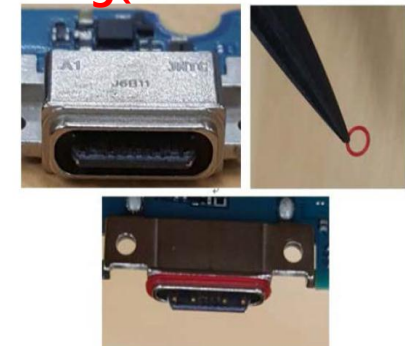


⚠ Caution

1) Be care of scratch.

16

Remove USB Dispensing on PBA.
 Insert O-Ring on PBA



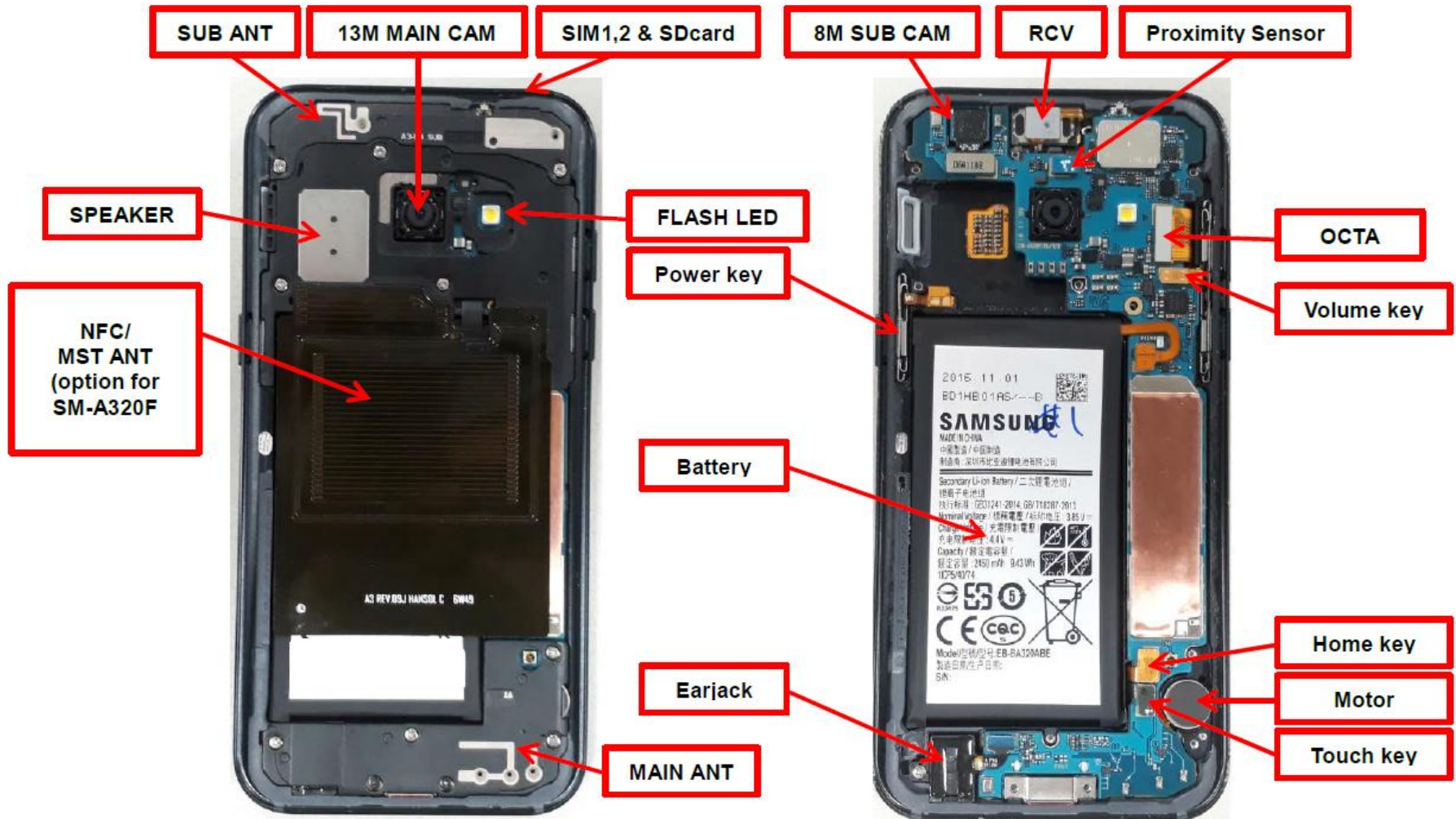
⚠ Caution

1) Be care not to damage the PBA

O-ring(GH81-14271A)

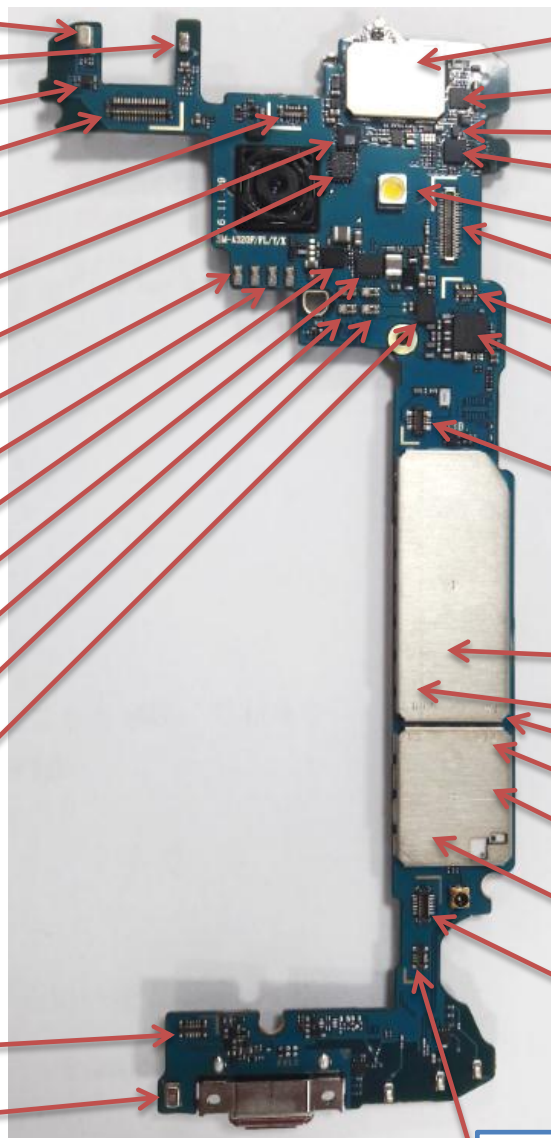
Parts Layout

Rear Case



Parts Layout

PBA (Top side)



