

2. Specification

2-1. Radio Frequency & Channel

1-1) LTE BAND frequency [SM-A320F,FL]

Equa.	Freq. Range	CH Range
FUL = FUL_low+0.1(NUL-NOFFS-UL)	LB1 : 1920 ~ 1980	18000≤N≤18599
	LB2 : 1850 ~ 1910	18600≤N≤19199
	LB3 : 1710 ~ 1785	19200≤N≤19949
	LB5 : 824 ~ 849	20400≤N≤20649
	LB7 : 2500 ~ 2570	20750≤N≤21449
	LB8 : 880 ~ 915	21450≤N≤21799
	LB20 : 832 ~ 862	24150≤N≤24449
	LB40 : 2300 ~ 2400	38650≤N≤39649
FDL = FDL_low+0.1(NDL-NOFFS-DL)	LB1 : 2110 ~ 2170	0≤N≤599
	LB2 : 1930 ~ 1990	600≤N≤1199
	LB3 : 1805 ~ 1880	1200≤N≤1949
	LB5 : 869 ~ 894	2400≤N≤2649
	LB7 : 2620 ~ 2690	2750≤N≤3449
	LB8 : 925 ~ 960	3450≤N≤3799
	LB20 : 791 ~ 821	6150≤N≤6449
	LB40 : 2300 ~ 2400	38650≤N≤39649

1-2) LTE BAND frequency [SM-A320Y]

Equa.	Freq. Range	CH Range
FUL = FUL_low+0.1(NUL-NOFFS-UL)	LB1 : 1920 ~ 1980	18000≤N≤18599
	LB2 : 1850 ~ 1910	18600≤N≤19199
	LB3 : 1710 ~ 1785	19200≤N≤19949
	LB4 : 1710 ~ 1755	19950≤N≤20399
	LB5 : 824 ~ 849	20400≤N≤20649
	LB7 : 2500 ~ 2570	20750≤N≤21449
	LB8 : 880 ~ 915	21450≤N≤21799
	LB17 : 704 ~ 716	23730≤N≤23849
	LB20 : 832 ~ 862	24150≤N≤24449
	LB28 : 703 ~ 748	27210≤N≤27659
	LB38 : 2570 ~ 2620	37750≤N≤38249
	LB40 : 2300 ~ 2400	38650≤N≤39649
	LB41 : 2496 ~ 2690	39650≤N≤41589
FDL = FDL_low+0.1(NDL-NOFFS-DL)	LB1 : 2110 ~ 2170	0≤N≤599
	LB2 : 1930 ~ 1990	600≤N≤1199
	LB3 : 1805 ~ 1880	1200≤N≤1949
	LB4 : 2110 ~ 2155	1950≤N≤2399
	LB5 : 869 ~ 894	2400≤N≤2649
	LB7 : 2620 ~ 2690	2750≤N≤3449
	LB8 : 925 ~ 960	3450≤N≤3799
	LB17 : 734 ~ 746	5730≤N≤5849
	LB20 : 791 ~ 821	6150≤N≤6449
	LB28 : 758 ~ 803	9210≤N≤9659
	LB38 : 2570 ~ 2620	37750≤N≤38249
	LB40 : 2300 ~ 2400	38650≤N≤39649
	LB41 : 2496 ~ 2690	39650≤N≤41589

2. Specification

2-1) WCDMA BAND frequency [SM-A320F,FL]

Equa.	Freq. Range	CH Range
Tx = N*0.2	WB1 : 1920 ~ 1980 WB2 : 1850 ~ 1910 WB5 : 824 ~ 849 WB8 : 880 ~ 915	9612≤N≤9888 9262≤N≤9538 4132≤N≤4233 2712≤N≤2863
Rx = N*0.2	WB1 : 2110 ~ 2170 WB2 : 1930 ~ 1990 WB5 : 869 ~ 894 WB8 : 925 ~ 960	10562≤N≤10838 9662≤N≤9938 4357≤N≤4458 2937≤N≤3088

2-2) WCDMA BAND frequency [SM-A320Y]

Equa.	Freq. Range	CH Range
Tx = N*0.2	WB1 : 1920 ~ 1980 WB2 : 1850 ~ 1910 WB4 : 1710 ~ 1755 WB5 : 824 ~ 849 WB8 : 880 ~ 915	9612≤N≤9888 9262≤N≤9538 1312≤N≤1513 4132≤N≤4233 2712≤N≤2863
Rx = N*0.2	WB1 : 2110 ~ 2170 WB2 : 1930 ~ 1990 WB4 : 2110 ~ 2155 WB5 : 869 ~ 894 WB8 : 925 ~ 960	10562≤N≤10838 9662≤N≤9938 1537≤N≤1738 4357≤N≤4458 2937≤N≤3088

3) GSM BAND frequency

Equa.	Freq. Range	CH Range
Tx = 824.2+0.2*(N-128) Tx = 890+0.2*(N-1024) Tx = 1710.2+0.2*(N-512) Tx = 1850.2+0.2*(N-512)	GSM850 : 824 ~ 849 GSM900 : 880 ~ 915 DCS : 1710 ~ 1785 PCS : 1850 ~ 1910	128≤N≤251 975≤N≤1023 512≤N≤885 512≤N≤810
Rx = 869.2+0.2*(N-128) Rx = 935+0.2*(N-1024) Rx = 1805.2+0.2*(N-512) Rx = 1930.2+0.2*(N-512)	GSM850 : 869 ~ 894 GSM900 : 925 ~ 960 DCS : 1805 ~ 1880 PCS : 1930 ~ 1990	128≤N≤251 975≤N≤1023 512≤N≤885 512≤N≤810

2. Specification

2-2. GSM / WCDMA / LTE General Specification

1) GSM BAND

		GSM 850	GSM 900	DCS1800	PCS1900
Freq. Band[MHz] Uplink/Downlink		824~849 869~894	880~915 925~960	1710~1785 1805~1880	1850~1910 1930~1990
ARFCN range		128~251	0~124 & 975~1023	512~885	512~810
Tx/Rx spacing		45 MHz	45 MHz	95 MHz	80 MHz
Mod. Bit rate/ Bit Period	GPRS	270.833 Kbps 3.692 us	270.833 Kbps 3.692 us	270.833 Kbps 3.692 us	270.833 Kbps 3.692 us
Time Slot Period/Frame Period		576.9 us 4.615 ms	576.9 us 4.615 ms	576.9 us 4.615 ms	576.9 us 4.615 ms
Modulation	GPRS	0.3 GMSK	0.3 GMSK	0.3 GMSK	0.3 GMSK
MS Power	GPRS	33 dBm~5 dBm	33 dBm~5 dBm	30 dBm~0 dBm	30 dBm~0 dBm
Power Level	GPRS	5 pcl~19 pcl	5 pcl~19 pcl	0 pcl~15 pcl	0 pcl~15 pcl
Sensitivity		-102 dBm	-102 dBm	-100 dBm	-102 dBm
TDMA Mux		8	8	8	8
Cell Radius		3 Km	3 Km	2 Km	2 Km

2. Specification

2) WCDMA BAND [SM-A320F,FL]

	WCDMA BAND1	WCDMA BAND2	WCDMA BAND5	WCDMA BAND8
Freq. Band[MHz] Uplink/Downlink	1920~1980 2110~2170	1850~1910 1930~1990	824~849 869~894	880~915 925~960
ARFCN range	9612~9888 10562~10838	9262~9538 9662~9938	781~4233 1006~4458	2712~2863 2937~3088
Tx/Rx spacing	190MHz	80MHz	45MHz	45MHz
Mod. Bit rate/ Bit Period	3.84 Mcps/s	3.84 Mcps/s	3.84 Mcps/s	3.84 Mcps/s
Time Slot Period/Frame Period	10ms	10ms	10ms	10ms
Modulation	UL : HQPSK DL : QPSK			
MS Power	Max:23.0dBm (+1~-3)dBm Min:<-50dBm	Max:22.0dBm (+1~-3)dBm Min:<-50dBm	Max:23.0dBm (+1~-3)dBm Min:<-50dBm	Max:23.0dBm (+1~-3)dBm Min:<-50dBm
Power Level	Class3	Class3	Class3	Class3
Sensitivity	-106.7dBm	-104.7dBm	-104.7dBm	-104.7dBm

2) WCDMA BAND [SM-A320Y]

	WCDMA BAND1	WCDMA BAND2	WCDMA BAND4	WCDMA BAND5	WCDMA BAND8
Freq. Band[MHz] Uplink/Downlink	1920~1980 2110~2170	1850~1910 1930~1990	1710~1755 2110~2155	824~849 869~894	880~915 925~960
ARFCN range	9612~9888 10562~10838	9262~9538 9662~9938	1312~1513 1537~1738	781~4233 1006~4458	2712~2863 2937~3088
Tx/Rx spacing	190MHz	80MHz	400MHz	45MHz	45MHz
Mod. Bit rate/ Bit Period	3.84 Mcps/s				
Time Slot Period/Frame Period	10ms	10ms	10ms	10ms	10ms
Modulation	UL : HQPSK DL : QPSK				
MS Power	Max:23.0dBm (+1~-3)dBm Min:<-50dBm	Max:22.0dBm (+1~-3)dBm Min:<-50dBm	Max:21.5dBm (+1~-3)dBm Min:<-50dBm	Max:23.0dBm (+1~-3)dBm Min:<-50dBm	Max:23.0dBm (+1~-3)dBm Min:<-50dBm
Power Level	Class3	Class3	Class3	Class3	Class3
Sensitivity	-106.7dBm	-104.7dBm	-104.7dBm	-104.7dBm	-104.7dBm

2. Specification

3-1) LTE BAND [SM-A320F,FL]

	LTE BAND1	LTE BAND2	LTE BAND3	LTE BAND5
Freq. Band[MHz] Uplink/Downlink	1920~1980 2110~2170	1850~1910 1930~1990	1710 ~ 1785 1805 ~ 1880	824~849 869~894
ARFCN range	18000~18599 0~599	18600~19199 600~1199	19200 ~ 19949 1200~1949	20400~20649 2400~2649
Tx/Rx spacing	190 MHz	80 MHz	95 MHz	45 MHz
Mod. Bit rate/ Bit Period	9Mbps/s (at 10MHz BW,50RB)	9Mbps/s (at 10MHz BW,50RB)	9Mbps/s (at 10MHz BW,50RB)	9Mbps/s (at 10MHz BW,50RB)
Time Slot Period/Frame Period	10ms	10ms	10ms	10ms
Modulation	UL : QPSK 16QAM 64QAM DL : QPSK 16QAM 64QAM 256QAM			
MS Power	Max:22.5±2.7dBm Min:-49dBm	Max:22.5±2.7dBm Min:-49dBm	Max:23±2.7dBm Min:-49dBm	Max:24±2.7dBm Min:-49dBm
Power Level	Class3	Class3	Class3	Class3
Sensitivity	-97dBm	-95dBm	-94dBm	-95dBm
TDMA Mux	-		-	
Cell Radius	-		-	

2. Specification

	LTE BAND7	LTE BAND8	LTE BAND20	LTE BAND40
Freq. Band[MHz] Uplink/Downlink	2500~2570 2620~2690	880~915 925~960	832~862 791~821	2300~2400 2300~2400
ARFCN range	20750~21449 2750~3449	21450~21799 3450~3799	19250 ~ 19950 1250~1950	38650~39649 38650~39649
Tx/Rx spacing	120 MHz	45 MHz	41 MHz	
Mod. Bit rate/ Bit Period	9Mbps/s (at 10MHz BW,50RB)	9Mbps/s (at 10MHz BW,50RB)	9Mbps/s (at 10MHz BW,50RB)	9Mbps/s (at 10MHz BW,50RB)
Time Slot Period/Frame Period	10ms	10ms	10ms	10ms
Modulation	UL : QPSK 16QAM 64QAM DL : QPSK 16QAM 64QAM 256QAM			
MS Power	Max:23±2.7dBm Min:-49dBm	Max:24±2.7dBm Min:-49dBm	Max:24±2.7dBm Min:-49dBm	Max:23±2.7dBm Min:-49dBm
Power Level	Class3	Class3	Class3	Class3
Sensitivity	-95dBm	-94dBm	-94dBm	-97dBm
TDMA Mux		-	-	-
Cell Radius		-	-	-

2. Specification

3-2) LTE BAND [SM-A320Y]

