

2. Specification

2-1. Radio Frequency & Channel

1) LTE BAND frequency

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
	LB12 : 699 ~ 716	23010≤N≤23179
	LB13 : 777 ~ 787	23180≤N≤23279
	LB17 : 704 ~ 716	23730≤N≤23849
	LB18 : 815 ~ 830	23850≤N≤23999
	LB19 : 830 ~ 845	23850≤N≤23999
	LB20 : 832 ~ 862	24000≤N≤24149
	LB26 : 814 ~ 849	26690≤N≤27039
	LB28 : 703 ~ 748	27210≤N≤27659
	LB38 : 2570 ~ 2620	37750≤N≤38249
LB40 : 2300 ~ 2400	38650≤N≤39649	
LB41 : 2496 ~ 2690	39650≤N≤41589	
LB66 : 1710 ~ 1780	131972≤N≤132671	
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
	LB12 : 729 ~ 746	5010≤N≤5179
	LB13 : 746 ~ 756	5180≤N≤5279
	LB17 : 734 ~ 746	5730≤N≤5849
	LB18 : 860 ~ 876	5850≤N≤5999
	LB19 : 875 ~ 890	6000≤N≤6149
	LB20 : 791 ~ 821	6150≤N≤6449
	LB26 : 859 ~ 894	8690≤N≤9039
	LB28 : 758 ~ 803	9210≤N≤9659
	LB38 : 2570 ~ 2620	37750≤N≤38249
LB40 : 2300 ~ 2400	38650≤N≤39649	
LB41 : 2496 ~ 2690	39650≤N≤41589	
LB66 : 2110 ~ 2200	66436≤N≤67335	

2. Specification

2) WCDMA BAND frequency

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

3) GSM BAND frequency

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

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2-2. GSM General Specification

		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	33.5 dBm~5 dBm	33 dBm~5 dBm	29.5dBm~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

2-3. WCDMA General Specification

	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	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	10ms
Modulation	UL : HQPSK DL : QPSK	UL : HQPSK DL : QPSK	UL : HQPSK DL : QPSK	UL : HQPSK DL : QPSK	UL : HQPSK DL : QPSK
MS Power	Max:22.5dBm (+1~-3)dBm Min:<-50dBm	Max:22.0dBm (+1~-3)dBm Min:<-50dBm	Max:23.0dBm (+1~-3)dBm Min:<-50dBm	Max:24.2dBm (+1~-3)dBm Min:<-50dBm	Max:24.2dBm (+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

2-4. LTE General Specification

	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)	9Mbps/s (at 10MHz BW,50RB)	9Mbps/s (at 10MHz BW,50RB)	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	10ms	10ms	10ms
Modulation	UL : QPSK 16QAM 64QAM DL : QPSK 16QAM 64QAM 256QAM	UL : QPSK 16QAM 64QAM DL : QPSK 16QAM 64QAM 256QAM	UL : QPSK 16QAM 64QAM DL : QPSK 16QAM 64QAM 256QAM	UL : QPSK 16QAM 64QAM DL : QPSK 16QAM 64QAM 256QAM	UL : QPSK 16QAM 64QAM DL : QPSK 16QAM 64QAM 256QAM	UL : QPSK 16QAM 64QAM DL : QPSK 16QAM 64QAM 256QAM	UL : QPSK 16QAM 64QAM DL : QPSK 16QAM 64QAM 256QAM
MS Power	Max:22.5±2.7d Bm Min:-49dBm	Max:23.0±2.7d Bm Min:-49dBm	Max:23.0±2.7d Bm Min:-49dBm	Max:23.0±2.7d Bm Min:-49dBm	Max:24.2±2.7d Bm Min:-49dBm	Max:23.7±2.7d Bm Min:-49dBm	Max:24.2±2.7d Bm Min:-49dBm
Power Level	Class3	Class3	Class3	Class3	Class3	Class3	Class3
Sensitivity	-97dBm	-95dBm	-94dBm	-97dBm	-95dBm	-95dBm	-94dBm

2. Specification

	LTE BAND12	LTE BAND13	LTE BAND17	LTE BAND18	LTE BAND19	LTE BAND20
Freq. Band[MHz] Uplink/Downlink	699 ~ 716 729 ~ 746	777 ~ 787 746 ~ 756	704~716 734~746	815 ~ 830 860 ~ 876	830 ~ 845 875 ~ 890	832~862 791~821
ARFCN range	23010≤N≤23179 5010≤N≤5179	23180≤N≤23279 5180≤N≤5279	23730~23849 5730~5849	23850≤N≤23999 5850≤N≤5999	23850≤N≤23999 6000≤N≤6149	19250 ~ 19950 1250~1950
Tx/Rx spacing	30 MHz	31 MHz	30 MHz	45 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)	9Mbps/s (at 10MHz BW,50RB)	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	UL : QPSK 16QAM 64QAM DL : QPSK 16QAM 64QAM 256QAM	UL : QPSK 16QAM 64QAM DL : QPSK 16QAM 64QAM 256QAM	UL : QPSK 16QAM 64QAM DL : QPSK 16QAM 64QAM 256QAM	UL : QPSK 16QAM 64QAM DL : QPSK 16QAM 64QAM 256QAM	UL : QPSK 16QAM 64QAM DL : QPSK 16QAM 64QAM 256QAM
MS Power	Max:23.5±2.7dBm Min:-49dBm	Max:22.5±2.7dBm Min:-49dBm	Max:23.5±2.7dBm Min:-49dBm	Max:23.5±2.7dBm Min:-49dBm	Max:23.5±2.7dBm Min:-49dBm	Max:24.2±2.7dBm Min:-49dBm
Power Level	Class3	Class3	Class3	Class3	Class3	Class3
Sensitivity	-94dBm	-94dBm	-94dBm	-94dBm	-94dBm	-94dBm

2. Specification

	LTE BAND26	LTE BAND28	LTE BAND38	LTE BAND40	LTE BAND41	LTE BAND66
Freq. Band[MHz] Uplink/Downlink	814 ~ 849 859 ~ 894	703~748 758~803	2570~2620 2570~2620	2300~2400 2300~2400	2496~2690 2496~2690	1710 ~ 1780 2110 ~ 2200
ARFCN range	26690≤N≤27039 8690≤N≤9039	20400~20650 2400~2650	37750~38249 37750~38249	38650~39649 38650~39649	39650~41589 39650~41589	131972≤N≤13267 1 66436≤N≤67335
Tx/Rx spacing	45 MHz	55 MHz				400 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)	9Mbps/s (at 10MHz BW,50RB)	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	UL : QPSK 16QAM 64QAM DL : QPSK 16QAM 64QAM 256QAM	UL : QPSK 16QAM 64QAM DL : QPSK 16QAM 64QAM 256QAM	UL : QPSK 16QAM 64QAM DL : QPSK 16QAM 64QAM 256QAM	UL : QPSK 16QAM 64QAM DL : QPSK 16QAM 64QAM 256QAM	UL : QPSK 16QAM 64QAM DL : QPSK 16QAM 64QAM 256QAM
MS Power	Max:23.5±2.7dBm Min:-49dBm	Max:23.3±2.7dBm Min:-49dBm	Max:22.9±2.7dBm Min:-49dBm	Max:23.8±2.7dBm Min:-49dBm	Max:23.5±2.7dBm Min:-49dBm	Max:23.0±2.7dBm Min:-49dBm
Power Level	Class3	Class3	Class3	Class3	Class3	Class3
Sensitivity	-94dBm	-95.5dBm	-97dBm	-97dBm	-95dBm	-95dBm

2. Specification

2-5. WCDMA General Specification

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. Product Function

Main Function

Item	Description
OS	Android V7.1.1 (Nougat)
RF	GSM850 / GSM900 / DCS1800 / PCS1900 WCDMA: B1/ B2/ B4/ B5/ B8 LTE: B1/ B2/ B3/ B4/ B5/ B7/ B8/ B12/ B13/ B17/ B18/ B19/ B20/ B26/ B28/ B38/ B40/ B41/ B66 Down/Uplink Data Rate (Max, Mbps) : LTE 450/50
Battery	3,500mAh
Base Band	Exynos7885 2.2GHz & 1.6GHz (Octa-Core)
Other RF	GPS, Glonass, Beidou, ANT+, BT 5.0, USB 2.0, NFC, WIFI 802.11 a/b/g/n/ac 2.4+5GHz, MST
Camera	Rear(16M) + Front(16M+8M) Camera
LCD	6.0" FHD+ OCTA
RAM	4GB MEMORY + 32GB eMMC / 4G MEMORY + 64GB eMMC / 6G MEMORY + 64GB eMMC
Sensor	Accelerometer, Barometer, Fingerprint Sensor, Gyro Sensor, Geomagnetic Sensor, Hall Sensor, RGB Light Sensor, Proximity Sensor
Accessory	Charger: 9V/1.67A Data cable : 0.8M USB-A Ear phone: 3.5pi, 4pin Ejection Pin

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.