MIC6000
Sub MIC

ANT2002
LB Sub ANT contact

U3001
GPS AMP

U7006
VT Camera Connector

HDC6000
Proxy/RGB Connector

U6006
Pressure Sensor

U7007
6 Axis Sensor(Gyro & ACC)

ANT6002/6003
Speaker Contact

ANT5000/5003
PowerKey Contact

U5000
Flash Driver IC

U3008
MST Driver IC

ANT3002/3003
NFC ANT Contact

ANT3000/3001
MST ANT Contact

U3008
MST Driver IC

HDC6002
Earjack Connector

MIC6001
Main MIC

U3004 (in Shieldcan)
BT/WIFI IC

U7008
WIFI 5G IC

U6009
Compass Sensor

U6008
Sensor HUB

LED5000
Flash IC

HDC7002
OCTA Connector

HDC5000
Volume key Connector

U3003
MST Driver IC

HDC7000
Battery Connector

U5004 (in Shieldcan)
PMIC

OSC50000 (in Shieldcan)
32kHz

U1007 (in Shieldcan)
APT module

F1004 (in Shieldcan)
B28 Duplex

U1005 (in Shieldcan)
FEMid

U1009 (in Shieldcan)
GSM Quad MMB PA

HDC903
Finger Sensor Connector

HDC7001
SUB Touch Connector

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Parts Layout

PBA (Bottom side)



SIM5000
SD_SIM connector

ANT3007
WIFI 5G Antenna contact

ANT6001/6002
RCV contact

HDC7004
13M camera Connector

U7001
HD OCTA DC-DC

U5003
IF PMIC

U5002
OVP

UCP400
AP_CP with POP Memory

UME5000
16GB eMMC

U2002
RFIC

U1008
HighBand PA

U7002
Sub Touch UC

ANT5005/5006
Motor contact

OSC3000
26MHz

U6005
Hall IC

ANT2000
LB Sub ANT contact

ANT2001
MB_HB Sub ANT contact)

F2005
GPS SAW filter

F2003
Diplexer


U2001
Diversity LNA

U3006
FM IC

IFC5001
USB Connector

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. (C701,C805)	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 step 4
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 C5023(=IFPMIC Output)	C5023 = Power supply voltage	Go to the step 6
		If not the correct value	Replace the U5003(=IFPMIC)
6	Check the voltage of C5006(=PMIC Output)	C5006 = 1.8V	Go to the step 7
		If not the correct value	Replace the U5004(=PMIC)

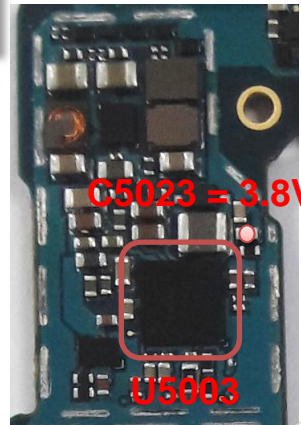
**** Usage guide of the Power & Current test jig has been uploaded at GSPN. (Power & Current Tester_Rev4_150716.pdf)**

Troubleshooting

No Power (cont')

Step	Check point	Result value	Defect point
7	Check the frequency of TCX2000	26MHz	Main chip (UCP400)
		If not the correct value	X-TAL (TCX2000)

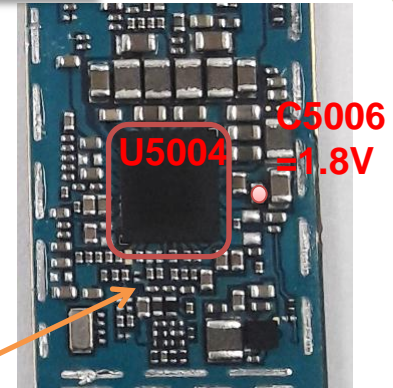
Step5



Step7



Step6



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	3 rd party Apps.
		Not solved	Go to the step 5
5	Perform full reset.	Solved	S/W or 3 rd 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 C5029, C5026 (eMMC)	C5029 = 1.8V C5026 = 2.85V	PBA
		If not the correct value	Replace the eMCP(eMMC)

**** Usage guide of the Power & Current test jig has been uploaded at GSPN. (Power & Current Tester_Rev4_150716.pdf)**

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Troubleshooting

No Charging

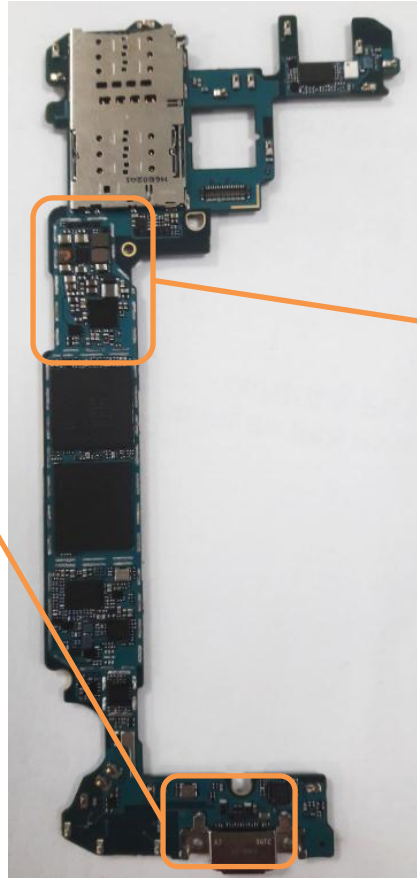
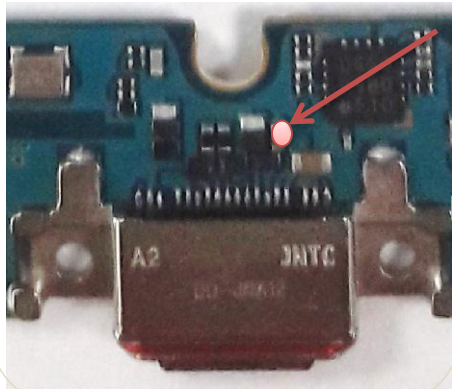
Step	Check point	Result value	Defect point
1	Confirm the defect symptom	-	-
2	Replace a battery.	Solved	Go to the step 2.1
		Not solved	Go to the step 3
2.1	Charge the customer battery during 5min at least.	Solved	Totally discharged battery
		Not solved	Battery
3	** Analyse reasons of No-Charging using 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 C5085	C5085 = 5V	Go to the step 7
		If not the correct value	may not connected charger
7	Check the voltage of C5052	C5052= 5V	Replace the U5002
		If not the correct value	Replace the U5003

