

## 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.

## 2. Specification

### 2-1. GSM General Specification

Item		GSM 850	EGSM 900	DCS1800	PCS1900
Freq. Band[MHz]		824~849	880~915	1710~1785	1850~1910
Uplink/Downlink		869~894	925~960	1805~1880	1930~1990
ARFCN range		128~251	0~124 & 975~1023	512~885	512~810
Tx/Rx spacing		45MHz	45MHz	95MHz	80MHz
Mod. Bit rate/ Bit Period		270.833kbps 3.692us	270.833kbps 3.692us	270.833kbps 3.692us	270.833kbps 3.692us
Time Slot Period/ Frame Period		576.9us 4.615ms	576.9us 4.615ms	576.9us 4.615ms	576.9us 4.615ms
Modulation	GSM/ EGPRS	GMSK/ 8PSK	GMSK/ 8PSK	GMSK/ 8PSK	GMSK/ 8PSK
MS Power		33dBm~5dBm	33dBm~5dBm	30dBm~0dBm	30dBm~0dBm
Power Class		4(GMSK) E2(8PSK)	4(GMSK) E2(8PSK)	1(GMSK) E2(8PSK)	1(GMSK) E2(8PSK)
Sensitivity		-102dBm	-102dBm	-100dBm	-100dBm
TDMA Mux		8	8	8	8

## 2. Specification

### 2-2. GSM Tx Power Class

TX Power control level	GSM850	TX Power control level	EGSM900	TX Power control level	DCS1800	TX Power control level	PCS1900
5	33±2 dBm	5	33±2 dBm	0	30±3 dBm	0	30±3 dBm
6	31±2 dBm	6	31±2 dBm	1	28±3 dBm	1	28±3 dBm
7	29±2 dBm	7	29±2 dBm	2	26±3 dBm	2	26±3 dBm
8	27±2 dBm	8	27±2 dBm	3	24±3 dBm	3	24±3 dBm
9	25±2 dBm	9	25±2 dBm	4	22±3 dBm	4	22±3 dBm
10	23±2 dBm	10	23±2 dBm	5	20±3 dBm	5	20±3 dBm
11	21±2 dBm	11	21±2 dBm	6	18±3 dBm	6	18±3 dBm
12	19±2 dBm	12	19±2 dBm	7	16±3 dBm	7	16±3 dBm
13	17±2 dBm	13	17±2 dBm	8	14±3 dBm	8	14±3 dBm
14	15±2 dBm	14	15±2 dBm	9	12±4 dBm	9	12±4 dBm
15	13±2 dBm	15	13±2 dBm	10	10±4 dBm	10	10±4 dBm
16	11±3 dBm	16	11±3 dBm	11	8±4 dBm	11	8±4 dBm
17	9±3 dBm	17	9±3 dBm	12	6±4 dBm	12	6±4 dBm
18	7±3 dBm	18	7±3 dBm	13	4±4 dBm	13	4±4 dBm
19	5±3 dBm	19	5±3 dBm	14	2±5 dBm	14	2±5 dBm
-	-	-	-	15	0±5 dBm	15	0±5 dBm

## 2. Specification

### 2-3-1. WCDMA General Specification[SM-A505F/FN/FM]

Item	WCDMA2100(B1)	WCDMA1900(B2)	WCDMA850(B5)	WCDMA900(B8)
Freq. Band[MHz] Uplink/Downlink	1920~1980 2110~2170	1850~1910 1930~1990	824~849 869~894	880~915 925~960
ARFCN range	UL: 9612~9888 DL: 10562~10838	UL: 9262~9538 DL: 9662~9938	UL: 4132~4233 DL: 4357~4458	UL: 2712~2868 DL: 2937~3088
Tx/Rx spacing	190MHz	80MHz	45MHz	45MHz
Mod. Bit rate/ Bit Period	42.2Mbps(DL) 5.42Mbps(UL)	42.2Mbps(DL) 5.42Mbps(UL)	42.2Mbps(DL) 5.42Mbps(UL)	42.2Mbps(DL) 5.42Mbps(UL)
Time Slot Period/ Frame Period	WCDMA 10ms/0.667ms HSPA 2ms/0.667ms	WCDMA 10ms/0.667ms HSPA 2ms/0.667ms	WCDMA 10ms/0.667ms HSPA 2ms/0.667ms	WCDMA 10ms/0.667ms HSPA 2ms/0.667ms
Modulation	QPSK 16QAM 64QAM	QPSK 16QAM 64QAM	QPSK 16QAM 64QAM	QPSK 16QAM 64QAM
MS Power (dBm)	25.7 ~ -49(↓)	25.7 ~ -49(↓)	25.7 ~ -49(↓)	25.7 ~ -49(↓)
Power Class	3(max+24dBm)	3(max+24dBm)	3(max+24dBm)	3(max+24dBm)
Sensitivity	-106dBm	-104dBm	-104dBm	-103dBm

## 2. Specification

### 2-3-2. WCDMA General Specification[SM-A505G/GN/GT]

Item	WCDMA2100(B1)	WCDMA1900(B2)	WCDMA AWS(B4)	WCDMA850(B5)	WCDMA900(B8)
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	UL: 9612~9888 DL: 10562~10838	UL: 9262~9538 DL: 9662~9938	UL: 1312~1513 DL: 1537~1738	UL: 4132~4233 DL: 4357~4458	UL: 2712~2868 DL: 2937~3088
Tx/Rx spacing	190MHz	80MHz	400MHz	45MHz	45MHz
Mod. Bit rate/ Bit Period	42.2Mbps(DL) 5.42Mbps(UL)	42.2Mbps(DL) 5.42Mbps(UL)	42.2Mbps(DL) 5.42Mbps(UL)	42.2Mbps(DL) 5.42Mbps(UL)	42.2Mbps(DL) 5.42Mbps(UL)
Time Slot Period/ Frame Period	WCDMA 10ms/0.667ms HSPA 2ms/0.667ms	WCDMA 10ms/0.667ms HSPA 2ms/0.667ms	WCDMA 10ms/0.667ms HSPA 2ms/0.667ms	WCDMA 10ms/0.667ms HSPA 2ms/0.667ms	WCDMA 10ms/0.667ms HSPA 2ms/0.667ms
Modulation	QPSK 16QAM 64QAM	QPSK 16QAM 64QAM	QPSK 16QAM 64QAM	QPSK 16QAM 64QAM	QPSK 16QAM 64QAM
MS Power (dBm)	25.7 ~ -49(↓)	25.7 ~ -49(↓)	25.7 ~ -49(↓)	25.7 ~ -49(↓)	25.7 ~ -49(↓)
Power Class	3(max+24dBm)	3(max+24dBm)	3(max+24dBm)	3(max+24dBm)	3(max+24dBm)
Sensitivity	-106dBm	-104dBm	-106dBm	-104dBm	-103dBm

## 2. Specification

### 2-4. LTE General Specification

Item	LTE Band1	LTE Band3	LTE Band5	LTE Band7
Freq. Band[MHz] Uplink/Downlink	1920~1980 2110~2170	1710~1785 1805~1880	824~849 869~894	2500~2570 2620~2690
ARFCN range	UL:18000~18599 DL:0~599	UL:19200~19949 DL:1200~1949	UL:20400~20649 DL:2400~2649	UL:20750~21449 DL:2750~3449
Tx/Rx spacing (MHz)	190	95	45	120
Channel Bandwidth (MHz)	5/10/15/20	1.4/3/5/10/15/20	1.4/3/5/10	5/10/15/20
Modulation	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)
MS Power (dBm)	25.7~-39(↓)	25.7~-39(↓)	25.7~-39(↓)	25.7~-39(↓)
Sensitivity(QPSK, BW 10MHz) (dBm)	-96.3	-93.3	-94.3	-94.3

Item	LTE Band8	LTE Band38	LTE Band40	LTE Band41
Freq. Band[MHz] Uplink/Downlink	880~915 925~960	2570~2620	2300~2400	2496~2690
ARFCN range	UL:21450-21799 DL:3450-3799	UL/DL:37750 ~ 38249	UL/DL:38650 ~ 39649	UL/DL:39650 ~ 41589
Tx/Rx spacing (MHz)	45	0	0	0
Channel Bandwidth (MHz)	1.4/3/5/10	5/10/15/20	5/10/15/20	5/10/15/20
Modulation	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)
MS Power (dBm)	25.7~-39(↓)	25.7~-39(↓)	25.7~-39(↓)	25.7~-39(↓)
Sensitivity(QPSK, BW 10MHz) (dBm)	-93.3	-96.3	-96.3	-94.3

## 2. Specification

### [SM-A505F/FN/FM]

Item	LTE Band20
Freq. Band[MHz] Uplink/Downlink	832~862 791~821
ARFCN range	UL:24150~24449 DL:6150~6449
Tx/Rx spacing (MHz)	-41
Channel Bandwidth (MHz)	5/10/15/20
Modulation	QPSK, 16/64QAM 256QAM(DL only)
MS Power (dBm)	25.7~-39(↓)
Sensitivity(QPSK, BW 10MHz) (dBm)	-93.3



## 2. Specification

### [SM-A505G/GN]

Item	LTE Band2	LTE Band4	LTE Band12	LTE Band13
Freq. Band[MHz] Uplink/Downlink	1850~1910 1930~1990	1710~1755 2110~2155	699~716 729~746	777~787 746~756
ARFCN range	UL:18600~19199 DL:600~1199	UL:19950~20399 DL:1950~2399	UL:23010~23179 DL:5010~5179	UL:23180~23279 DL:5180~5279
Tx/Rx spacing (MHz)	80	400	30	-31
Channel Bandwidth (MHz)	1.4/3/5/10/15/20	1.4/3/5/10/15/20	1.4/3/5/10	1.4/3/5/10
Modulation	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)
MS Power (dBm)	25.7~-39(↓)	25.7~-39(↓)	25.7~-39(↓)	25.7~-39(↓)
Sensitivity(QPSK, BW 10MHz)(dBm)	-94.3	-96.3	-93.3	-93.3

Item	LTE Band17	LTE Band28	LTE Band66
Freq. Band[MHz] Uplink/Downlink	704~716 734~746	703~748 758~803	1710~1780 2110~2200
ARFCN range	UL:23730~23849 DL:5730~5849	UL:27210~27659 DL:9210~9659	UL:131972~132671 DL:66436~67335
Tx/Rx spacing (MHz)	30	55	400
Channel Bandwidth (MHz)	5/10	3/5/10/15/20	1.4/3/5/10/15/20
Modulation	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)
MS Power (dBm)	25.7~-39(↓)	25.7~-39(↓)	25.7~-39(↓)
Sensitivity (QPSK, BW 10MHz) (dBm)	-93.3	-94.8	-95.8

## 2. Specification

### [SM-A505GT]

Item	LTE Band2	LTE Band4	LTE Band12	LTE Band13
Freq. Band[MHz] Uplink/Downlink	1850~1910 1930~1990	1710~1755 2110~2155	699~716 729~746	777~787 746~756
ARFCN range	UL:18600~19199 DL:600~1199	UL:19950~20399 DL:1950~2399	UL:23010~23179 DL:5010~5179	UL:23180~23279 DL:5180~5279
Tx/Rx spacing (MHz)	80	400	30	-31
Channel Bandwidth (MHz)	1.4/3/5/10/15/20	1.4/3/5/10/15/20	1.4/3/5/10	1.4/3/5/10
Modulation	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)
MS Power (dBm)	25.7~-39(↓)	25.7~-39(↓)	25.7~-39(↓)	25.7~-39(↓)
Sensitivity(QPSK, BW 10MHz)(dBm)	-94.3	-96.3	-93.3	-93.3

Item	LTE Band17	LTE Band20	LTE Band28	LTE Band66
Freq. Band[MHz] Uplink/Downlink	704~716 734~746	832~862 791~821	703~748 758~803	1710~1780 2110~2200
ARFCN range	UL:23730~23849 DL:5730~5849	UL:24150~24449 DL:6150~6449	UL:27210~27659 DL:9210~9659	UL:131972~132671 DL:66436~67335
Tx/Rx spacing (MHz)	30	-41	55	400
Channel Bandwidth (MHz)	5/10	5/10/15/20	3/5/10/15/20	1.4/3/5/10/15/20
Modulation	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)
MS Power (dBm)	25.7~-39(↓)	25.7~-39(↓)	25.7~-39(↓)	25.7~-39(↓)
Sensitivity (QPSK, BW 10MHz) (dBm)	-93.3	-93.3	-94.8	-95.8