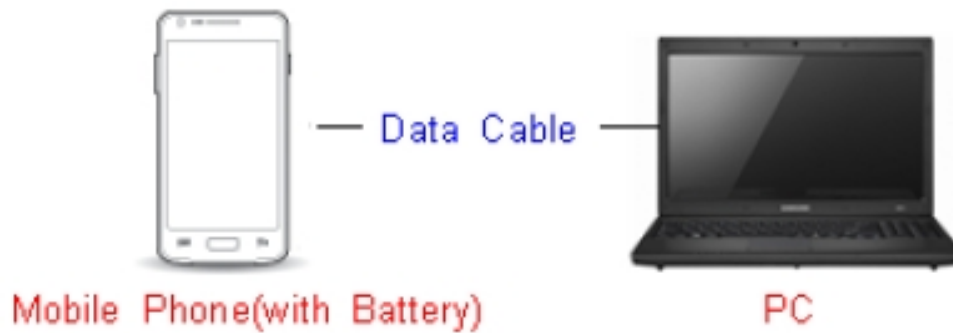
6. Level 1 Repair

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

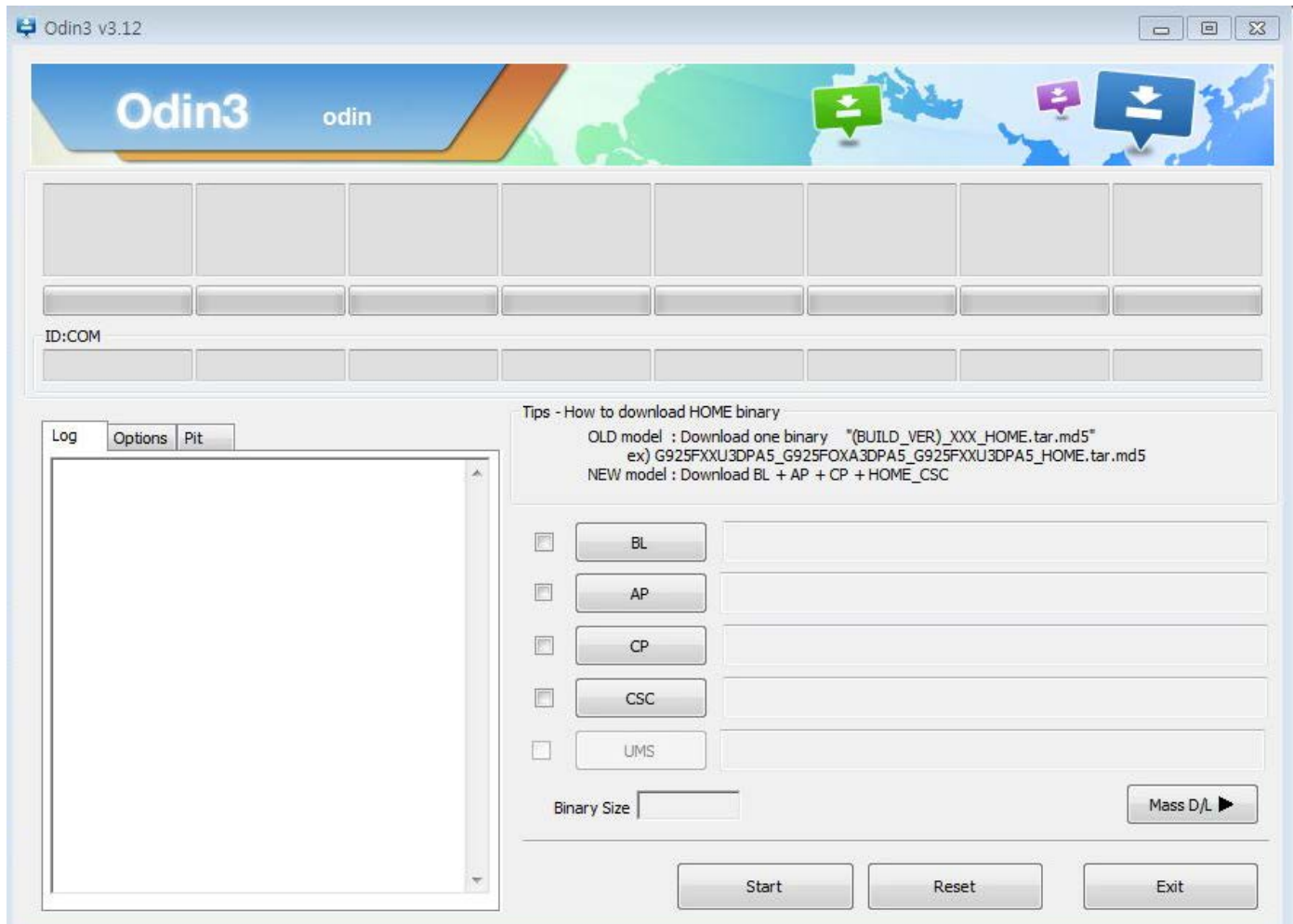


Data Cable : [GH39-01886A](#)

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**"

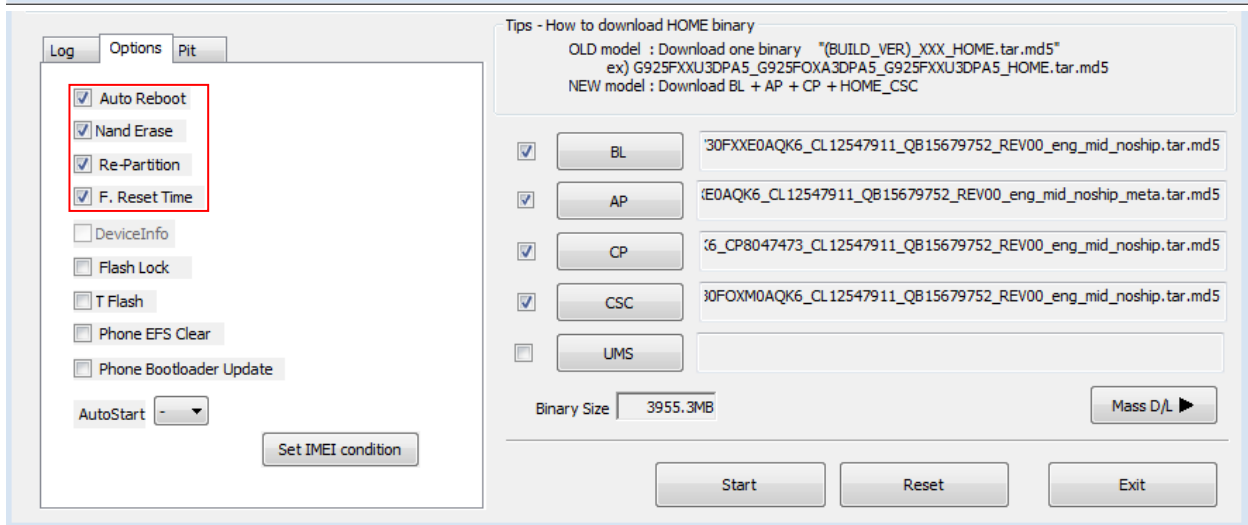
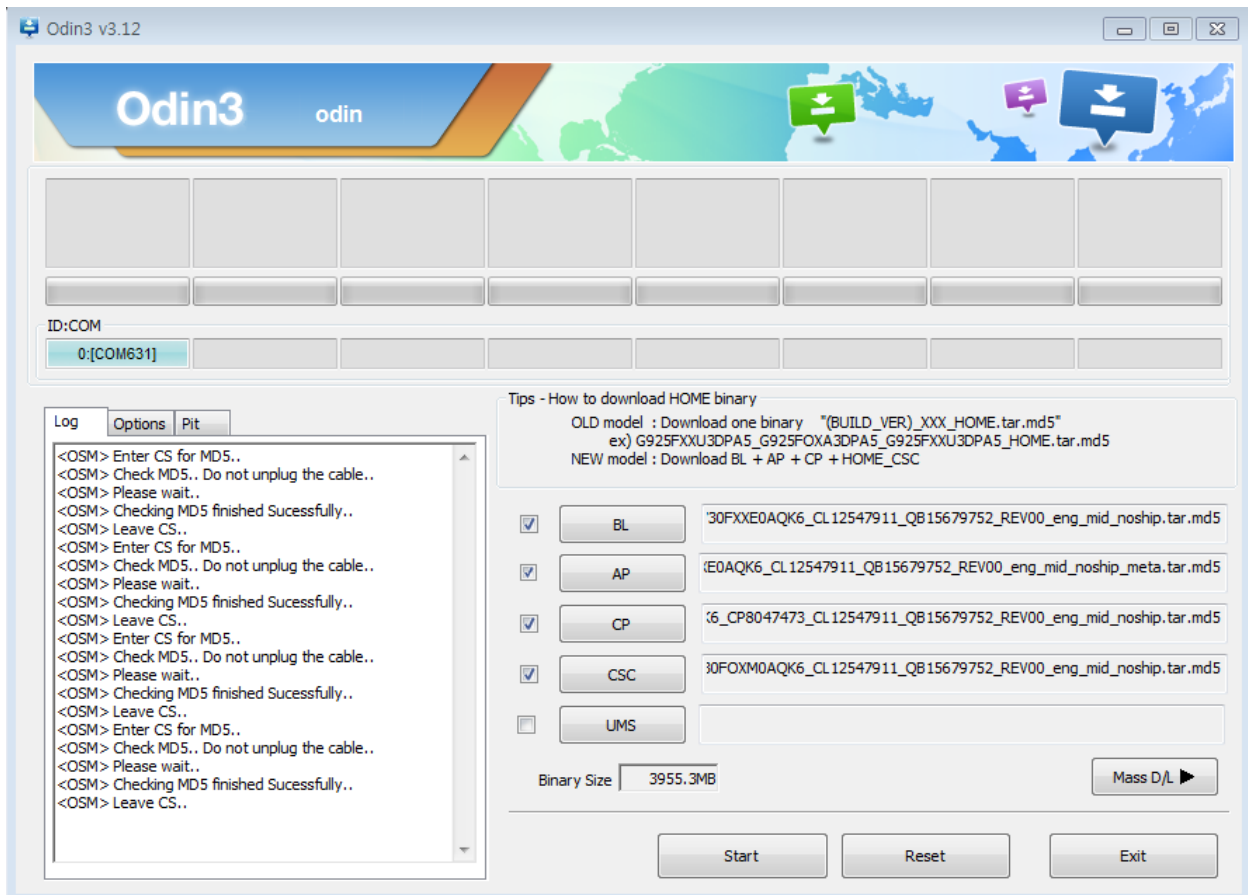


6. Level 1 Repair

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

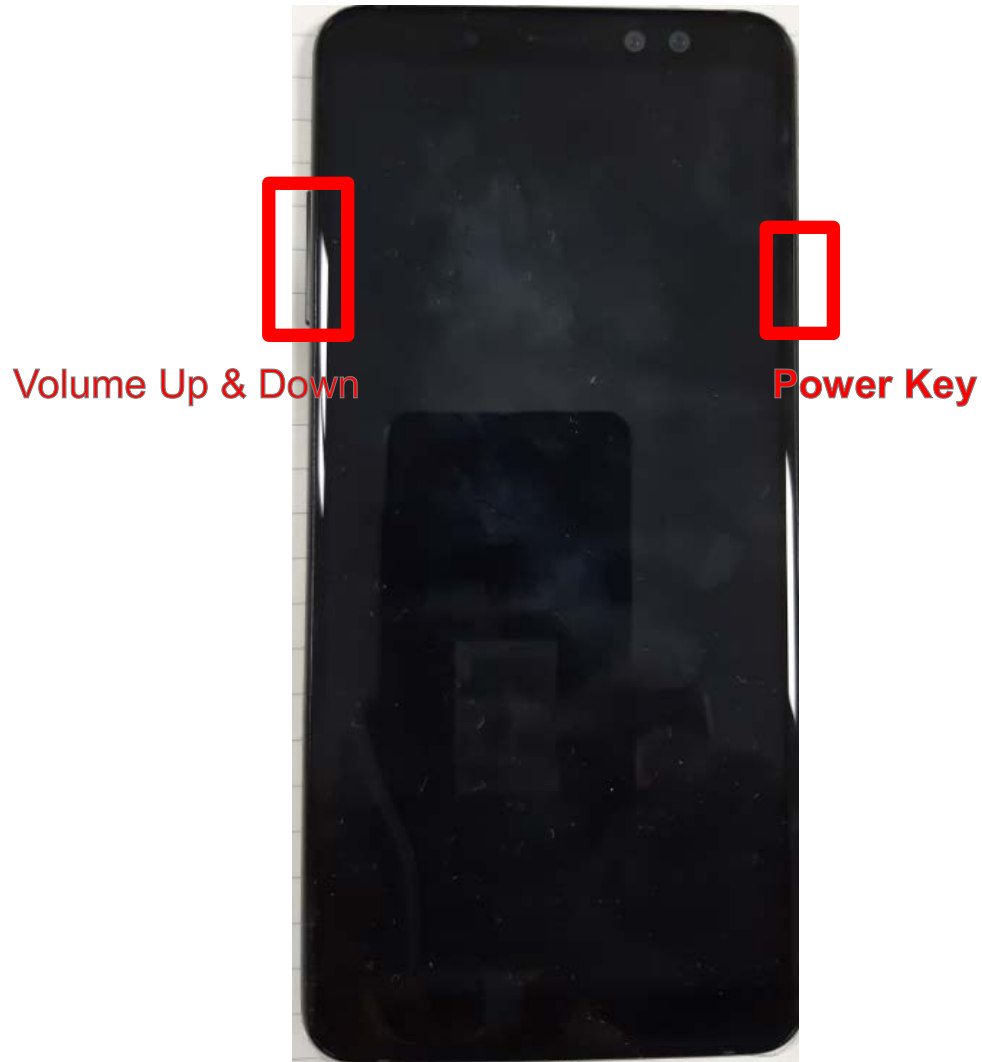
* Note : "Odin v3.12 or above" checks MD5 checksum just after file selection.