**** Usage guide of the Power & Current test jig has been uploaded at GSPN. (Power & Current Tester_Rev4_150716.pdf)**

Troubleshooting

Step 5

C5085=5V

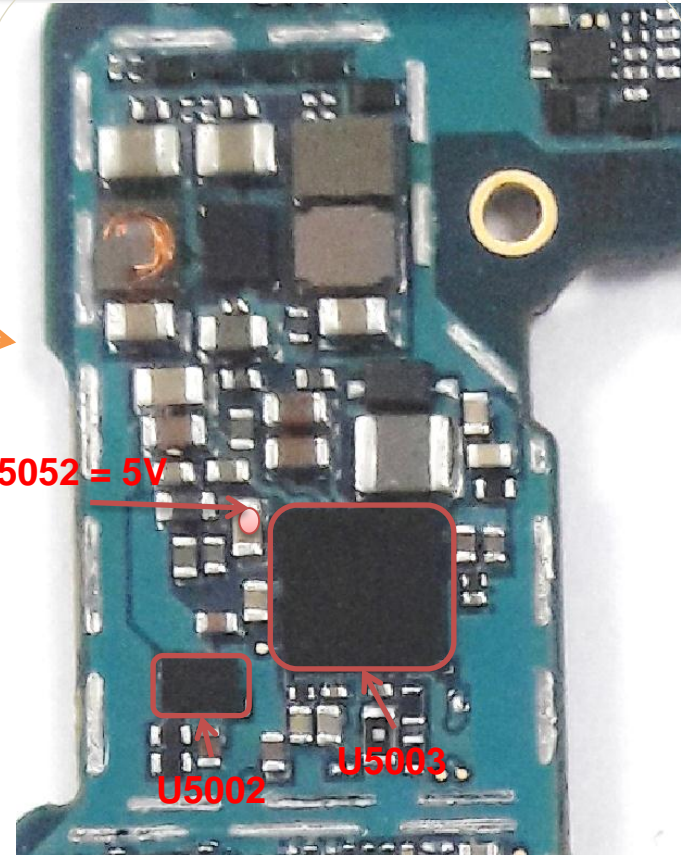


Step 6

C5052 = 5V

U5002

U5003



Troubleshooting

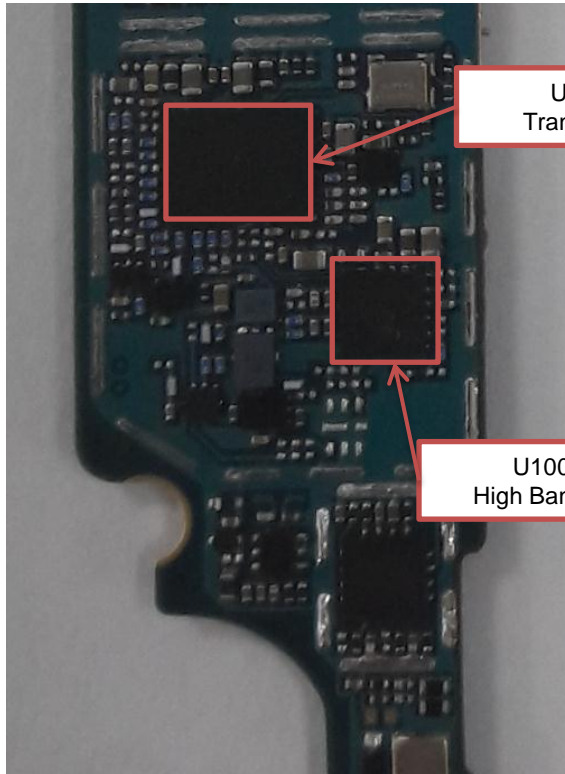
Call Problem (with RF equipment)

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	TX	2G	MMMB, Main Femid TRANCEIVER
			3G	MMMB, Main Femid TRANCEIVER
			LTE	MMMB or,B7/B40 PA Main FEM, TRANCEIVER
		RX	2G	Main Femid , TRANCEIVER
			3G	Main Femid , TRANCEIVER
			LTE	Main Femid , TRANCEIVER

Troubleshooting

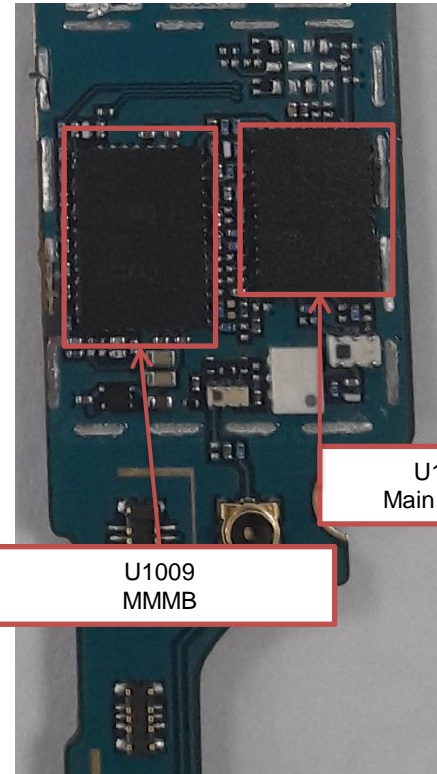
Call Problem

Step5



U2002
Transceiver

U1008
High Band PA



U1009
MMBB

U1005
Main FEMID

Troubleshooting

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. (Coaxial cable, 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)	Abnormal	RF components.
		Normal	CP(Call Processor) (UCP400) CP PMIC(U5004)
	U2002 Transceiver U1005 Main FEMID U1009 MMB PA U1008 High Band PA		