	LTE BAND1	LTE BAND2	LTE BAND3	LTE BAND4	LTE BAND5	LTE BAND7	LTE BAND8
Freq. Band[MHz] Uplink/Downlink	1920~1980 2110~2170	1850~1910 1930~1990	1710 ~ 1785 1805 ~ 1880	1710~1755 2110~2155	824~849 869~894	2500~2570 2620~2690	880~915 925~960
ARFCN range	18000~18599 0~599	18600~19199 600~1199	19200 ~ 19949 1200~1949	19950~20399 1950~2399	20400~20649 2400~2649	20750~21449 2750~3449	21450~21799 3450~3799
Tx/Rx spacing	190 MHz	80 MHz	95 MHz	400 MHz	45 MHz	120 MHz	45 MHz
Mod. Bit rate/ Bit Period	9Mbps/s (at 10MHz BW,50RB)						
Time Slot Period/Frame Period	10ms						
Modulation	UL : QPSK 16QAM 64QAM DL : QPSK 16QAM 64QAM 256QAM						
MS Power	Max:22.5±2.7 dBm Min:-49dBm	Max:22.5±2.7 dBm Min:-49dBm	Max:23±2.7d Bm Min:-49dBm	Max:23±2.7d Bm Min:-49dBm	Max:24±2.7d Bm Min:-49dBm	Max:23±2.7d Bm Min:-49dBm	Max:24±2.7d Bm Min:-49dBm
Power Level	Class3						
Sensitivity	-97dBm	-95dBm	-94dBm	-97dBm	-95dBm	-95dBm	-94dBm
TDMA Mux	-		-				-
Cell Radius	-		-				-

2. Specification

	LTE BAND17	LTE BAND20	LTE BAND28	LTE BAND38	LTE BAND40	LTE BAND41
Freq. Band[MHz] Uplink/Downlink	704~716 734~746	832~862 791~821	703~748 758~803	2570~2620 2570~2620	2300~2400 2300~2400	2496~2690 2496~2690
ARFCN range	23730~23849 5730~5849	19250 ~ 19950 1250~1950	20400~20650 2400~2650	37750~38249 37750~38249	38650~39649 38650~39649	39650~41589 39650~41589
Tx/Rx spacing	30 MHz	41 MHz	55 MHz			
Mod. Bit rate/ Bit Period	9Mbps/s (at 10MHz BW,50RB)					
Time Slot Period/Frame Period	10ms	10ms	10ms	10ms	10ms	10ms
Modulation	UL : QPSK 16QAM 64QAM DL : QPSK 16QAM 64QAM 256QAM					
MS Power	Max:24±2.7dBm Min:-49dBm	Max:24±2.7dBm Min:-49dBm	Max:23.5±2.7dBm Min:-49dBm	Max:23±2.7dBm Min:-49dBm	Max:23±2.7dBm Min:-49dBm	Max:23±2.7dBm Min:-49dBm
Power Level	Class3	Class3	Class3	Class3	Class3	Class3
Sensitivity	-94dBm	-94dBm	-95.5dBm	-97dBm	-97dBm	-95dBm
TDMA Mux	-	-			-	
Cell Radius	-	-			-	

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2. Specification

2-3. GSM BAND TX power control level

TX Power control level	GSM850	GSM900	TX Power control level	DCS1800	TX Power control level	PCS1900
5	33±2 dBm	33±2 dBm	0	30±2 dBm	0	30±2 dBm
6	31±3 dBm	31±3 dBm	1	28±3 dBm	1	28±3 dBm
7	29±3 dBm	29±3 dBm	2	26±3 dBm	2	26±3 dBm
8	27±3 dBm	27±3 dBm	3	24±3 dBm	3	24±3 dBm
9	25±3 dBm	25±3 dBm	4	22±3 dBm	4	22±3 dBm
10	23±3 dBm	23±3 dBm	5	20±3 dBm	5	20±3 dBm
11	21±3 dBm	21±3 dBm	6	18±3 dBm	6	18±3 dBm
12	19±3 dBm	19±3 dBm	7	16±3 dBm	7	16±3 dBm
13	17±3 dBm	17±3 dBm	8	14±3 dBm	8	14±3 dBm
14	15±3 dBm	15±3 dBm	9	12±4 dBm	9	12±4 dBm
15	13±3 dBm	13±3 dBm	10	10±4 dBm	10	10±4 dBm
16	11±5 dBm	11±5 dBm	11	8±4 dBm	11	8±4 dBm
17	9±5 dBm	9±5 dBm	12	6±4 dBm	12	6±4 dBm
18	7±5 dBm	7±5 dBm	13	4±4 dBm	13	4±4 dBm
19	5±5 dBm	5±5 dBm	14	2±5 dBm	14	2±5 dBm
			15	0±5 dBm	15	0±5 dBm

3. Operation Instruction and Installation

Main Function

Item	Description
OS	Android V6.0.1 (Marshmallow)
RF	LTE Cat.6 (300/ 50Mbps)
Battery	2,350mAh
Base Band	Exynos7870 1.6GHz (octa core)
SM-A320F,Y Other RF	A-GPS, Glonass, BT4.2, USB Type C, NFC, WIFI 802.11 a/b/g/n/ac 2.4+5GHz, MST
SM-A320FL Other RF	A-GPS, Glonass, BT4.2, USB Type C, NFC, WIFI 802.11 a/b/g/n/ac 2.4+5GHz
Camera	13M+8M Camera
LCD	4.7" HD OCTA
RAM	2GB RAM + 16GB ROM
Sensor	Accelerometer, Barometer, Fingerprint Sensor, Gyro Sensor, Geomagnetic Sensor, Hall Sensor, Proximity Sensor
Accessory	Charger: 5V/1.55A Data cable : 1.2M C to A C to B usb connector Ear phone: 3.5pi, 4pin

9. Reference Abbreviate

Reference Abbreviate

- **AAC**: Advanced Audio Coding.
- **AVC** : Advanced Video Coding.
- **BER** : Bit Error Rate
- **BPSK**: Binary Phase Shift Keying
- **CA** : Conditional Access
- **CDM** : Code Division Multiplexing
- **C/I** : Carrier to Interference
- **DMB** : Digital Multimedia Broadcasting
- **EN** : European Standard
- **ES** : Elementary Stream
- **ETSI**: European Telecommunications Standards Institute
- **MPEG**: Moving Picture Experts Group
- **PN** : Pseudo-random Noise
- **PS** : Pilot Symbol
- **QPSK**: Quadrature Phase Shift Keying
- **RS** : Reed-Solomon
- **SI** : Service Information
- **TDM** : Time Division Multiplexing
- **TS** : Transport Stream

1. Safety Precautions

1-1. Repair Precaution

Before attempting any repair or detailed tuning, shield the device from RF noise or static electricity discharges.

Use only demagnetized tools that are specifically designed for small electronic repairs, as most electronic parts are sensitive to electromagnetic forces.

Use only high quality screwdrivers when servicing products. Low quality screwdrivers can easily damage the heads of screws.

Use only conductor wire of the properly gauge and insulation for low resistance, because of the low margin of error of most testing equipment.

We recommend 22-gauge twisted copper wire.

Hand-soldering is not recommended, because printed circuit boards (PCBs) can be easily damaged, even with relatively low heat. Never use a soldering iron with a power rating of more than 100 watts and use only lead-free solder with a melting point below 250°C (482°F).

Prior to disassembling the battery charger for repair, ensure that the AC power is disconnected.

Always use the replacement parts that are registered in the SEC system. Third-party replacement parts may not function properly.

1. Safety Precautions

1-2. ESD(Electrostatically Sensitive Devices) Precaution

Many semiconductors and ESDs in electronic devices are particularly sensitive to static discharge and can be easily damaged by it. We recommend protecting these components with conductive anti-static bags when you store or transport them.

Always use an anti-static strap or wristband and remove electrostatic buildup or dissipate static electricity from your body before repairing ESDs.

Ensure that soldering irons have AC adapter with ground wires and that the ground wires are properly connected.

Use only desoldering tools with plastic tips to prevent static discharge.

Properly shield the work environment from accidental electrostatic discharge before opening packages containing ESDs.

The potential for static electricity discharge may be increased in low humidity environments, such as air-conditioned rooms. Increase the airflow to the working area to decrease the chance of accidental static electricity discharges.

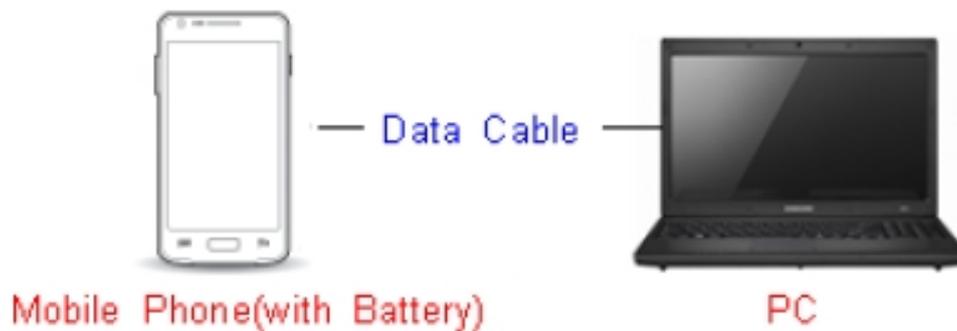
6. Level 1 Repair

6-1. S/W installation

6-1-1. Required items in order to install S/W

- Installation program: Downloader Program ([Odin3 v3.12.5.exe](#))
- Mobile Phone
- Data Cable
- Mobile device specific S/W: Binary files

※ Settings

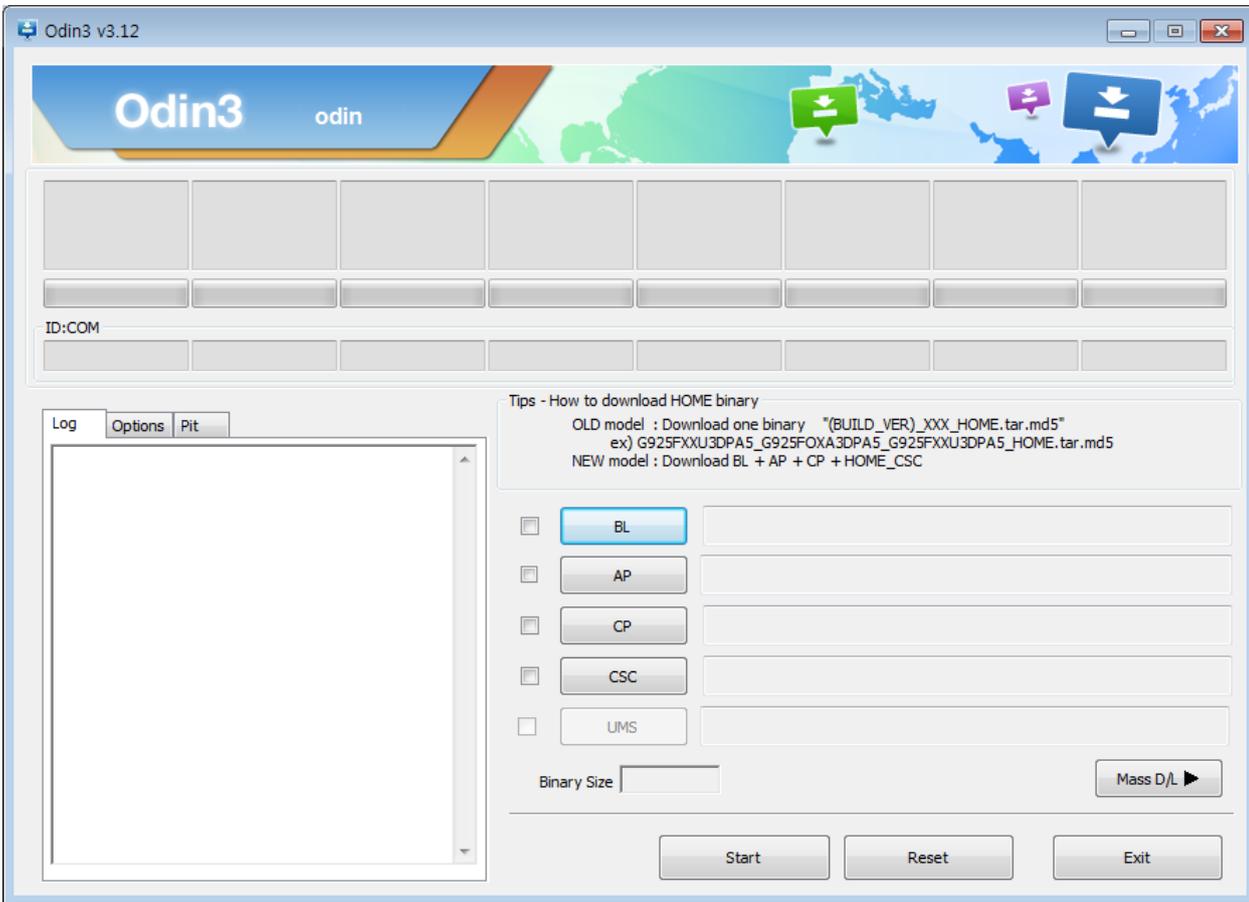


Data Cable : GH39-01886A

6. Level 1 Repair

6-1-2. S/W Installation Program (Downloader program)