6. Level 1 Repair

2. Enter into Download Mode

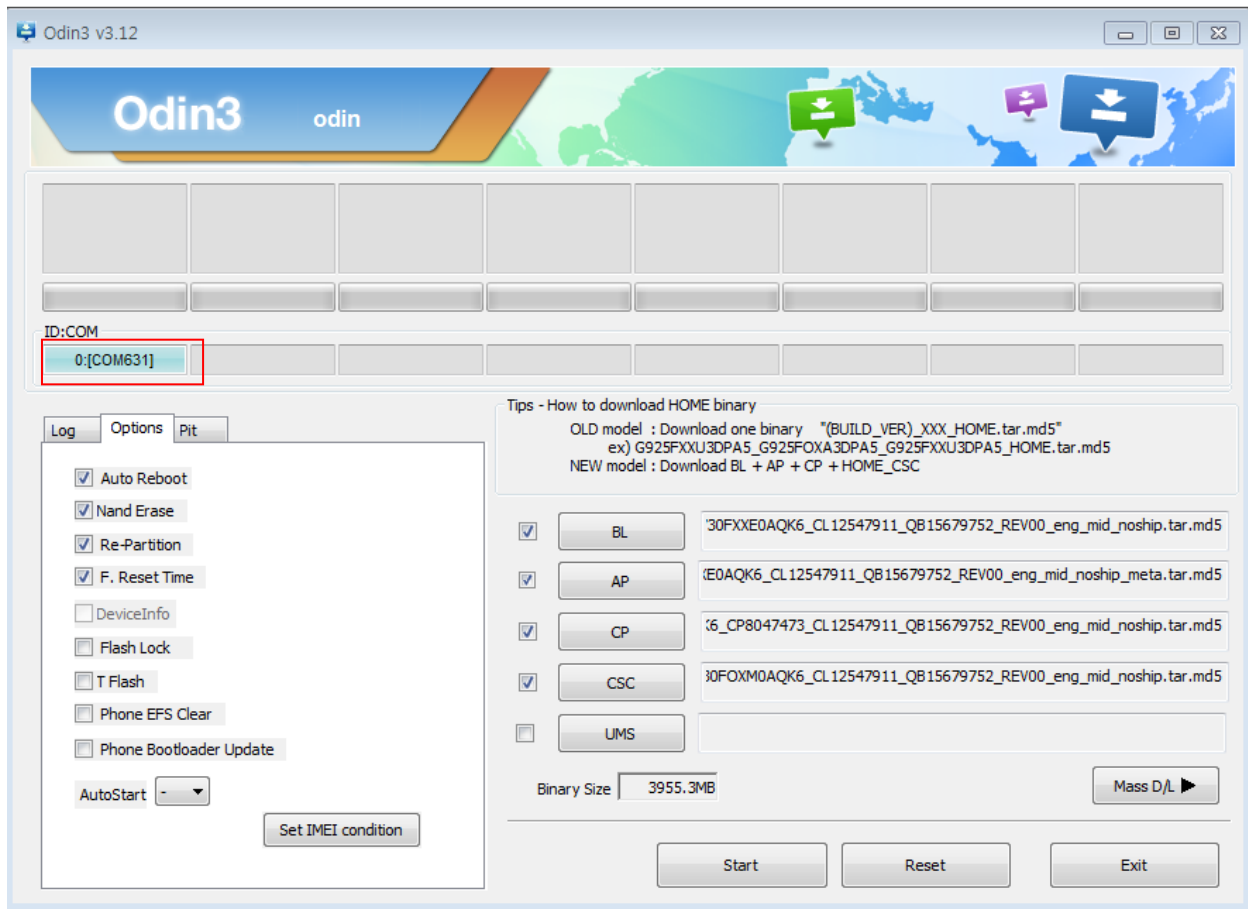
- Enter into Download Mode by pressing Volume Up & Down button and Power On/Off Button simultaneously followed by pressing Volume up button as a direction of the phone.



6. Level 1 Repair

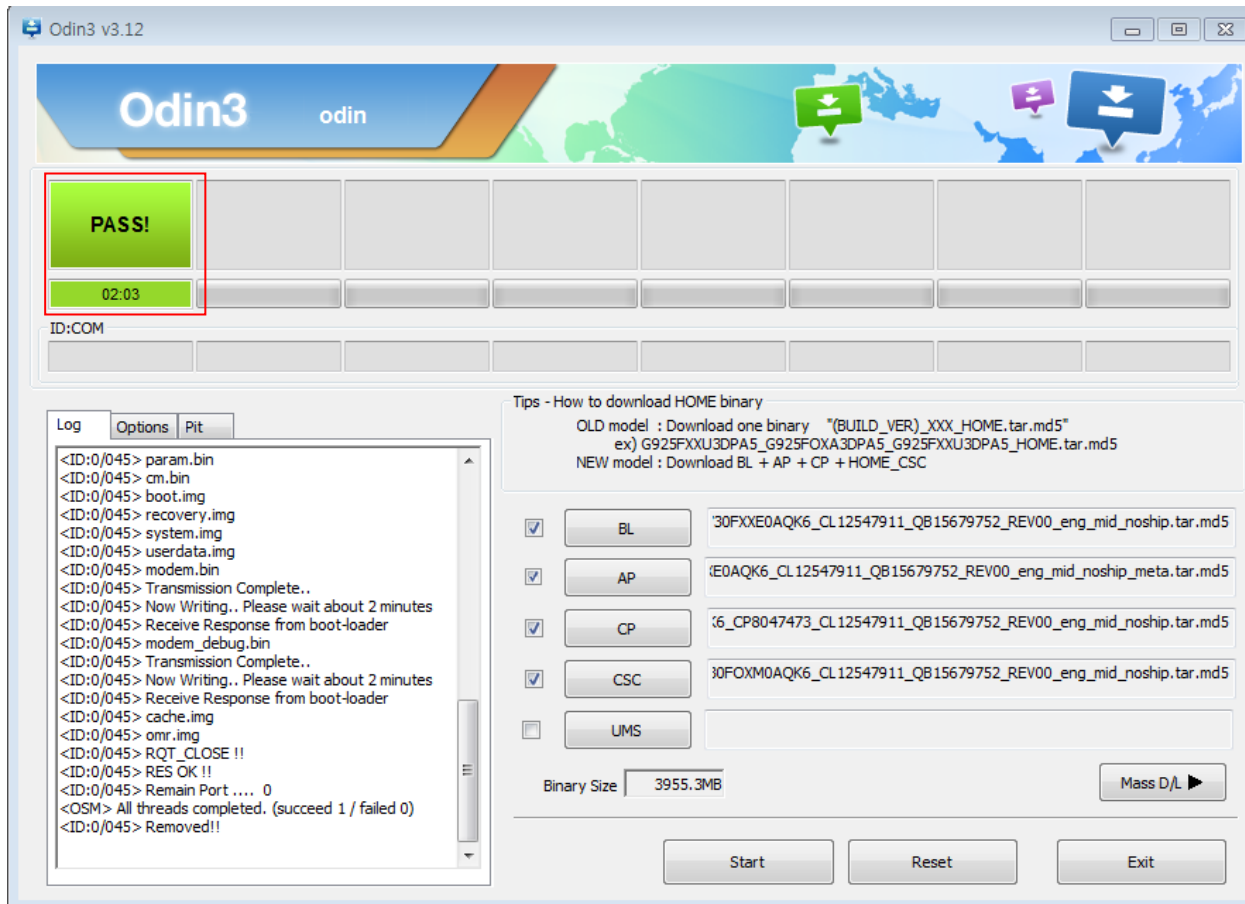
3. Connect the device to PC via Data Cable.

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 → Accounts → Backup and reset

⚠ Caution. Never disconnect during the S/W downloading.