Troubleshooting

Call Problem

Step2,3

CHECK SETTINGS

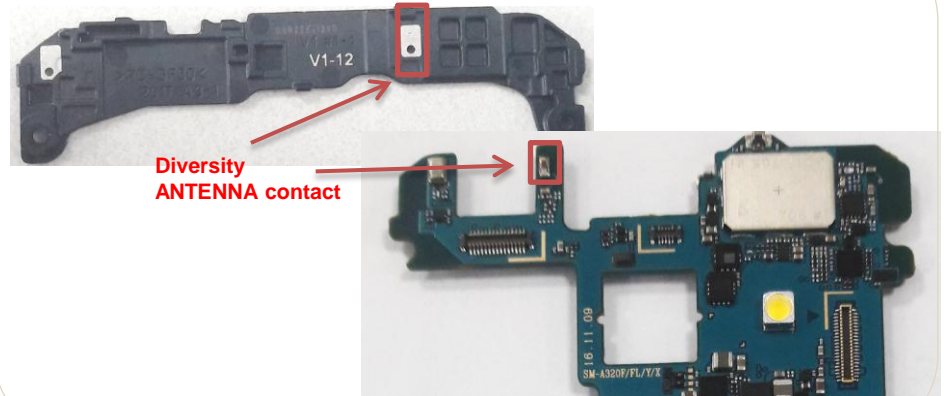
Wireless and networks

Airplane mode

ServiceMode
RRC : IDLE, Band1
MCC-MNC : 450 - 08
RX: 10763, RI: -60, CID: 1a0c2
TX: 9813_PSC: 283
EcIo: -5, RSCP: -65
SpeechVER : FR FR FR
L1 : PCH_Sleep
Drx cycle: 128
SIB19 is received

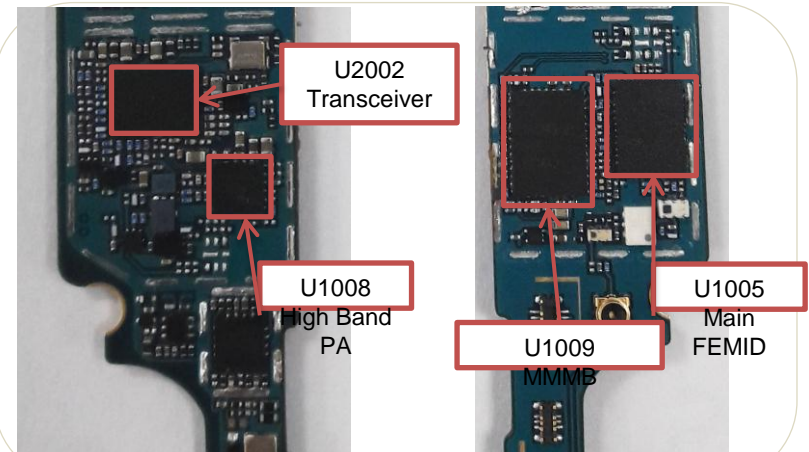
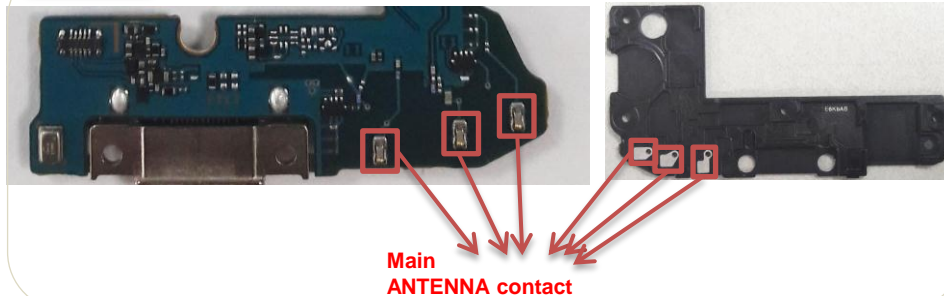
DEBUG SCREEN STATUS
Same value compare to
normal device.

Step4



Step5

Step4



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	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	Replace U6001 (Audio amp)
6	Check if the SPK is contacted to ANT6002, ANT6003 well, and assemble the phone again.	Solved	Assembly error
		Not solved	Go to step 3