### 3. Product Function

#### Main Function

Item	Description
OS	Android P OS V9.0
<b>SM-A505F/FN/FM</b> RF	GSM850 / GSM900 / DCS1800 / PCS1900 WCDMA: B1/ B2/ B5/ B8 LTE: B1 / B3 / B5/ B7/ B8/ B20/ B38/ B40/ B41
<b>SM-A505GT</b> RF	GSM850 / GSM900 / DCS1800 / PCS1900 WCDMA: B1/ B2/ B4/ B5/ B8 LTE: B1/ B2/ B3/ B4/ B5/ B7/ B8/ B12/ B13/ B17 / B26 / B28/ B38/ B40/ B41/ B66
<b>SM-A505G/GN</b> RF	GSM850 / GSM900 / DCS1800 / PCS1900 WCDMA: B1/ B2/ B4/ B5/ B8 LTE: B1/ B2/ B3/ B4/ B5/ B7/ B8/ B12/ B13/ B17 B20 /B26/ B28/ B38/ B40/ B41/ B66
Battery	4000mAh
Base Band	2.3Ghz Quad + 1.7GHz Quad
Other RF	GPS, Glonass, Beidou, Galileo / BT5.0 / USB 2.0 / WIFI 802.11 a/b/g/n/ac / NFC
Camera	Triple Camera ( 25MP(F1.7) + 5MP(F2.2) + 8MP(F2.2)) with LED Flash / Front Camera 25MP(F2.0)
LCD	6.4", FHD+, 2340x1080
<b>SM-A505F(SWA/SEA/MEA)</b> <b>/FN/G/GT/GN</b> RAM + ROM	4GB + 64GB
<b>SM-A505F(SWA/SEA/MEA)/GN</b> RAM + ROM	6GB + 64GB
<b>SM-A505F_MEA/FN</b> RAM + ROM	4GB + 128GB
<b>SM-A505F_SEA/FM</b> RAM + ROM	6GB + 128GB
Sensor	Accelerometer, Fingerprint Sensor, Gyro Sensor, Geomagnetic Sensor, Hall Sensor, Proximity Sensor, RGB Light Sensor
Accessory	Charger: 9V/1.67A and 5V/2.0A AFC charging Data cable: 3.0pi, 0.8m(USB-C) Ear phone: 3.5pi, 4pin

## 6. Level 1 Repair

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### 6-1. S/W Update

#### 6-1-1. Preparation

- S/W Update program : [Fenrir 5.17.xxxx](#)
- Mobile Phone
- Data Cable

#### ※ Settings

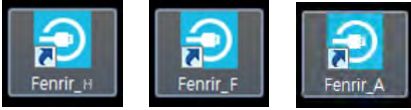


Data Cable : [GH39-01999A](#)

## 6. Level 1 Repair

### 6-1-2. How to use 'Fenrir' S/W update program.

1) Launch Fenrir by clicking on the icon on the desktop



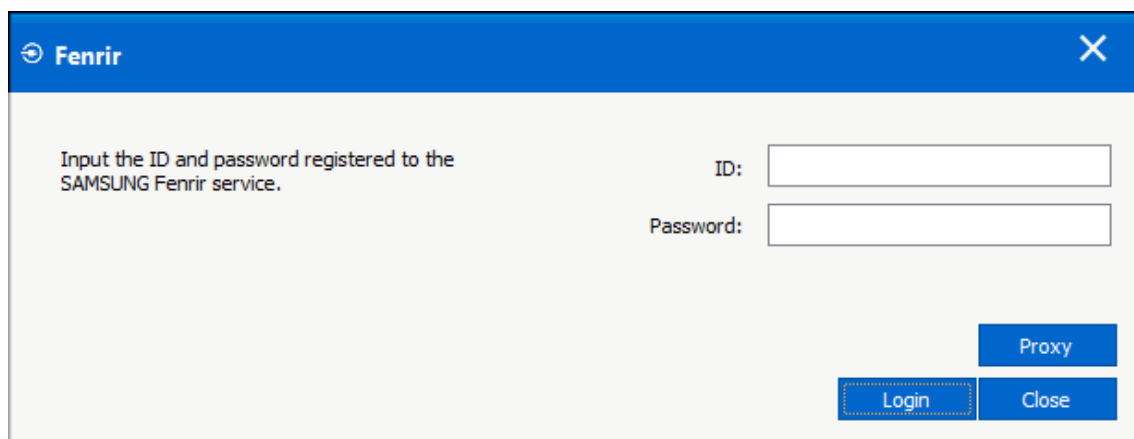
- SVH (Fenrir\_Home) : It uses Home binary which does not have user data area in the memory when flashed to a device. (Keep user data)

- SVC (Fenrir\_Factory) : It uses Factory binary which erases all user data in the memory when flashed to a device. (Clear user data)

- SVA (Fenrir\_All) : It uses Factory and Home binaries. you can download Home and Factory binary in a PC (but requires double HDD storage and NW traffic)

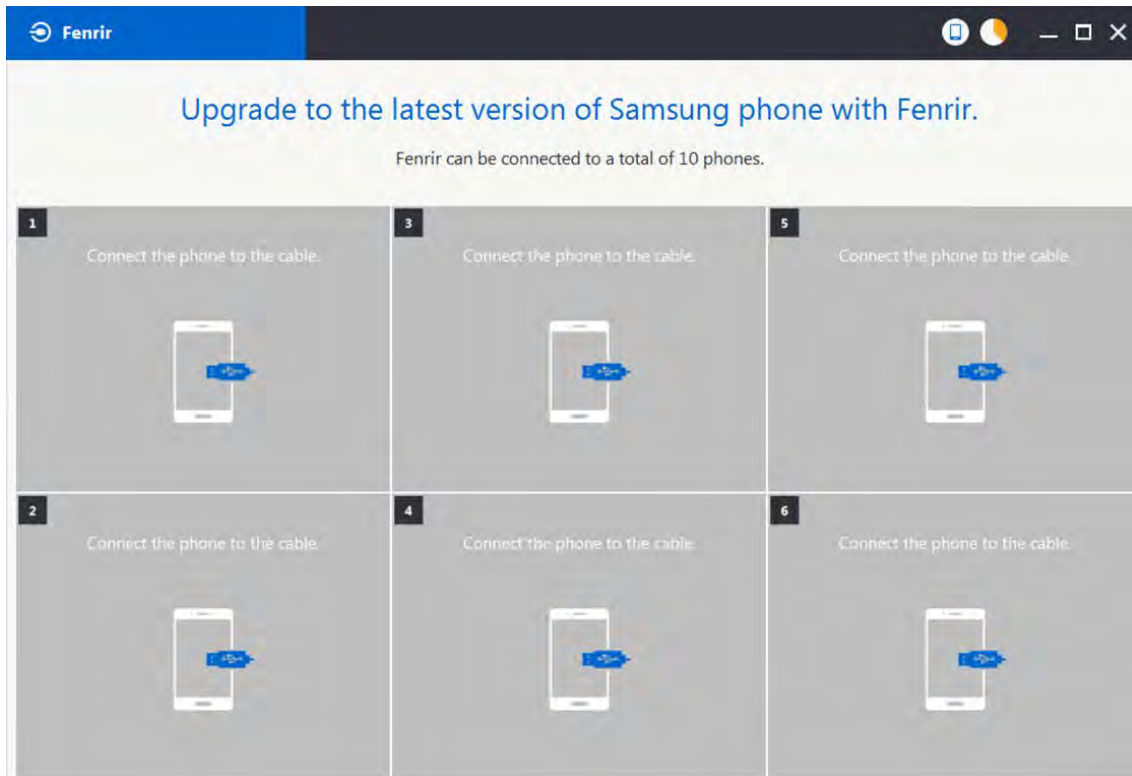
2) Input ID & password

※ You need to reset the ID information in case of PC change and format and repair, hard disk change

A screenshot of the Fenrir software login window. The window has a blue title bar with the 'Fenrir' logo and a close button. The main area is light gray. On the left, it says 'Input the ID and password registered to the SAMSUNG Fenrir service.' On the right, there are two input fields: 'ID:' and 'Password:'. Below these fields are three buttons: 'Proxy', 'Login', and 'Close'. The 'Login' button is highlighted with a dashed orange border.

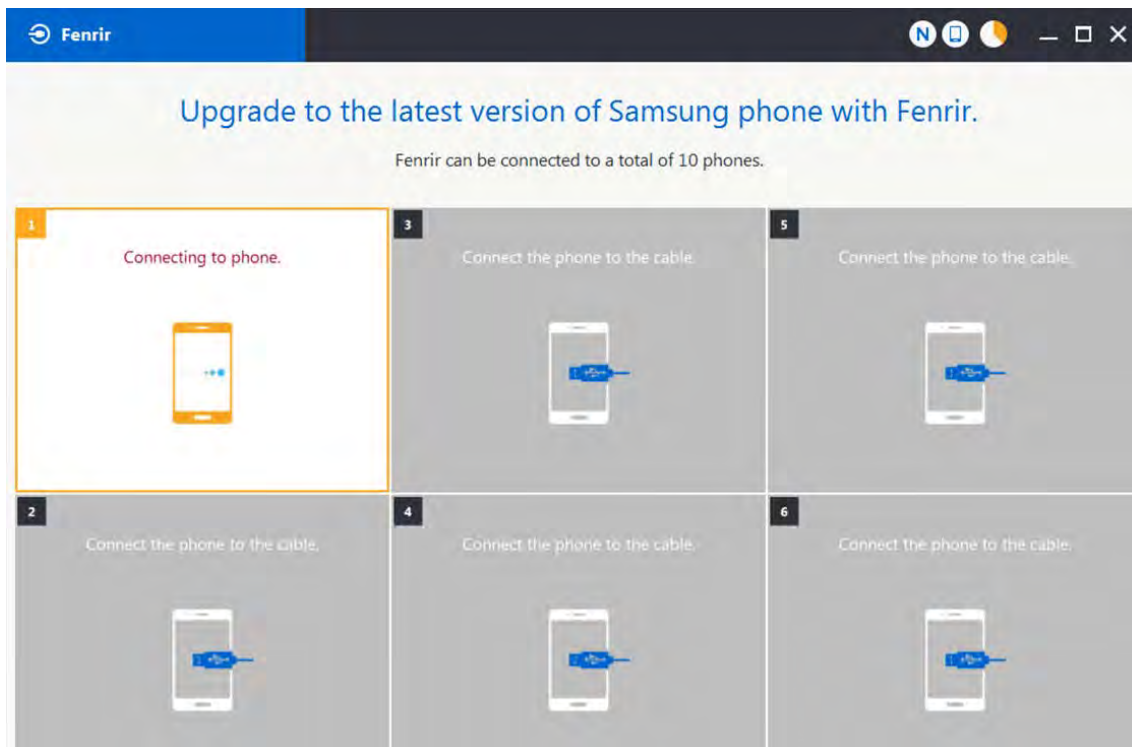
## 6. Level 1 Repair

3) Ensure device has sufficient charge (at least 20%) to start firmware update.



4) Connect the device to PC via data cable.

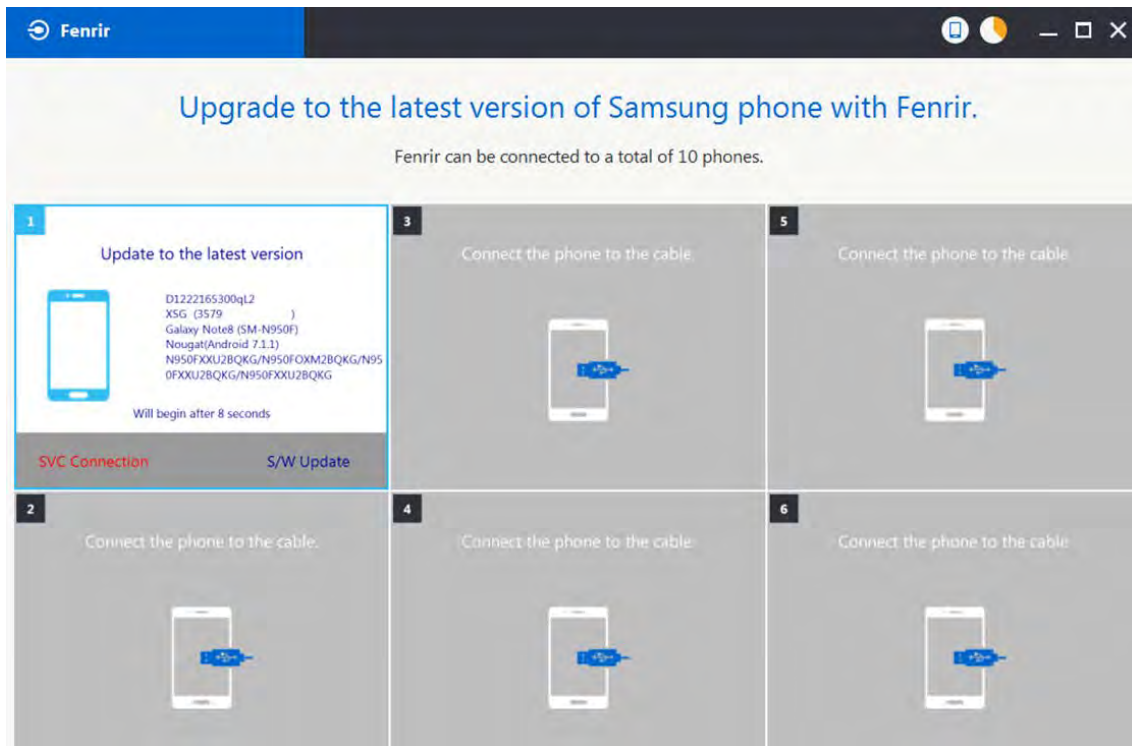
5) Upon USB connection, you will be presented with below screen.



