

## 2. Specification

### 2-1. Radio Frequency & Channel

1) LTE BAND frequency

#### ① SM-J530FM/F

Equa.	Freq. Range	CH Range
FUL = FUL_low+0.1(NUL-NOFFS-UL)	LB1 : 1920 ~ 1980	18000 ≤ N ≤ 18599
	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
	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

#### ② SM-J530GM/G/YM/Y

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
FDL = FDL_low+0.1(NDL-NOFFS-DL)	LB41 : 2496 ~ 2690	39650 ≤ N ≤ 41589
	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	

## 2. Specification

	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) 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

## 2. Specification

### 2-2. GSM / WCDMA / LTE General Specification

#### 1) GSM BAND

		<b>GSM 850</b>	<b>GSM 900</b>	<b>DCS1800</b>	<b>PCS1900</b>
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

	<b>WCDMA BAND1</b>	<b>WCDMA BAND2</b>	<b>WCDMA BAND4</b>	<b>WCDMA BAND5</b>	<b>WCDMA BAND8</b>
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: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
TDMA Mux	-	-	-	-	-
Cell Radius	-	-	-	-	-

## 2. Specification

### 3) LTE BAND

#### ① SM-J530FM/F

	LTE BAND1	LTE BAND3	LTE BAND5	LTE BAND7	LTE BAND8	LTE BAND20	LTE BAND40
Freq. Band[MHz] Uplink/Downlink	1920~1980 2110~2170	1710 ~ 1785 1805 ~ 1880	824~849 869~894	2500~2570 2620~2690	880~915 925~960	832~862 791~821	2300~2400 2300~2400
ARFCN range	18000~18599 0~599	19200 ~ 19949 1200~1949	20400~20649 2400~2649	20750~21449 2750~3449	21450~21799 3450~3799	19250 ~ 19950 1250~1950	38650~39649 38650~39649
Tx/Rx spacing	190 MHz	95 MHz	45 MHz	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)	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±2.7dBm Min:-49dBm	Max:23±2.7dBm Min:-49dBm	Max:24±2.7dBm Min:-49dBm	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	Class3	Class3	Class3
Sensitivity	-97dBm	-94dBm	-95dBm	-95dBm	-94dBm	-94dBm	-97dBm
TDMA Mux	-	-	-	-	-	-	-
Cell Radius	-	-	-	-	-	-	-

## 2. Specification

### ② SM-J530GM/G/YM/Y

	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±2.7dBm Min:-49dBm	Max:22.5±2.7dBm Min:-49dBm	Max:23±2.7dBm Min:-49dBm	Max:23±2.7dBm Min:-49dBm	Max:24±2.7dBm Min:-49dBm	Max:23±2.7dBm Min:-49dBm	Max:24±2.7dBm Min:-49dBm
Power Level	Class3	Class3	Class3	Class3	Class3	Class3	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)	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: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	-	-			-	

## 2. Specification

### 2-3. GSM BAND TX power control level

TX Power control level	GSM850	GSM900
5	33±2 dBm	33±2 dBm
6	31±3 dBm	31±3 dBm
7	29±3 dBm	29±3 dBm
8	27±3 dBm	27±3 dBm
9	25±3 dBm	25±3 dBm
10	23±3 dBm	23±3 dBm
11	21±3 dBm	21±3 dBm
12	19±3 dBm	19±3 dBm
13	17±3 dBm	17±3 dBm
14	15±3 dBm	15±3 dBm
15	13±3 dBm	13±3 dBm
16	11±5 dBm	11±5 dBm
17	9±5 dBm	9±5 dBm
18	7±5 dBm	7±5 dBm
19	5±5 dBm	5±5 dBm
-	-	-

TX Power control level	DCS1800
0	30±2 dBm
1	28±3 dBm
2	26±3 dBm
3	24±3 dBm
4	22±3 dBm
5	20±3 dBm
6	18±3 dBm
7	16±3 dBm
8	14±3 dBm
9	12±4 dBm
10	10±4 dBm
11	8±4 dBm
12	6±4 dBm
13	4±4 dBm
14	2±5 dBm
15	0±5 dBm

TX Power control level	PCS1900
0	30±2 dBm
1	28±3 dBm
2	26±3 dBm
3	24±3 dBm
4	22±3 dBm
5	20±3 dBm
6	18±3 dBm
7	16±3 dBm
8	14±3 dBm
9	12±4 dBm
10	10±4 dBm
11	8±4 dBm
12	6±4 dBm
13	4±4 dBm
14	2±5 dBm
15	0±5 dBm



### 3. Operation Instruction and Installation

#### Main Function

Item	Description
OS	Android V7.0.1 (Nougat)
RF	LTE Cat.6 (300/ 50Mbps)
Battery	3,000mAh
Base Band	Exynos7870 1.6GHz (Octa-Core)
Other RF	A-GPS, Glonass, BT4.1, USB 2.0, NFC, WIFI 802.11 a/b/g/n/ac 2.4+5GHz, MST
Camera	13M+13M Camera
LCD	5.2" FHD OCTA
<b>SM-J530FM/F</b> RAM	2GB RAM + 16GB eMMC
<b>SM-J530GM/G</b> RAM	2GB RAM + 16GB/32GB eMMC
<b>SM-J530YM</b> RAM	3GB RAM + 16GB/32GB eMMC
<b>SM-J530Y</b> RAM	3GB RAM + 32GB eMMC
Sensor	Accelerometer, Fingerprint Sensor, Gyro Sensor, Geomagnetic Sensor, Light Sensor, Proximity Sensor, RGB Sensor
Accessory	Charger: 5V/1.55A Data cable : 0.8M USB-A Ear phone: 3.5pi, 4pin Ejection Pin

# 1. Safety Precautions

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## 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

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## 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.