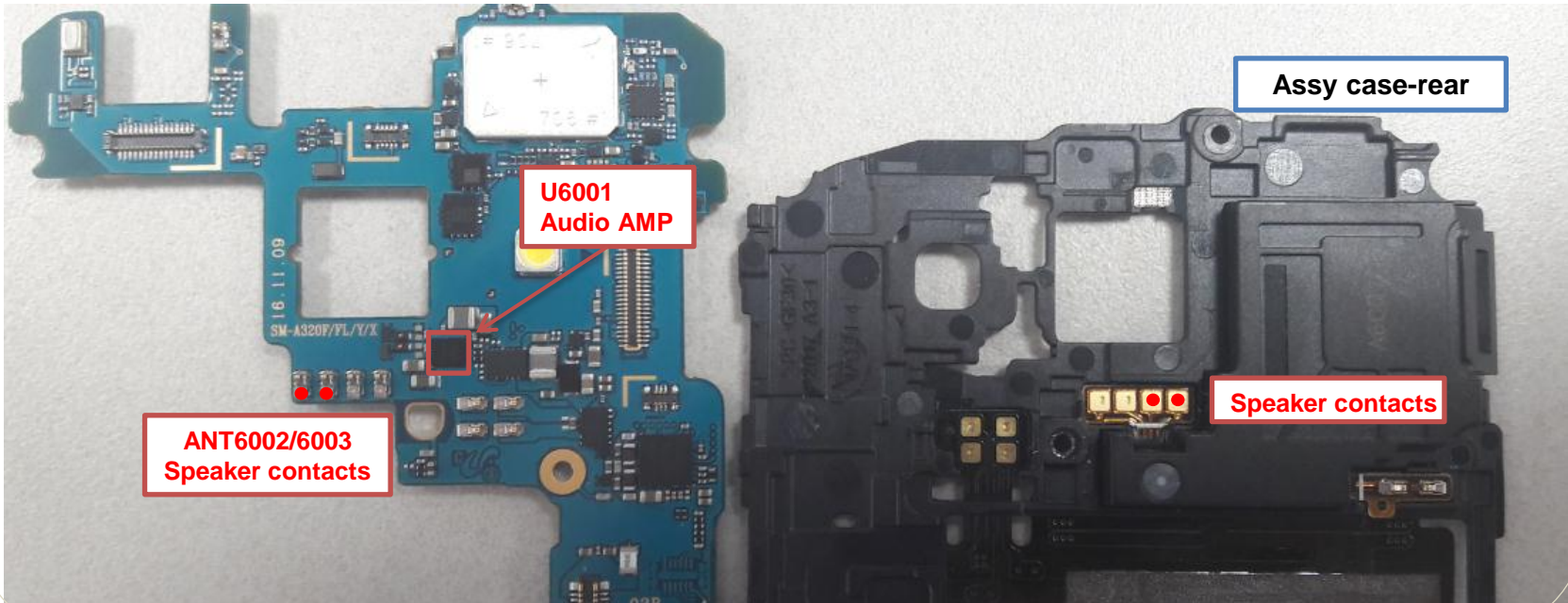
Troubleshooting

Sound Problem

Step3

Step6

Step7



Troubleshooting

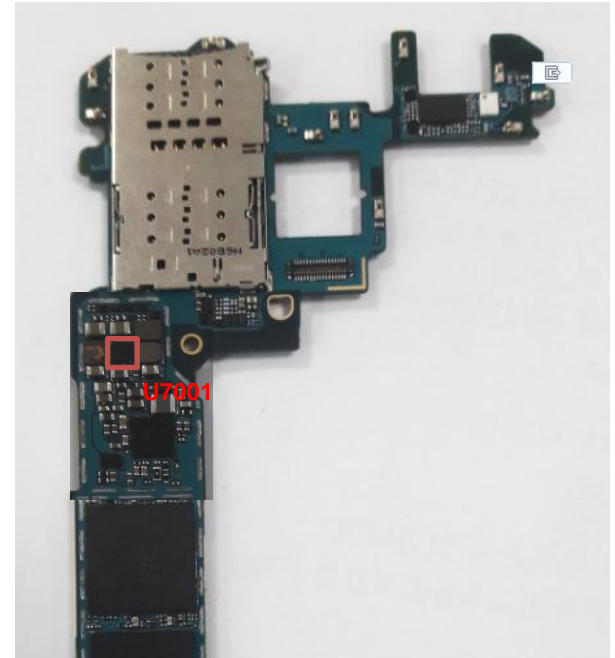
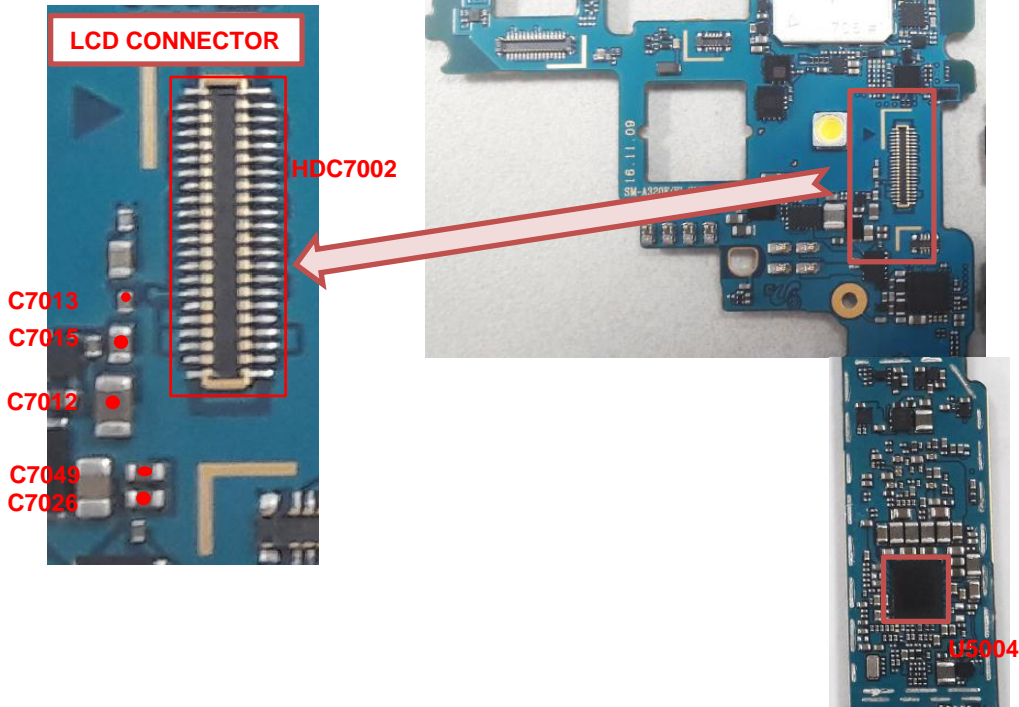
Display Problem

Step	Check point	Result value	Defect point
1	Confirm the defect symptom	-	-
2	Check the AMOLED connector (HDC7002)	Broken, dust, corrosion	AMOLED connector (HDC7002)
		Loose fitting	Connection
		Normal	Go to the next step
3	Replace the AMOLED	Solved	AMOLED
		Not solved	Go to the next step
4	Connect a AMOLED, and display on with a power supply (power supply voltage : 4.0V)	-	-
5	Check the voltage of C7013 = 3.0V Notice. It should be measured when the display is activated on	If not the correct value	PMIC(U5004)
		C7013=3.0V	Go to the next step
6	Check the voltage of C7015 = 1.5V Notice. It should be measured when the display is activated on	If not the correct value	U5004
		C7015=1.5V	Go to the next step
7	Check the voltage of following chips (C7012,C7026,C7049) Notice. It should be measured when the display is activated on	If not the correct value	U7001
		C7012 = 7.0V C7026 = -1.4 ~ -4.4V C7049 = 4.6V	MAIN CHIP