- Open up the S/W Installation Program by executing the "**Odin3 v3.12.5.exe**"

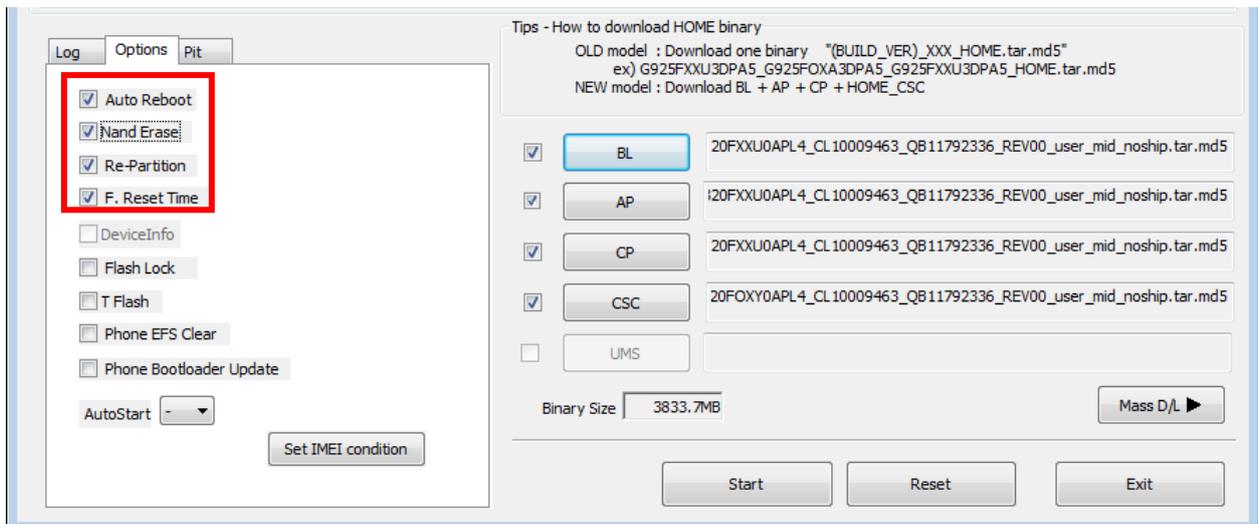
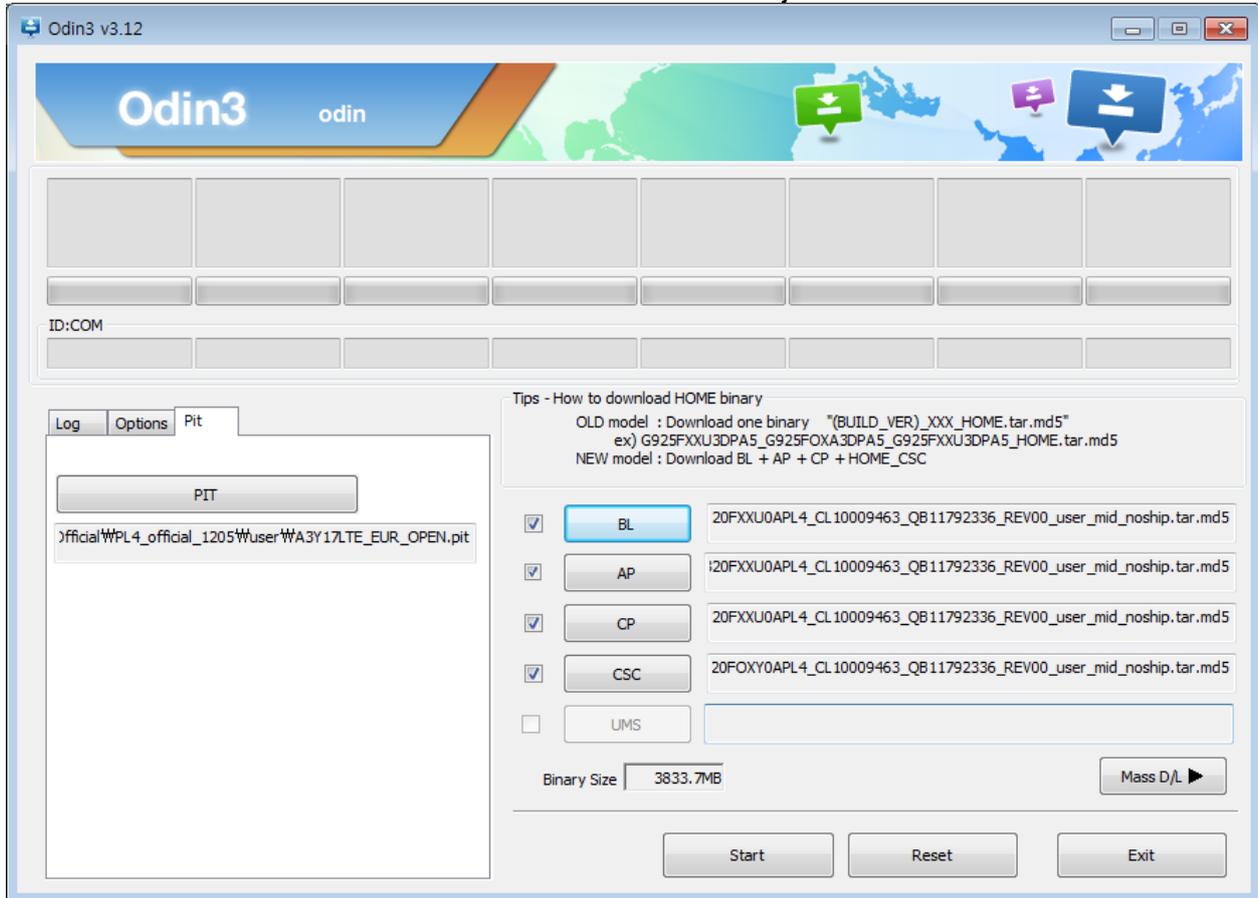


6. Level 1 Repair

1. Enable the check mark by click on the following options,

- Check Auto Reboot, Re-Partition, and F. Reset Time-
- Check PIT
- Check Nand Erase All
- Check BL, AP, CP, and CSC Files

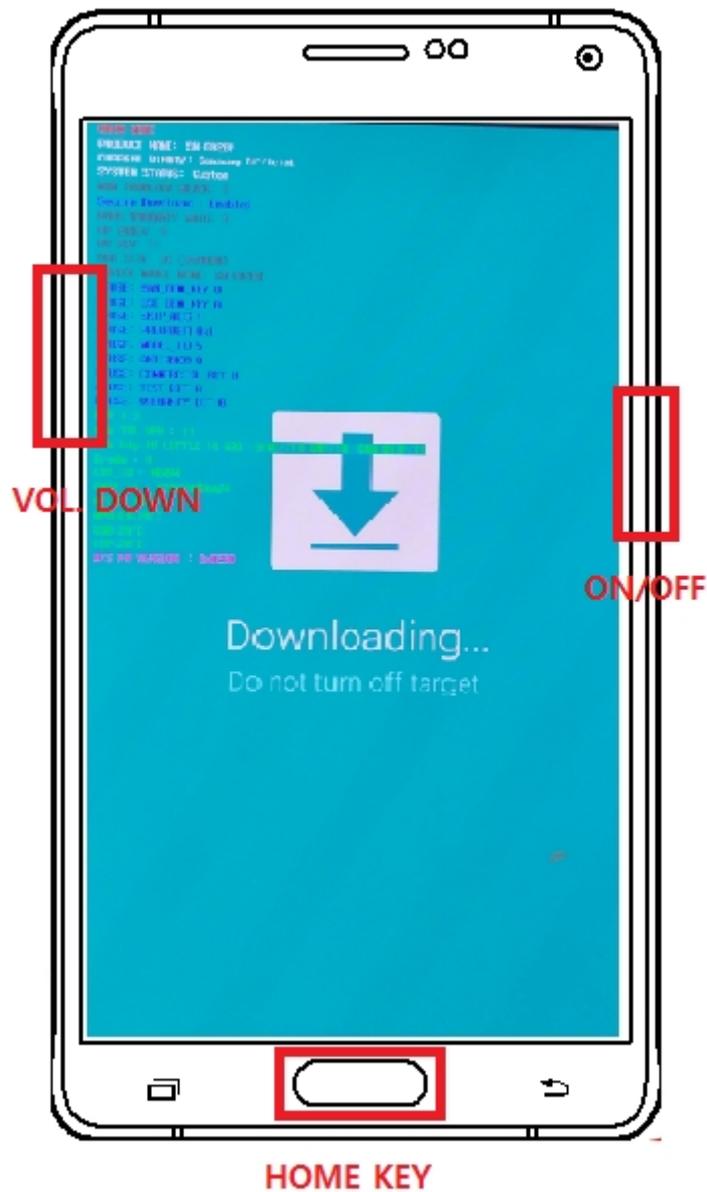
* Note : "Odin v3.12 or above" checks MD5 checksum just after file selection.



6. Level 1 Repair

2. Enter into Download Mode

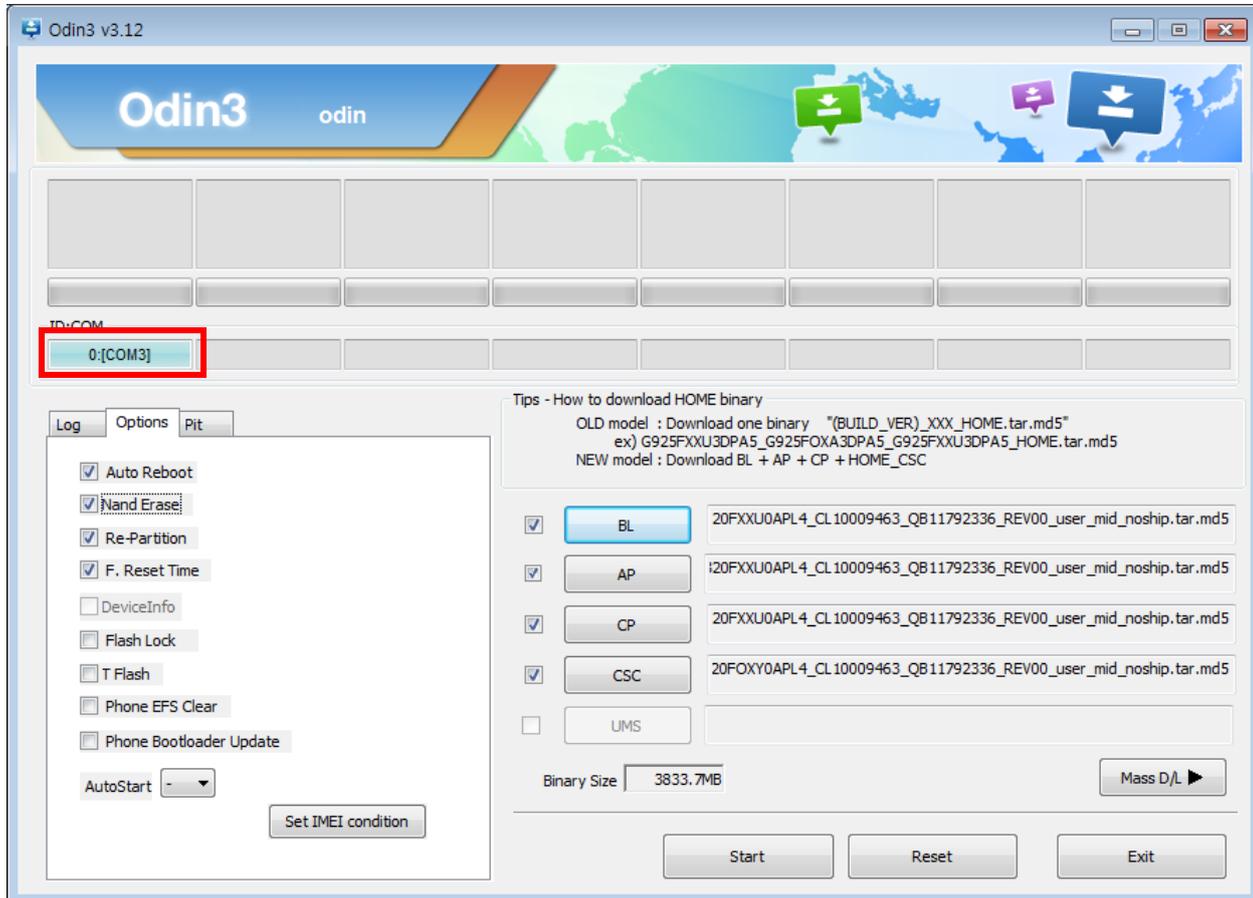
- Enter into Download Mode by pressing Home button, Volume Down button and Power On/Off Button simultaneously followed by pressing Volume up button as a direction of the phone.