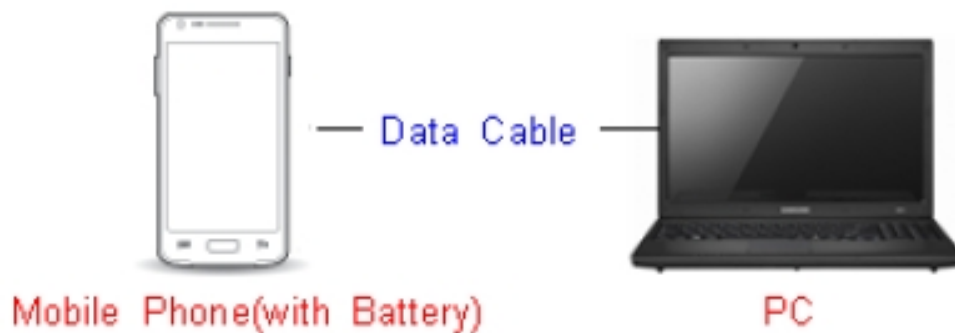
## 6. Level 1 Repair

### 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

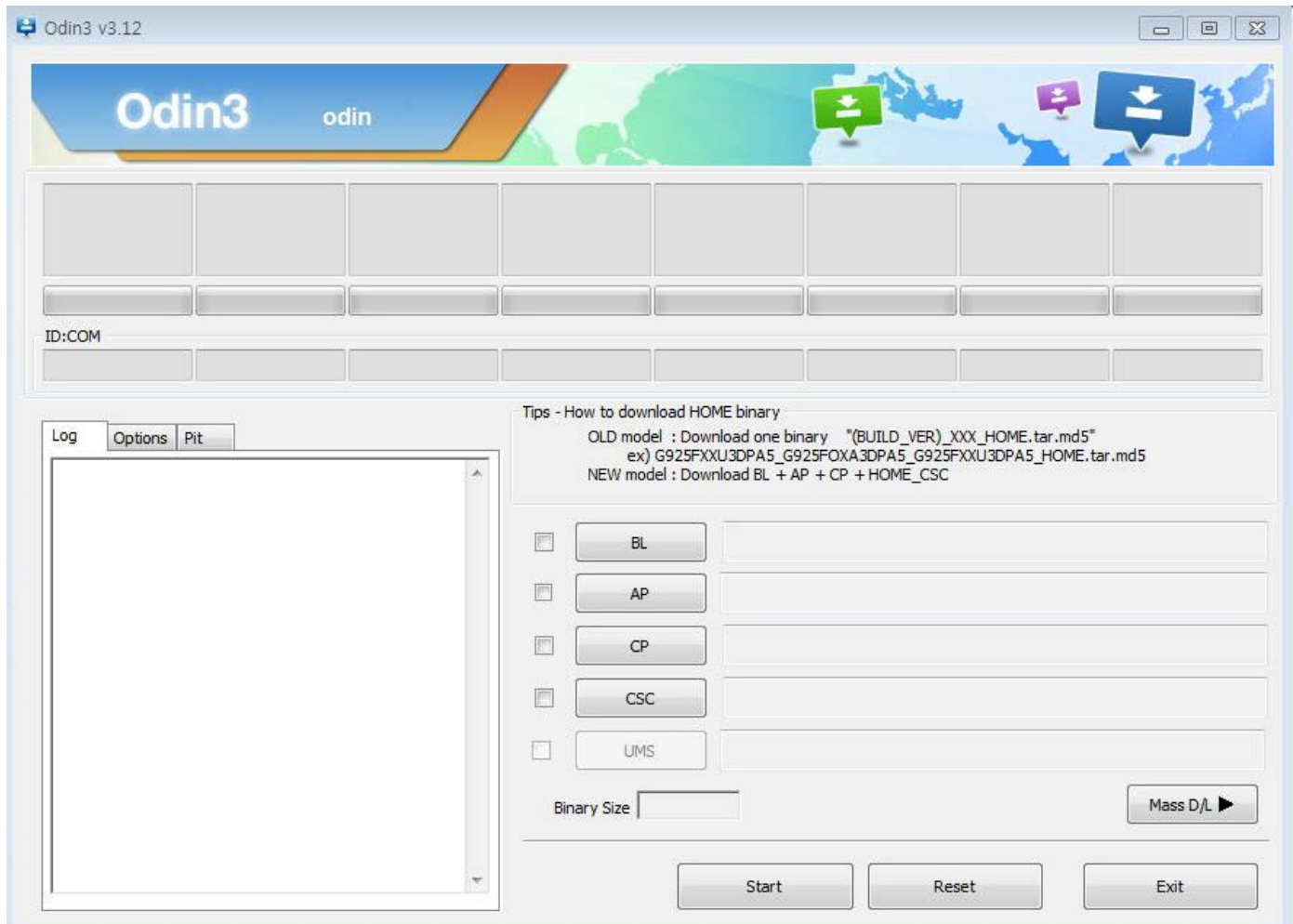


Data Cable : GH39-01710D

## 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**"

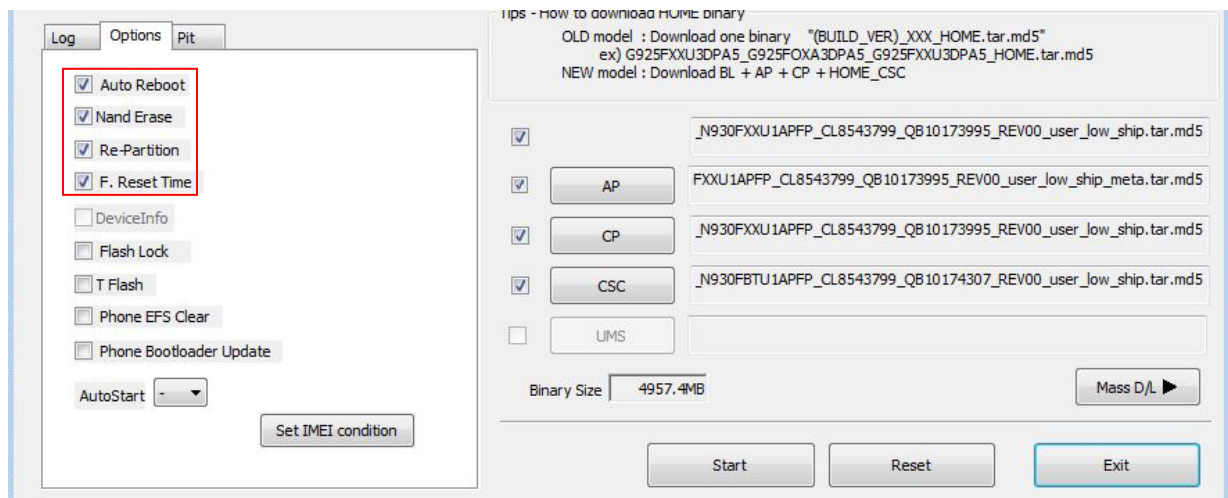
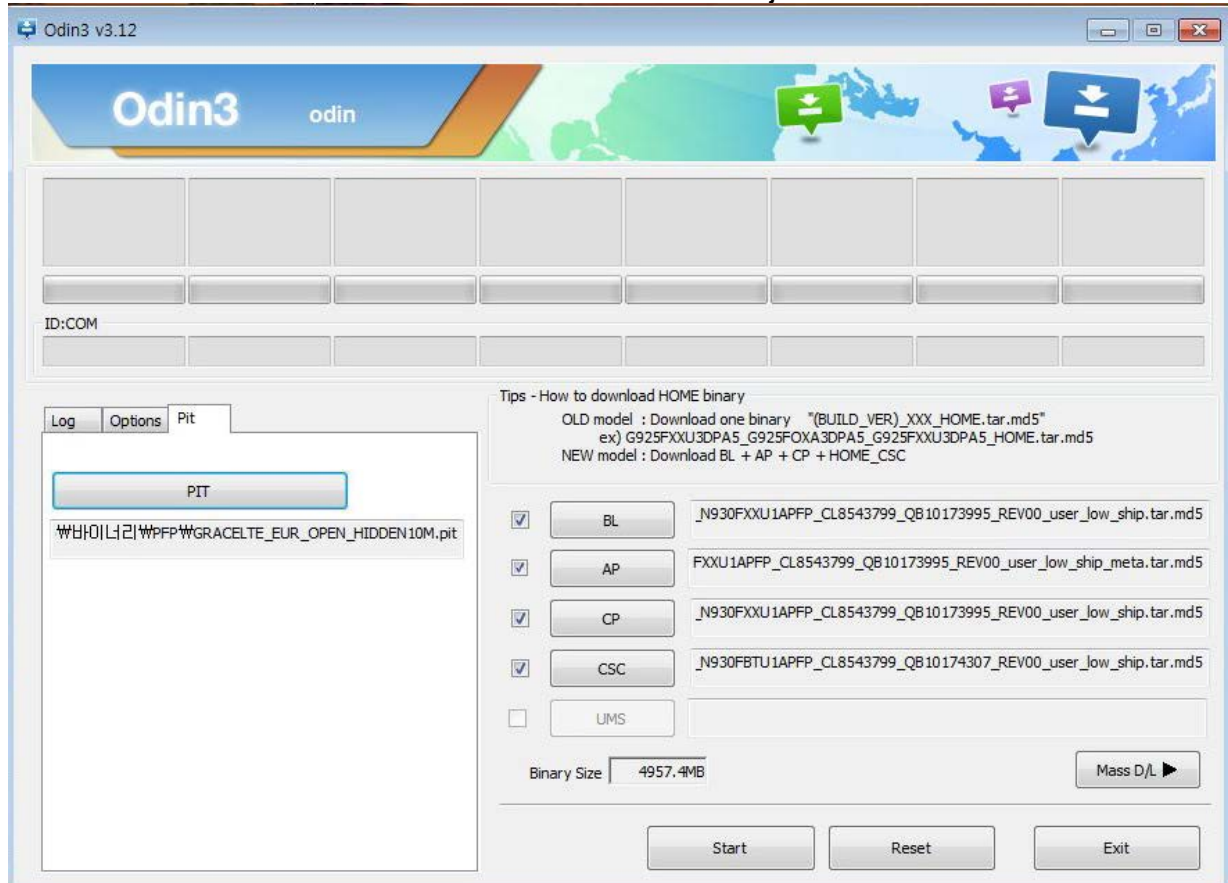


## 6. Level 1 Repair

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

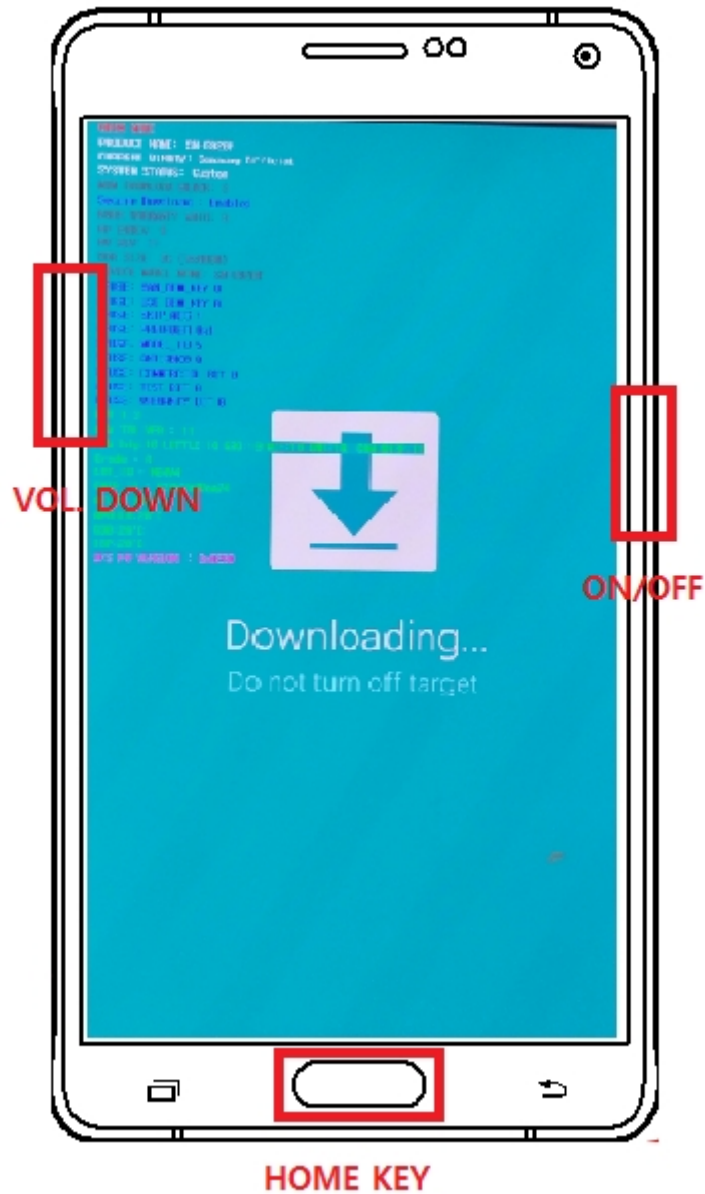
\* Note : "Odin v3.12 or above" checks MD5 checksum just after file selection.



## 6. Level 1 Repair

### 2. Enter into Download Mode

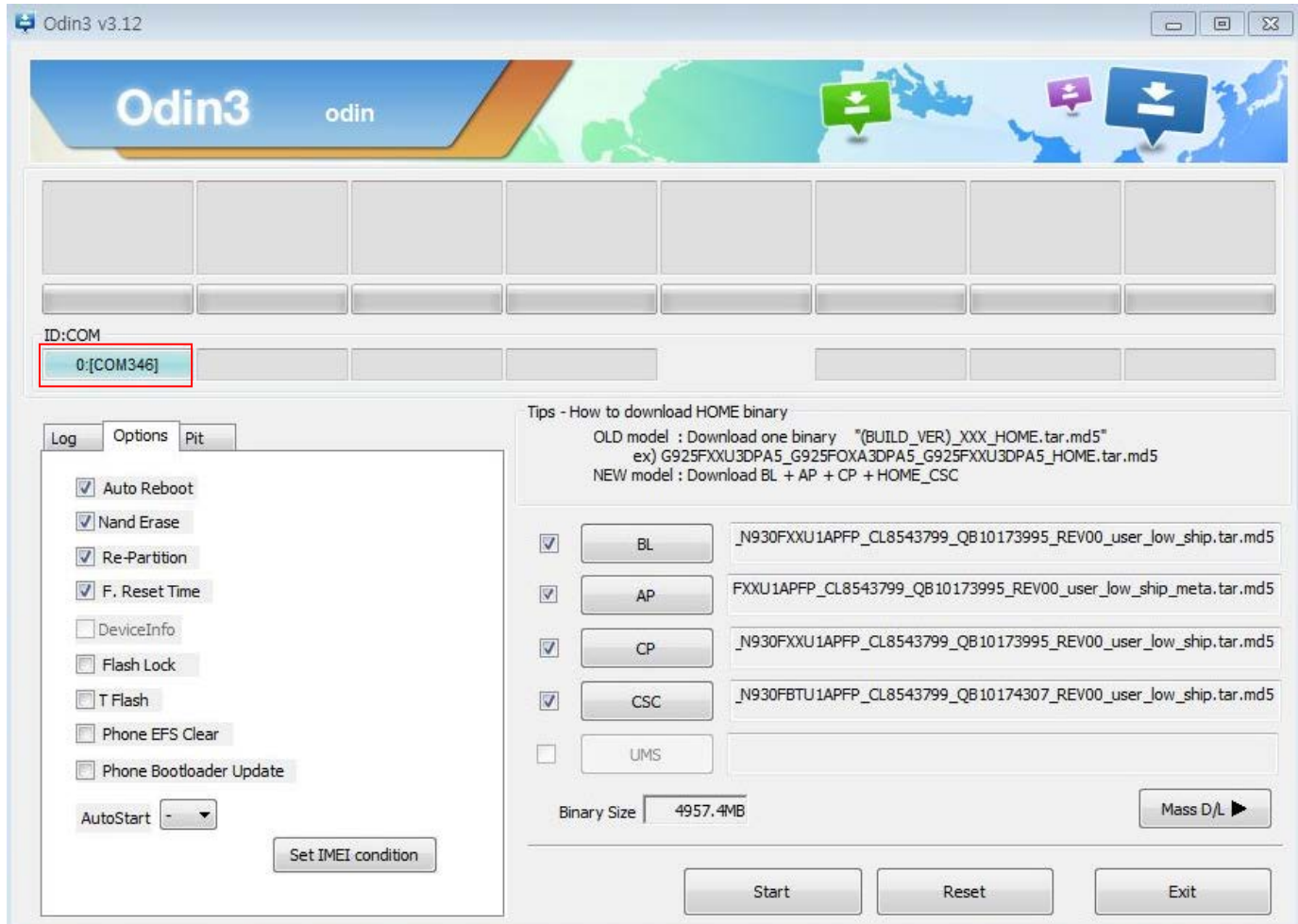
- Enter into Download Mode by pressing Home button, Volume Down button and Power On/Off Button simultaneously followed by pressing Volume up button as a direction of the phone.