Troubleshooting

Display Problem

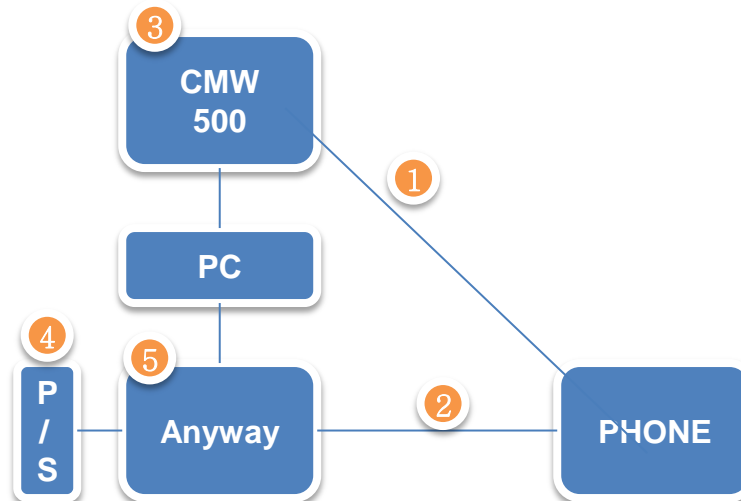
Step2, 5, 6, 7



RF Calibration Preparation

Item	Quantity	Code
① RF cable	1	GH81-11962G
② IF cable	1	GH81-11962W
③ RF Equipment	1	CMW500
④ Power Supply	1	E3632A
⑤ Anyway JIG	1	-

Connection
Diagram



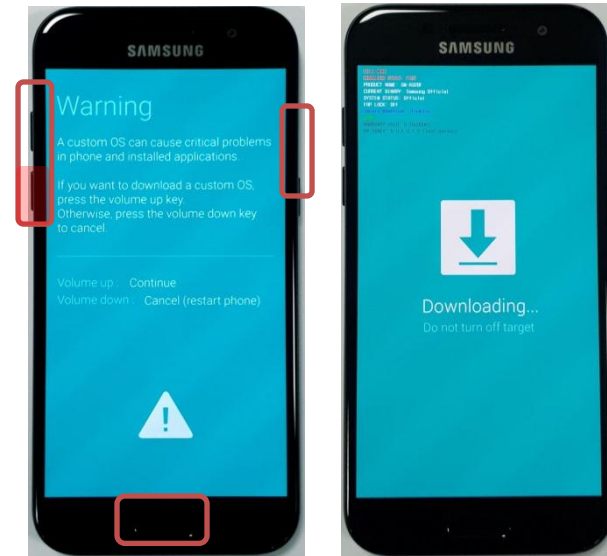
S/W Update

❌ S/W Update via Fenrir is mandatory.

Below is the way to use Odin for any specific case.

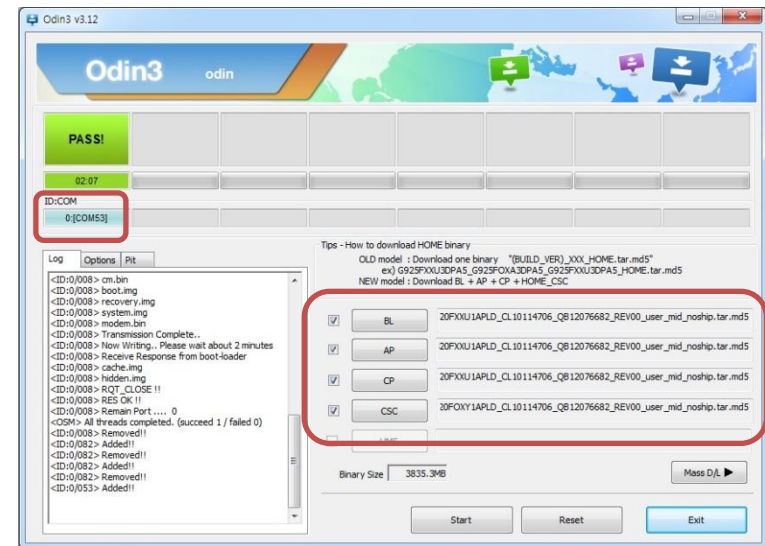
How to enter the S/W download mode

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 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.



New Features

Camera

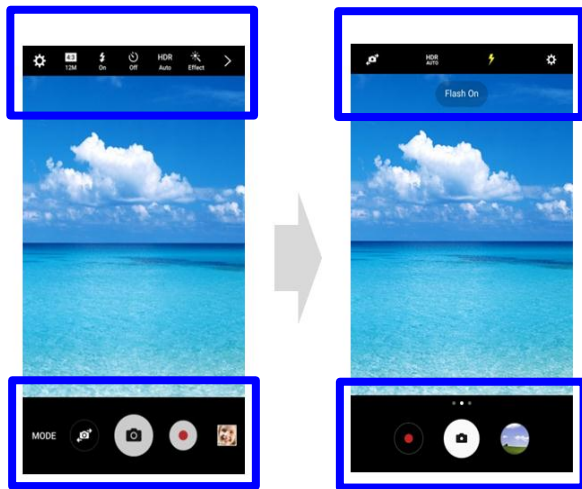
Simple UX & Easy Swipe

- Simplifying Quick Panel Icons, minimizing Pop-up Menu
- Fast mode / effect switching by Swipe

Preview

- **Simplifying quick panel**

Hide icons (picture size / Timer / Effect),
Minimize pop up

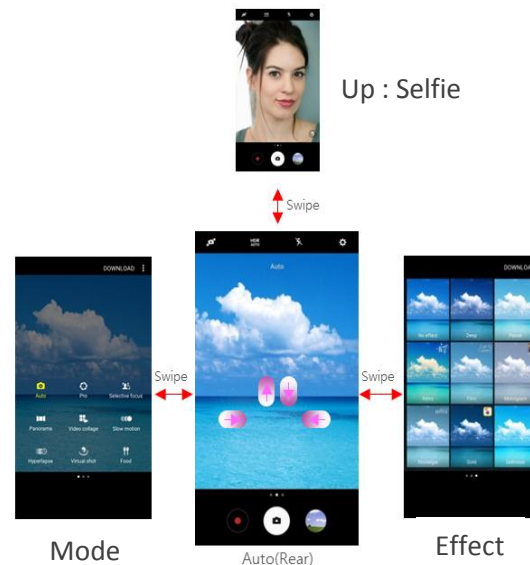


A 2016 : 10 icons

A 2017 : 7 icons

Easy Swipe

- **Fast changing by Swipe**



Mode

Auto(Rear)