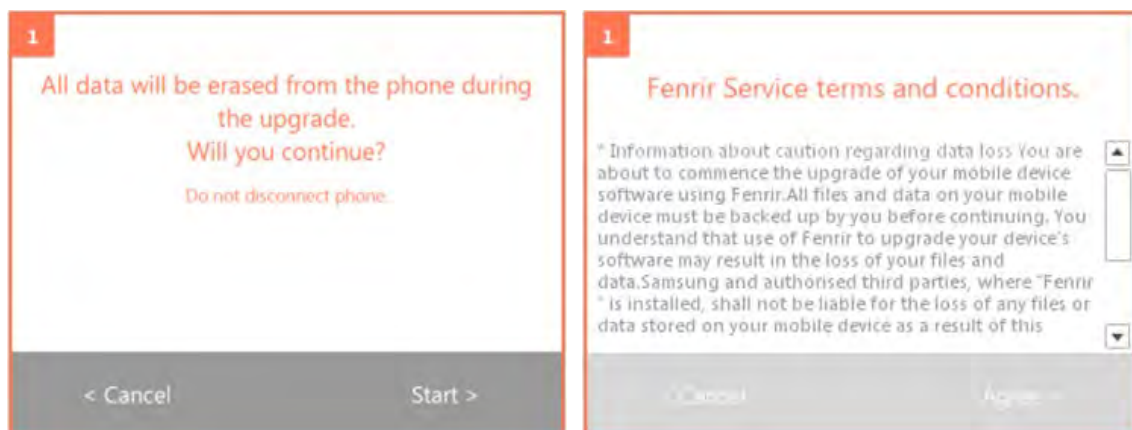
## 6. Level 1 Repair

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6) Once device is detected, you will be presented with below screen. To update S/W, select "S/W Update" or to exit select "SVC Connection". If you select "SVC Connection", only Fenrir connection history (record) will be stored in the FUS server to support warranty validation. (This is known as "Service Connection" history)



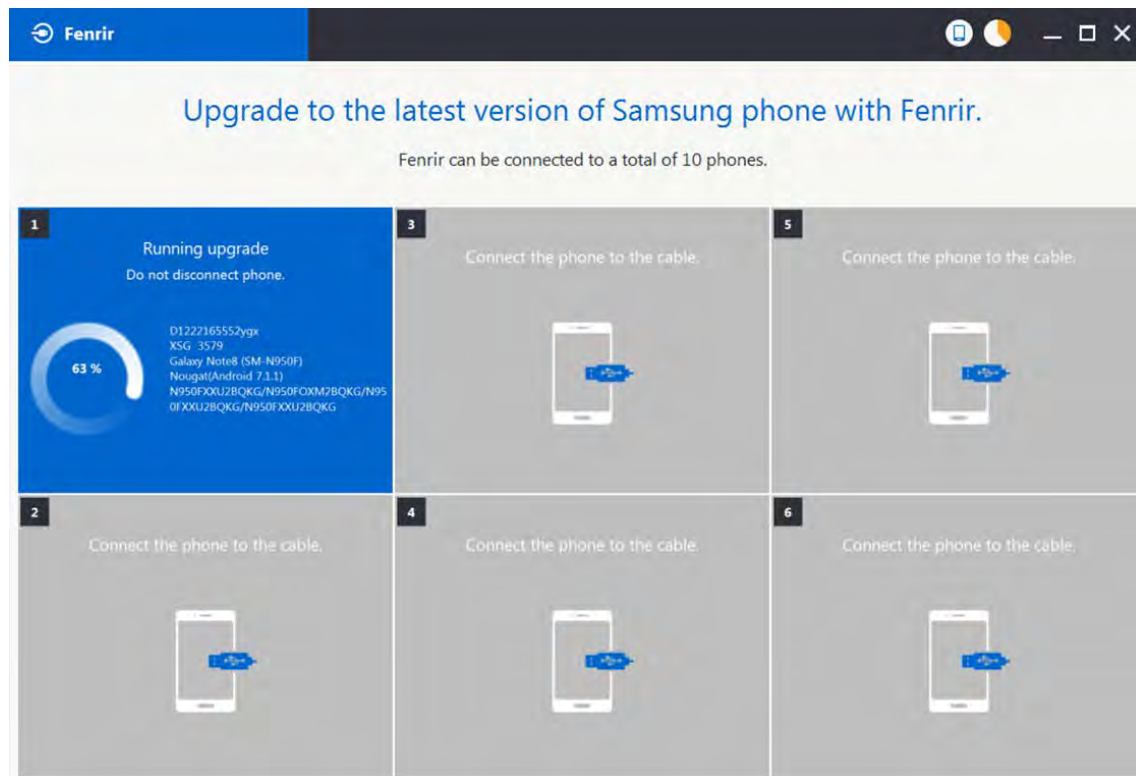
7) Once Fenrir starts, application will display the below screen. And select the Start button & Agree button.



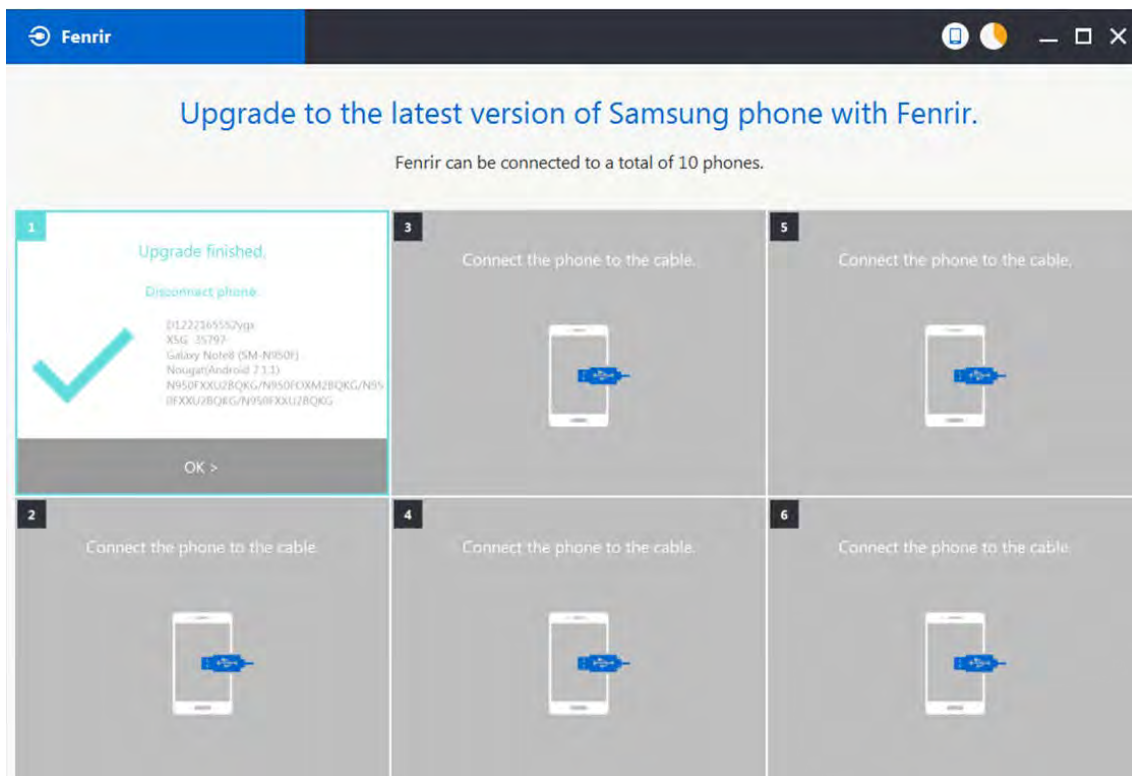


## 6. Level 1 Repair

8) The status circle increases as the update installs. The update process takes approximately 5-10 minutes to complete. Do not disconnect the device from USB during processing.



9) Once complete, application will present the below screen indicating update complete. Click Ok and detach device from USB.





## 6. Level 1 Repair

### 6-2. How to use 'Odin' program

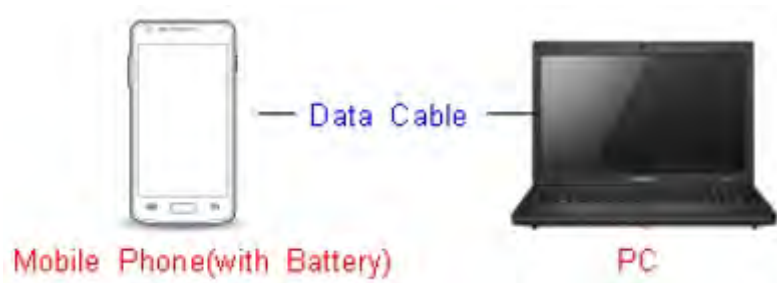
※ S/W Update via Fenrir is mandatory.

Below is the method to use 'Odin' program in any specific case.

#### 6-2-1. Preparation

- Installation program : [Odin3 v3.13.2.exe or above](#)
- Mobile Phone
- Data Cable
- S/W Binary files (downloaded from GSPN)

#### ※ Settings

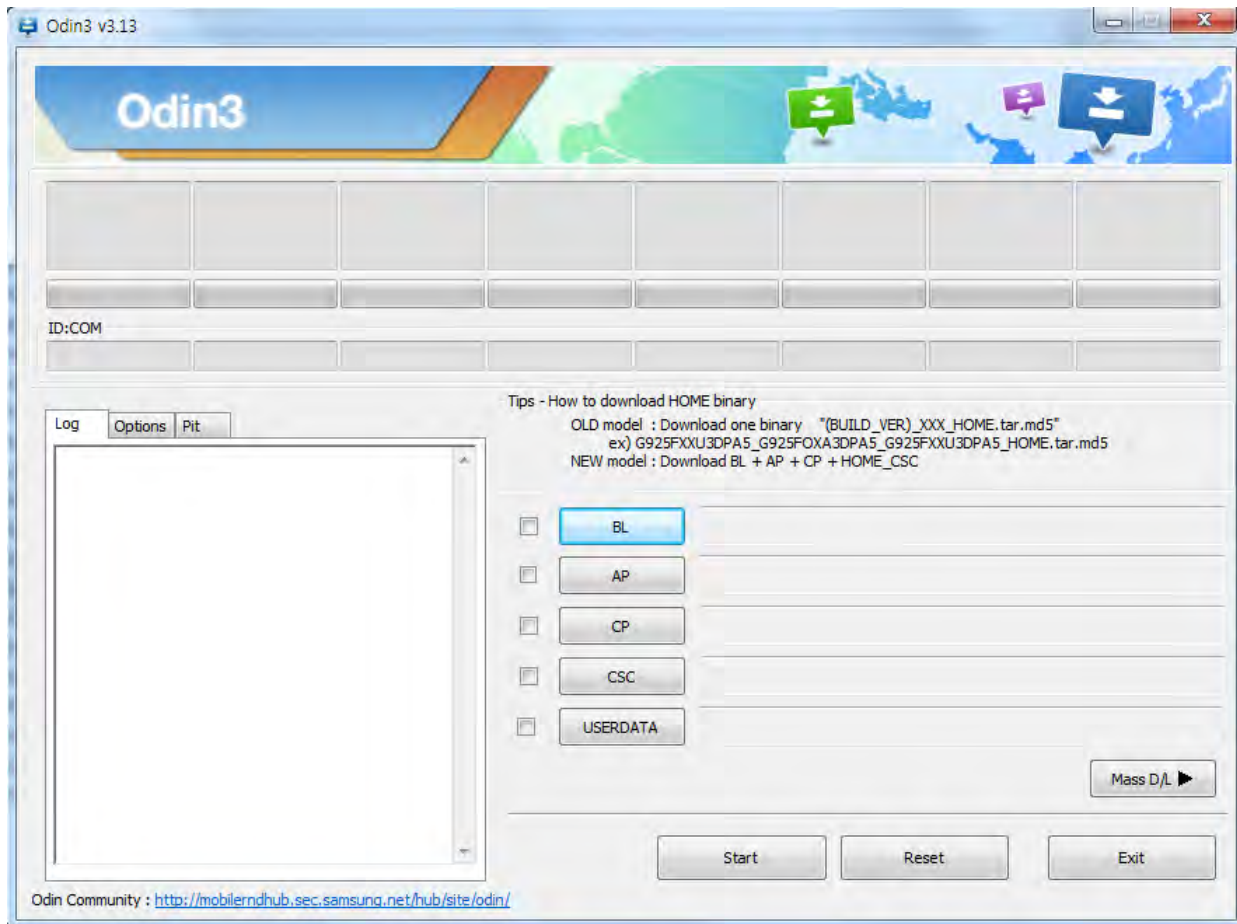


Data Cable : [GH39-01999A](#)