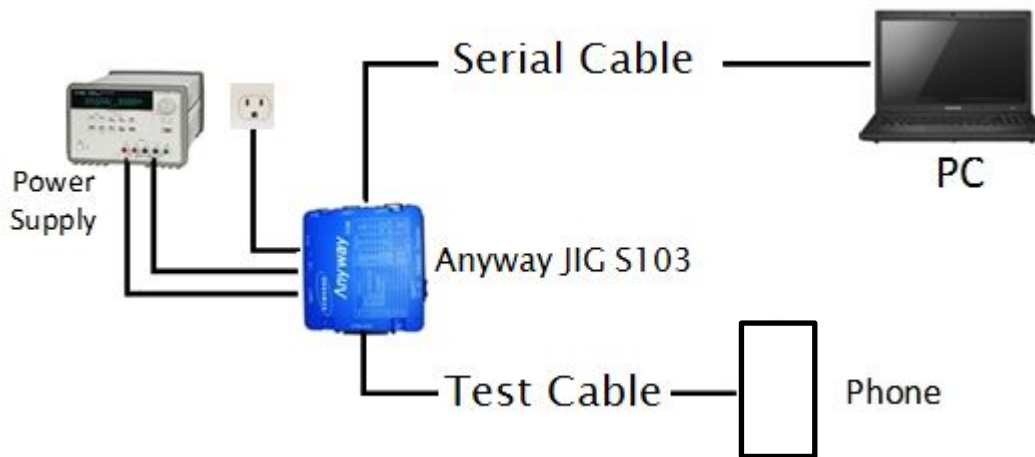
6. Level 1 Repair

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_3.1.299.0.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

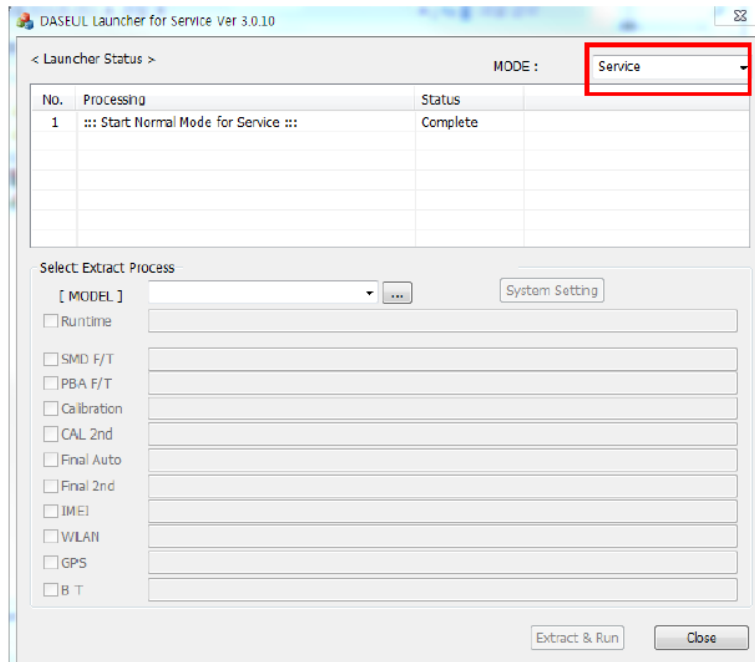
6. Level 1 Repair


6-2-2. IMEI writing Process

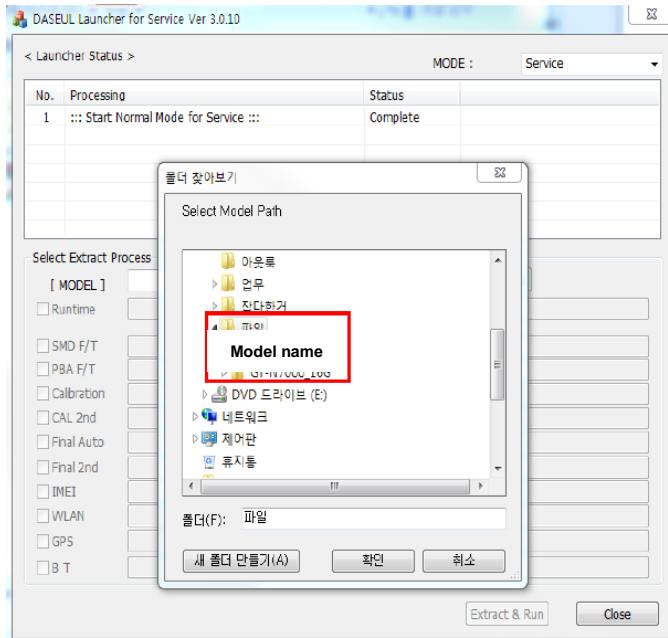
1. Run DASEUL_SVC_Launcher_v3.0.12.exe

 DASEUL_SVC_Launcher_v3.0.12.exe

2. Select Service Mode

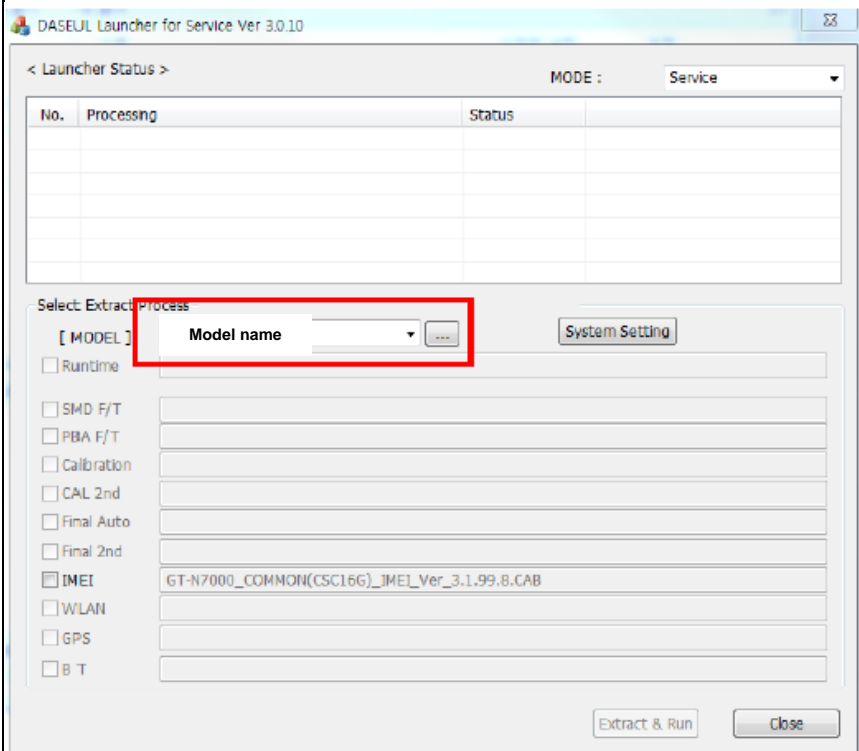


3. Click  and Select folder where the Launcher exists



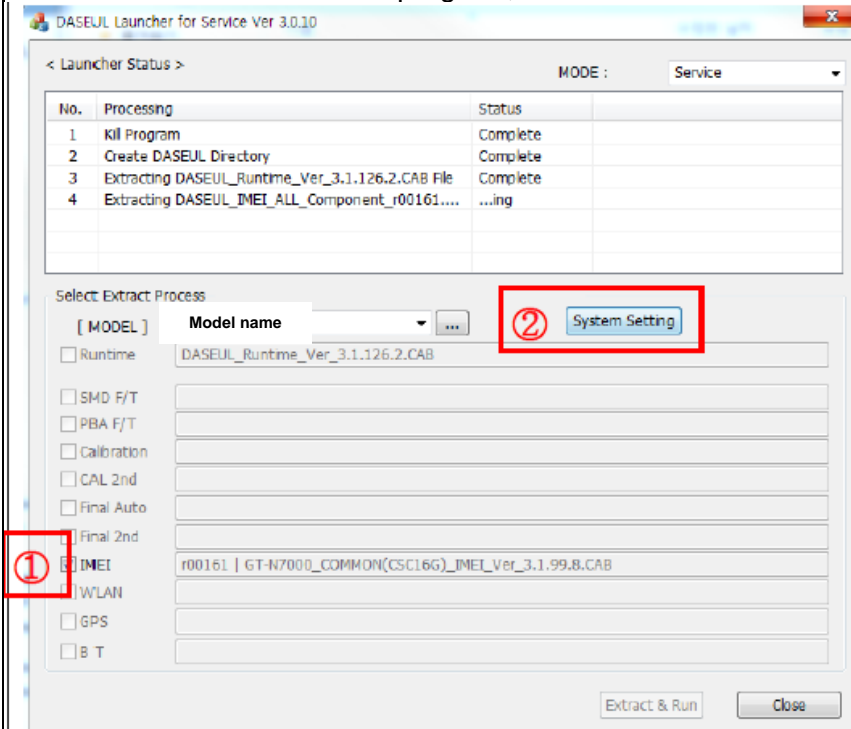
6. Level 1 Repair

4. Select Model



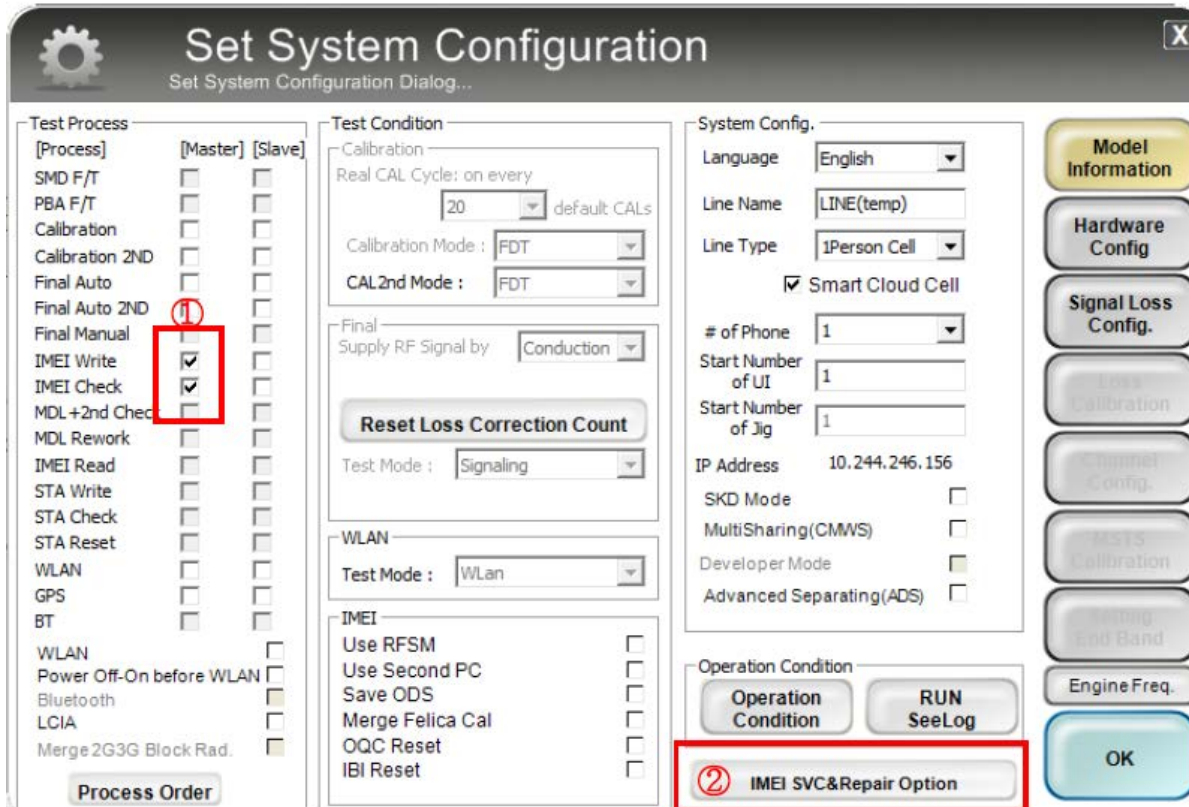
5. Check IMEI and click System Setting

✘Once you setup the setting, you don't have to do it again, unless there is change.
From second run of the IMEI program, check IMEI and click Extract & Run.