## 6. Level 1 Repair

### 3. Connect the device to PC via Data Cable.

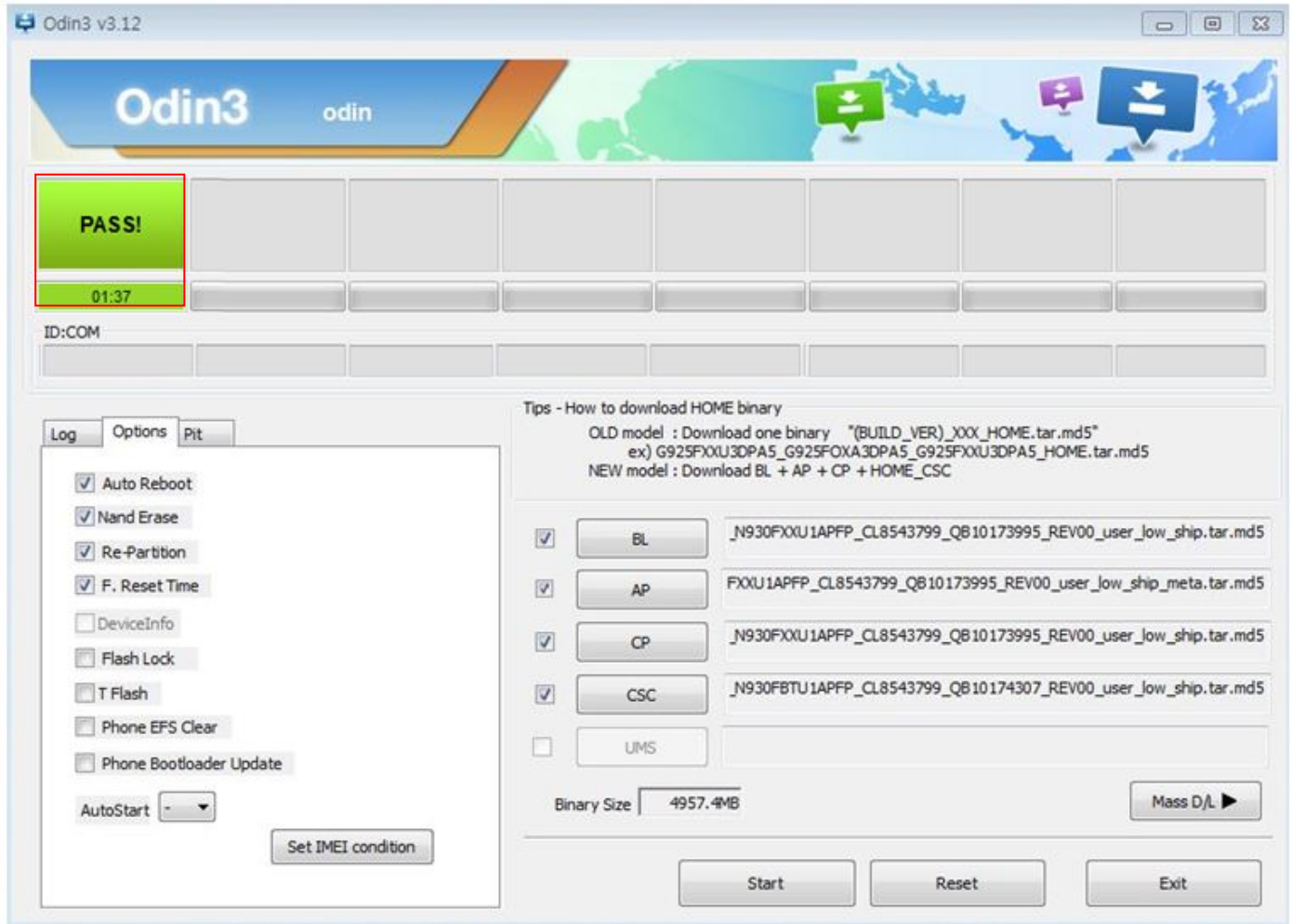
Make sure that the one of communication ports [ID:COM] box is highlighted in sky blue. The device is now connected with the PC and ready to download the binary files in it.





## 6. Level 1 Repair

- 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.



- Disconnect the device from the Data cable.
- 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.**

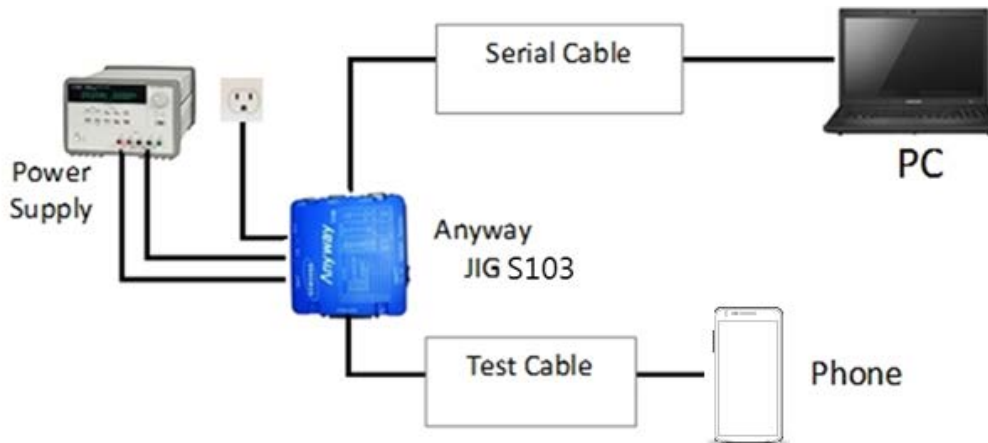
## 6. Level 1 Repair

### 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



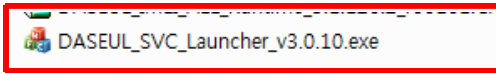
#### - S/W

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

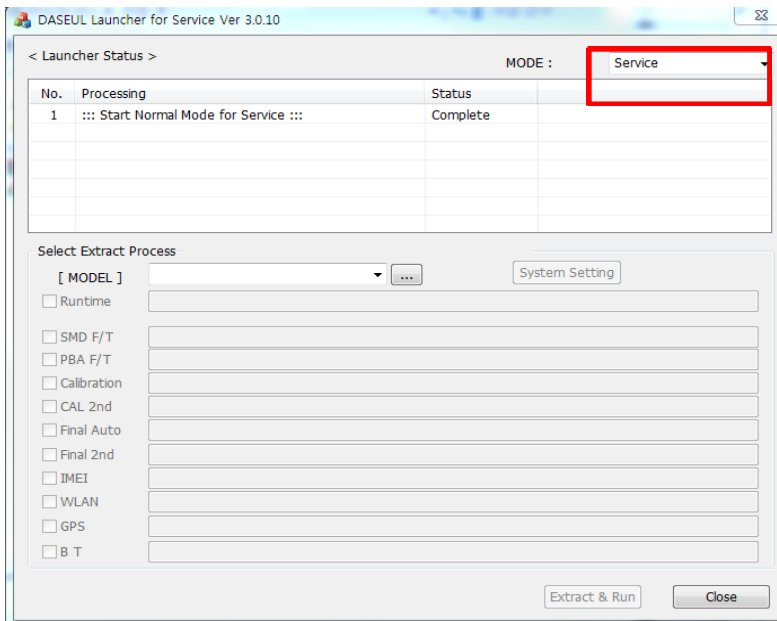
## 6. Level 1 Repair


### 6-2-2 IMEI writing Process

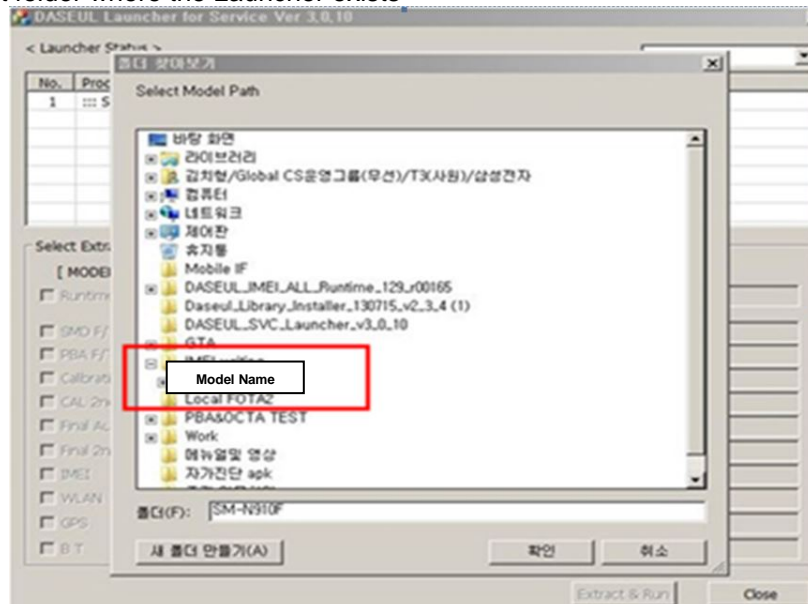
1. Run DASEUL\_SVC\_Launcher\_v3.0.10.exe