## 6. Level 1 Repair

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

Open up the S/W Installation Program by executing the "**Odin3 v3.13.2.exe**"

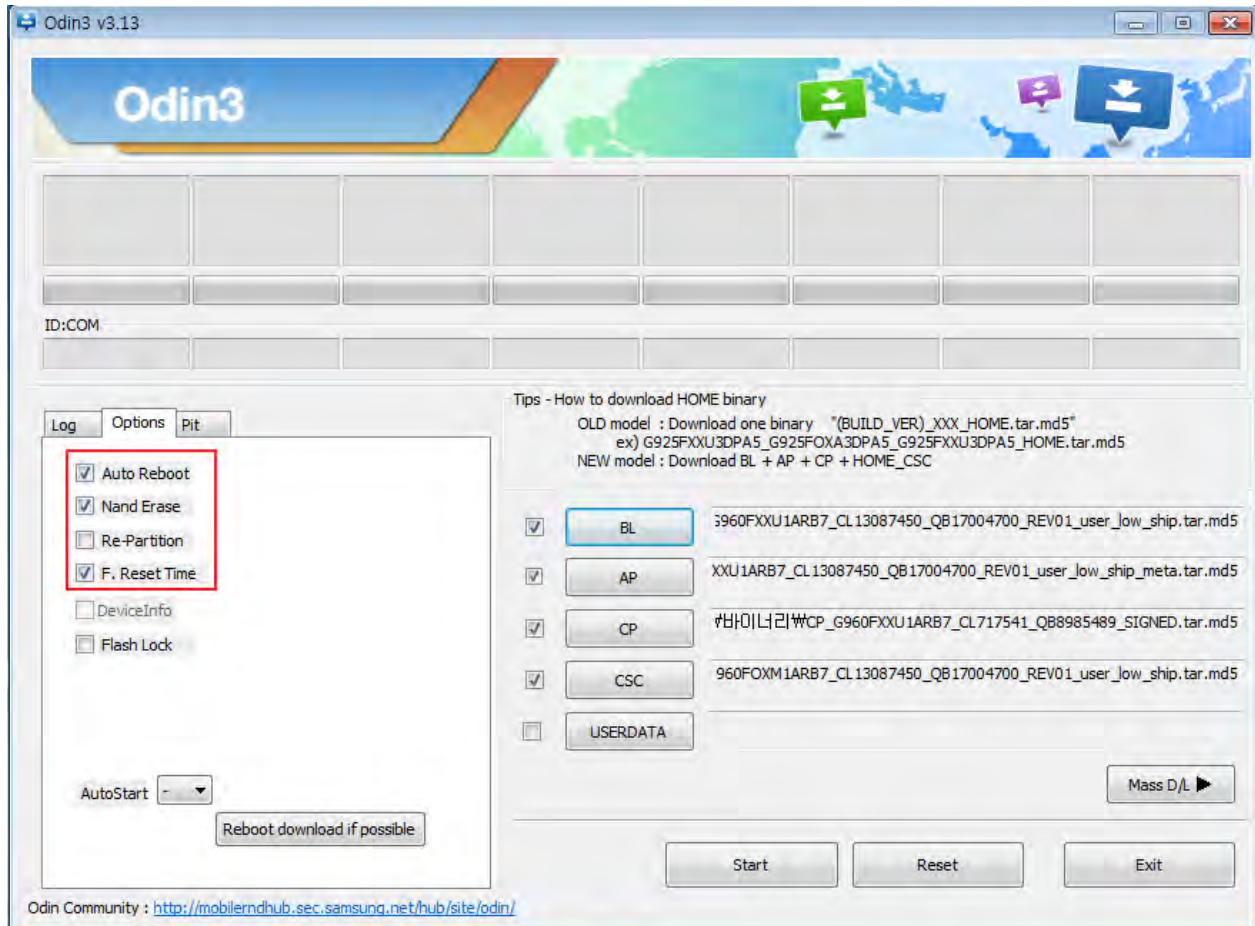


## 6. Level 1 Repair

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

- Check Auto Reboot, F. Reset Time, Nand Erase
- Check BL, AP, CP, CSC Files

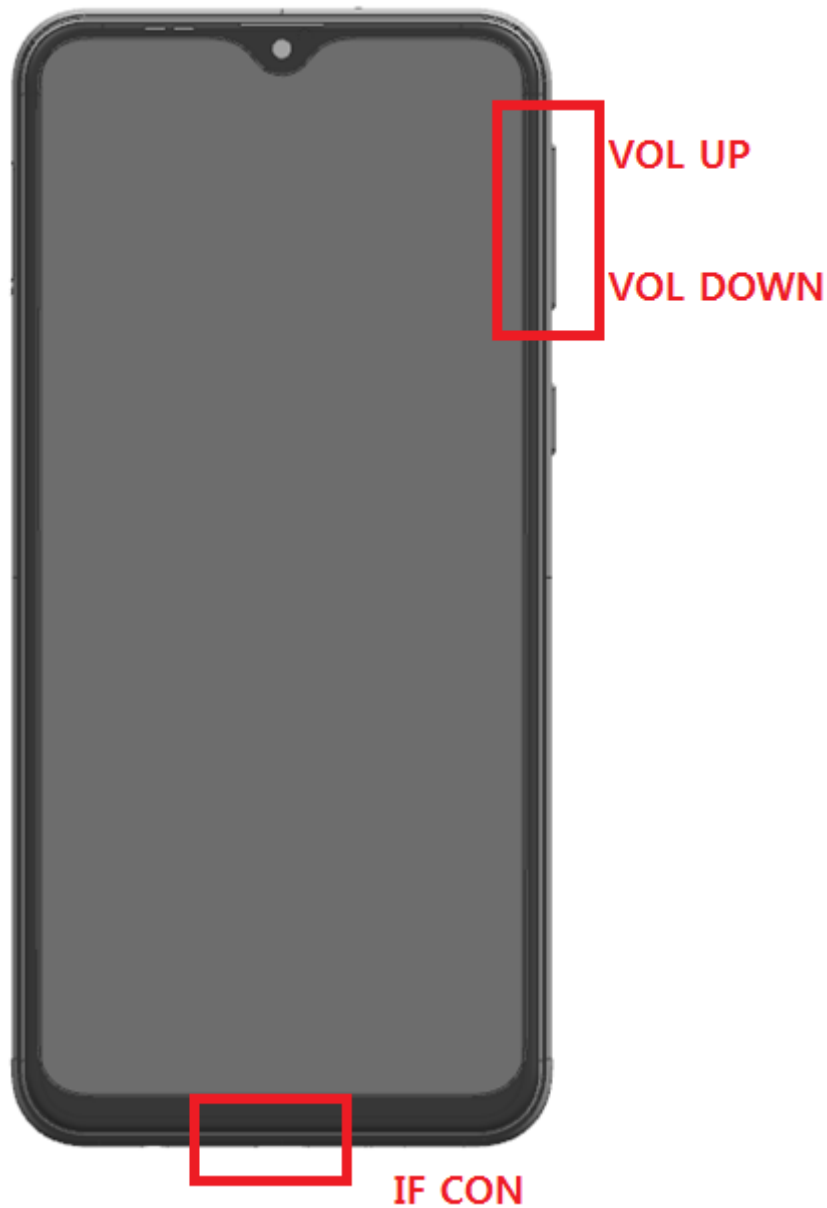
\* Note : "Odin v3.13.2 or above" checks MD5 checksum just after file selection.



## 6. Level 1 Repair

### 2. Enter into Download Mode

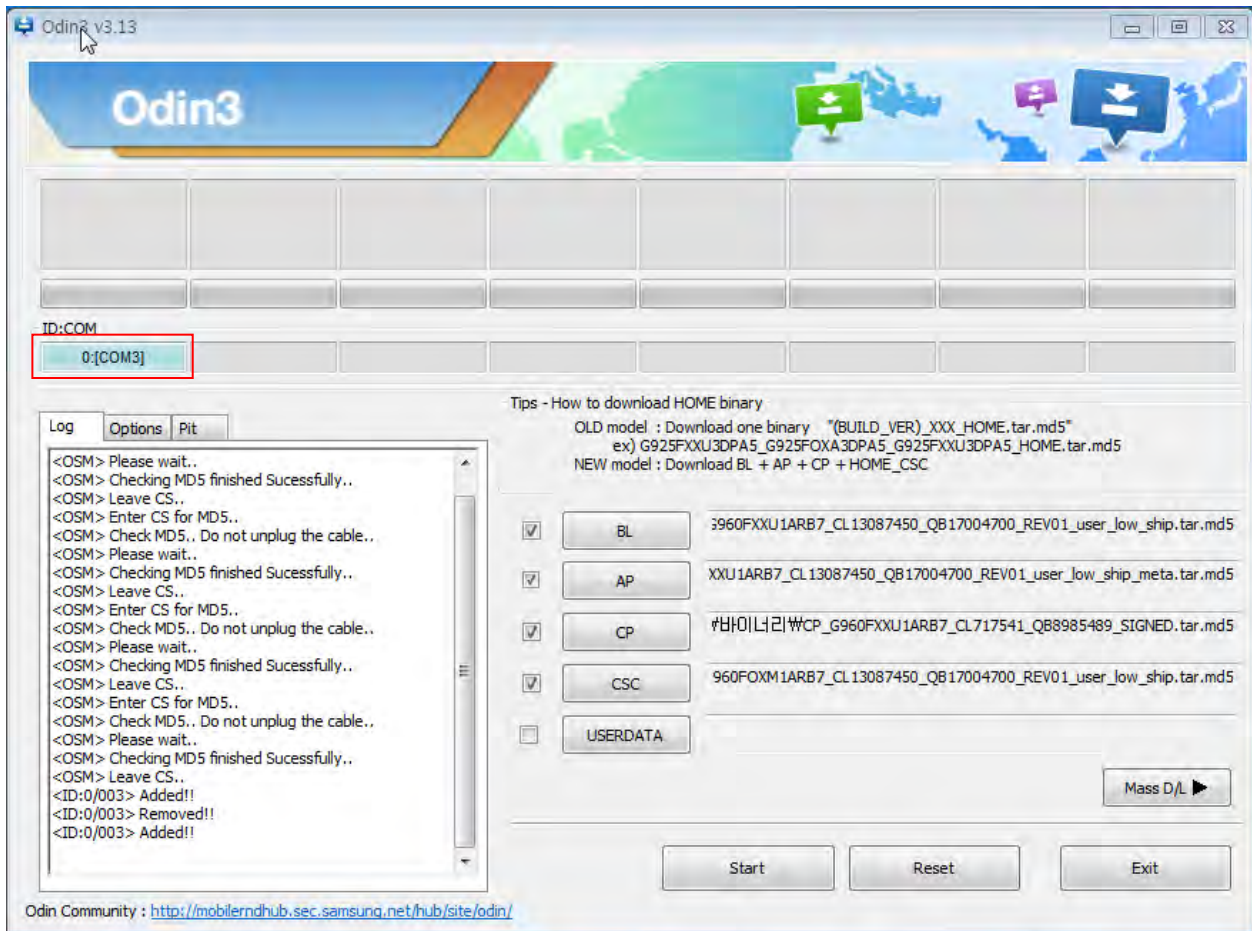
- Enter into Download Mode by pressing Volume Down button, Intelligence button and ON/OFF Button simultaneously followed by pressing Volume up button as a direction of the phone.