6. Level 1 Repair

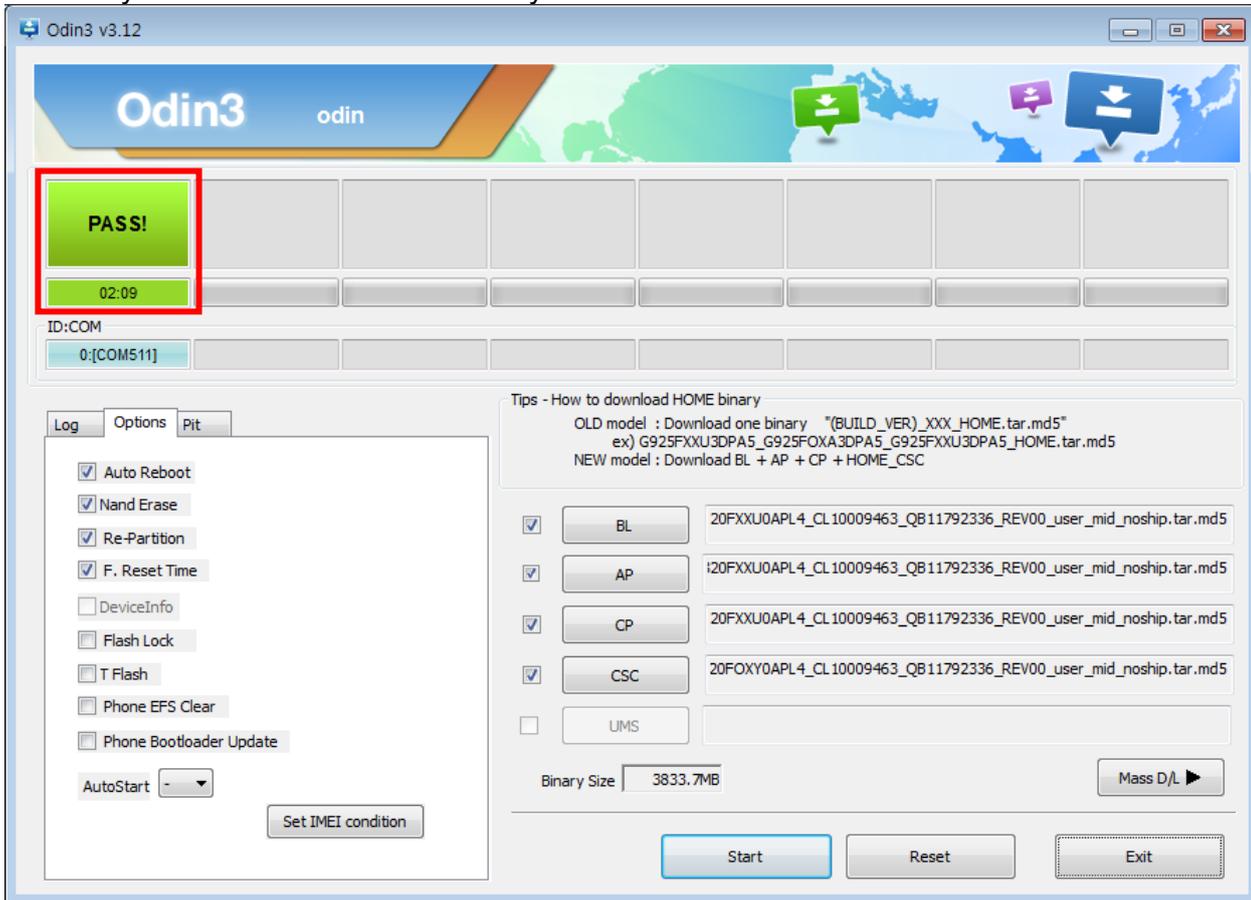
3. Connect the device to PC via Data Cable.

Make sure that the one of communication ports [ID:COM] box is highlighted in sky blue. The device is now connected with the PC and ready to download the binary files in it.



6. Level 1 Repair

4. Start downloading the binary files into the device by clicking Start button on the screen. The green colored "PASS!" sign will appear on the upper-left box if the binary files have been successfully downloaded into the device.



5. Disconnect the device from the Data cable.
6. Once the device boots up, you can check the version of the binary file or name by pressing the following code in sequence;
***#1234#**

You can perform Factory Reset by Settings → General management → Reset → Factory data reset

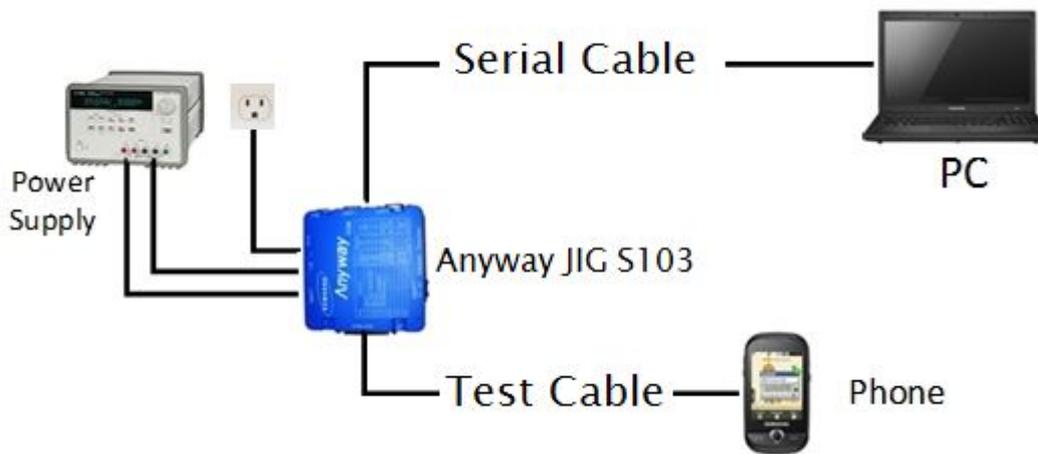
6. Level 1 Repair

6-2 IMEI writing

6-2-1 Preparation

- New IMEI writing Program has been released.
- Supported Model : Models which CAB files are uploaded on HHPsvc INI File category, instead of ini file.
- Refer to below IMEI writing procedure.

- H/W



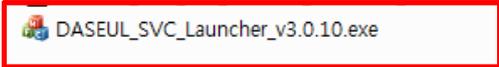
- S/W

① Library Install	To use Daseul, library files should be installed. Refer to SVC Bulletin “(11-82) Daseul (New IMEI writing Program) Library Install guide_rev1.0”
② Launcher	DASEUL_SVC_Launcher_v3_0_25 or higher -Uploaded on HHPsvc Notice
③ Runtime File	1. DASEUL_Runtime_Ver_3.1.139.0.CAB or higher -Uploaded on HHPsvc Notice 2. Make 'ModelName' folder at the same position with launcher & Runtime file.
④ Model File	Copy Model File under the 'Model Name' folder

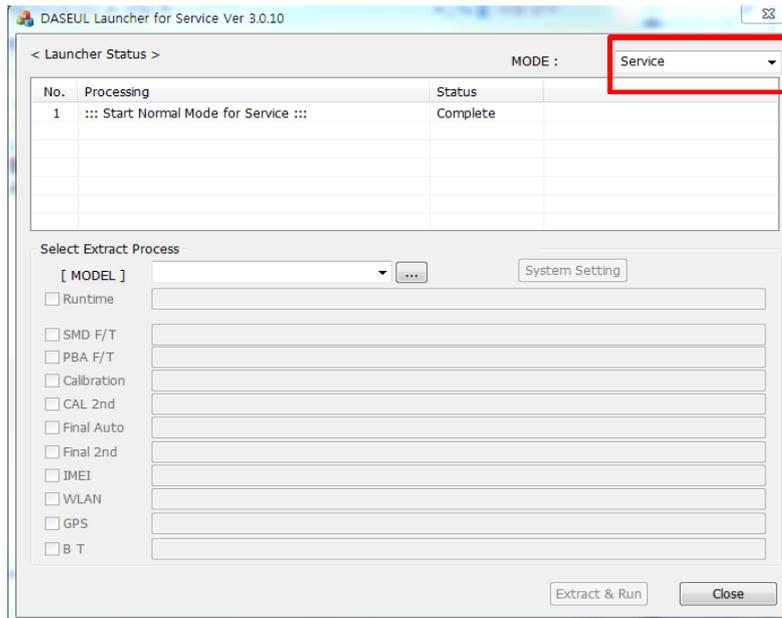
6. Level 1 Repair

6-2-2 IMEI writing Process

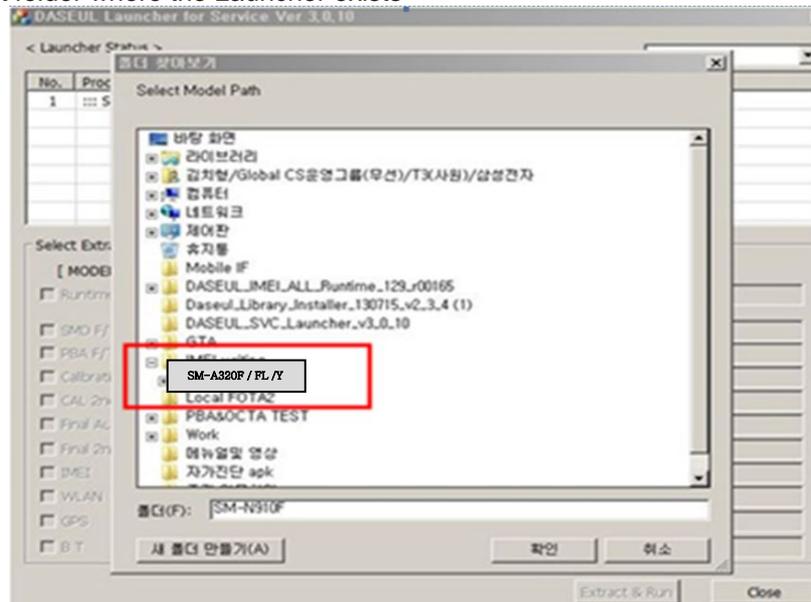
1. Run DASEUL_SVC_Launcher_v3.0.10.exe



2. Select Service Mode



3. Click  and Select folder where the Launcher exists



6. Level 1 Repair

6. Check IMEI Write / IMEI Check and click IMEI SVC & Repair Option.

Set System Configuration
Set System Configuration Dialog...