2. Select Service Mode

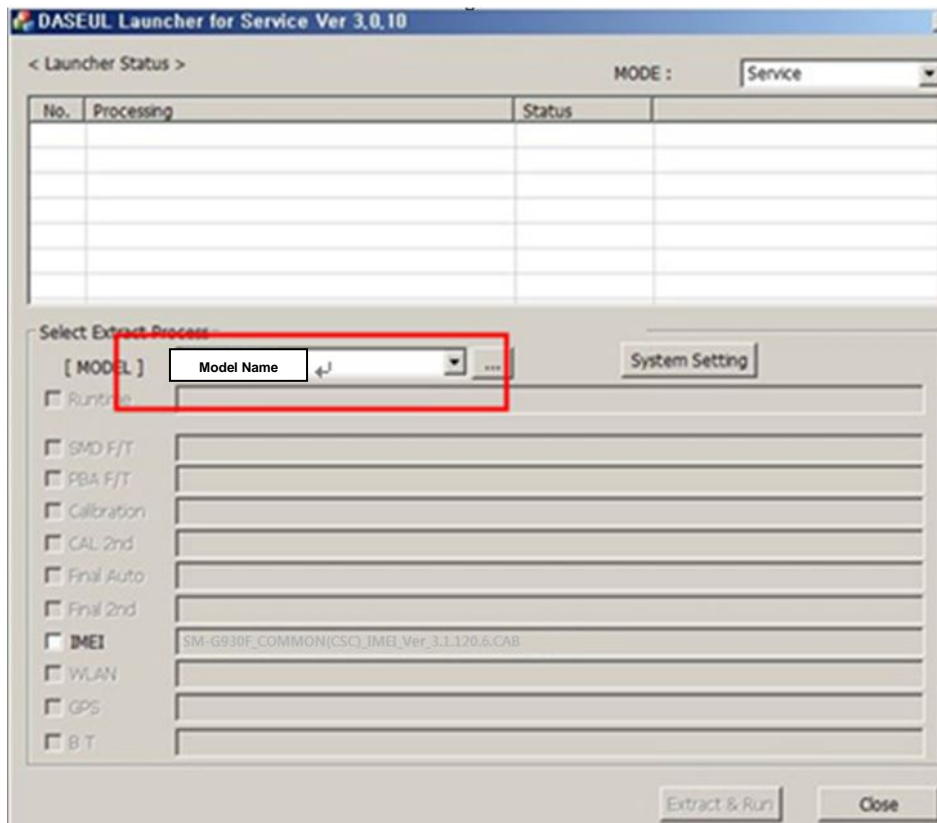


3. Click  and Select folder where the Launcher exists



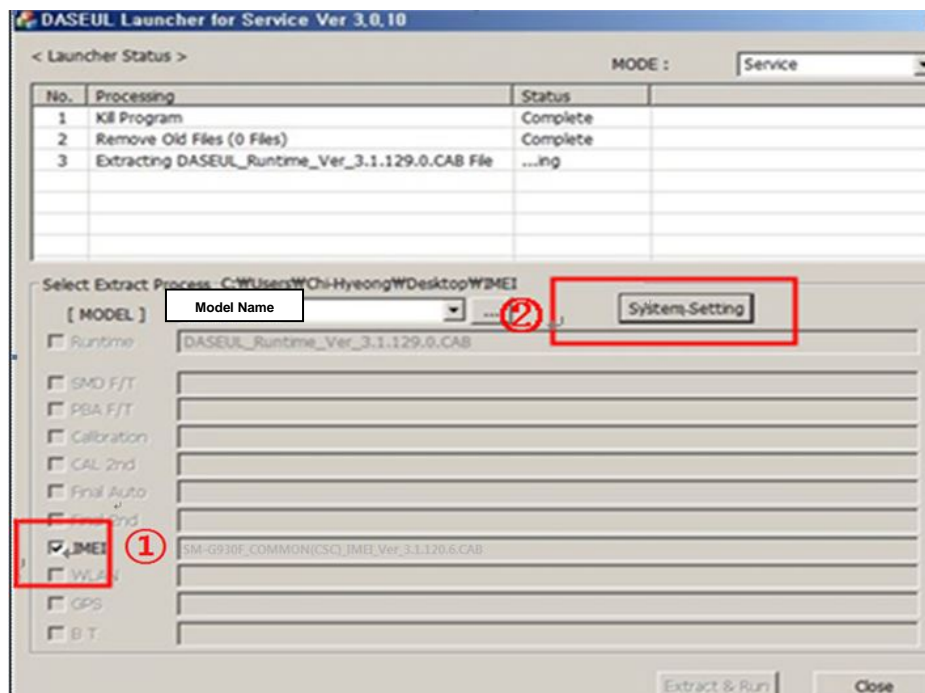
## 6. Level 1 Repair

### 4. Select Model



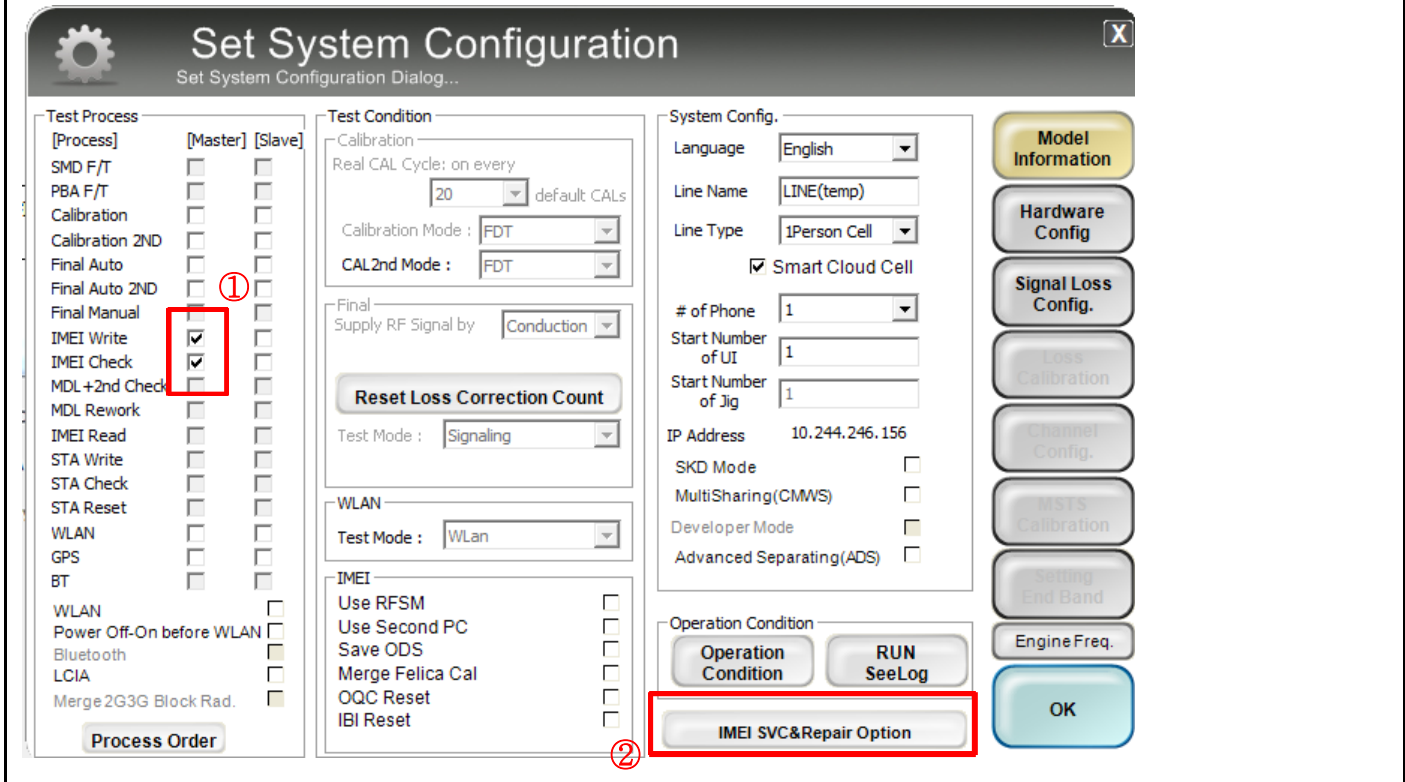
### 5. Check IMEI and click System Setting

※ 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  
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	<input type="checkbox"/>
Use Second PC	<input type="checkbox"/>
Save ODS	<input type="checkbox"/>
Merge Felica Cal	<input type="checkbox"/>
QQC Reset	<input type="checkbox"/>
IBI Reset	<input type="checkbox"/>