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 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 : 10.244.246.156

SKD Mode

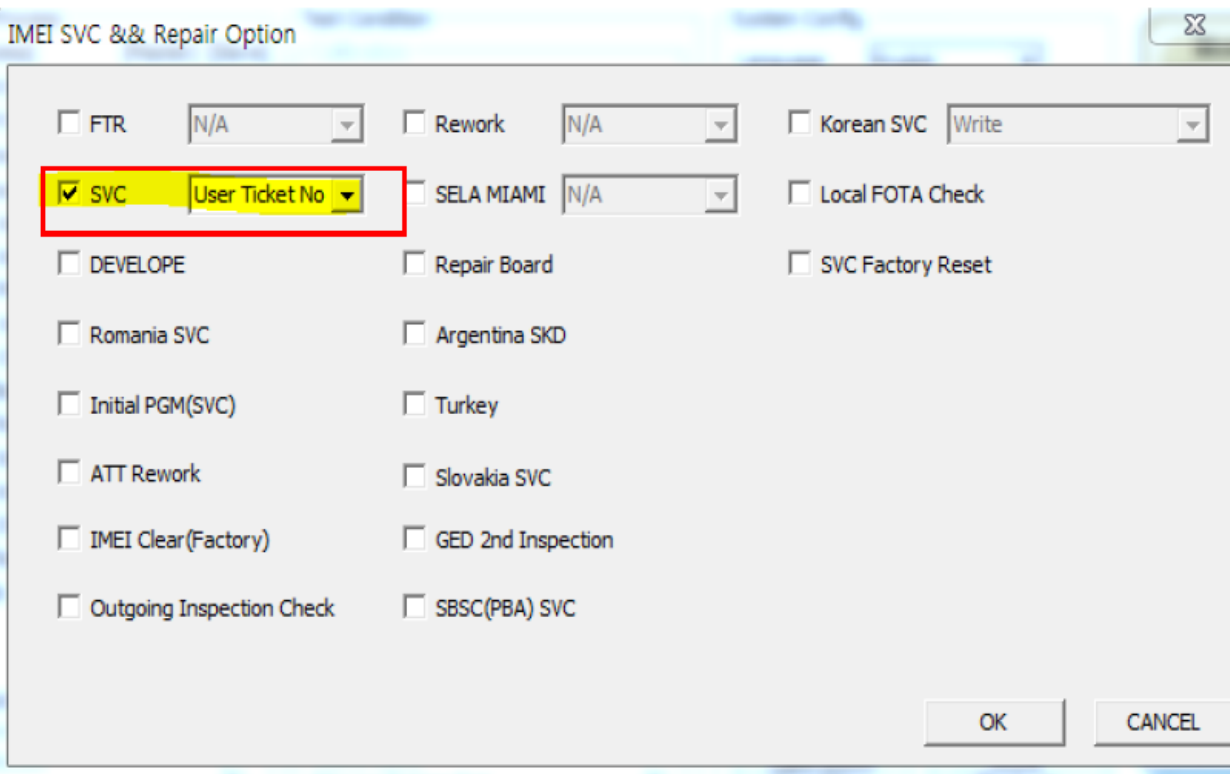
MultiSharing(CMWS)

Developer Mode

Advanced Separating(ADS)

Operation Condition

7. Check 'SVC , User Ticket No' and click OK



IMEI SVC && Repair Option

FTR Rework Korean SVC

SVC SELA MIAMI Local FOTA Check

DEVELOPE Repair Board SVC Factory Reset

Romania SVC Argentina SKD

Initial PGM(SVC) Turkey

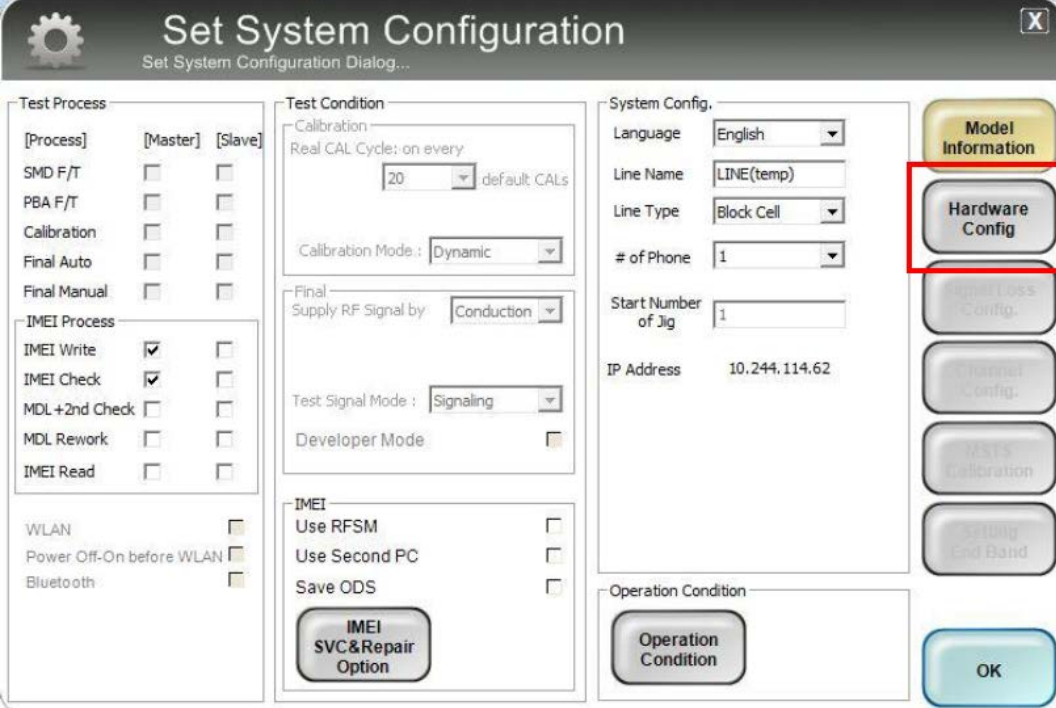
ATT Rework Slovakia SVC

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"/>
Final Auto	<input type="checkbox"/>	<input type="checkbox"/>
Final Manual	<input type="checkbox"/>	<input type="checkbox"/>

IMEI Process

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"/>

WLAN
Power Off-On before WLAN
Bluetooth

Test Condition

Calibration
Real CAL Cycle: on every
20 default CALs
Calibration Mode: Dynamic

Final
Supply RF Signal by: Conduction

Test Signal Mode: Signaling
Developer Mode

IMEI
Use RFSM
Use Second PC
Save ODS

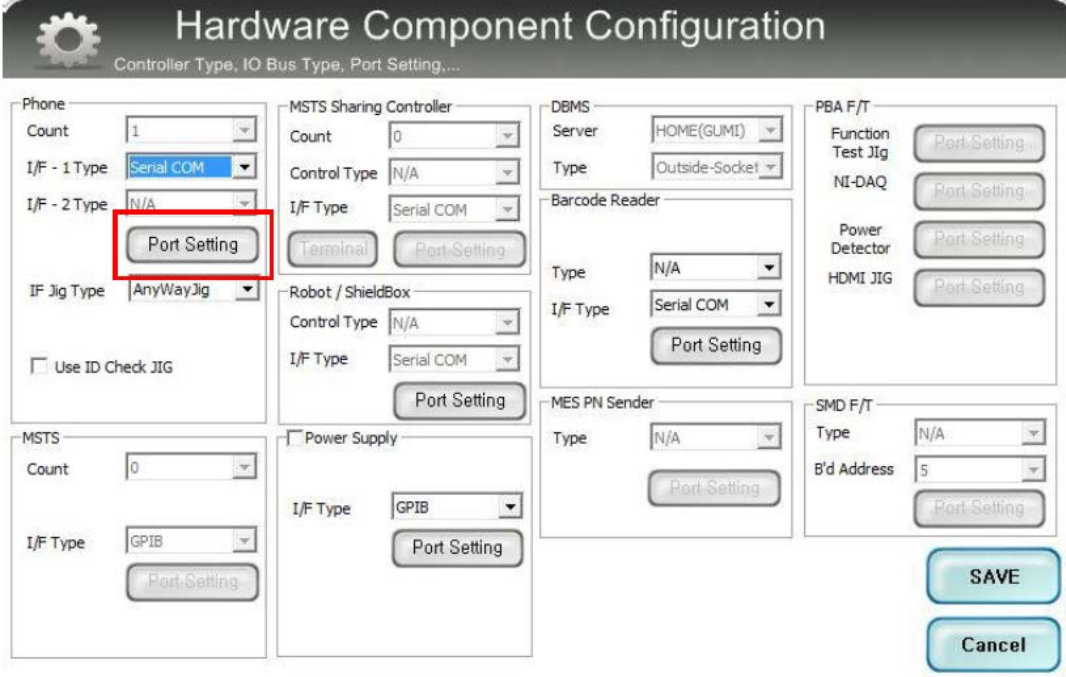
System Config.

Language: English
Line Name: LINE(temp)
Line Type: Block Cell
of Phone: 1
Start Number of Jig: 1
IP Address: 10.244.114.62

Operation Condition

Buttons: Model Information, Hardware Config, Signal Loss Config, Terminal Config, IMEI Calibration, Setting End Band, IMEI SVC&Repair Option, Operation Condition, 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
IF Jig Type: AnyWayJig
Use ID Check JIG

MSTS Sharing Controller
Count: 0
Control Type: N/A
I/F Type: Serial COM
Terminal Port Setting

Robot / ShieldBox
Control Type: N/A
I/F Type: Serial COM
Port Setting

Power Supply
I/F Type: GPIB
Port Setting

DBMS
Server: HOME(GUMI)
Type: Outside-Socket

Barcode Reader
Type: N/A
I/F Type: Serial COM
Port Setting

MES PN Sender
Type: N/A
Port Setting

PBA F/T
Function Test Jig Port Setting
NI-DAQ Port Setting
Power Detector Port Setting
HDMI JIG Port Setting

MSTS
Count: 0
I/F Type: GPIB
Port Setting

SMD F/T
Type: N/A
B'd Address: 5
Port Setting

Buttons: Port Setting, SAVE, Cancel

6. Level 1 Repair

10. Select Port Number and SAVE

Set IO BUS Configuration

Phone IO Bus Setting

Common

BaudRate: 115200
 Data Bit: 8
 Parity: No
 Stop Bit: 1

No	Port #1
1	1

SAVE
 Cancel

11. Click OK to proceed

Set System Configuration

Set System Configuration Dialog...

Test Process

[Process] [Master] [Slave]

SMD F/T

PBA F/T

Calibration

Final Auto

Final Manual

IMEI Process

IMEI Write

IMEI Check

MDL +2nd Check

MDL Rework

IMEI Read

WLAN

Power Off-On before WLAN

Bluetooth

Test Condition

Calibration

Real CAL Cycle: on every default: CALs

Calibration Mode:

Final

Supply RF Signal by:

Test Signal Mode:

Developer Mode

IMEI

Use RFSM

Use Second PC

Save ODS

IMEI SVC & Repair Option

System Config.