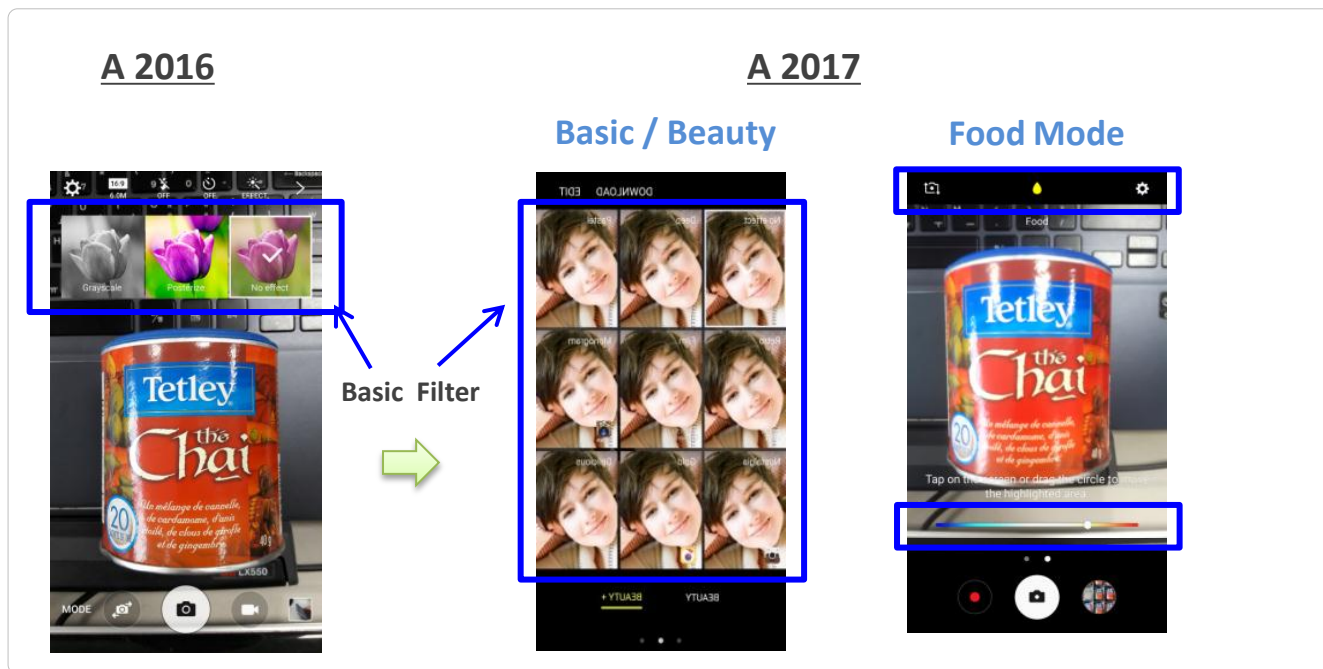
Effect

New Features

Camera

Effective Filter & Effect

- Enjoy various effect by using "Basic" filter
- Optimize selfie by using "Beauty" filter
- Dedicated colorful "Food" Mode (Rear only)



* A 2016 : Basic 4 Filters only

* A 2017 : Categorized 16 Filters (Basic 8, Beauty 8) + Food Mode (rear only)

Entering Path : Camera → Swipe right : Filter / Camera → Swipe left : mode

New Features

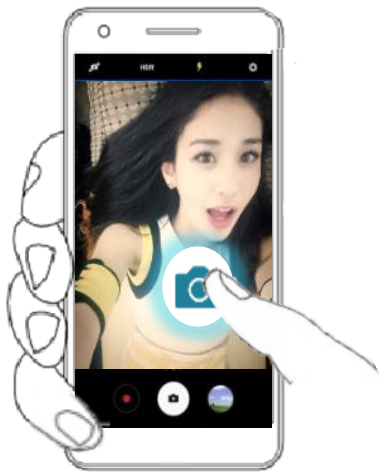
Camera

Bright and Easy Selfie

- Optimizing one hand use : better grip & stable picture
- A bright selfie in low-light conditions

Floating Shutter

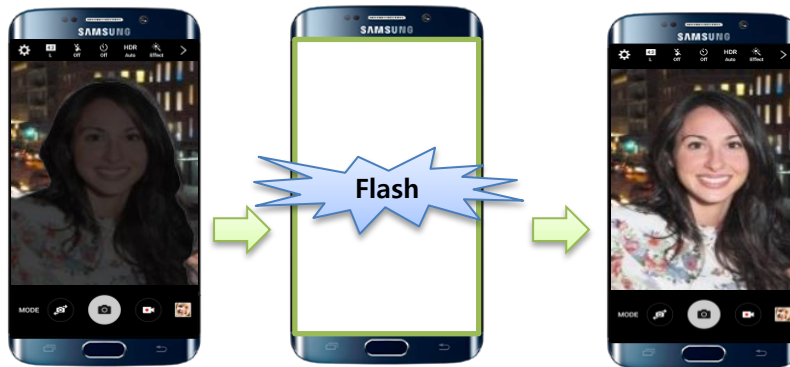
- For better grip & stability
→ Change Shutter position



※ Support : Front/Rear

Selfie Flash

- Use display as a front flash (※ No front flash LED)