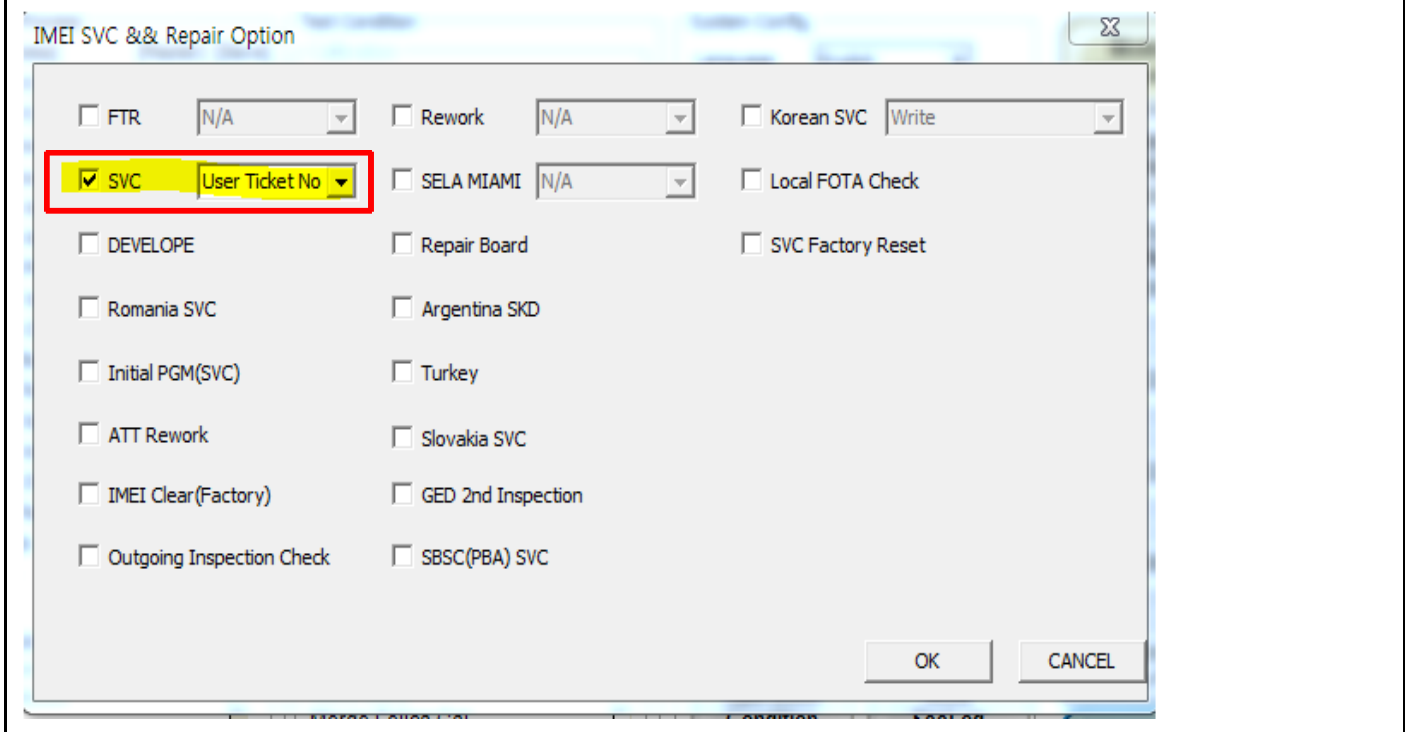
**System Config.**

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

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

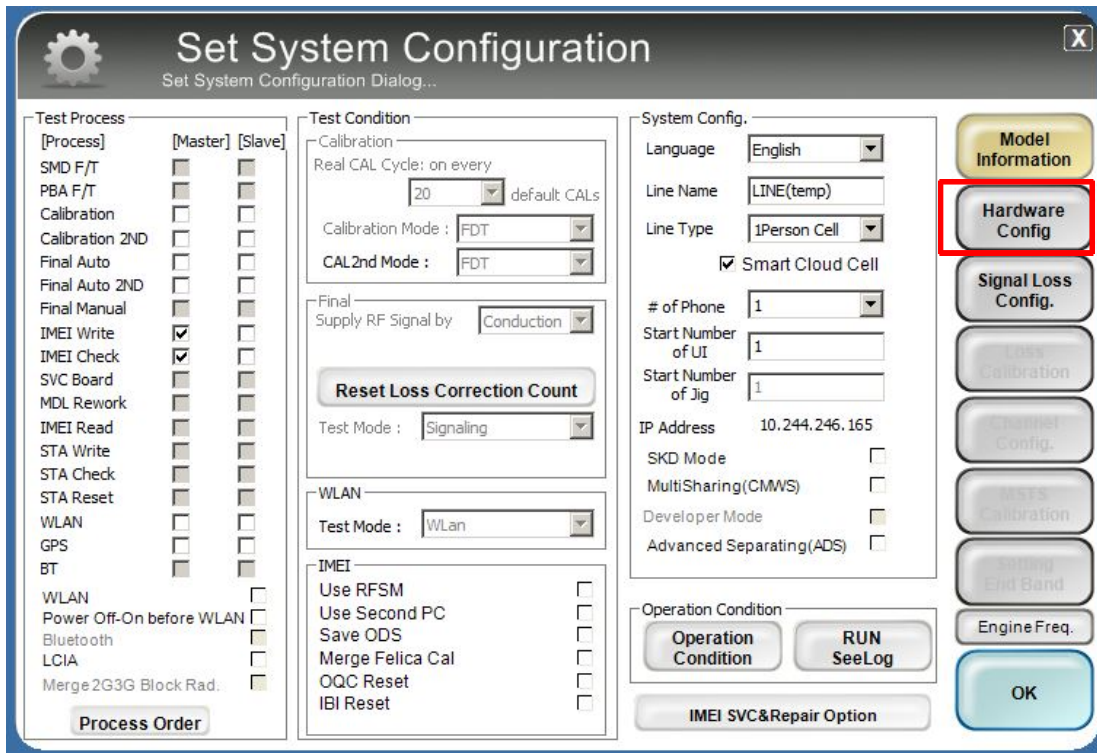
ATT Rework  Slovakia SVC

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.**

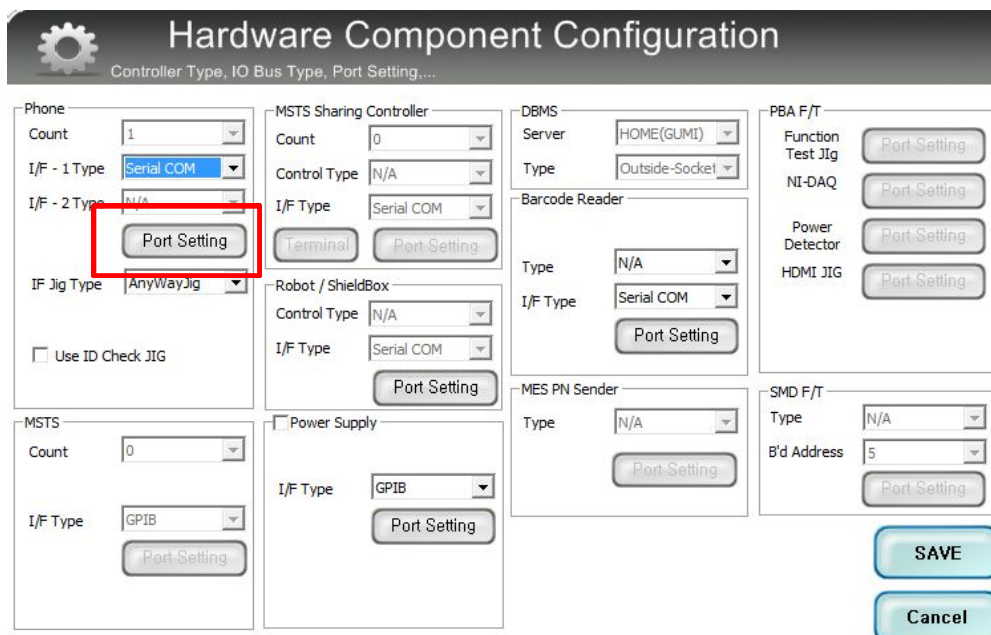
Language: English  
Line Name: LINE(temp)  
Line Type: 1Person Cell  
 Smart Cloud Cell  
# of Phone: 1  
Start Number of UI: 1  
Start Number of Jig: 1  
IP Address: 10.244.246.165  
SKD Mode   
MultiSharing(CMWS)   
Developer Mode   
Advanced Separating(ADS)

**Operation Condition**  
Operation Condition RUN SeeLog

**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  
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

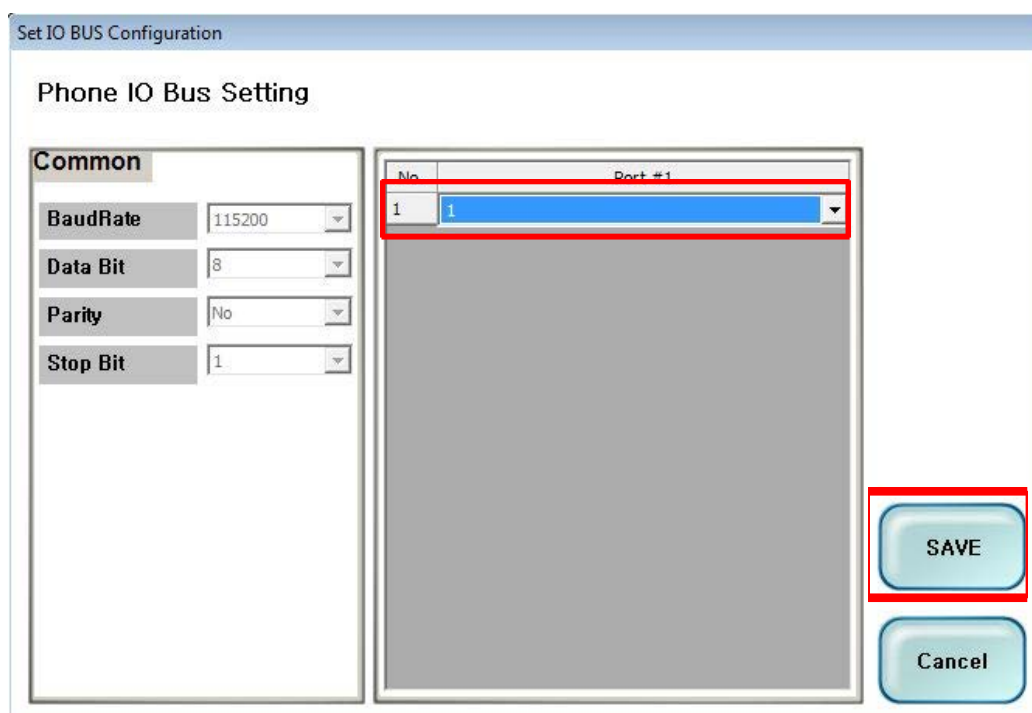
**PBA F/T**  
Function Test Jig Port Setting  
NI-DAQ Port Setting  
Power Detector Port Setting  
HDMI JIG Port Setting