## 6. Level 1 Repair

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

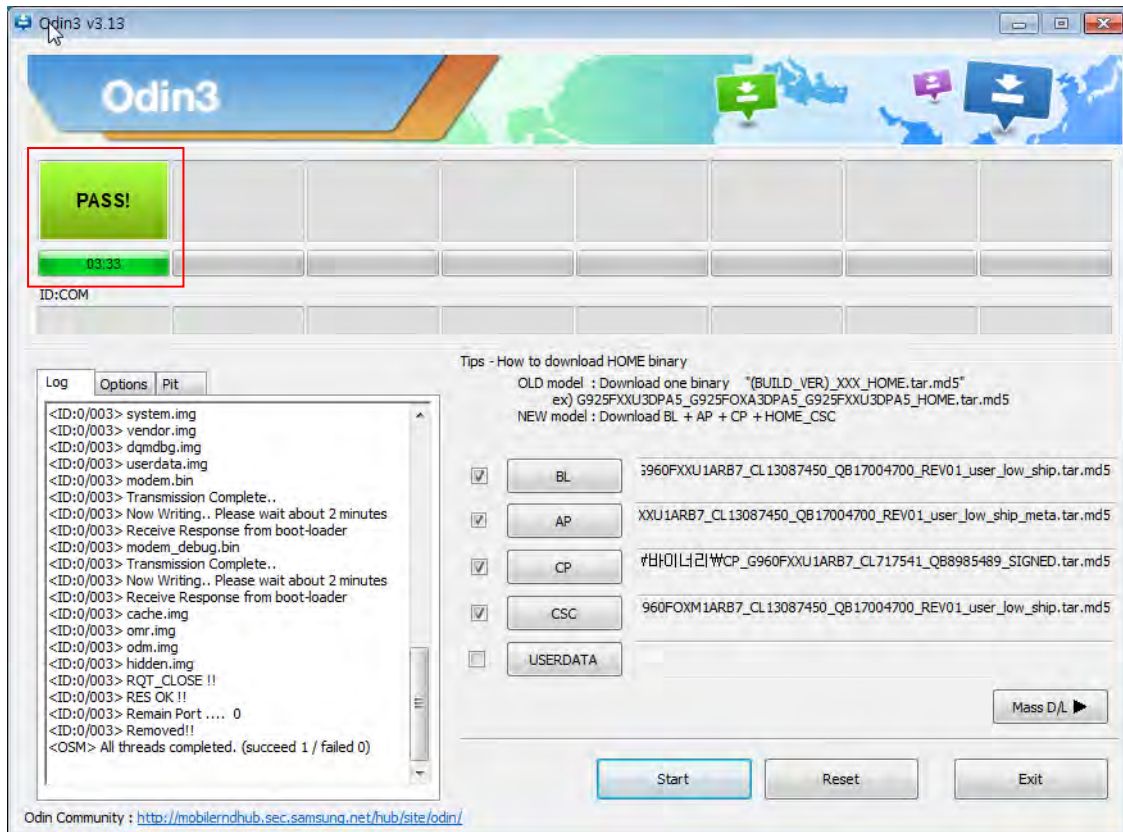
Make sure that the one of communication ports [ID:COM] box is highlighted in sky blue.  
The device is now connected with the PC and ready to download the binary files in it.



## 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 data Reset by Settings → General Management → Reset

**※ Caution. Never disconnect during the S/W downloading.**



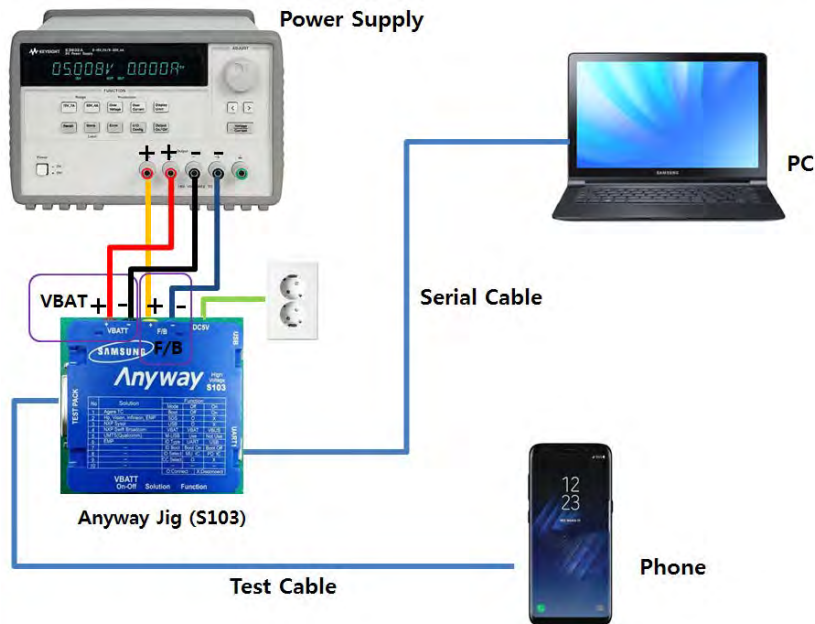
## 6. Level 1 Repair

### 6-3. IMEI writing

#### 6-3-1. 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	<b>DASEUL_SVC_Launcher_v3.0.12</b> or higher -Uploaded on HHPsvc Notice
③ Runtime File	1. <b>DASEUL_IMEI_ALL_Runtime_3.1.348.0_r00519.CAB</b> or higher -Uploaded on HHPsvc Notice 2. Make ‘SM-M205F’ folder at the same position with launcher & Runtime file. <div>  DASEUL_IMEI_ALL_Runtime_3.1.348.0_r00519.CAB   DASEUL_Launcher_v4.0.0.exe   SM-G960F_SS(CSC)_IMEI_Ver_3.1.343.10.CAB </div>
④ Model File	Copy Model File under the ‘SM-M205F’ folder

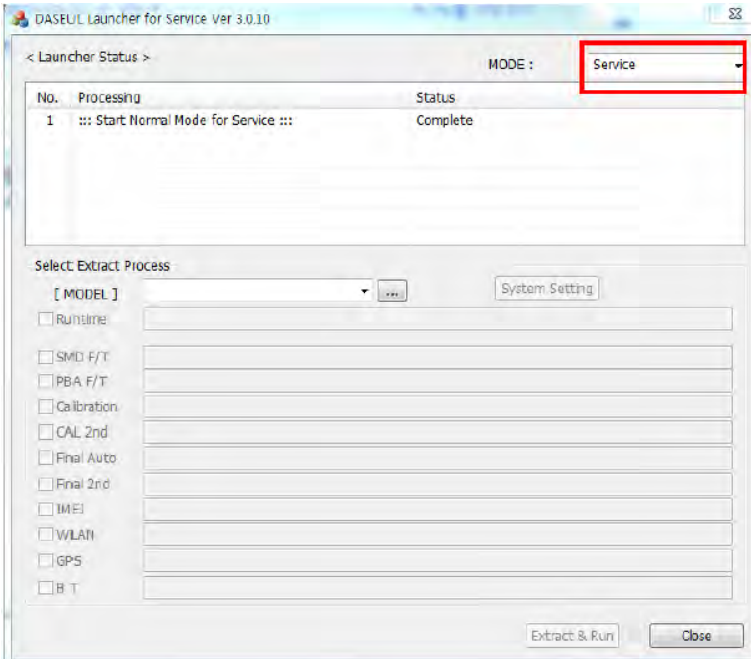
## 6. Level 1 Repair


### 6-3-2. IMEI writing Process

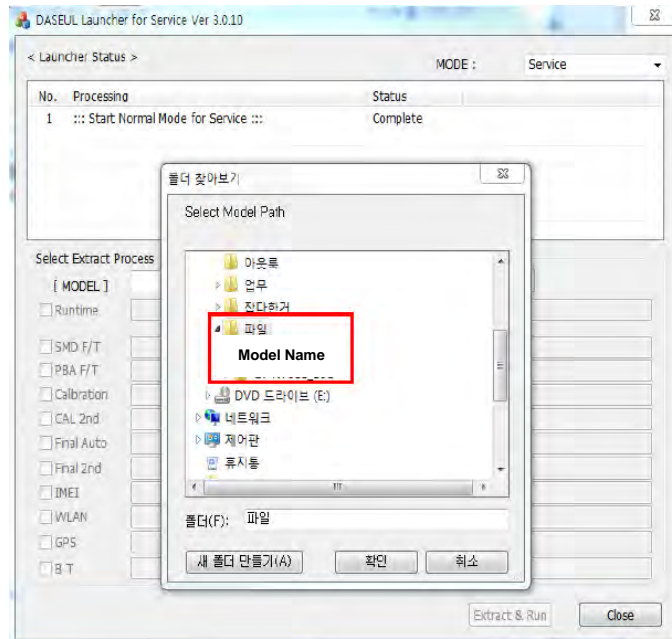
1. Run DASEUL\_SVC\_Launcher\_v3.0.12.exe

 DASEUL\_SVC\_Launcher\_v3.0.12.exe

2. Select Service Mode



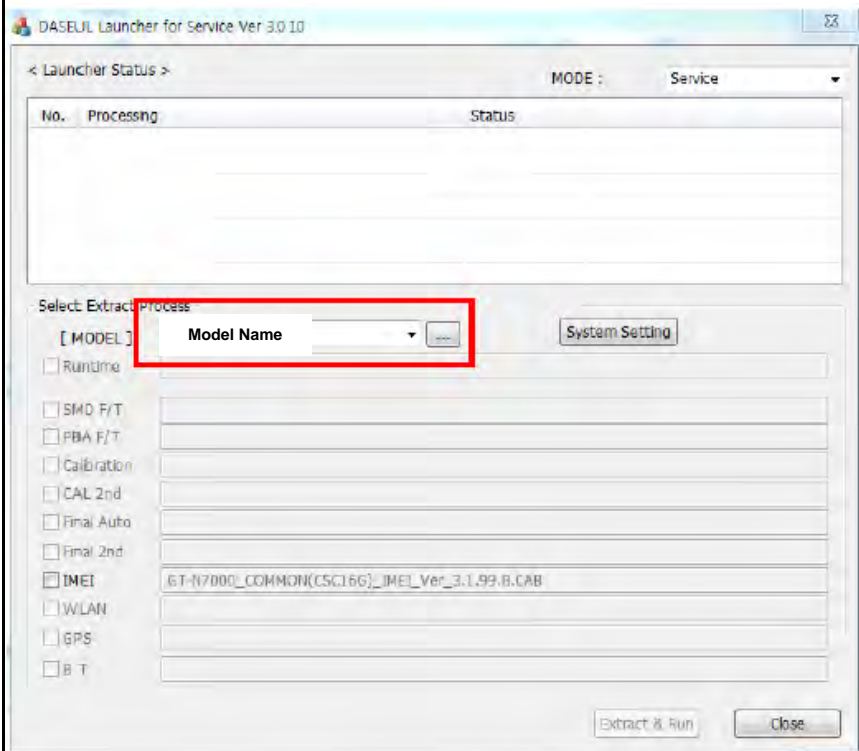
3. Click  and Select folder where the Launcher exists