Entering Path : Camera → Settings → Floating Camera button

Camera → Quick panel “Lightning” icon

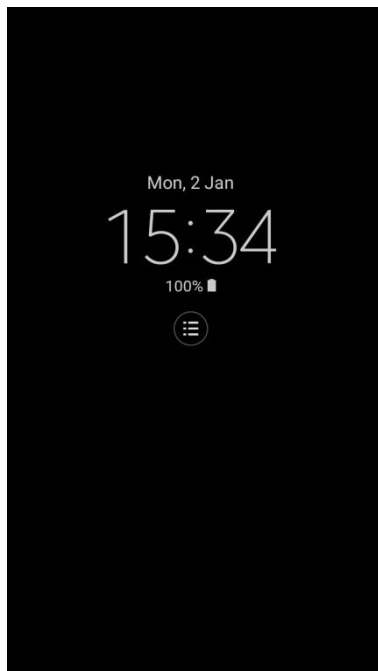
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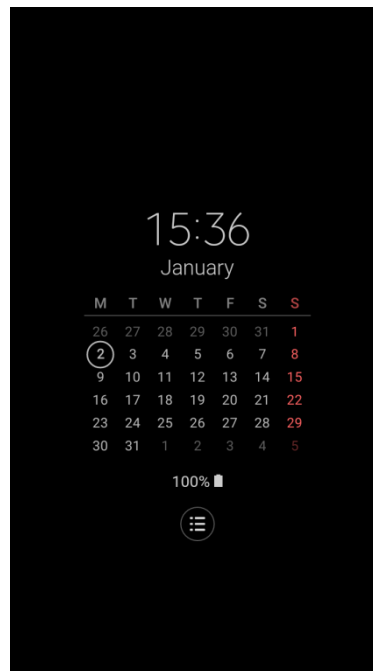
New Features

Always On Display

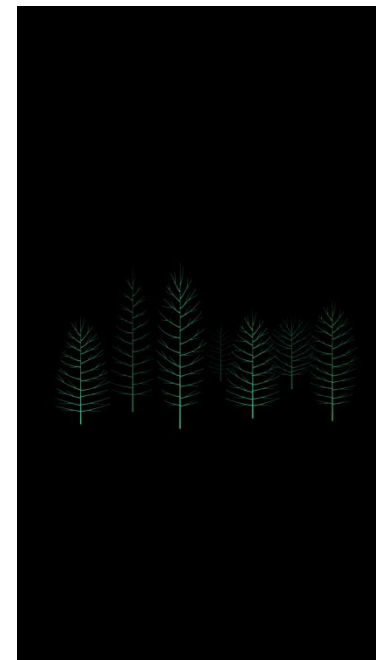
- With Always on Display, you can get information at a glance without waking up your phone.



Clock



Calendar



Image

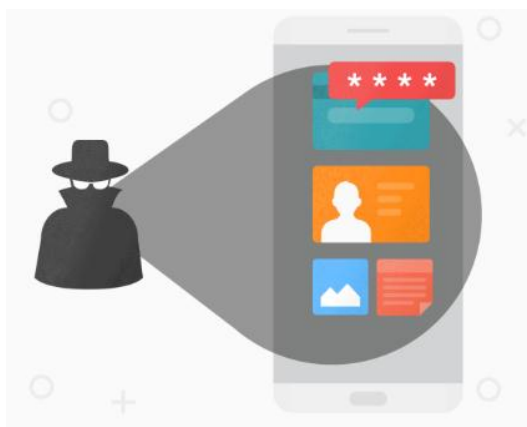
Entering Path : Apps → Settings → Display → Always On Display

Key Features

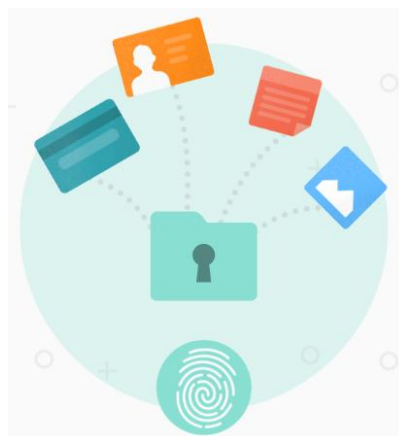
Secure Folder

KNOX support for Consumers : Create a secure folder to protect your private content and apps from others.

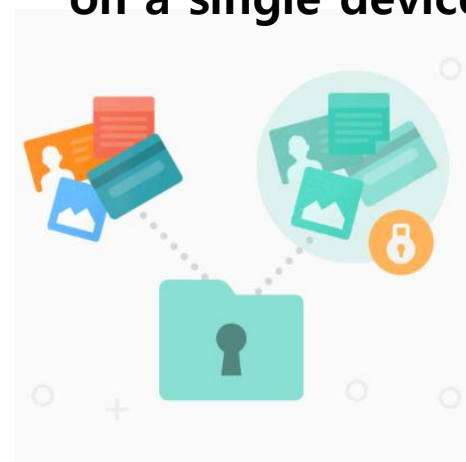
1. Protect your data



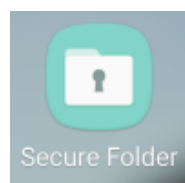
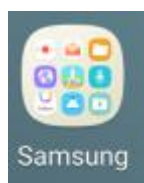
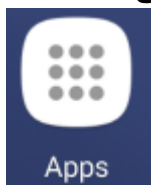
2. Lock your apps



3. Use 2 identical apps on a single device



Entering Path :



Apps → **Samsung Folder** → **Secure Folder**
Apps → **Settings** → **Lock screen and security** → **Secure Folder**

SVC Technical Information

Basic Information

AP Chipset	CP Chipset	IF Cable		RF Cable		RF Divider
SEC S5E7870		GH81-11962W		GH81-11962G		-
Charger Spec		Charging Current Standard	Type of Structure			Water Resistance
			Old	New Pocket	Backglass	
Adaptive (5.0 V-1.55A)		700~1600mA	-	-	O	IP68

SVC Jig List for SM-A320F

Item	Code	Item	Code
Hot Plate	GH81-12712E	TSP tape Attaching JIG	GH81-11905A
OCTA Disass'y Holder	GH81-12119A	Pressing JIG Body	GH81-11903A
OCTA Disass'y Jig Upper	GH81-12833A	Pressing Pad(for OCTA and Back Glass)	GH81-14371A
Battery Detaching Sheet	GH81-13983A	Pressing Pad(for Battery)	GH81-12694A



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