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

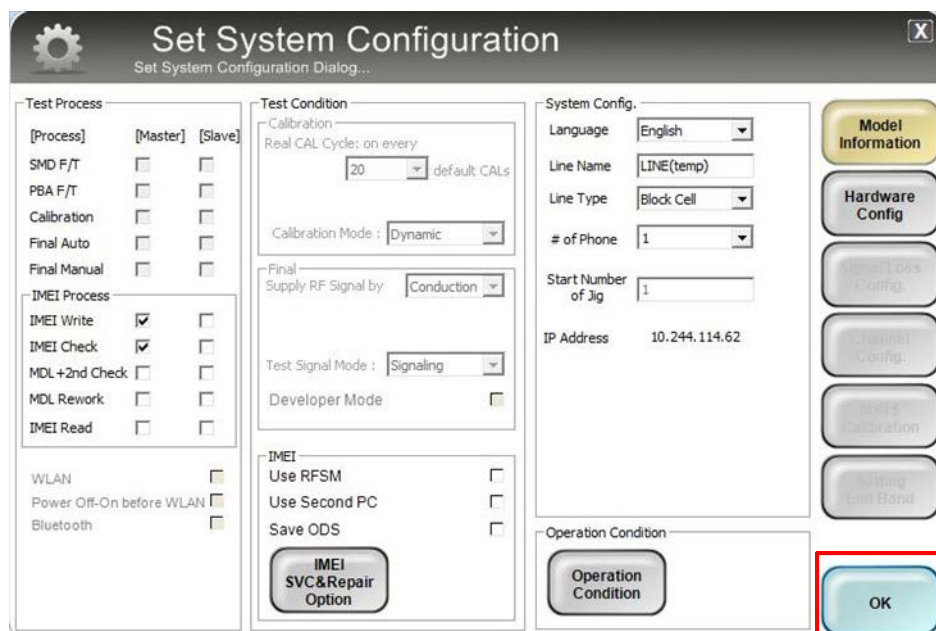
SAVE  
Cancel

## 6. Level 1 Repair

10. Select Port Number and SAVE

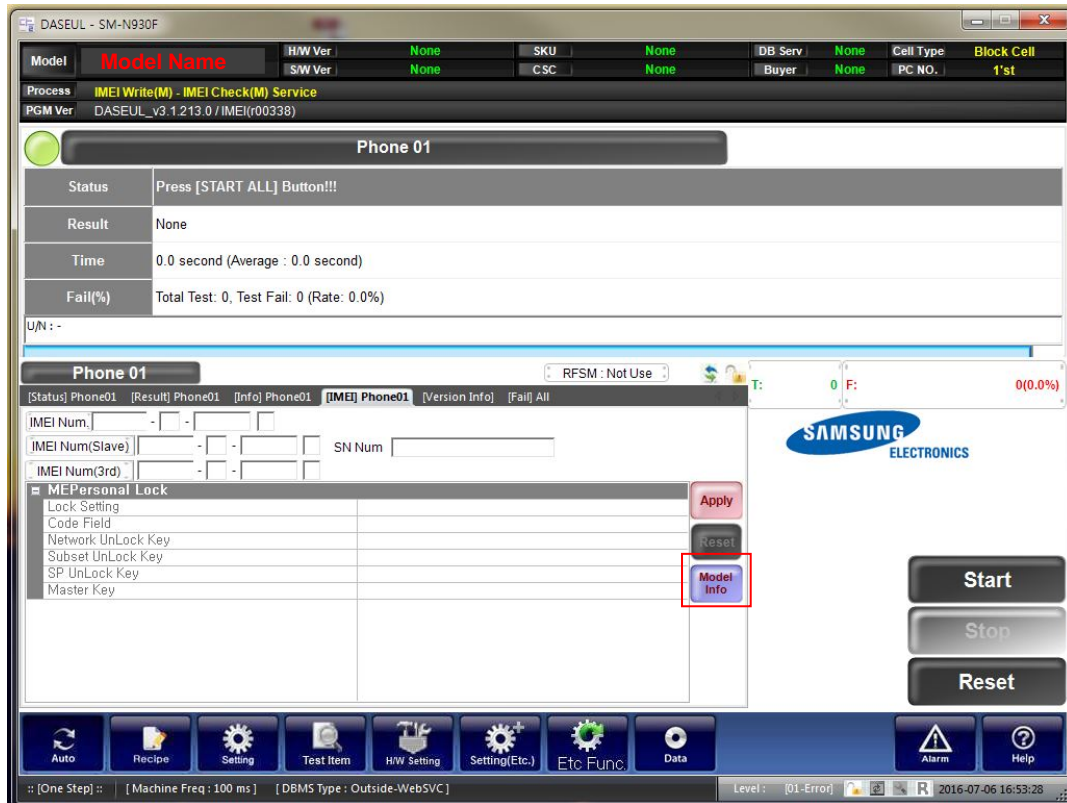


11. Click OK to proceed



## 6. Level 1 Repair

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



13. Click OK

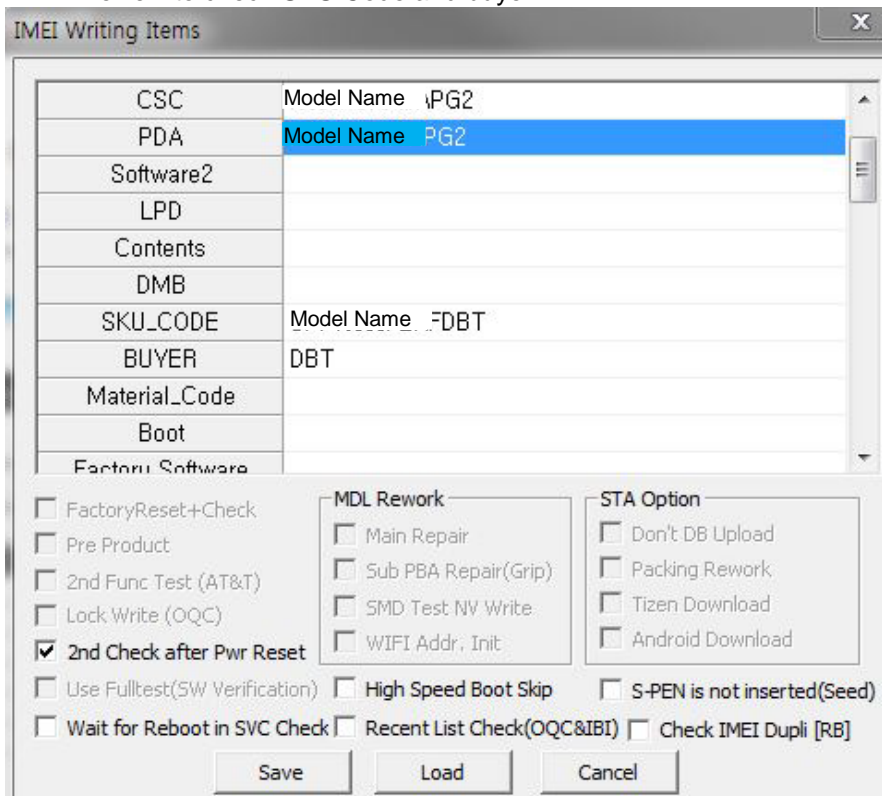




## 6. Level 1 Repair

14. Input SKU\_CODE and BUYER, then click Save button.

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



The dialog box 'IMEI Writing Items' contains a table with the following data:

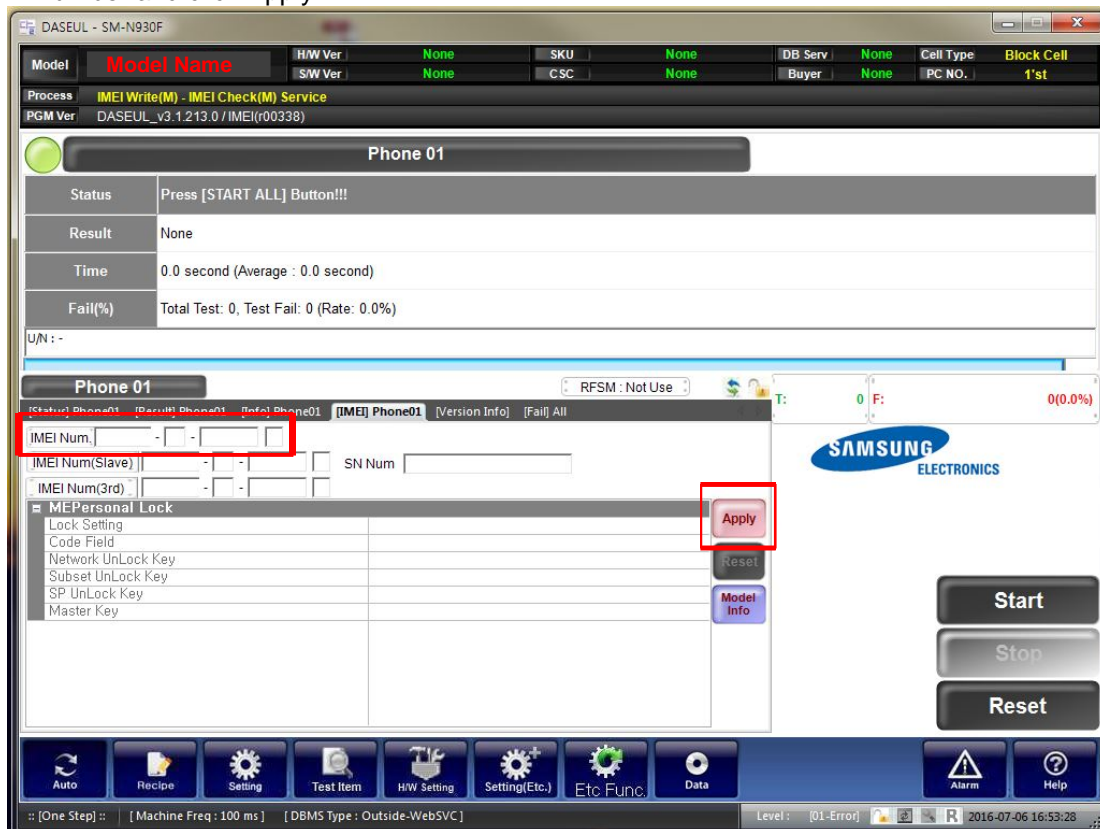
CSC	Model Name PG2
PDA	Model Name PG2
Software2	
LPD	
Contents	
DMB	
SKU_CODE	Model Name _DBT
BUYER	DBT
Material_Code	
Boot	
Factory Software	

Below the table are several groups of checkboxes:

- 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]

Buttons: Save, Load, Cancel

15. Input IMEI Number and click Apply



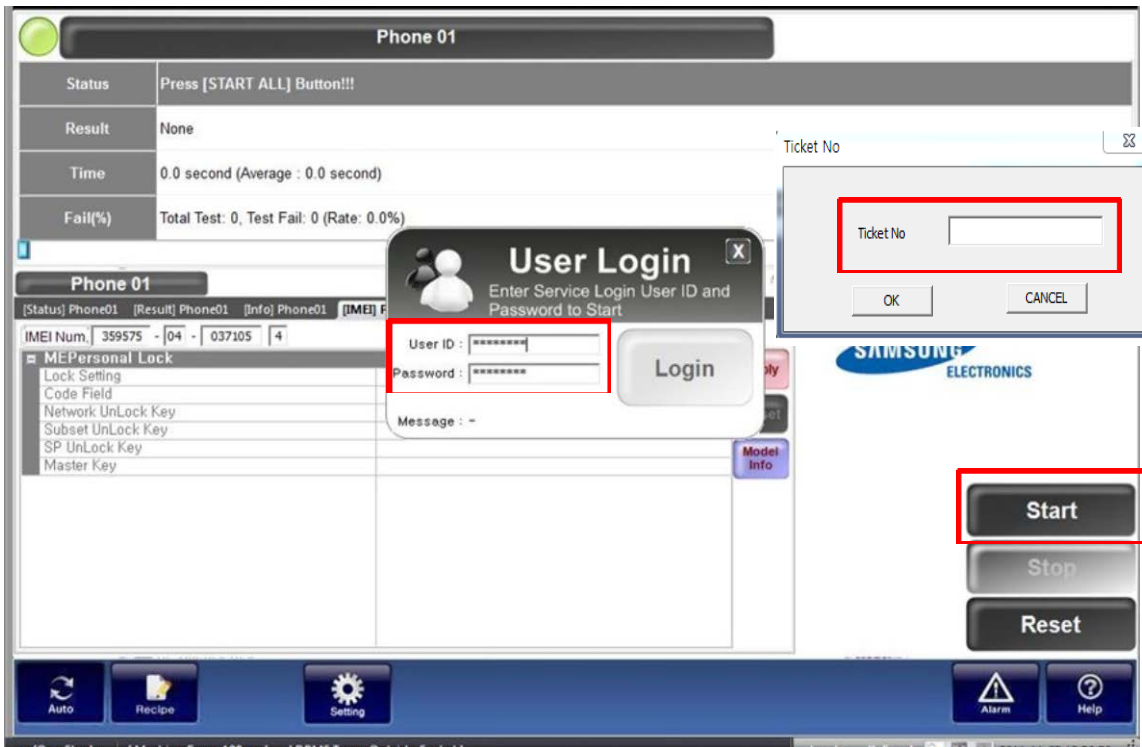
The screenshot shows the 'DASEUL - SM-N930F' software interface. At the top, it displays 'Model Name' and 'IMEI Write(M) - IMEI Check(M) Service'. Below this, there is a 'Phone 01' section with a status bar and a table of test results. The 'IMEI Num.' field is highlighted with a red box. To the right of the 'IMEI Num.' field, there is an 'Apply' button, also highlighted with a red box. The interface includes various navigation buttons at the bottom, such as 'Auto', 'Recipe', 'Setting', 'Test Item', 'HW Setting', 'Setting(Etc.)', 'Etc Func.', 'Data', 'Alarm', and 'Help'. The status bar at the bottom indicates 'Level : [01-Error]' and the date '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

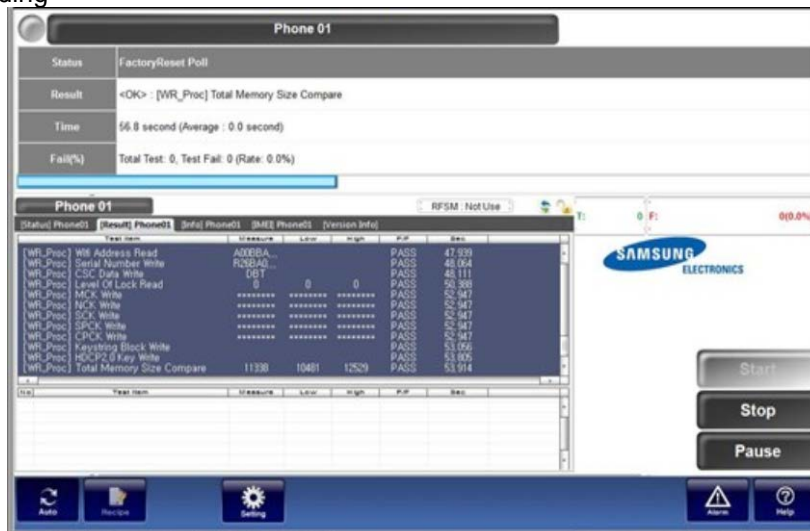


17. Connect the phone to Anyway JIG

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

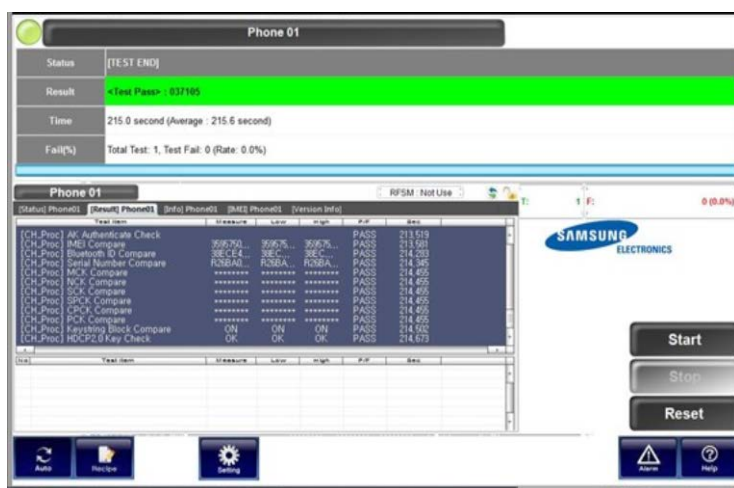
After connecting the phone, the phone will be booted automatically.