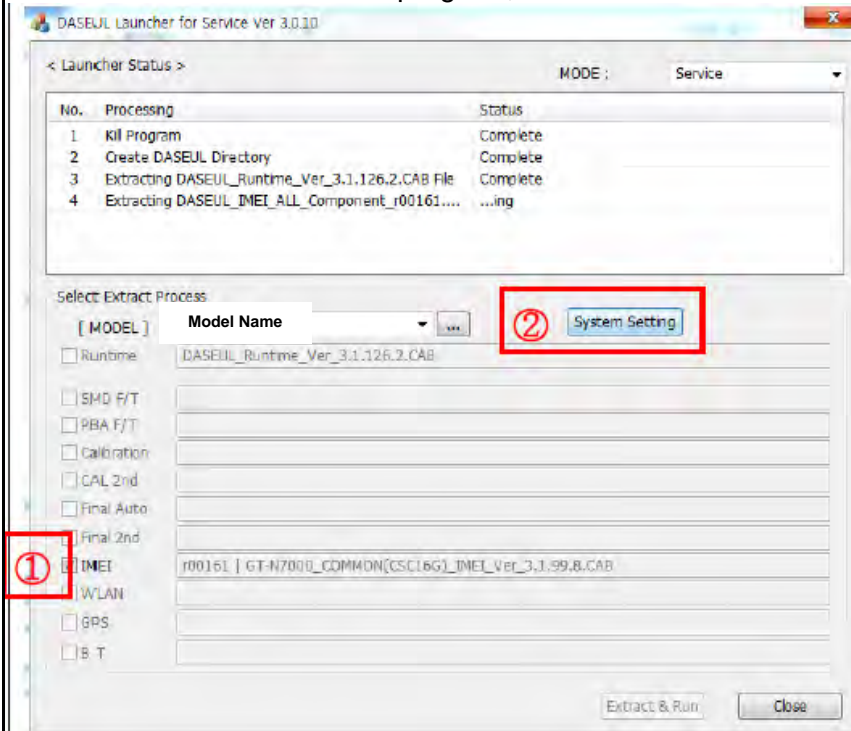
## 6. Level 1 Repair

### 4. Select Model



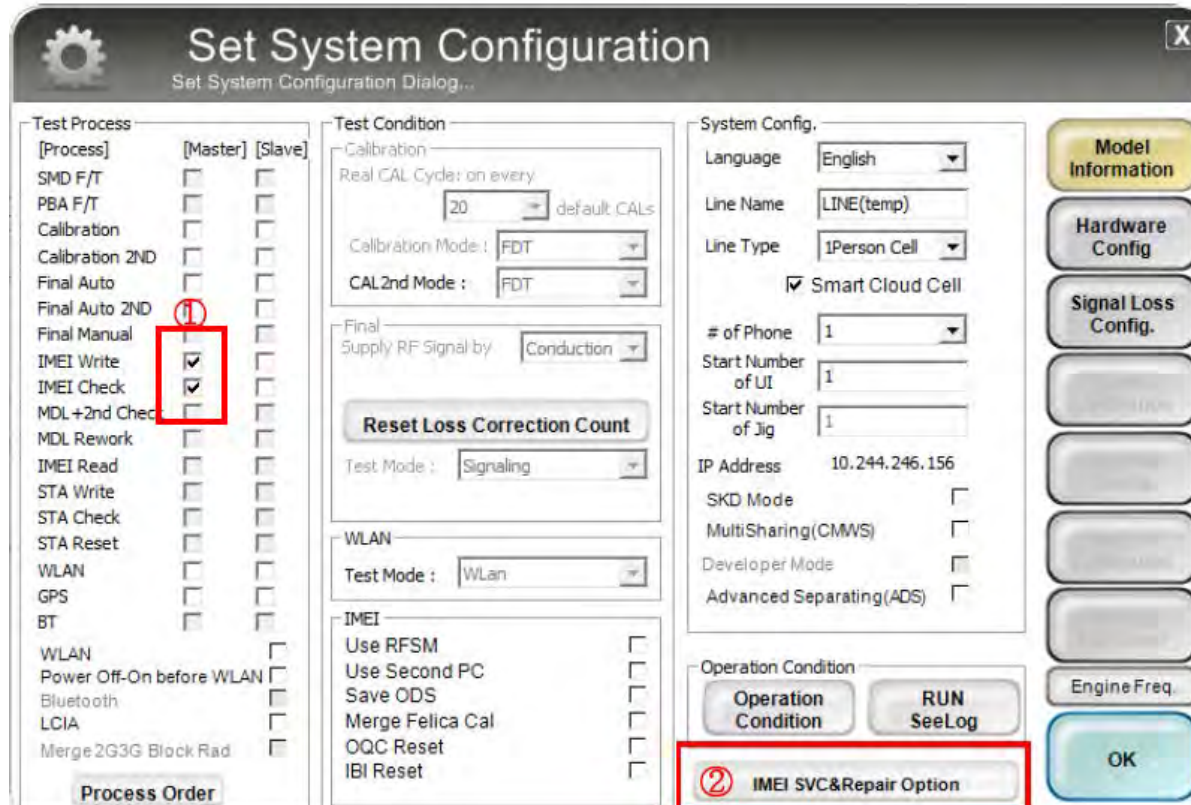
### 5. Check IMEI and click System Setting

※ 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.



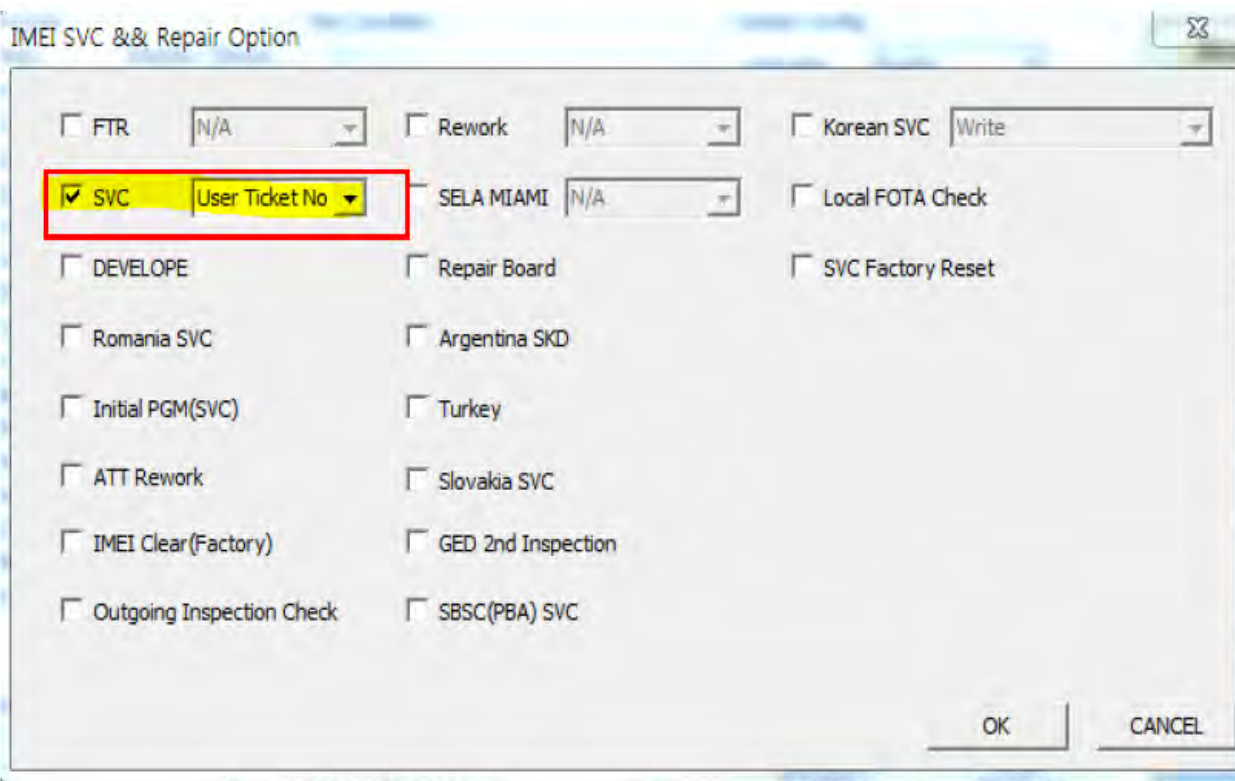
## 6. Level 1 Repair

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



The image shows the 'Set System Configuration' dialog box. It has several tabs: 'Test Process', 'Test Condition', 'System Config.', and 'Model Information'. The 'Test Process' tab is active, showing a list of test items with checkboxes for 'Master' and 'Slave' columns. A red box highlights the 'IMEI Write' and 'IMEI Check' rows, which are checked in the 'Master' column. A red circle with the number '1' is next to the 'IMEI Check' row. The 'Test Condition' tab shows 'Calibration' settings, 'Final Supply RF Signal by' set to 'Conduction', and 'Test Mode' set to 'Signaling'. The 'System Config.' tab shows 'Language' set to 'English', 'Line Name' set to 'LINE(temp)', 'Line Type' set to '1Person Cell', and 'Smart Cloud Cell' checked. The 'Model Information' tab shows 'Model Information', 'Hardware Config', 'Signal Loss Config.', 'Engine Freq.', and 'OK' buttons. A red box with a red circle and the number '2' highlights the 'IMEI SVC&Repair Option' button at the bottom.

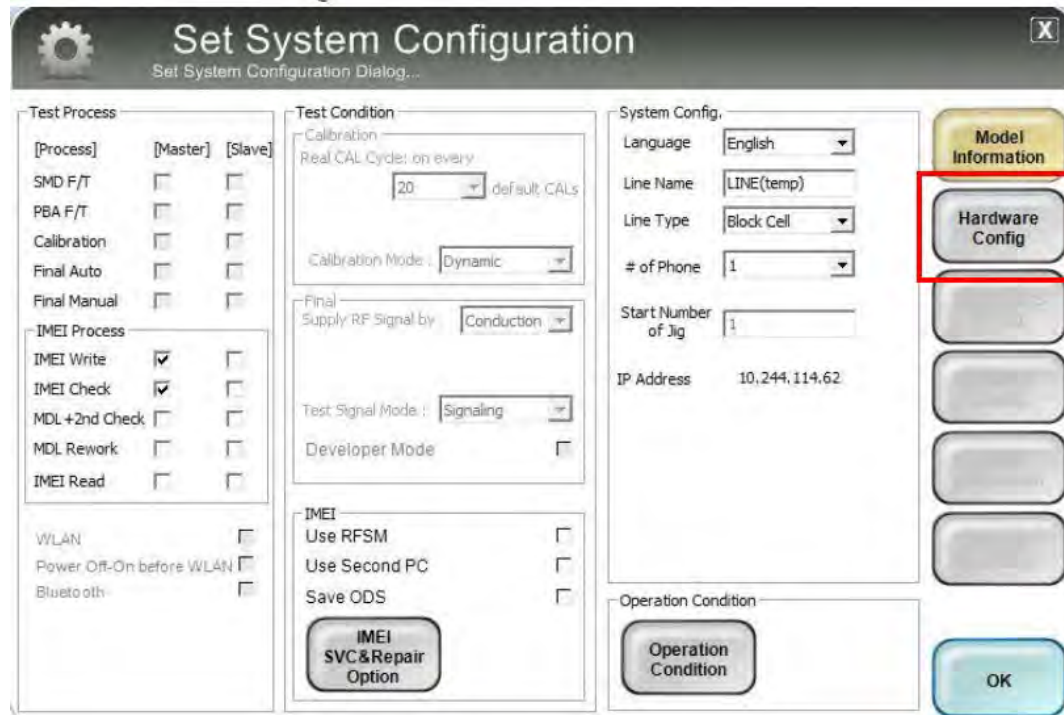
7. Check 'SVC , User Ticket No' and click OK



The image shows the 'IMEI SVC & Repair Option' dialog box. It has a title bar with a close button. The dialog contains several checkboxes and dropdown menus. A red box highlights the 'SVC' checkbox, which is checked, and the 'User Ticket No' dropdown menu. Other options include 'FTR' (N/A), 'Rework' (N/A), 'Korean SVC' (Write), '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', and 'SBSC(PBA) SVC'. The 'OK' and 'CANCEL' buttons are at the bottom right.

## 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  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:

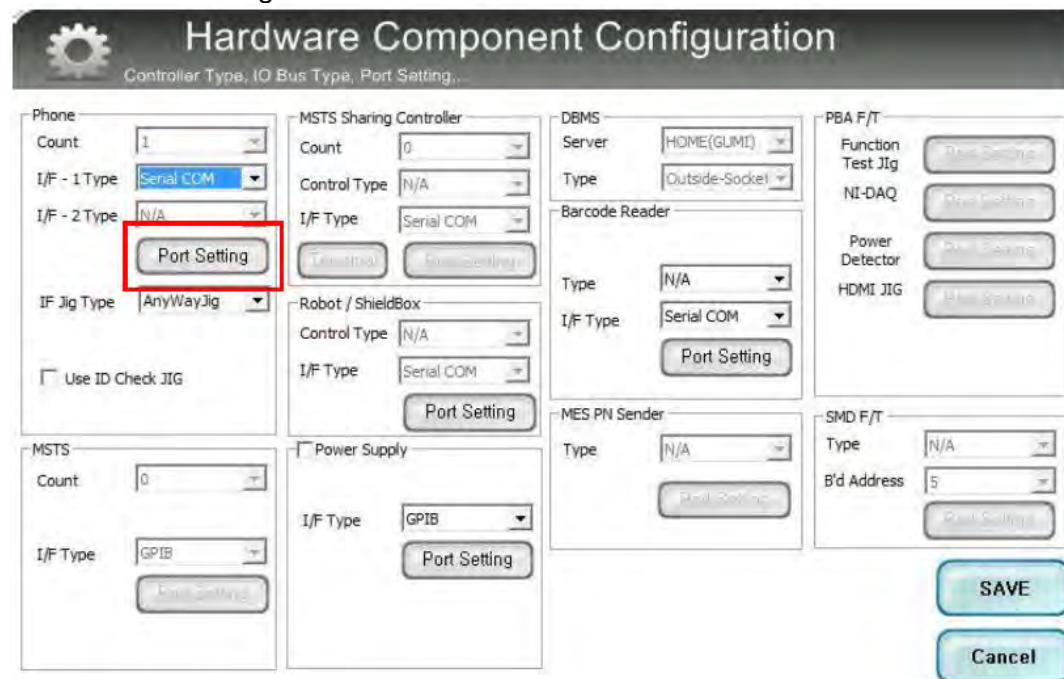
**Operation Condition**

**Model Information**

**Hardware Config**

**OK**

### 9. Click 'Port Setting'



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

**Phone**

Count:

I/F - 1 Type:

I/F - 2 Type:

**Port Setting**

I/F Jig Type:

☐ Use ID Check JIG

**MSTS**

Count:

I/F Type:

**MSTS Sharing Controller**

Count:

Control Type:

I/F Type:

**Robot / ShieldBox**

Control Type:

I/F Type:

**Port Setting**

**Power Supply**

I/F Type:

**Port Setting**

**DBMS**

Server:

Type:

**Barcode Reader**

Type:

I/F Type:

**Port Setting**

**MES PN Sender**

Type:

**Port Setting**

**PBA F/T**

Function Test Jig:

NI-DAQ:

Power Detector:

HDMI JIG:

**SMD F/T**

Type:

B'd Address:

**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 Cycles 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 ☐

IMEI SVC&Repair Option

**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**

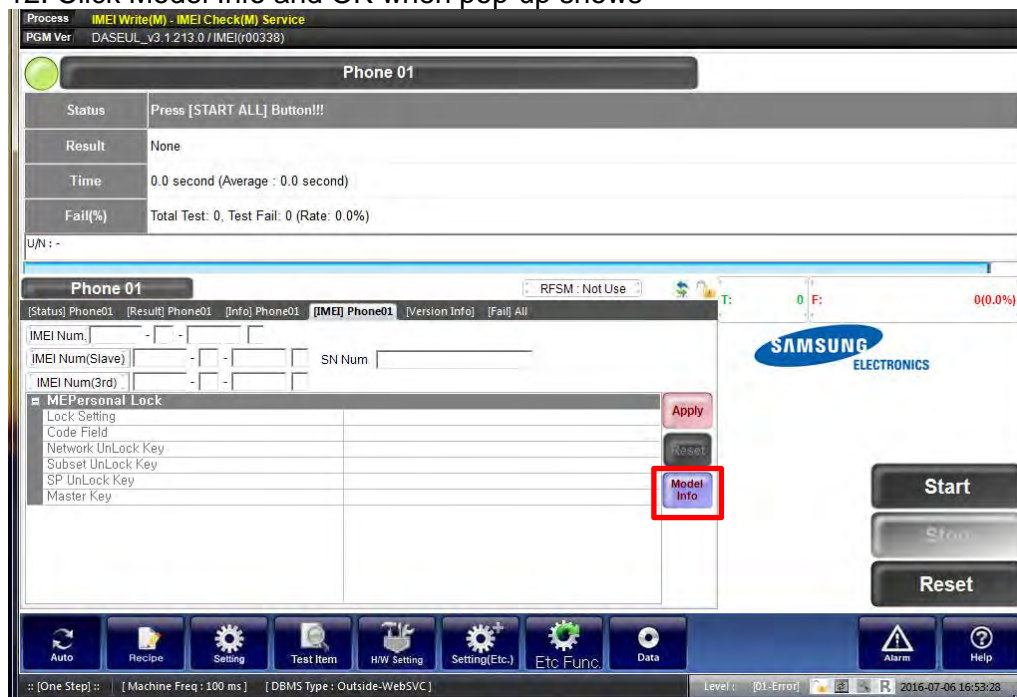
Operation Condition

OK



## 6. Level 1 Repair

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



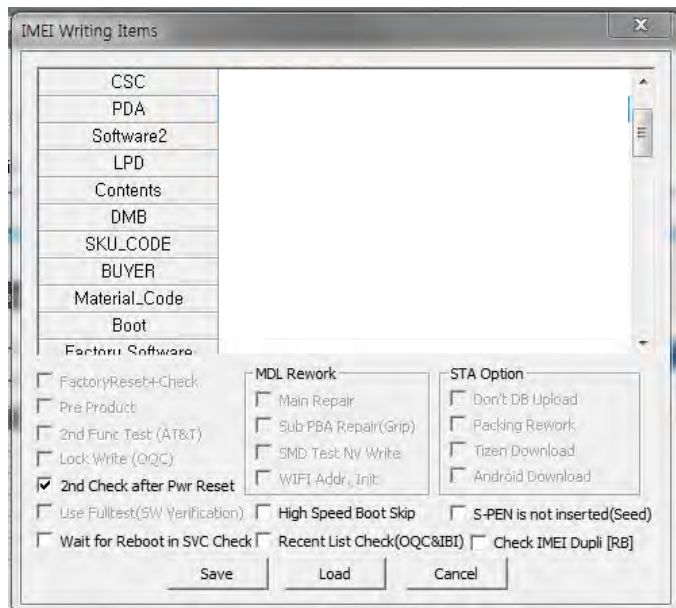
### 13. Click OK



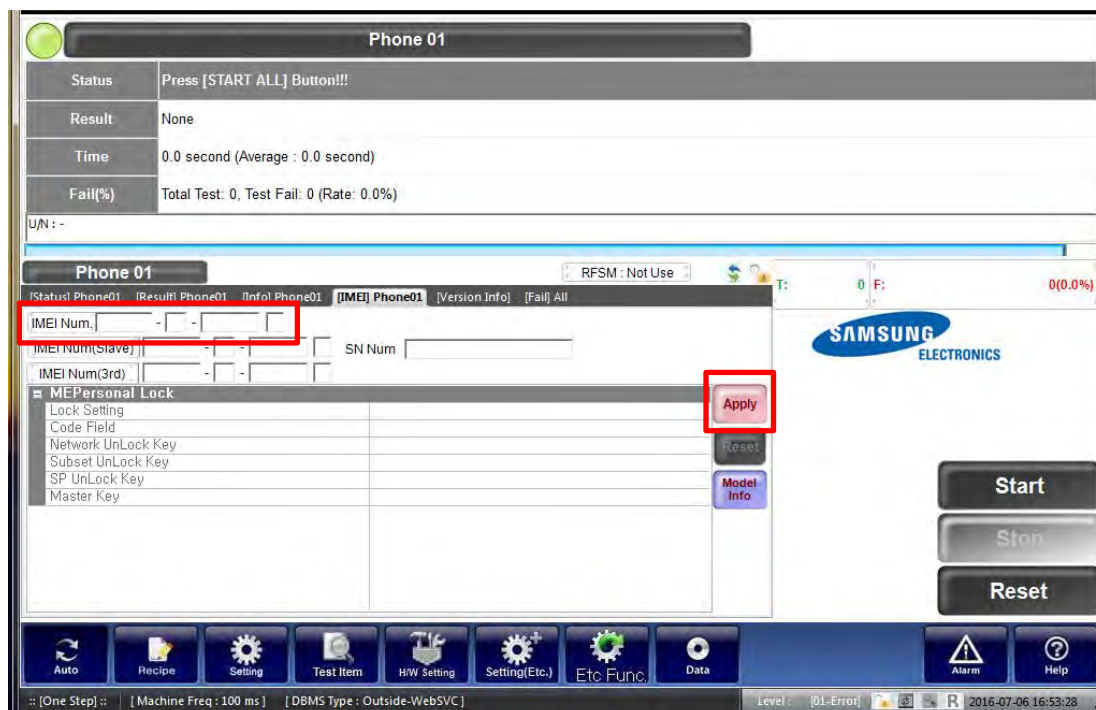
## 6. Level 1 Repair

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

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

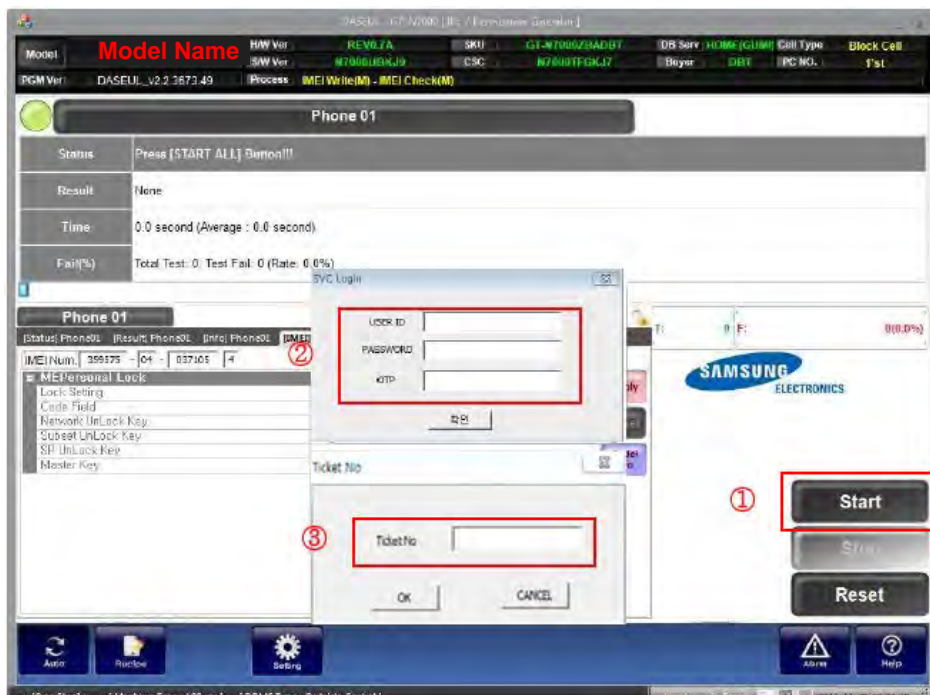


15. Input IMEI Number and click Apply



## 6. Level 1 Repair

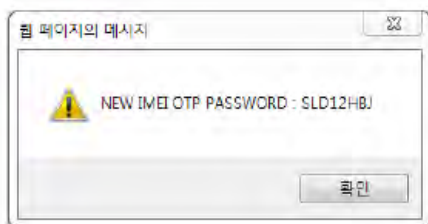
16. ① Click Start → ② Input IMEI writing ID and Password & OTP → ③ Input Ticket No



※ 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

### 6-4. RF Calibration






#### 6-4-1. 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-xxxx\\_OPEN\\_CALIBRATION\\_Ver\\_x.x.xxx.x.CAB](#)

※ It is required to use the latest program.

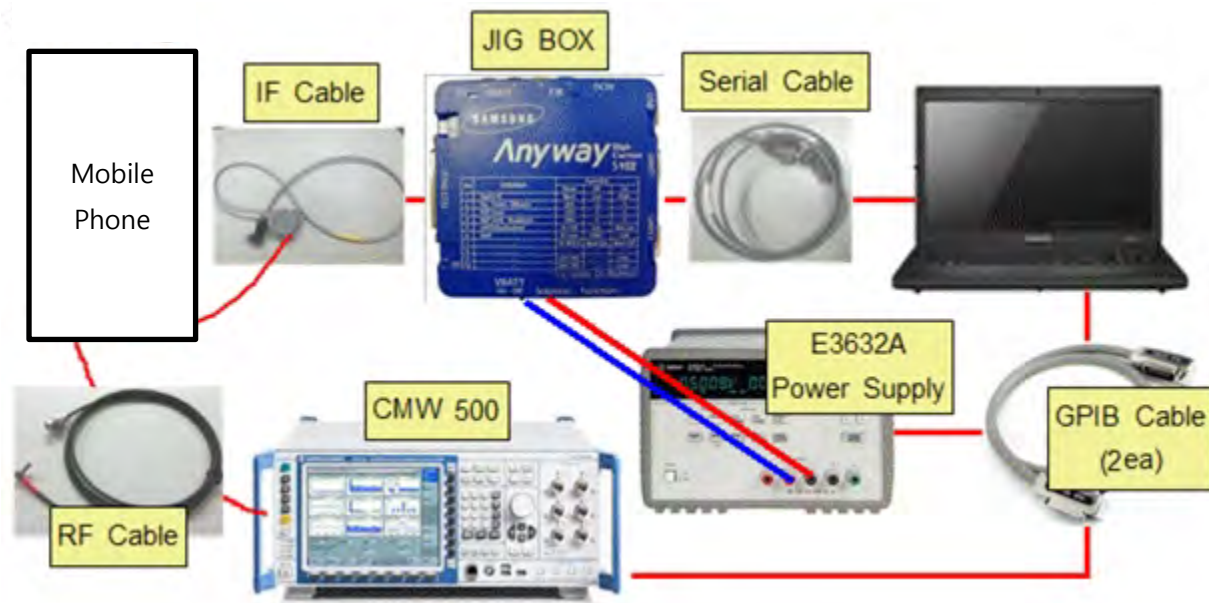
- Mobile Phone
- R&S CMW500
- E3632A Power Supply
- GPIB Cable (2ea)
- JIG BOX (S103)
- Adapter
- UART Serial Cable
- IF Cable (GH81-11962W)