Language:

Line Name:

Line Type:

of Phone:

Start Number of Jig:

IP Address: 10.244.114.62

Operation Condition

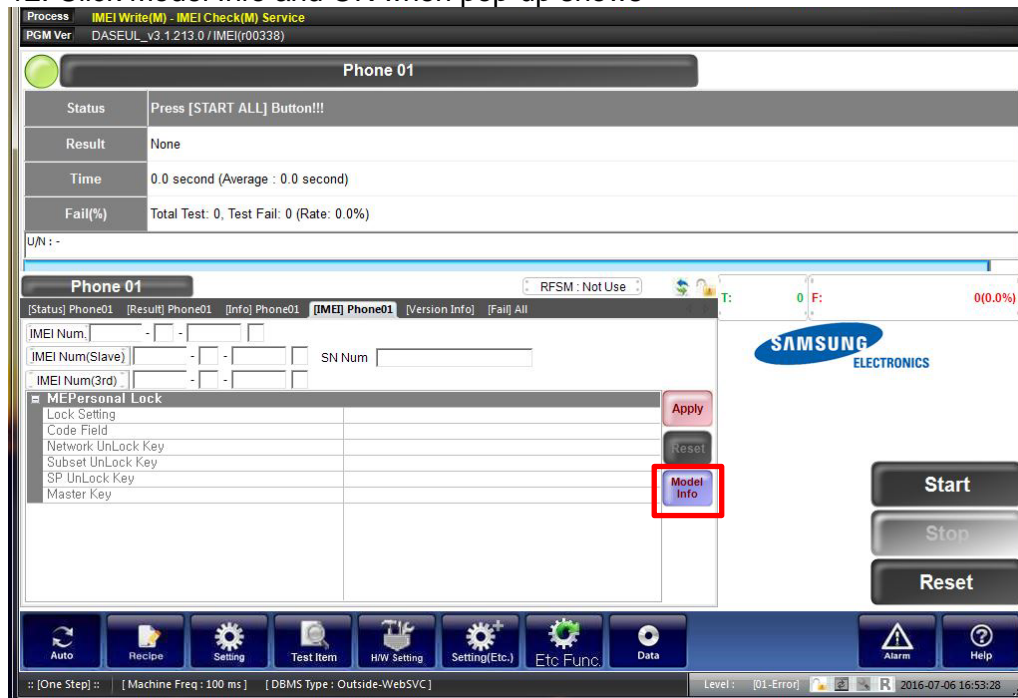
Operation Condition

Model Information
 Hardware Config
 Signal Loss Config
 Channel Config
 IMEI Calibration
 Setting End Band

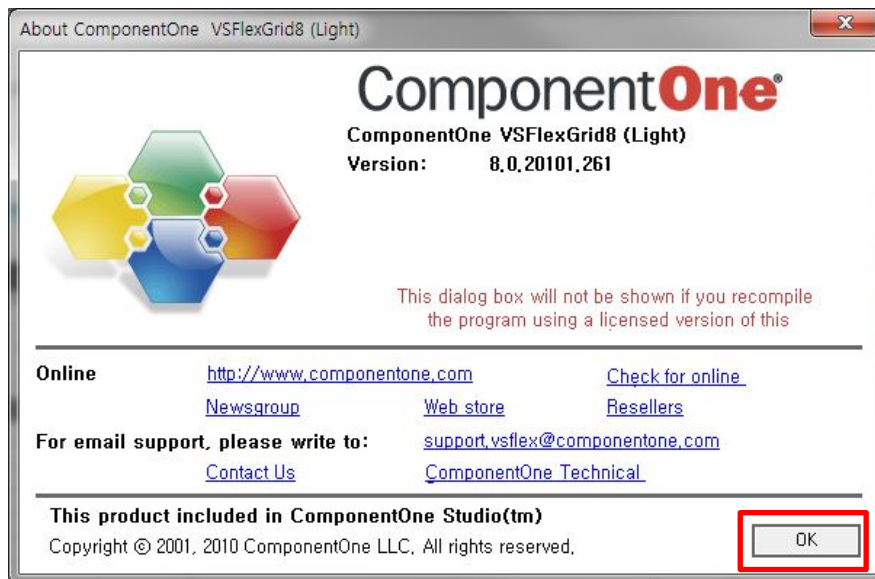
OK

6. Level 1 Repair

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



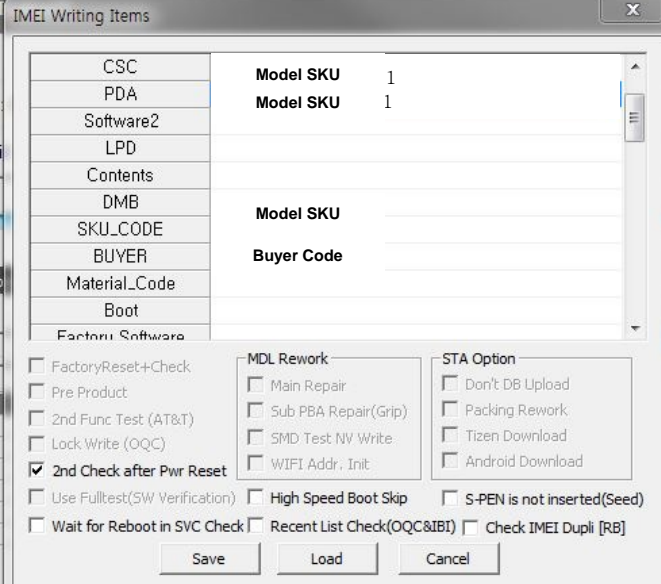
13. Click OK



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



IMEI Writing Items

CSC	Model SKU	1
PDA	Model SKU	1
Software2		
LPD		
Contents		
DMB	Model SKU	
SKU_CODE		
BUYER	Buyer Code	
Material_Code		
Boot		
Factory Software		

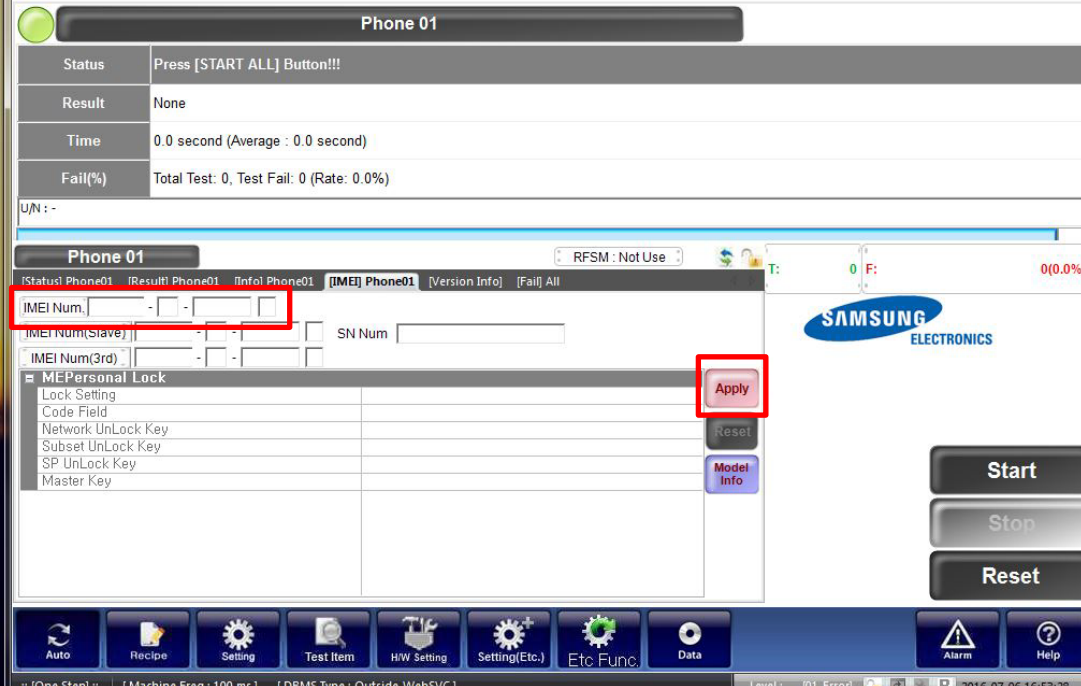
FactoryReset+Check
 Pre Product
 2nd Func. Test (AT&T)
 Lock Write (OQC)
 2nd Check after Pwr Reset
 Use Fulltest(SW Verification)
 Wait for Reboot in SVC Check

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%)

U/N: -

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

IMEI Num. [] - [] - []

IMEI Num(Slave) [] - [] - [] SN Num []

IMEI Num(3rd) [] - [] - []

MEPersonal Lock

- Lock Setting
- Code Field
- Network UnLock Key
- Subset UnLock Key
- SP UnLock Key
- Master Key

Apply

Reset

Model Info

Start

Stop

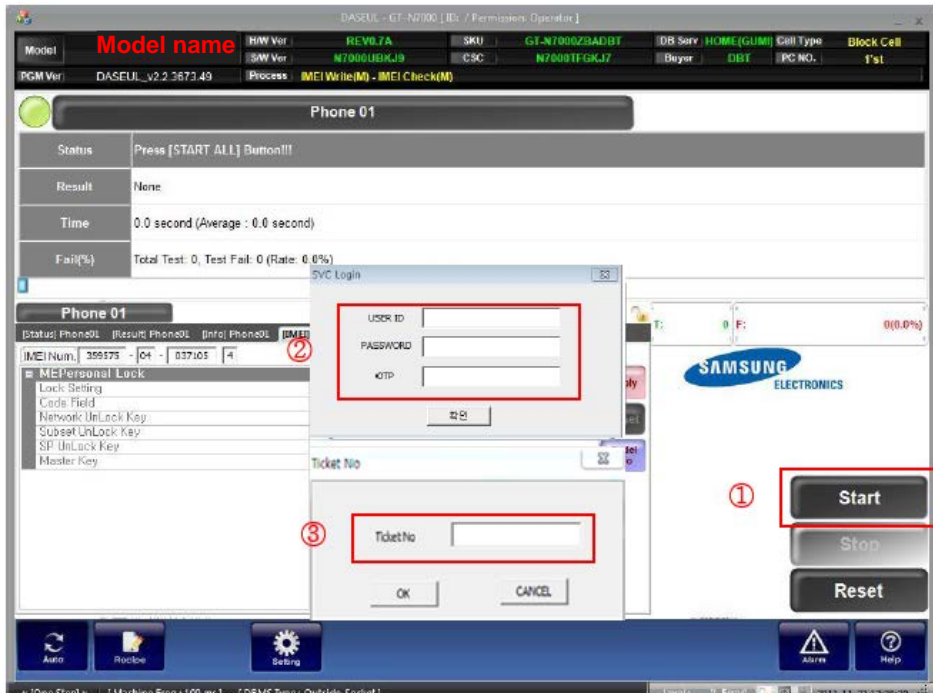
Reset

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

Level : 01-Error 2016-07-06 16:53:28

6. Level 1 Repair

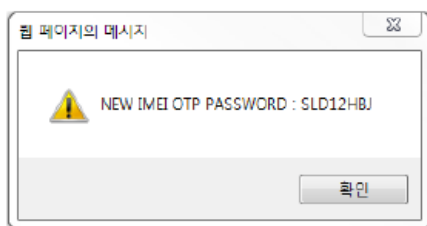
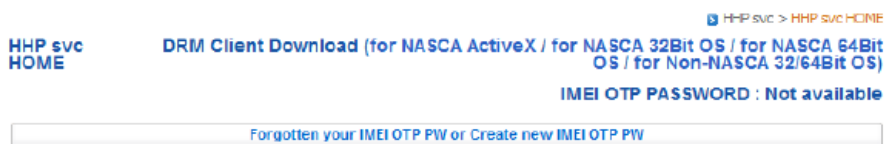
16. ① Click Start → ② Input IMEI writing ID and Password & OTP → ③ Input Ticket No



※ OTP(One time Password) : OTP is valid for 6 hours.