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%)

Test Item	Success	Fail	High	PUF	Pass
[CH_Proc] AK Authenticate Check	50720	50720	50720		PASS 213.519
[CH_Proc] IMEI Compare	3EE7E4	3EE7E4	3EE7E4		PASS 213.591
[CH_Proc] BootRom ID Compare	3EE7E4	3EE7E4	3EE7E4		PASS 214.293
[CH_Proc] Serial Number Compare	FD8BA0	FD8BA0	FD8BA0		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

Buttons: Start, Stop, Reset, Auto, Pinpoint, 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 ([Model Name\\_OPEN\\_CALIBRATION\\_Ver\\_3.1.298.3.CAB](#))

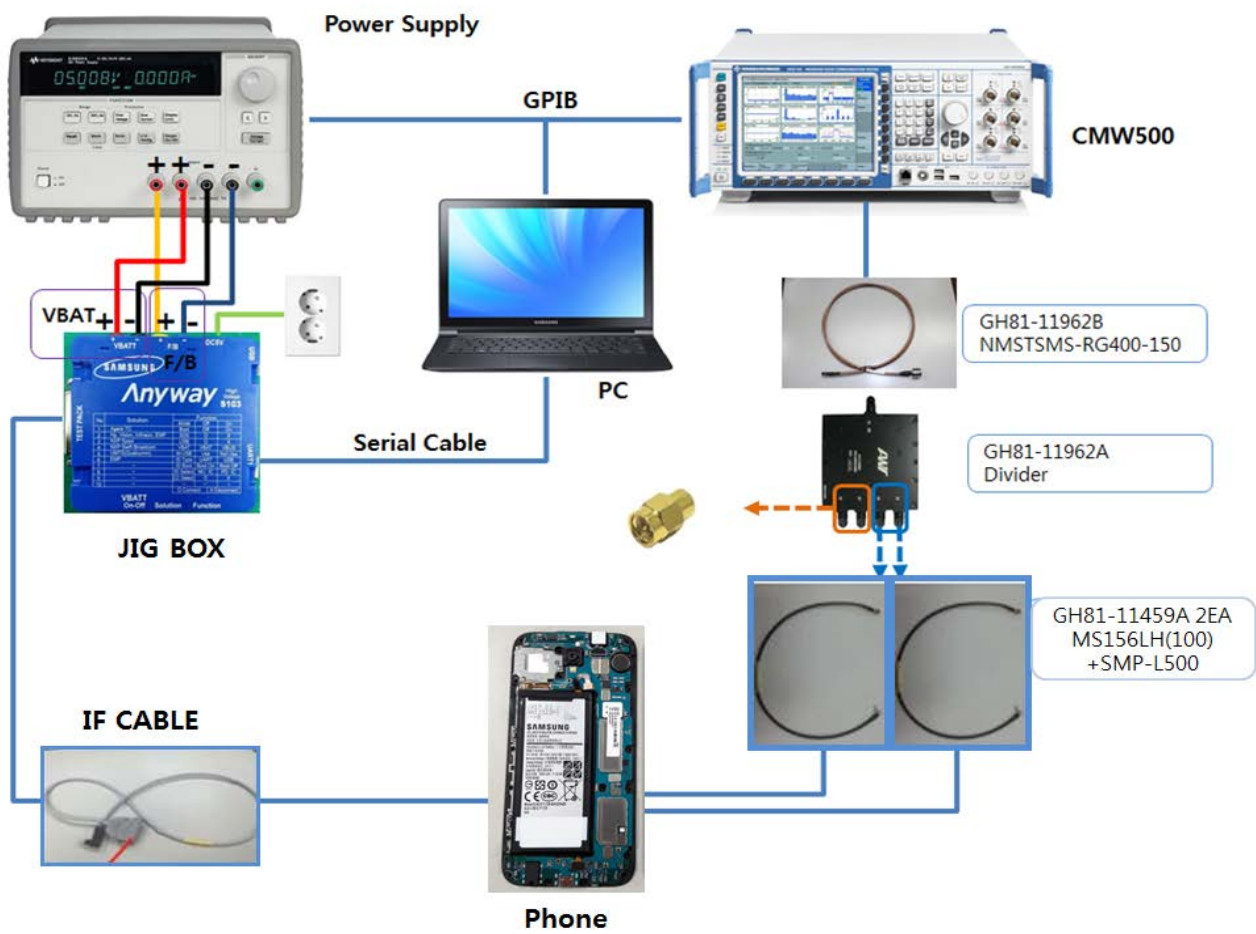
※ It is required to use the latest program.

- Mobile Phone
- R&S CMW500
- E3632A Power Supply
- GPIB Cable (2ea)
- JIG BOX (GH81-12520B)
- IF Cable (GH81-10952A)
- Adapter (GH81-11888K)
- UART Serial Cable
- RF Cable (GH81-11962D, 2EA)

#### • Table of test cables

RF Cable (Manual)	GH81-11459A		
	1.35T Long 		
4 Port Divider	GH81-11962A	GH81-11962B	GH81-11962E
	Use / No use 	Divider Cable 	50Ω terminator 