Test Process

[Process]	[Master]	[Slave]
SMD F/T	<input type="checkbox"/>	<input type="checkbox"/>
PBA F/T	<input type="checkbox"/>	<input type="checkbox"/>
Calibration	<input type="checkbox"/>	<input type="checkbox"/>
Calibration 2ND	<input type="checkbox"/>	<input type="checkbox"/>
Final Auto	<input type="checkbox"/>	<input type="checkbox"/>
Final Auto 2ND	<input type="checkbox"/>	<input type="checkbox"/>
Final Manual	<input type="checkbox"/>	<input type="checkbox"/>
IMEI Write	<input checked="" type="checkbox"/>	<input type="checkbox"/>
IMEI Check	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MDL +2nd Check	<input type="checkbox"/>	<input type="checkbox"/>
MDL Rework	<input type="checkbox"/>	<input type="checkbox"/>
IMEI Read	<input type="checkbox"/>	<input type="checkbox"/>
STA Write	<input type="checkbox"/>	<input type="checkbox"/>
STA Check	<input type="checkbox"/>	<input type="checkbox"/>
STA Reset	<input type="checkbox"/>	<input type="checkbox"/>
WLAN	<input type="checkbox"/>	<input type="checkbox"/>
GPS	<input type="checkbox"/>	<input type="checkbox"/>
BT	<input type="checkbox"/>	<input type="checkbox"/>
WLAN	<input type="checkbox"/>	<input type="checkbox"/>
Power Off-On before WLAN	<input type="checkbox"/>	<input type="checkbox"/>
Bluetooth	<input type="checkbox"/>	<input type="checkbox"/>
LCIA	<input type="checkbox"/>	<input type="checkbox"/>
Merge 2G3G Block Rad.	<input type="checkbox"/>	<input type="checkbox"/>

Test Condition

Calibration
Real CAL Cycle: on every
20 default CALs
Calibration Mode : FDT
CAL2nd Mode : FDT

Final
Supply RF Signal by : Conduction
Reset Loss Correction Count
Test Mode : Signaling

WLAN
Test Mode : WLAN

IMEI
Use RFSM
Use Second PC
Save ODS
Merge Felica Cal
OQC Reset
IBI Reset

System Config.

Language : English
Line Name : LINE(temp)
Line Type : 1Person Cell
 Smart Cloud Cell
of Phone : 1
Start Number of UI : 1
Start Number of Jig : 1
IP Address : 10.244.246.156
SKD Mode
MultiSharing(CMWS)
Developer Mode
Advanced Separating(ADS)

Operation Condition

Operation Condition

Model Information
Hardware Config
Signal Loss Config.
Loss Calibration
Channel Config.
MSTS Calibration
Setting End Band
Engine Freq.

7. Check SVC , User Ticket No and click OK

IMEI SVC && Repair Option

FTR N/A Rework N/A Korean SVC Write
 SVC User Ticket No SELA MIAMI N/A Local FOTA Check
 DEVELOPE Repair Board SVC Factory Reset
 Romania SVC Argentina SKD
 Initial PGM(SVC) Turkey
 ATT Rework Slovakia SVC
 IMEI Clear(Factory) GED 2nd Inspection
 Outgoing Inspection Check SBSC(PBA) SVC

6. Level 1 Repair

8. Click Hardware Config

Set System Configuration
Set System Configuration Dialog...

Test Process

[Process]	[Master]	[Slave]
SMD F/T	<input type="checkbox"/>	<input type="checkbox"/>
PBA F/T	<input type="checkbox"/>	<input type="checkbox"/>
Calibration	<input type="checkbox"/>	<input type="checkbox"/>
Calibration 2ND	<input type="checkbox"/>	<input type="checkbox"/>
Final Auto	<input type="checkbox"/>	<input type="checkbox"/>
Final Auto 2ND	<input type="checkbox"/>	<input type="checkbox"/>
Final Manual	<input type="checkbox"/>	<input type="checkbox"/>
IMEI Write	<input checked="" type="checkbox"/>	<input type="checkbox"/>
IMEI Check	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SVC Board	<input type="checkbox"/>	<input type="checkbox"/>
MDL Rework	<input type="checkbox"/>	<input type="checkbox"/>
IMEI Read	<input type="checkbox"/>	<input type="checkbox"/>
STA Write	<input type="checkbox"/>	<input type="checkbox"/>
STA Check	<input type="checkbox"/>	<input type="checkbox"/>
STA Reset	<input type="checkbox"/>	<input type="checkbox"/>
WLAN	<input type="checkbox"/>	<input type="checkbox"/>
GPS	<input type="checkbox"/>	<input type="checkbox"/>
BT	<input type="checkbox"/>	<input type="checkbox"/>
WLAN	<input type="checkbox"/>	<input type="checkbox"/>
Power Off-On before WLAN	<input type="checkbox"/>	<input type="checkbox"/>
Bluetooth	<input type="checkbox"/>	<input type="checkbox"/>
LCIA	<input type="checkbox"/>	<input type="checkbox"/>
Merge 2G3G Block Rad.	<input type="checkbox"/>	<input type="checkbox"/>

Test Condition

Calibration
Real CAL Cycle: on every
20 default: CALs
Calibration Mode : FDT
CAL2nd Mode : FDT

Final
Supply RF Signal by : Conduction

Reset Loss Correction Count

Test Mode : Signaling

WLAN
Test Mode : WLAN

IMEI
Use RFSM
Use Second PC
Save ODS
Merge Felica Cal
OQC Reset
IBI Reset

System Config.

Language : English
Line Name : LINE(temp)
Line Type : 1Person Cell
 Smart Cloud Cell
of Phone : 1
Start Number of UI : 1
Start Number of Jig : 1
IP Address : 10.244.246.165
SKD Mode
MultiSharing(CMWS)
Developer Mode
Advanced Separating(ADS)

Operation Condition

Operation Condition

IMEI SVC&Repair Option

Model Information
Hardware Config
Signal Loss Config.
Loss Calibration
Channel Config.
MSTS Calibration
Setting End Band
Engine Freq.
OK

9. Click Port Setting

Hardware Component Configuration
Controller Type, IO Bus Type, Port Setting,...

Phone

Count : 1
I/F - 1 Type : Serial COM
I/F - 2 Type : N/A
I/F Jig Type : AnyWayJig
 Use ID Check JIG

MSTS

Count : 0
I/F Type : GPIB

MSTS Sharing Controller

Count : 0
Control Type : N/A
I/F Type : Serial COM

Robot / ShieldBox

Control Type : N/A
I/F Type : Serial COM

Power Supply

I/F Type : GPIB

DBMS

Server : HOME(GUMI)
Type : Outside-Socket

Barcode Reader

Type : N/A
I/F Type : Serial COM

MES PN Sender

Type : N/A

PBA F/T

Function Test Jig : Port Setting
NI-DAQ : Port Setting
Power Detector : Port Setting
HDMI JIG : Port Setting