After that, you can get new OTP by click the “Forgotten your IMEI OTP PW or Create new IMEI OTP PW” button.

☞ OTP Location : GSPN → Knowledge → HHP svc → Home

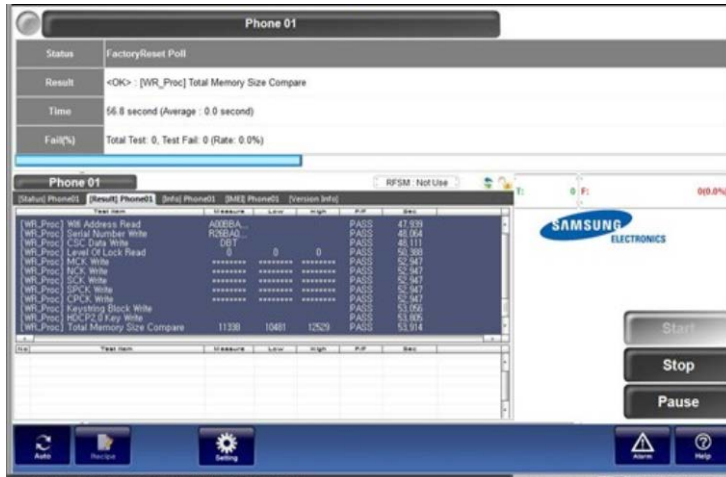


6. Level 1 Repair

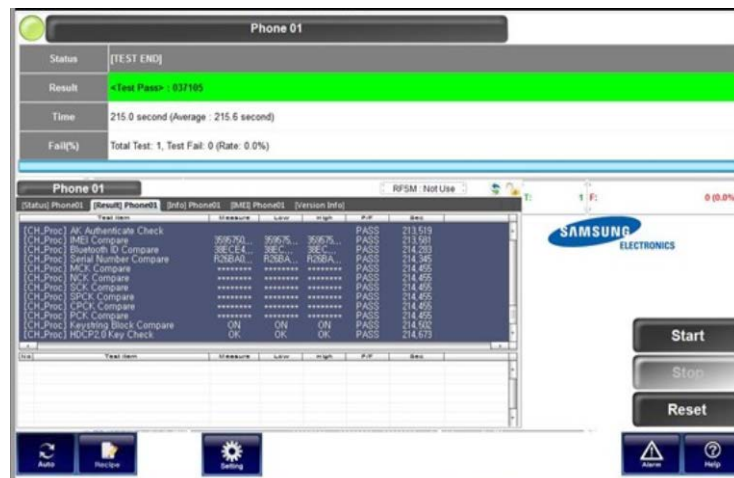
17. Connect the phone to Anyway JIG

- ✘ 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



19. IMEI Writing Success



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
- : **Model Name_OPEN_CALIBRATION_Ver_3.1.316.6.CAB**
- ✳ **It is required to use the latest program.**

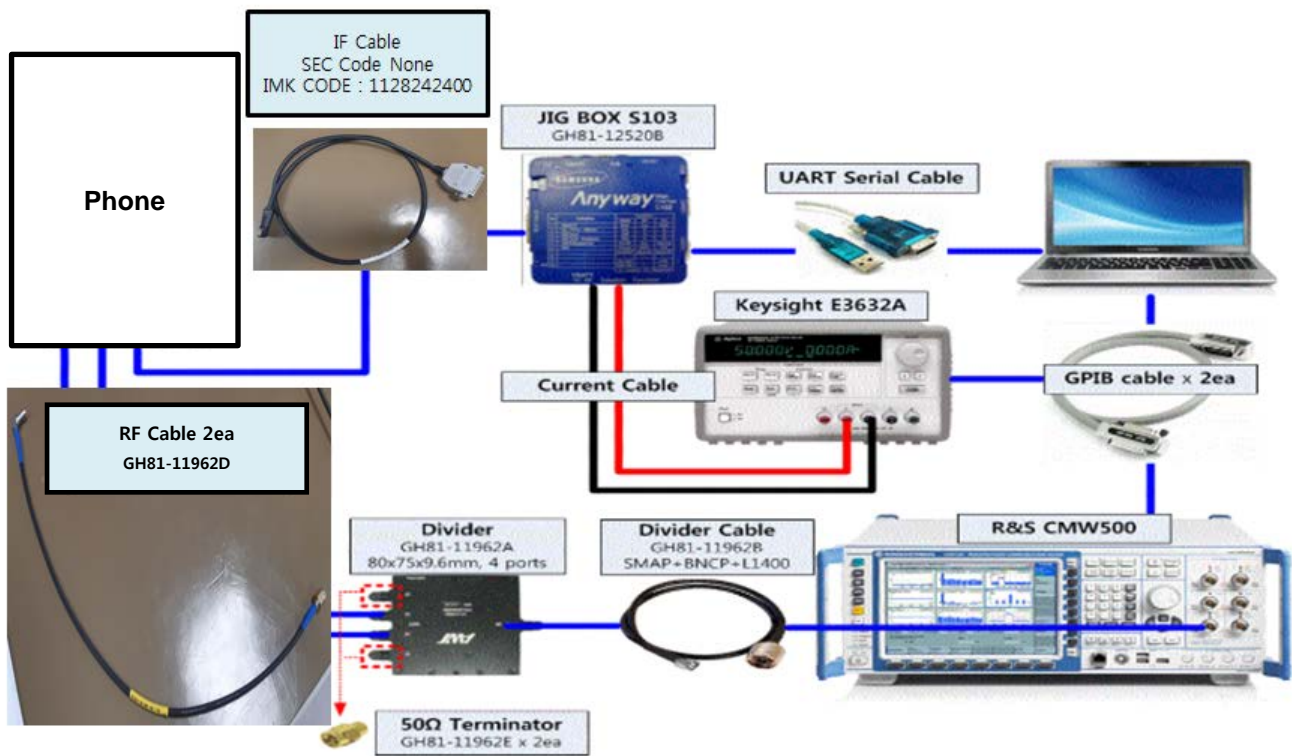
- Mobile Phone
- R&S CMW500
- E3632A Power Supply
- GPIB Cable (2ea)
- JIG BOX (S103)
- Adapter
- UART Serial Cable
- Adapter
- IF Cable (GH81-11962W)

• Table of test cables

IF Cable	GH81-10631A	GH81-11962W	GH81-11171A	
	11 pin	7 pin (New)	7 pin (Old)	
RF Cable (Manual)	GH81-11962D	GH81-11962D	GH81-11962C	GH81-11962F
	1.35T, LONG BNCP 	1.35T, short (2EA) SMAP 	1.6T, Short SMAP 	1.6T, Long BNCP 
4 Port Divider	GH81-11962A	GH81-11962B	GH81-11962E	
	Use 	Divider Cable 	50Ω terminator (2EA) 	

6. Level 1 Repair






❖ Setting



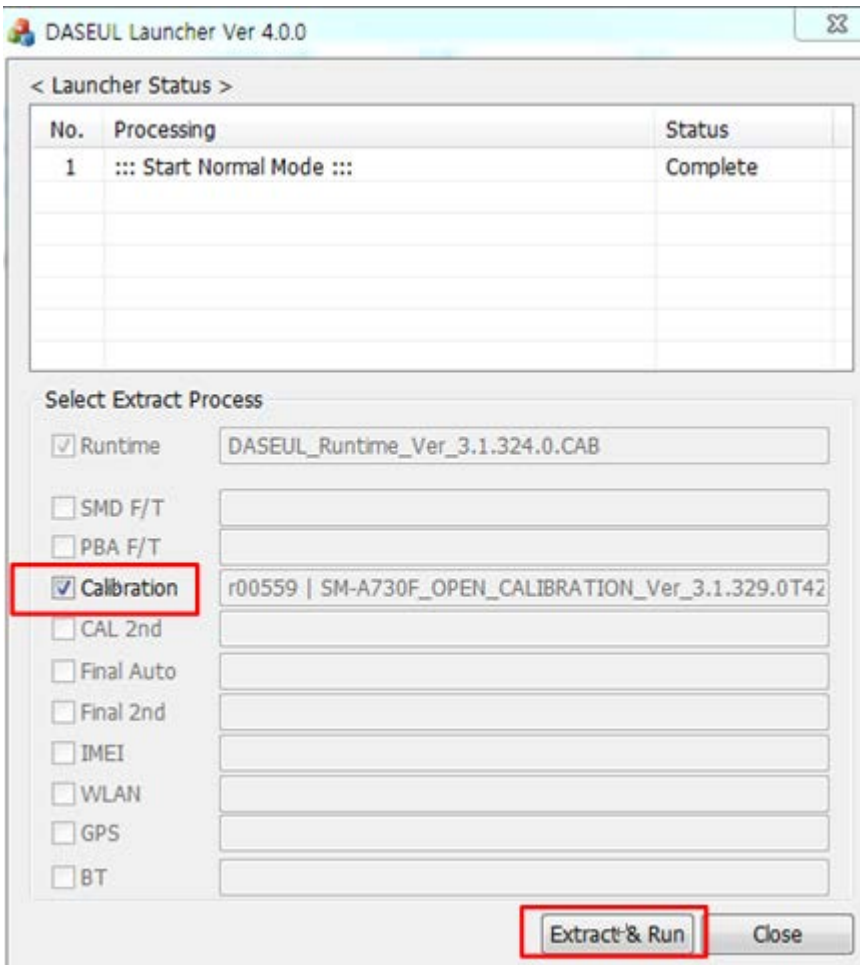
6. Level 1 Repair

6-3-2. RF Calibration Program

1. Run the RF Calibration Program Launcher, '[DASEUL_Launcher_vx.x.xx.exe](#)'.


-  DASEUL_CAL_ALL_Component_r00559....
-  DASEUL_CAL_ALL_Runtime_3.1.324.0_r...
-  DASEUL_Launcher_v4.0.0.exe
-  DASEUL_Runtime_Ver_3.1.324.0.CAB
-  SM-A730F_OPEN_CALIBRATION_Ver_3....