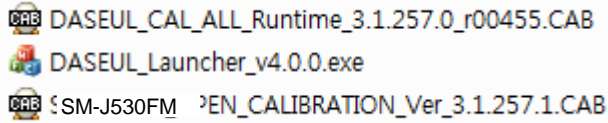
## 6. Level 1 Repair



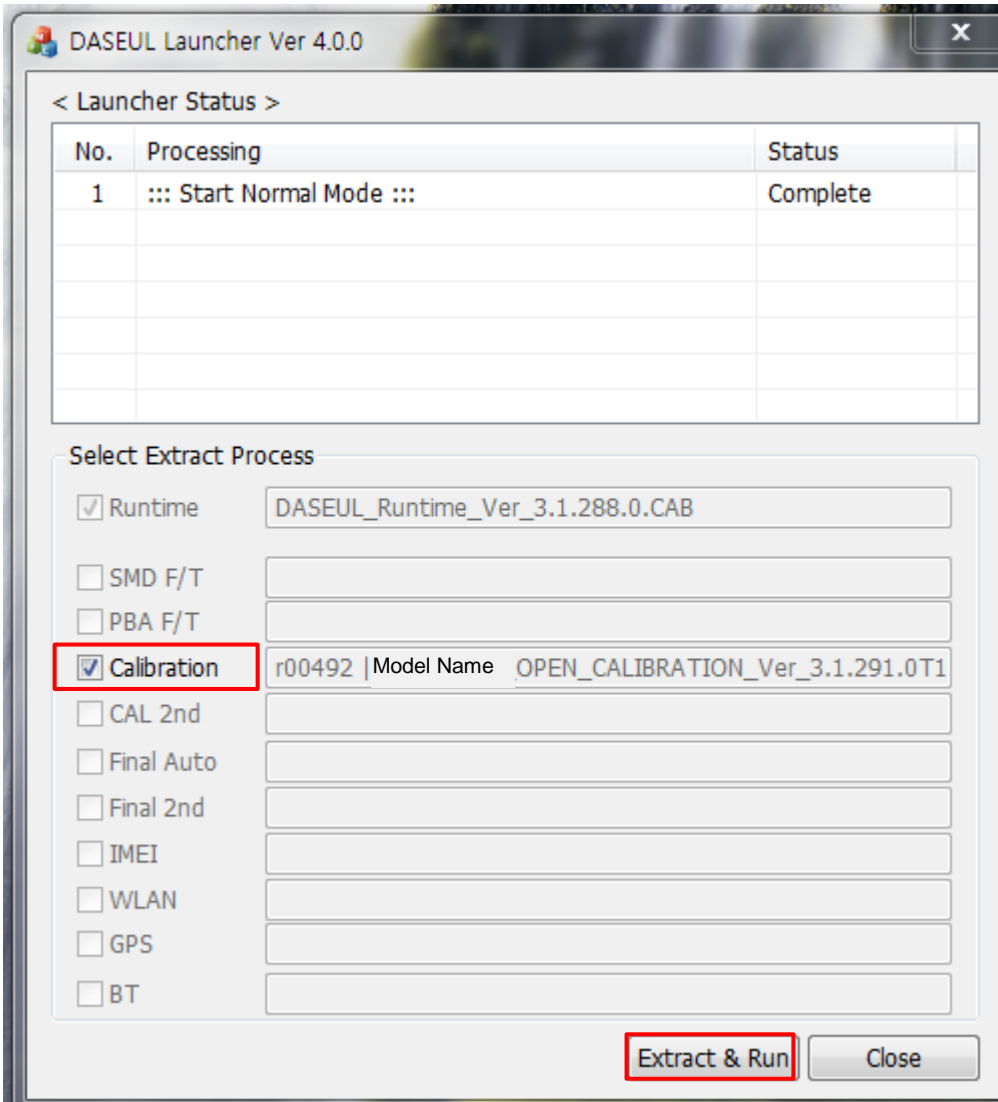
## 6. Level 1 Repair

### 6-3-2. RF Calibration Program

1. Run the RF Calibration Program Launcher, 'DASEUL\_Launcher\_vx.x.xx.exe'.

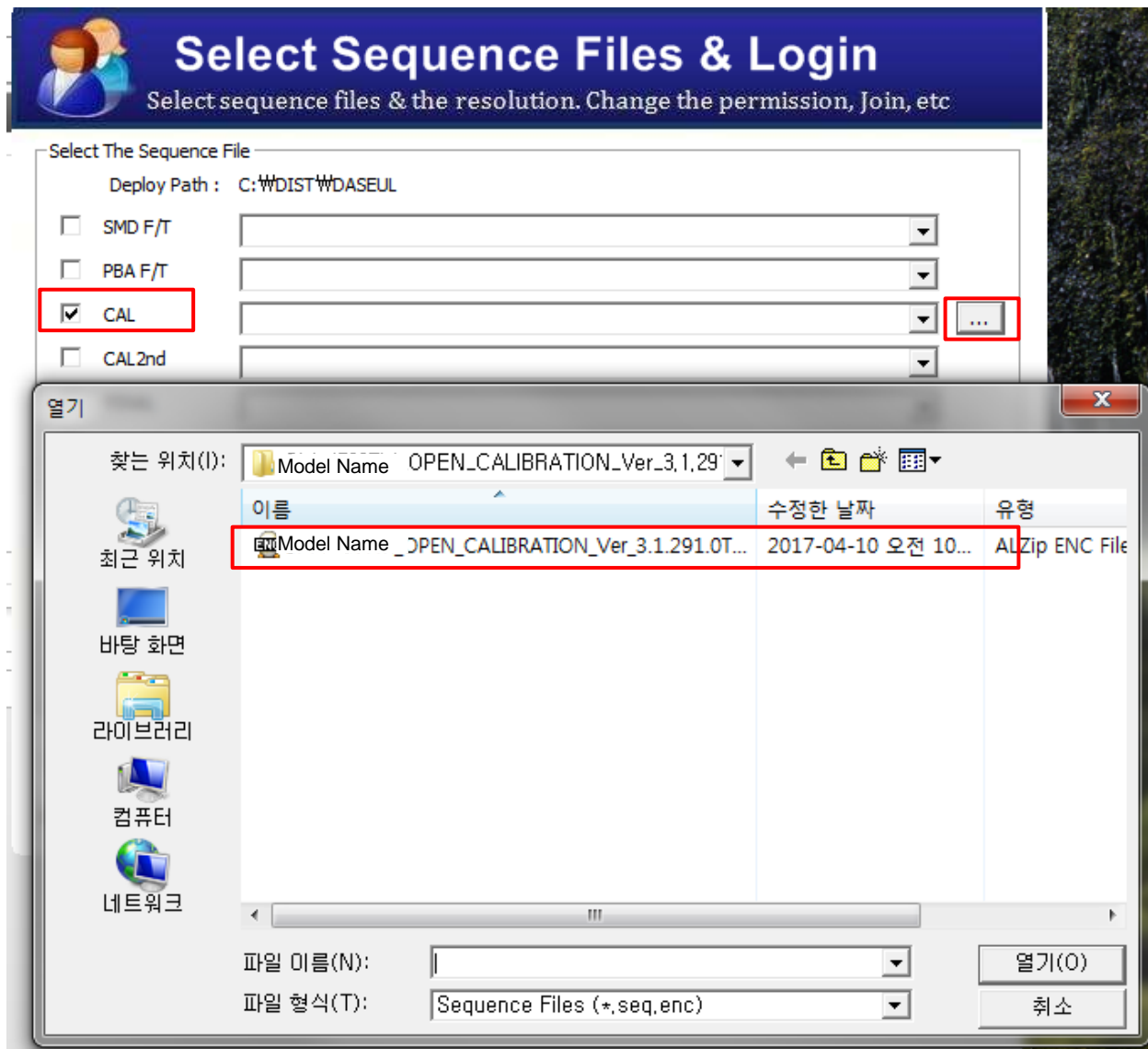


2. Check the 'Calibration' menu, and select 'Extract & Run'.



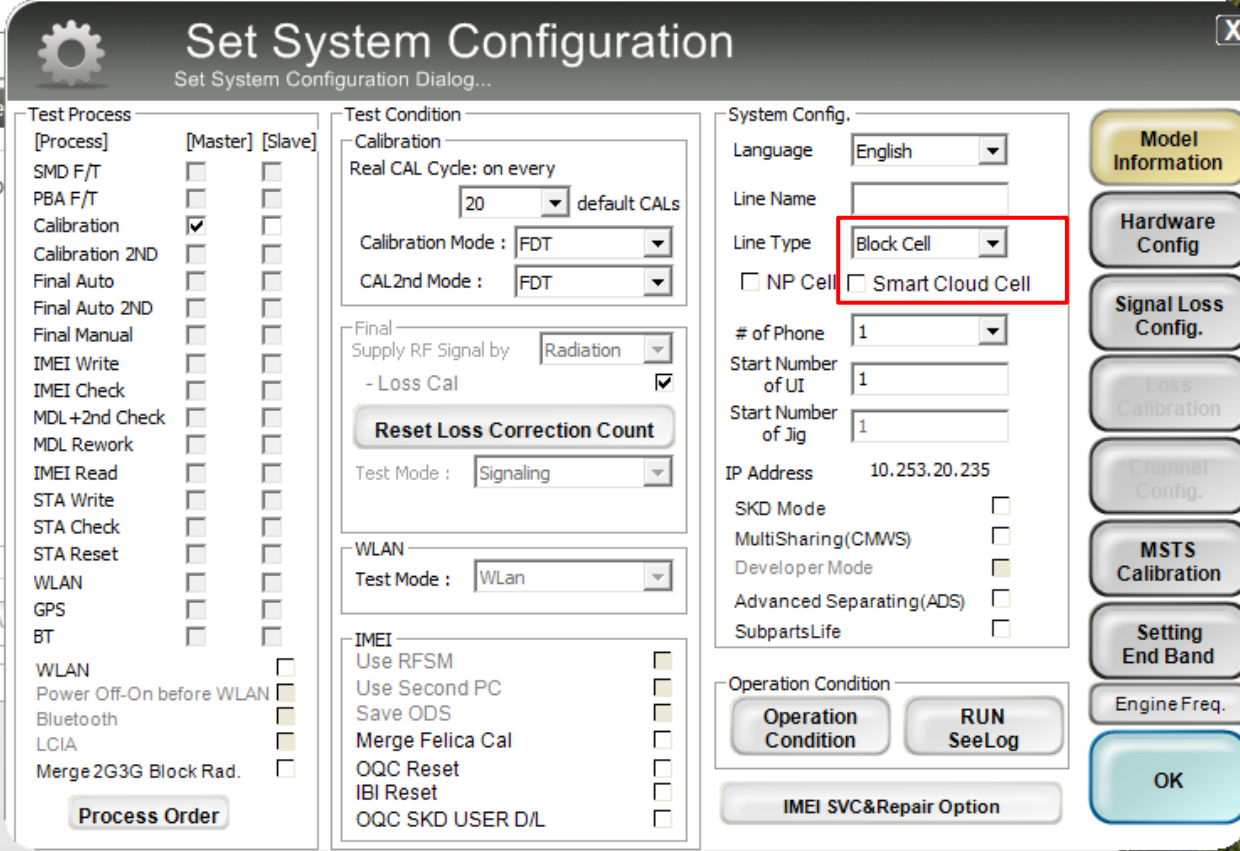
## 6. Level 1 Repair

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



## 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**

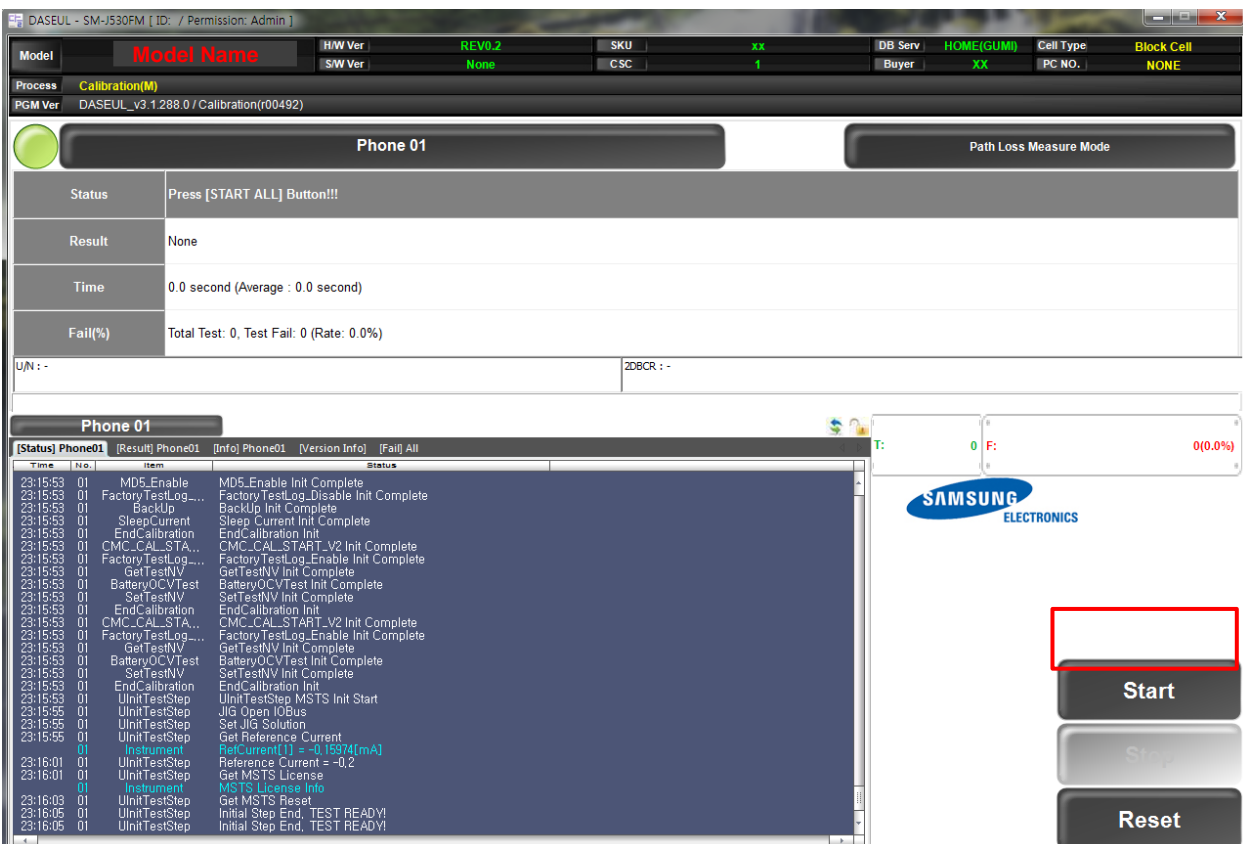
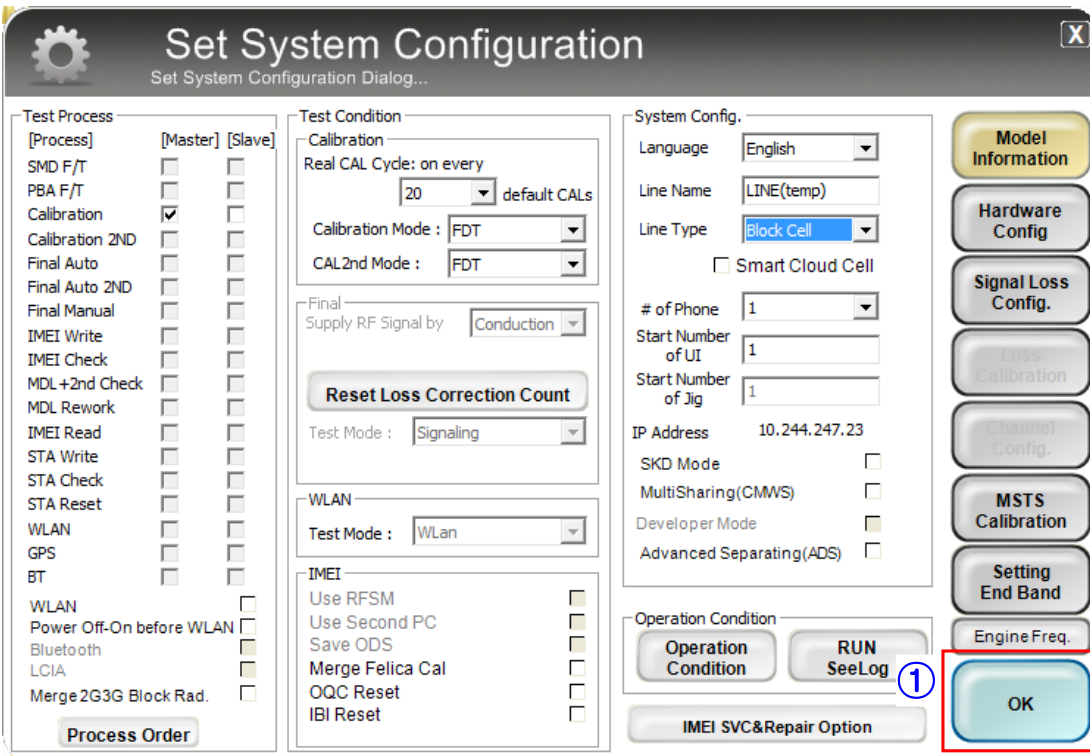
**Model Information**





## 6. Level 1 Repair

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



## 9. Reference Abbreviate

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### 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