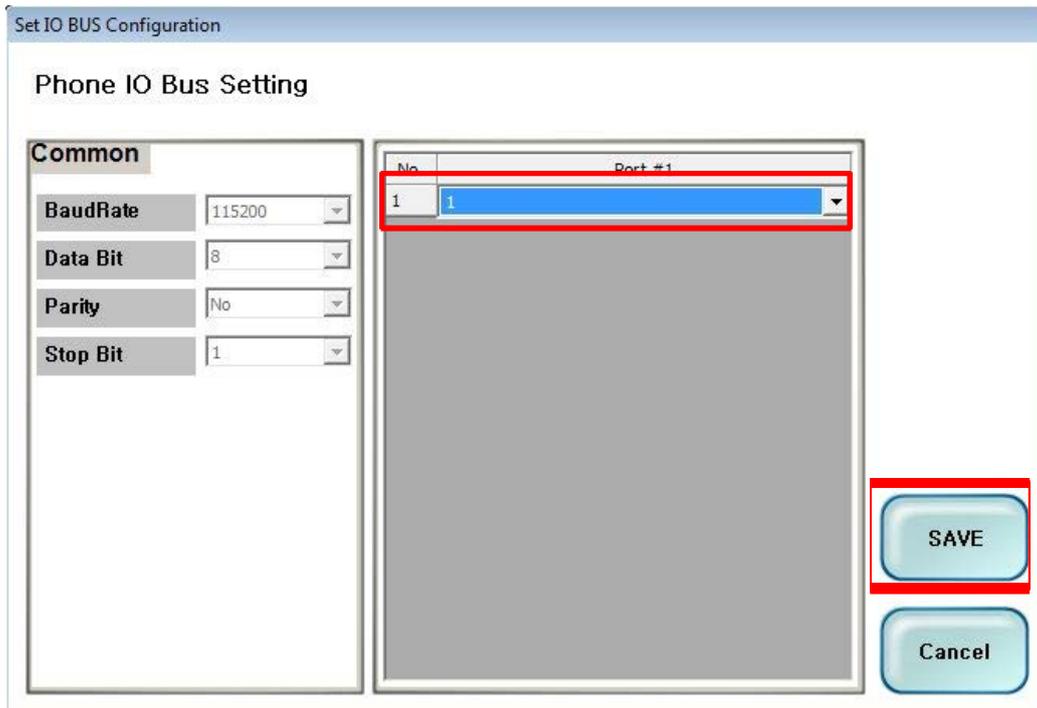
SMD F/T

Type : N/A
B'd Address : 5

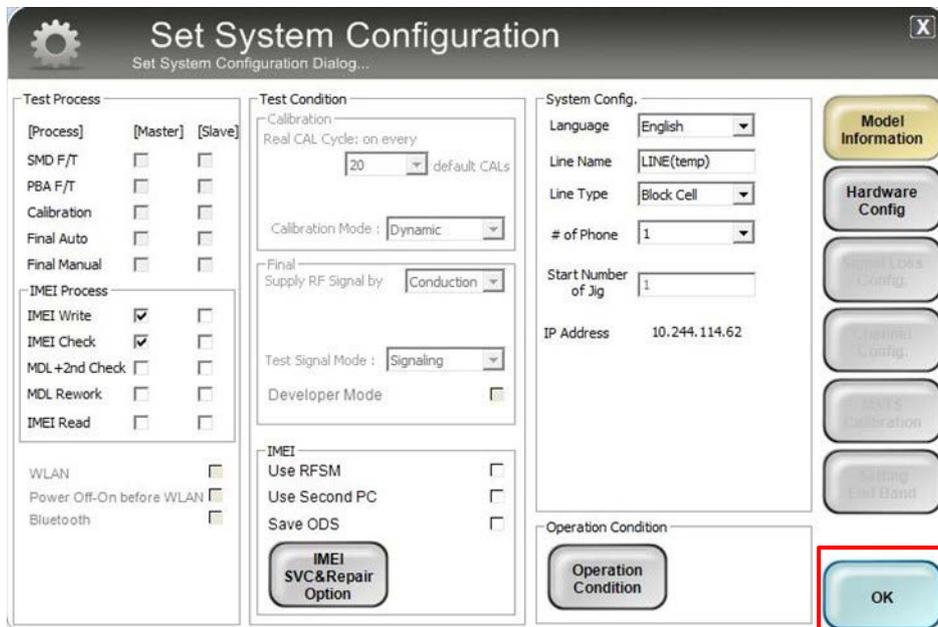
SAVE
Cancel

6. Level 1 Repair

10. Select Port Number and SAVE

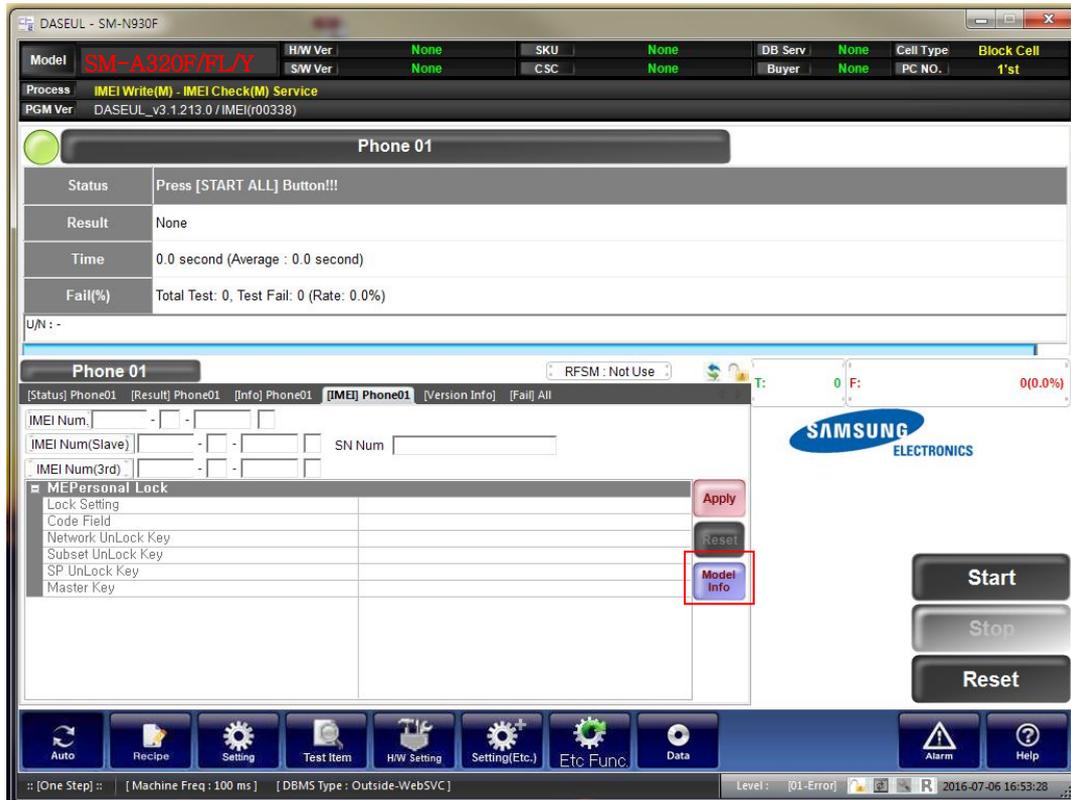


11. Click OK to proceed

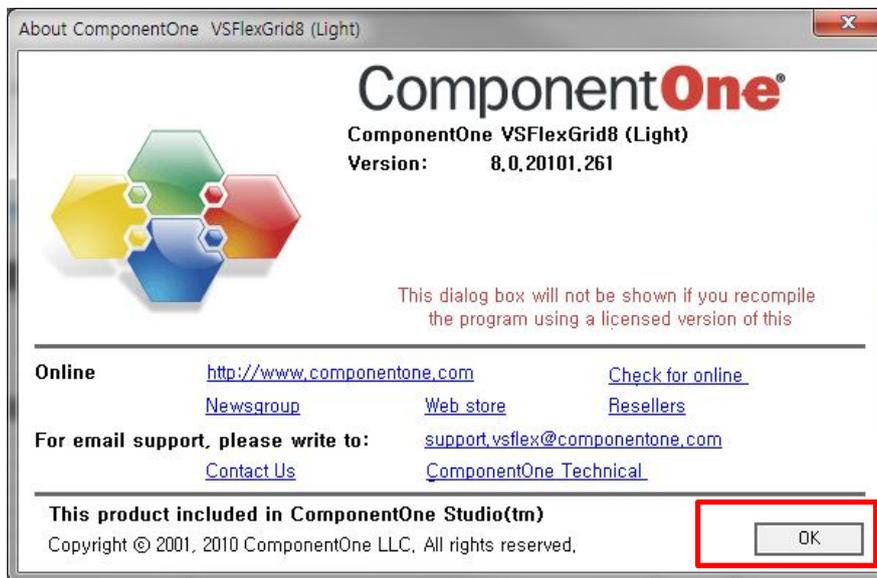


6. Level 1 Repair

12. Click Model Info and OK when pop-up shows



13. Click OK



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6. Level 1 Repair

14. Input SKU_CODE and BUYER, then click Save button.

※ Refer to HHPsvc→IMEI Review to check SKU Code and buyer

CSC	N930FOXMI1APG2
PDA	N930FXU1APG2
Software2	
LPD	
Contents	
DMB	
SKU_CODE	SM-N930FZKFDBT
BUYER	DBT
Material_Code	
Boot	
Factory Software	

FactoryReset+Check
 Pre Product
 2nd Func Test (AT&T)
 Lock Write (OQC)
 2nd Check after Pwr Reset
 Use Fulltest(SW Verification)
 Wait for Reboot in SVC Check

MDL Rework
 Main Repair
 Sub PBA Repair(Grip)
 SMD Test NV Write
 WIFI Addr. Init
 High Speed Boot Skip
 Recent List Check(OQC&IBI)

STA Option
 Don't DB Upload
 Packing Rework
 Tizen Download
 Android Download
 S-PEN is not inserted(Seed)
 Check IMEI Dupli [RB]

Save Load Cancel

15. Input IMEI Number and click Apply

Phone 01
 Status: Press [START ALL] Button!!!
 Result: None
 Time: 0.0 second (Average : 0.0 second)
 Fail(%): Total Test: 0, Test Fail: 0 (Rate: 0.0%)
 UJN: -

Phone 01 | RFSM : Not Use | T: 0 | F: 0 (0.0%)

[Status] Phone01 | [Result] Phone01 | [Info] Phone01 | [IMEI] Phone01 | [Version Info] | [Fail] All

IMEI Num. []-[]-[]-[]-[]-[]
 IMEI Num(Slave) []-[]-[]-[]-[]-[] | SN Num []-[]-[]-[]-[]-[]
 IMEI Num(3rd) []-[]-[]-[]-[]-[]

Auto | Recipe | Setting | Test Item | HW Setting | Setting(Etc.) | Etc Func. | Data | Alarm | Help

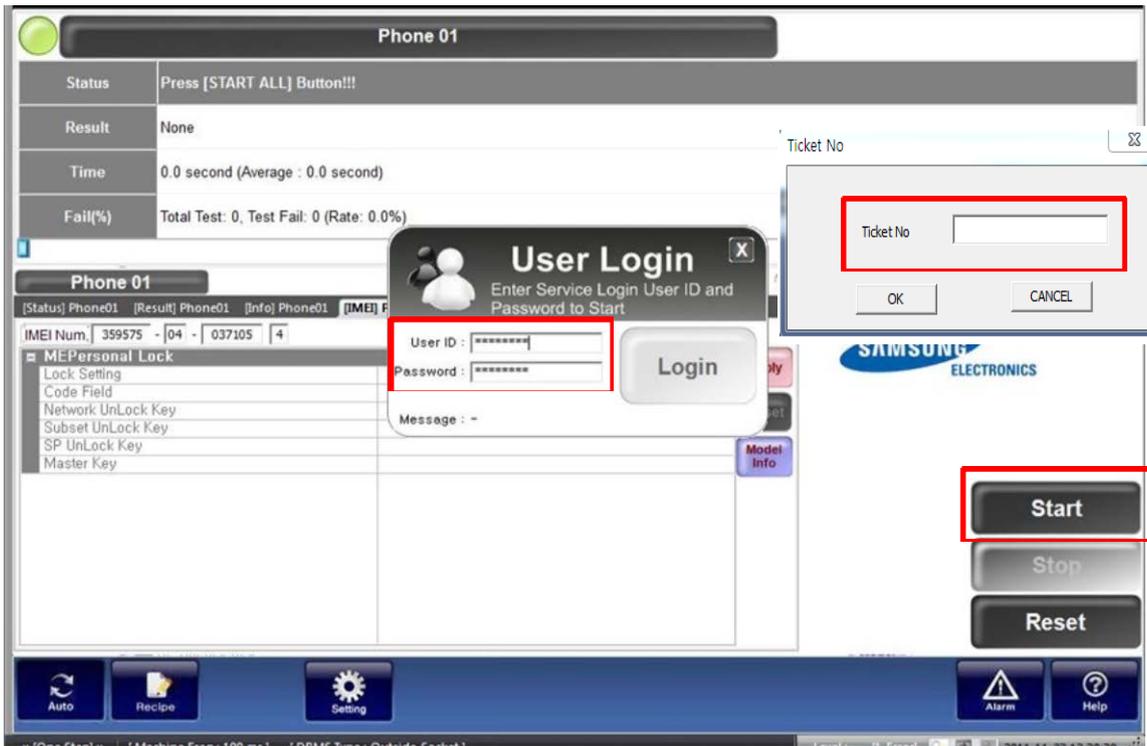
:: [One Step] :: | [Machine Freq : 100 ms] | [DBMS Type : Outside-WebSVC] | Level : [Q1-Error] | 2016-07-06 16:53:28

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6. Level 1 Repair

16. ① Click Start, and input IMEI writing ID and Password → ② input Ticket No

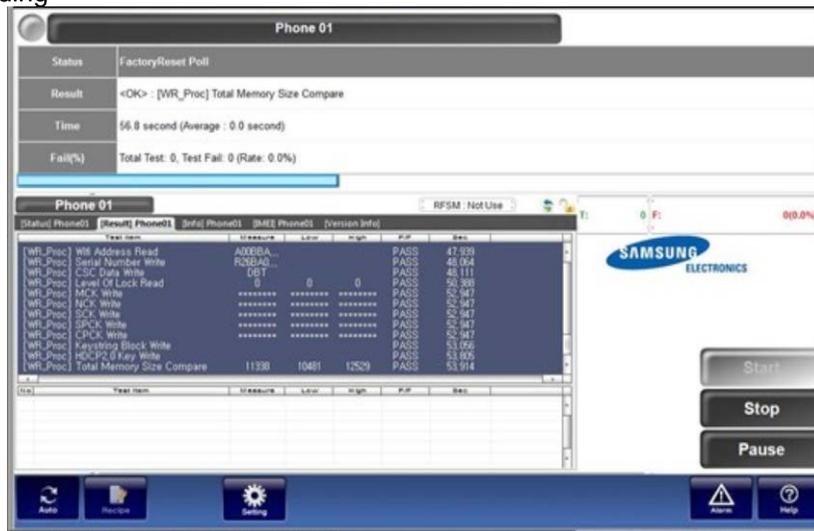


17. Connect the phone to Anyway JIG

※ When you connect the phone, the phone should be turned off.

After connecting the phone, the phone will be booted automatically.

18. IMEI Writing Proceeding



6. Level 1 Repair

19. IMEI Writing Success

Phone 01

Status: [TEST END]

Result: <Test Pass> - 037105

Time: 215.0 second (Average : 215.6 second)

Fail(%): Total Test: 1, Test Fail: 0 (Rate: 0.0%)

Phone 01

Test Item	Structure	Unit	High	PUF	Pass
[CH_Proc] AK_Authenticata Check	50720	50720	50720		PASS 213,519
[CH_Proc] IMEI Compare	50720	50720	50720		PASS 213,501
[CH_Proc] BootRom ID Compare	50720	50720	50720		PASS 214,293
[CH_Proc] Serial Number Compare	FD8BA0	FD8BA	FD8BA		PASS 214,385
[CH_Proc] MCK Compare	*****	*****	*****		PASS 214,455
[CH_Proc] NCK Compare	*****	*****	*****		PASS 214,455
[CH_Proc] SCK Compare	*****	*****	*****		PASS 214,455
[CH_Proc] SPCK Compare	*****	*****	*****		PASS 214,455
[CH_Proc] CPCK Compare	*****	*****	*****		PASS 214,455
[CH_Proc] PCF Compare	*****	*****	*****		PASS 214,455
[CH_Proc] Keystroke Block Compare	ON	ON	ON		PASS 214,502
[CH_Proc] HDCP2.0 Key Check	OK	OK	OK		PASS 214,673

SAMSUNG ELECTRONICS

Start

Stop

Reset

Auto

Printer

Setting

Alarm

Help

6. Level 1 Repair

6-3. RF Calibration

6-3-1. Required items in order to calibrate RF

- Installation program: RF Calibration Program
- Daseul_Launcher_vx.x.xx.exe
- Daseul_CAL_ALL_Runtime_x.x.xxx.x.CAB
- Model File - SM-A320F,FL : [SM-A320F_OPEN_CALIBRATION_Ver_3.1.218.1N.CAB](#)
- SM-A320Y : [SM-A320Y_OPEN_CALIBRATION_Ver_3.1.218.0T11.CAB](#)

※ It is required to use the latest program.