2. Check the '[Calibration](#)' menu, and select '[Extract & Run](#)'.



6. Level 1 Repair

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



Select Sequence Files & Login

Select sequence files & the resolution. Change the permission, Join, etc

Select The Sequence File

Deploy Path : C:\WDIST\WDASEUL

SMD F/T

PBA F/T

CAL

CAL2

FINAL

FINAL

FINAL

IMEI

WLAN

GPS

BT

Skip Conf

Resolution :

열기

찾는 위치(I): SM-A730F_OPEN_CALIBRATION_Ver_3.1.329.1

Model Name.

이름	수정된 날짜	유형
SM-A730F_OPEN_CALIBRATION_Ver_3.1.329.0T4...	2017-10-31 오후 2:...	ALZip ENC File

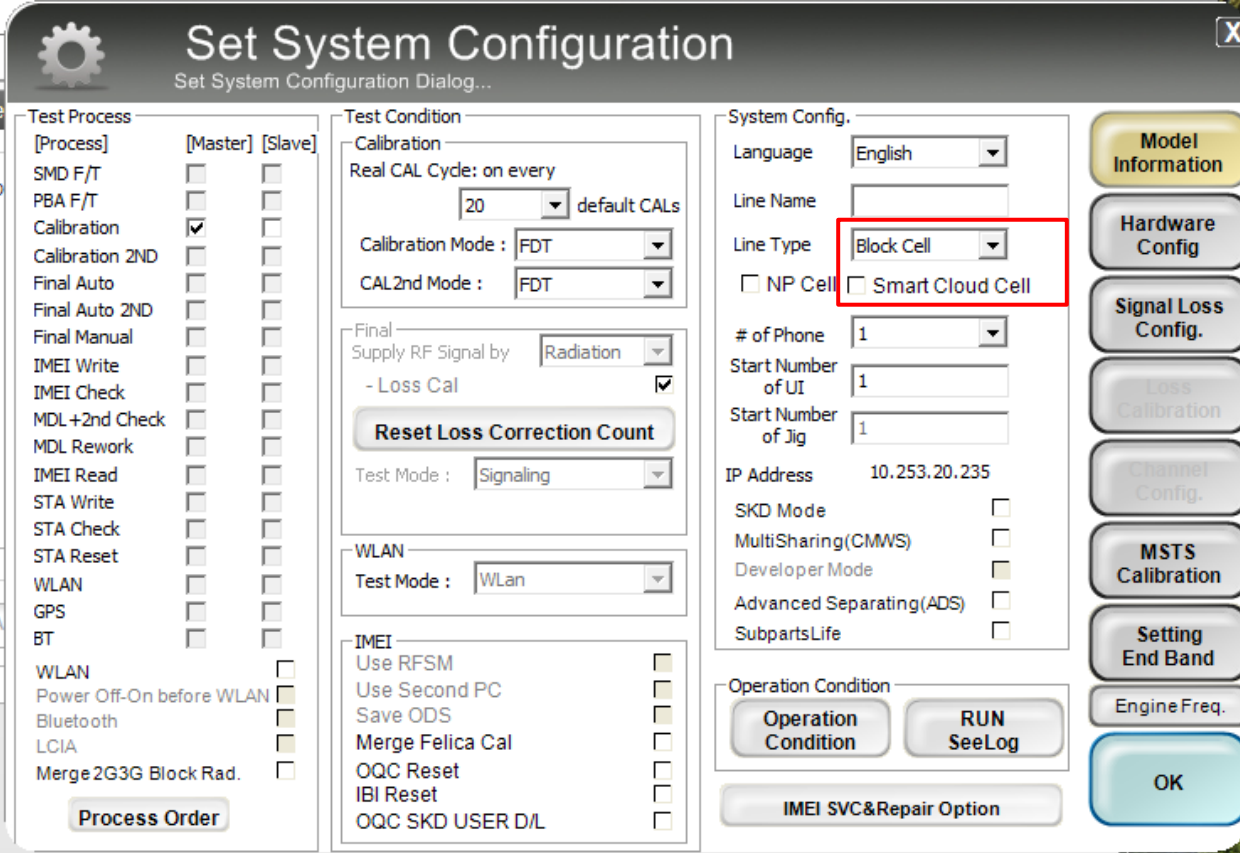
파일 이름(N): SM-A730F_OPEN_CALIBRATION_Ver_3.1.329.0

파일 형식(T): Sequence Files (*.seq,enc)

열기(O) 취소

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

- Loss Cal

Reset Loss Correction Count

Test Mode :

WLAN
Test Mode :

IMEI
Use RFSM

Use Second PC

Save ODS

Merge Felica Cal

OQC Reset

IBI Reset

OQC SKD USER D/L

System Config.

Language

Line Name

Line Type

NP Cell Smart Cloud Cell

of Phone

Start Number of UI

Start Number of Jig

IP Address

SKD Mode

MultiSharing(CMWS)

Developer Mode

Advanced Separating(ADS)

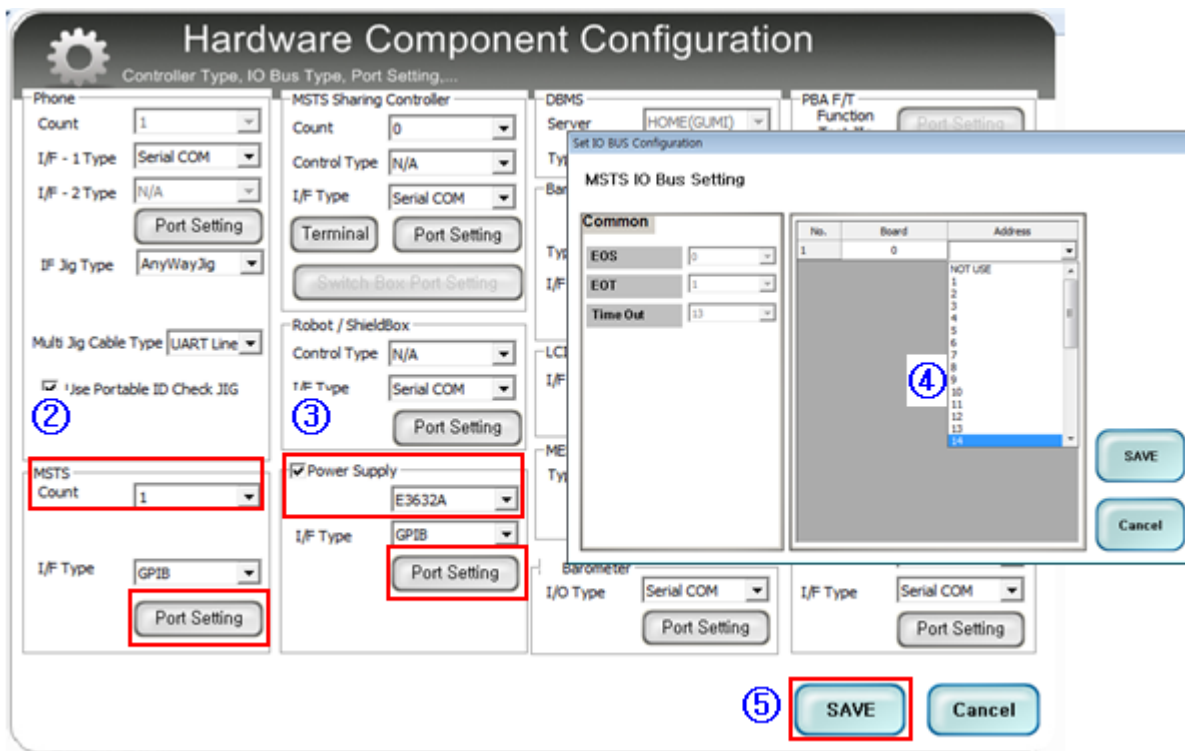
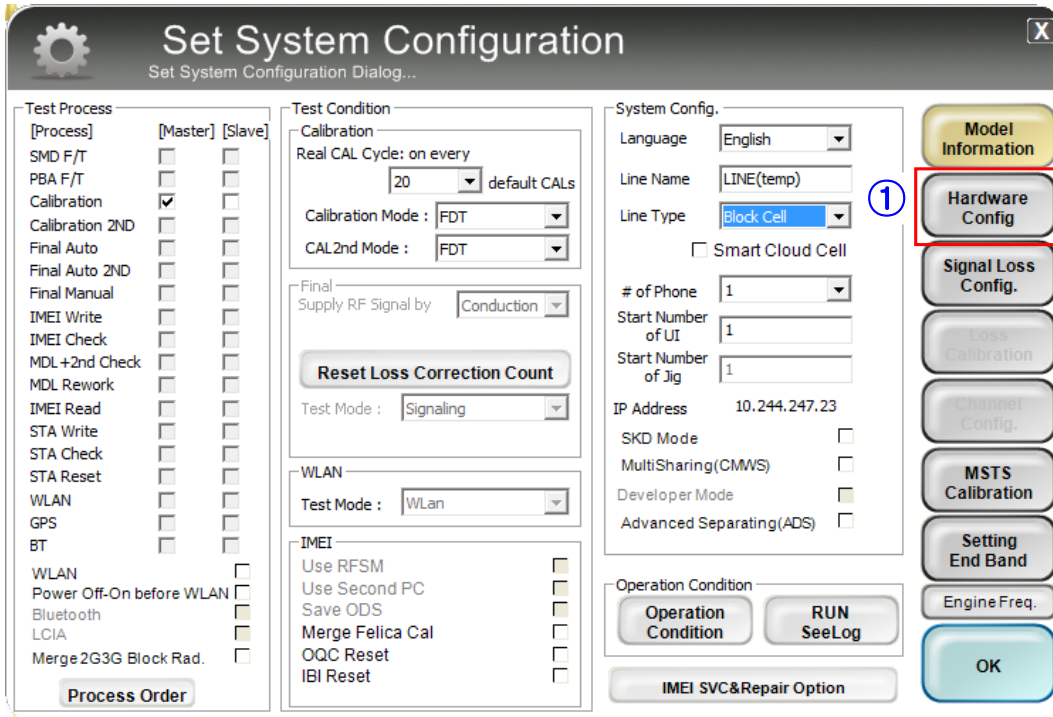
SubpartsLife

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.