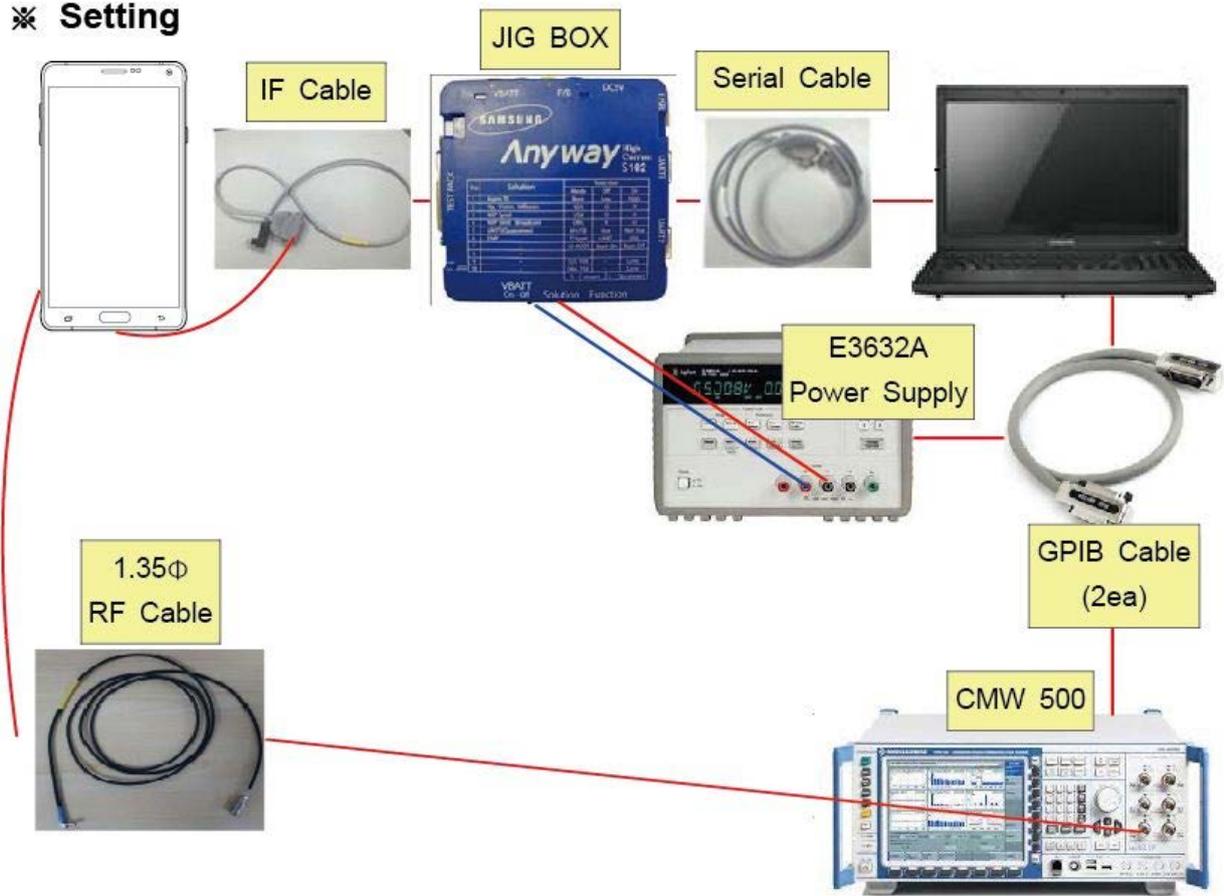
- [SM-A320F,FL,Y](#) Mobile Phone
- E3632A Power Supply
- JIG BOX (I-market: 1122429700(GH81-12520B))
- IF Cable (I-market: 1128242500(GH81-11962W))
- Adapter (GH81-11888K)
- RF Cable (GH81-11962G 1ea) 
- R&S CMW500
- GPIB Cable (2ea)
- UART Serial Cable

• Table of test cables

IF Cable	GH81-10631A	GH81-11962W	GH81-11171A	
	11 pin	USB C Type	7 pin (Old)	
RF Cable (Manual)	GH81-11962D	GH81-11962G	GH81-11962C	GH81-11962F
	1.35T, Short 	1.35T, Long 	1.6T, Short 	1.6T, Long 
4 Port Divider	GH81-11962A	GH81-11962B	GH81-11962E	
	Use / No use 	Divider Cable 	50Ω terminator 	

6. Level 1 Repair

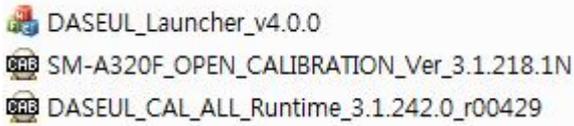
※ Setting



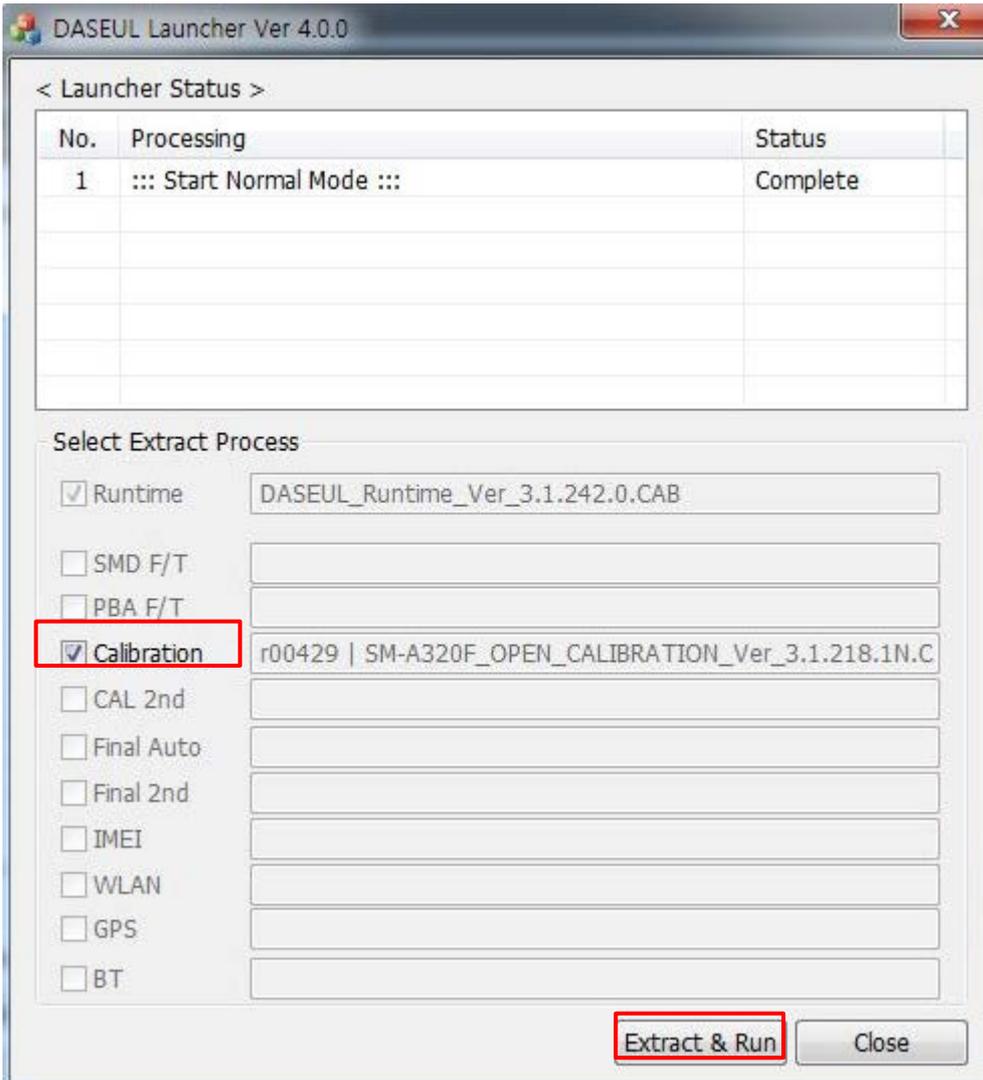
6. Level 1 Repair

6-3-2. RF Calibration Program

1. Run the RF Calibration Program Launcher, 'DASEUL_Launcher_vx.x.xx.exe'.

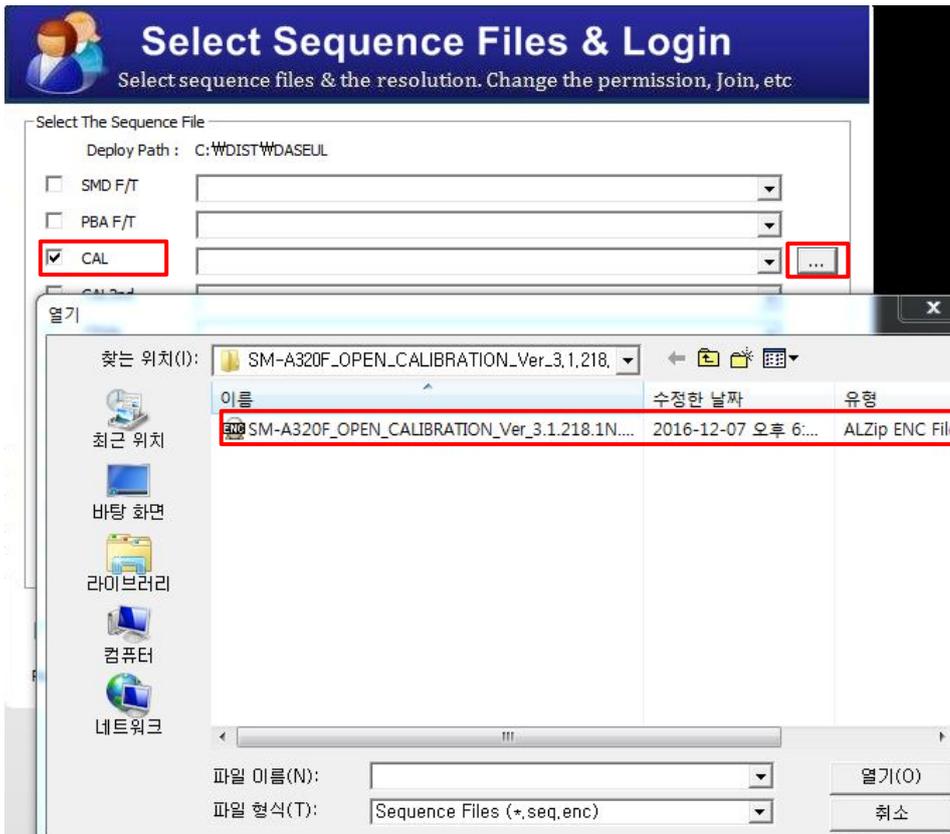


2. Check the 'Calibration' menu, and select 'Extract & Run'.

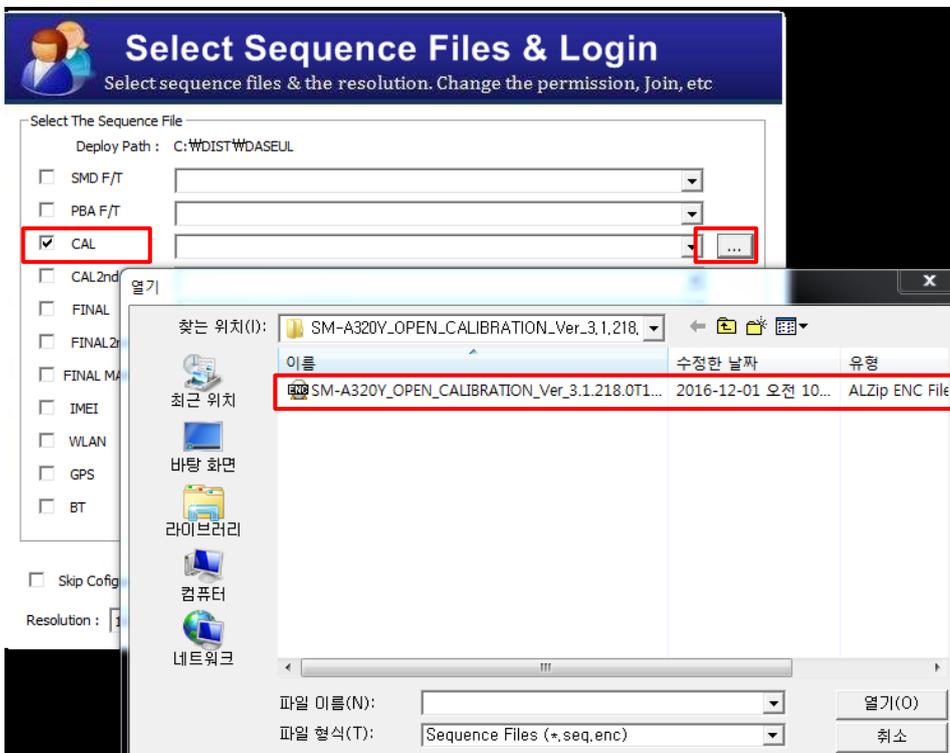


6. Level 1 Repair

3-1. Check the 'CAL' and open the [model file](#), then select 'Start' button.[SM-A320F,FL]



3-2. Check the 'CAL' and open the [model file](#), then select 'Start' button. [SM-A320Y]



6. Level 1 Repair

4. Change the Line Type to 'Block Cell' and disable 'Smart Cloud Cell'.

Set System Configuration
Set System Configuration Dialog...

Test Process

[Process]	[Master]	[Slave]
SMD F/T	<input type="checkbox"/>	<input type="checkbox"/>
PBA F/T	<input type="checkbox"/>	<input type="checkbox"/>
Calibration	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Calibration 2ND	<input type="checkbox"/>	<input type="checkbox"/>
Final Auto	<input type="checkbox"/>	<input type="checkbox"/>
Final Auto 2ND	<input type="checkbox"/>	<input type="checkbox"/>
Final Manual	<input type="checkbox"/>	<input type="checkbox"/>
IMEI Write	<input type="checkbox"/>	<input type="checkbox"/>
IMEI Check	<input type="checkbox"/>	<input type="checkbox"/>
MDL +2nd Check	<input type="checkbox"/>	<input type="checkbox"/>
MDL Rework	<input type="checkbox"/>	<input type="checkbox"/>
IMEI Read	<input type="checkbox"/>	<input type="checkbox"/>
STA Write	<input type="checkbox"/>	<input type="checkbox"/>
STA Check	<input type="checkbox"/>	<input type="checkbox"/>
STA Reset	<input type="checkbox"/>	<input type="checkbox"/>
WLAN	<input type="checkbox"/>	<input type="checkbox"/>
GPS	<input type="checkbox"/>	<input type="checkbox"/>
BT	<input type="checkbox"/>	<input type="checkbox"/>
WLAN	<input type="checkbox"/>	<input type="checkbox"/>
Power Off-On before WLAN	<input type="checkbox"/>	<input type="checkbox"/>
Bluetooth	<input type="checkbox"/>	<input type="checkbox"/>
LCIA	<input type="checkbox"/>	<input type="checkbox"/>
Merge 2G3G Block Rad.	<input type="checkbox"/>	<input type="checkbox"/>

Test Condition

Calibration
Real CAL Cycle: on every default CALs

Calibration Mode :

CAL2nd Mode :

Final
Supply RF Signal by

Reset Loss Correction Count

Test Mode :

WLAN
Test Mode :

IMEI
Use RFSM
Use Second PC
Save ODS
Merge Felica Cal
OQC Reset
IBI Reset

System Config.

Language

Line Name

Line Type

Smart Cloud Cell

of Phone

Start Number of UI

Start Number of Jig

IP Address

SKD Mode

MultiSharing(CMWS)

Developer Mode

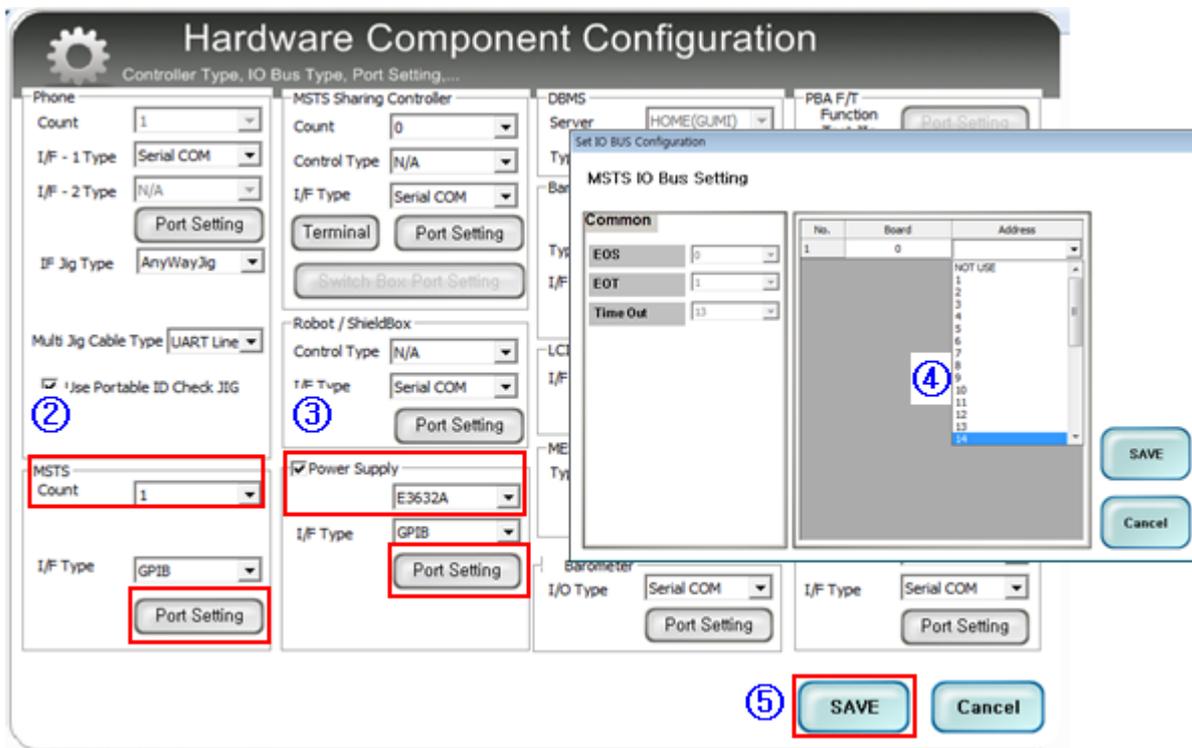
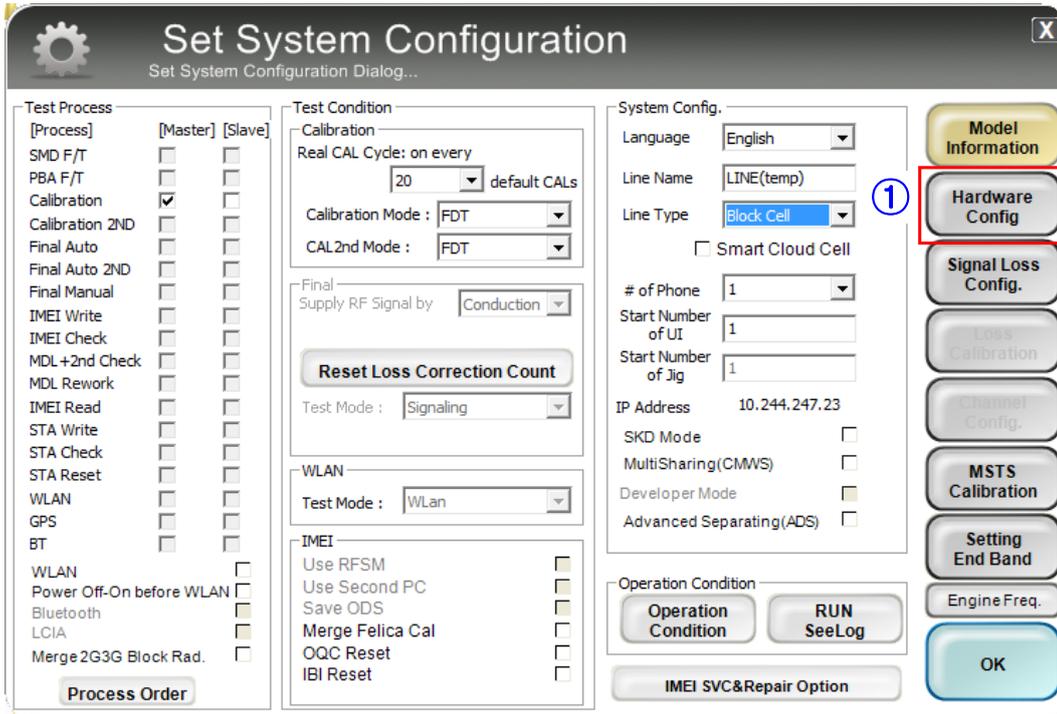
Advanced Separating(ADS)

Operation Condition

Model Information

6. Level 1 Repair

- Set the GPIB address of MSTS(CMW500) and Power Supply(E3632A) to enter 'Hardware Config' and 'Save'. (Check the GPIB address of equipments in advance)



6. Level 1 Repair

6. Press 'OK' to start RF Calibration after completing all settings.

The image shows two screenshots from a Samsung service tool. The top screenshot is the 'Set System Configuration' dialog box, which is used to configure various system parameters before starting a test. The bottom screenshot shows the 'Phone 01' test interface, which displays test results and provides controls to start, stop, or reset the test.

Set System Configuration Dialog...

Test Process

[Process]	[Master]	[Slave]
SMD F/T	<input type="checkbox"/>	<input type="checkbox"/>
PBA F/T	<input type="checkbox"/>	<input type="checkbox"/>
Calibration	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Calibration 2ND	<input type="checkbox"/>	<input type="checkbox"/>
Final Auto	<input type="checkbox"/>	<input type="checkbox"/>
Final Auto 2ND	<input type="checkbox"/>	<input type="checkbox"/>
Final Manual	<input type="checkbox"/>	<input type="checkbox"/>
IMEI Write	<input type="checkbox"/>	<input type="checkbox"/>
IMEI Check	<input type="checkbox"/>	<input type="checkbox"/>
MDL +2nd Check	<input type="checkbox"/>	<input type="checkbox"/>
MDL Rework	<input type="checkbox"/>	<input type="checkbox"/>
IMEI Read	<input type="checkbox"/>	<input type="checkbox"/>
STA Write	<input type="checkbox"/>	<input type="checkbox"/>
STA Check	<input type="checkbox"/>	<input type="checkbox"/>
STA Reset	<input type="checkbox"/>	<input type="checkbox"/>
WLAN	<input type="checkbox"/>	<input type="checkbox"/>
GPS	<input type="checkbox"/>	<input type="checkbox"/>
BT	<input type="checkbox"/>	<input type="checkbox"/>
WLAN	<input type="checkbox"/>	<input type="checkbox"/>
Power Off-On before WLAN	<input type="checkbox"/>	<input type="checkbox"/>
Bluetooth	<input type="checkbox"/>	<input type="checkbox"/>
LCIA	<input type="checkbox"/>	<input type="checkbox"/>
Merge 2G3G Block Rad.	<input type="checkbox"/>	<input type="checkbox"/>

Test Condition

Calibration
 Real CAL Cycle: on every default CALs
 Calibration Mode :
 CAL2nd Mode :

Final
 Supply RF Signal by :

Reset Loss Correction Count

Test Mode :

WLAN
 Test Mode :

IMEI
 Use RFSM
 Use Second PC
 Save ODS
 Merge Felica Cal
 OQC Reset
 IBI Reset

System Config.

Language :
 Line Name :
 Line Type :
 Smart Cloud Cell

of Phone :
 Start Number of UI :
 Start Number of Jig :
 IP Address : 10.244.247.23
 SKD Mode
 MultiSharing(CMWS)
 Developer Mode
 Advanced Separating(ADS)

Operation Condition

IMEI SVC&Repair Option

Model Information
 Hardware Config
 Signal Loss Config.
 Loss Calibration
 Channel Config.
 MSTs Calibration
 Setting End Band
 Engine Freq.

Phone 01

Status: Press [START ALL] Button!!!
 Result: None
 Time: 0.0 second (Average : 0.0 second)
 Fail(%): Total Test: 0, Test Fail: 0 (Rate: 0.0%)

U/N : -

Phone 01

[Status] Phone01 [Result] Phone01 [Info] Phone01 [Version Info] [Fail] All

Time	No.	Item	Status
21:12:08	01	SetTestNV	SetTestNV Init Complete
21:12:08	01	EndCalibration	EndCalibration Init
21:12:08	01	CMC_CAL_STA...	CMC_CAL_START_V2 Init Complete
21:12:08	01	FactoryTestLog...	FactoryTestLog_Enable Init Complete
21:12:08	01	GetTestNV	GetTestNV Init Complete
21:12:08	01	BatteryOCVTest	BatteryOCVTest Init Complete
21:12:08	01	SetTestNV	SetTestNV Init Complete
21:12:08	01	EndCalibration	EndCalibration Init
21:12:08	01	UlnitTestStep	UlnitTestStep MSTs Init Start
21:12:09	01	UlnitTestStep	JIG Open IOBus
21:12:09	01	UlnitTestStep	Set JIG Solution
21:12:10	01	UlnitTestStep	Get Reference Current
21:12:15	01	Instrument	RefCurrent[0] = 0.58689[mA]
21:12:15	01	UlnitTestStep	Reference Current = 0.6
21:12:15	01	Instrument	Get MSTs License
21:12:17	01	UlnitTestStep	MSTs License Info
21:12:19	01	UlnitTestStep	Get MSTs Reset
21:12:20	01	UlnitTestStep	Initial Step End, TEST READY! Press [START ALL] Button!!!

SAMSUNG ELECTRONICS

Auto Recipe Setting Test Item HW Setting Setting(Etc.) Etc Func. Data Alarm Help

Level : [01-Error] 2016-12-07 21:12:28

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