#### ❖ Table of test cables

RF Cable (Manual)	GH81-11962M (2ea)	GH81-11962U (2ea)	
	1.2T, 102mm 	1.2T, 102mm 	
4 Port Divider	GH81-11962A	GH81-11962B	GH81-11962E
	Divider 	Divider Cable 	50Ω terminator 

## 6. Level 1 Repair

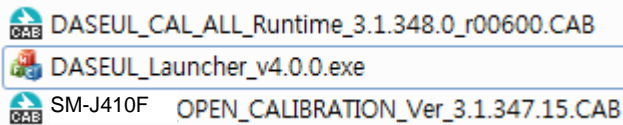
### ❖ Setting



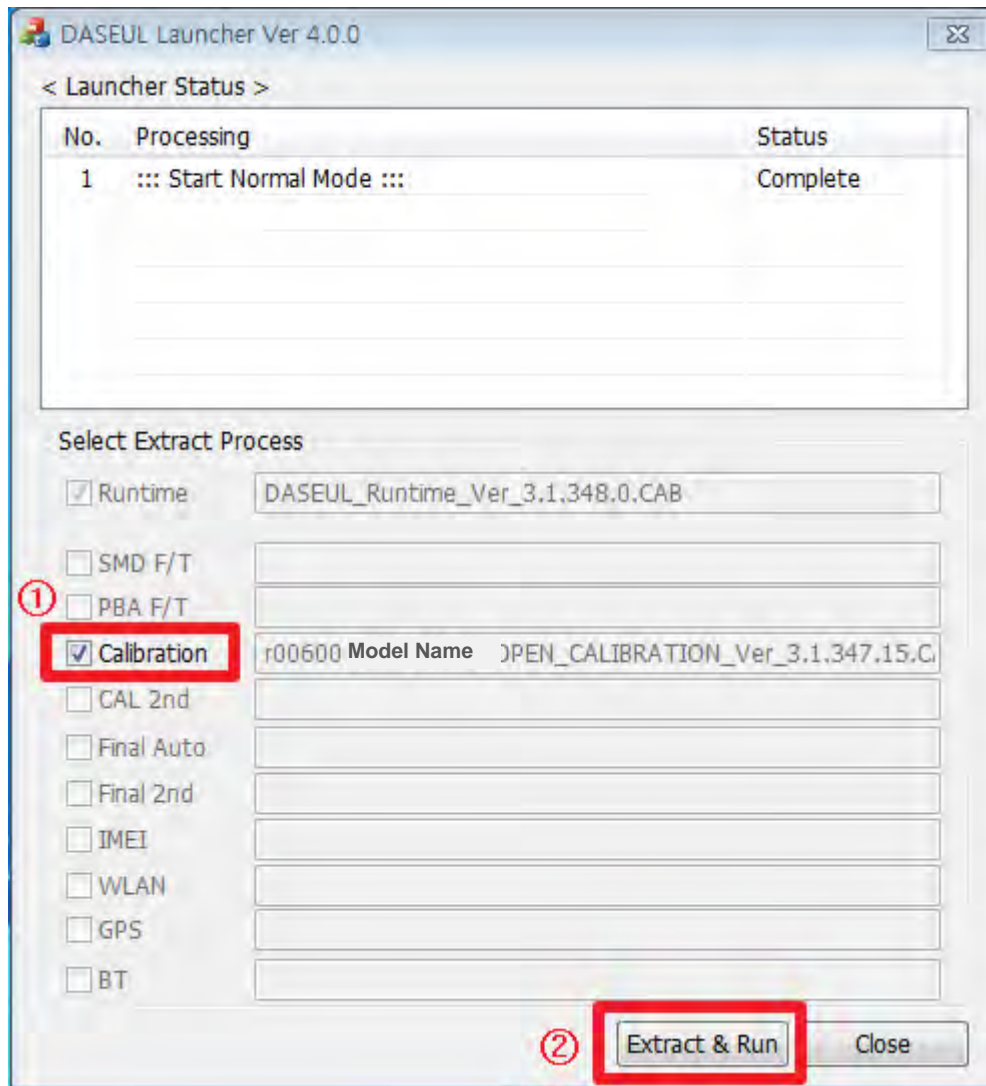
## 6. Level 1 Repair

### 6-4-2. RF Calibration Program

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

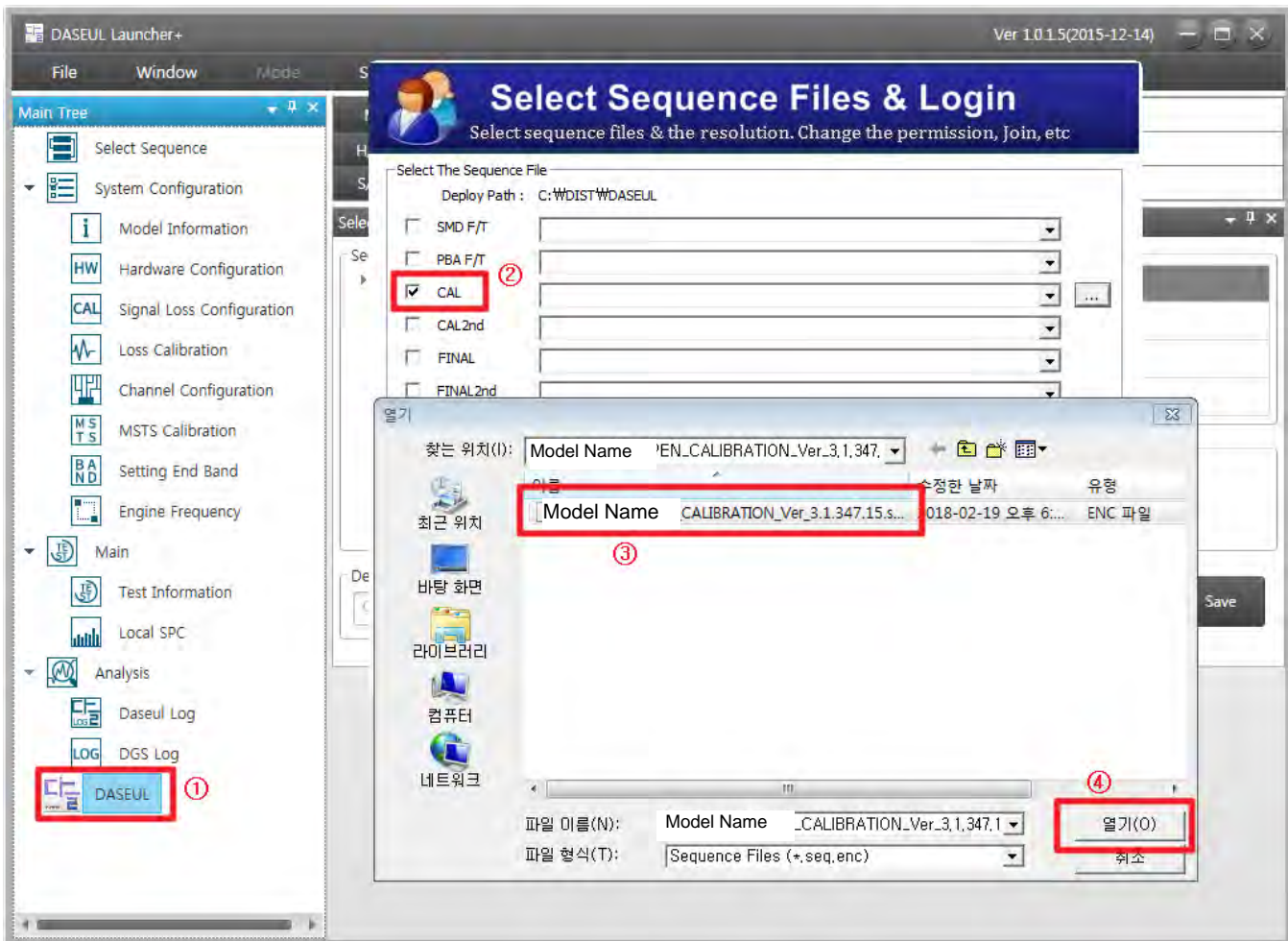


2. Check the 'Calibration' option and Click 'Extract & Run'.



## 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 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  
OQC SKD USER D/L

**System Config.**

Language Korean  
Line Name LINE(temp)  
Line Type Block Cell  
☐ NP Cell ☐ Smart Cloud Cell  
# of Phone 1  
Start Number of UI 1  
Start Number of Jig 1  
IP Address 10.60.157.50  
SKD Mode  
MultiSharing(CMWS)  
Developer Mode  
Advanced Separating(ADS)  
SubpartsLife

**Operation Condition**

**Operation Condition** **RUN SeeLog**

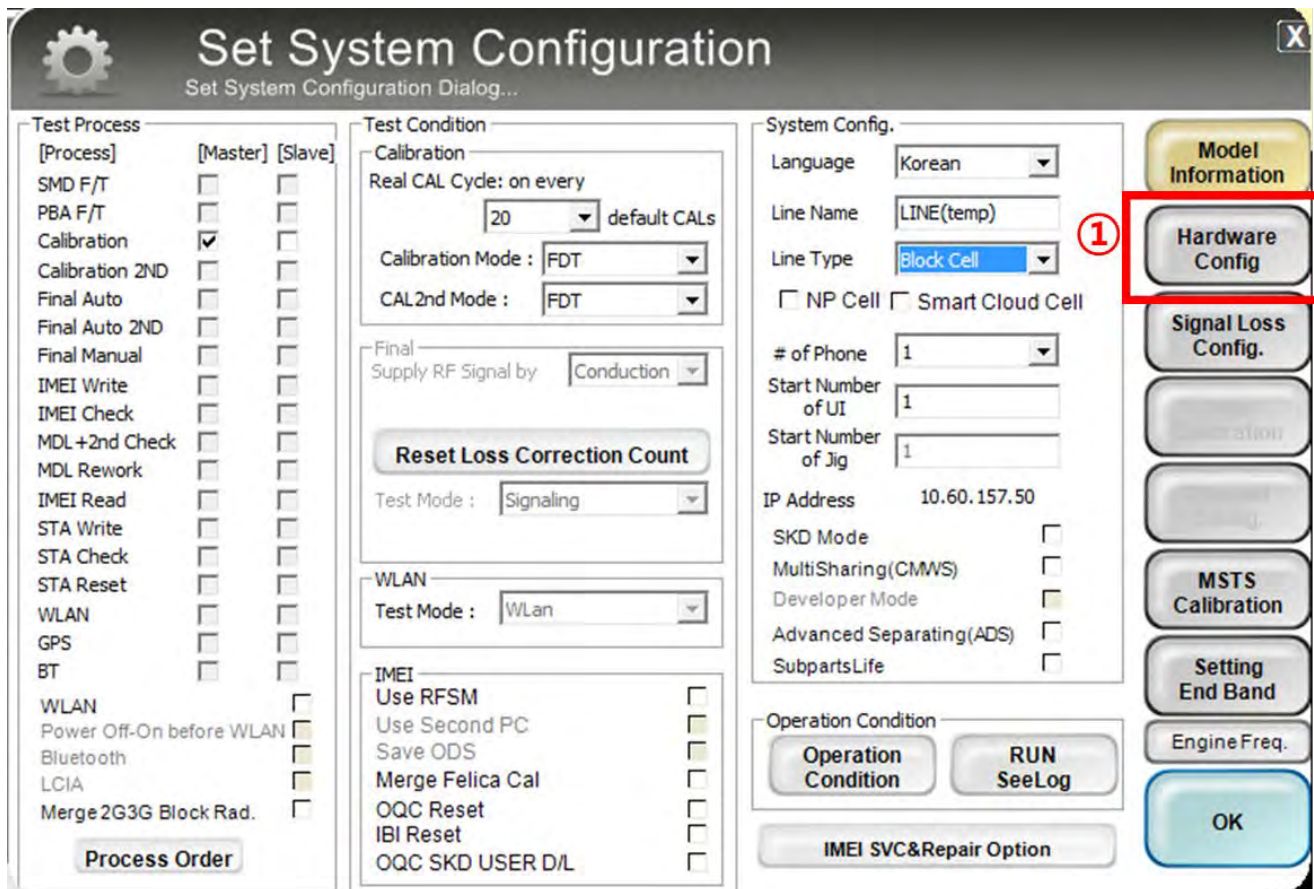
**IMEI SVC&Repair Option**

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



## 6. Level 1 Repair

5. 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)



**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 ☐  
OQC SKD USER D/L ☐

**System Config.**

Language :

Line Name :

Line Type :

☐ NP Cell ☐ Smart Cloud Cell

# of Phone :

Start Number of UI :

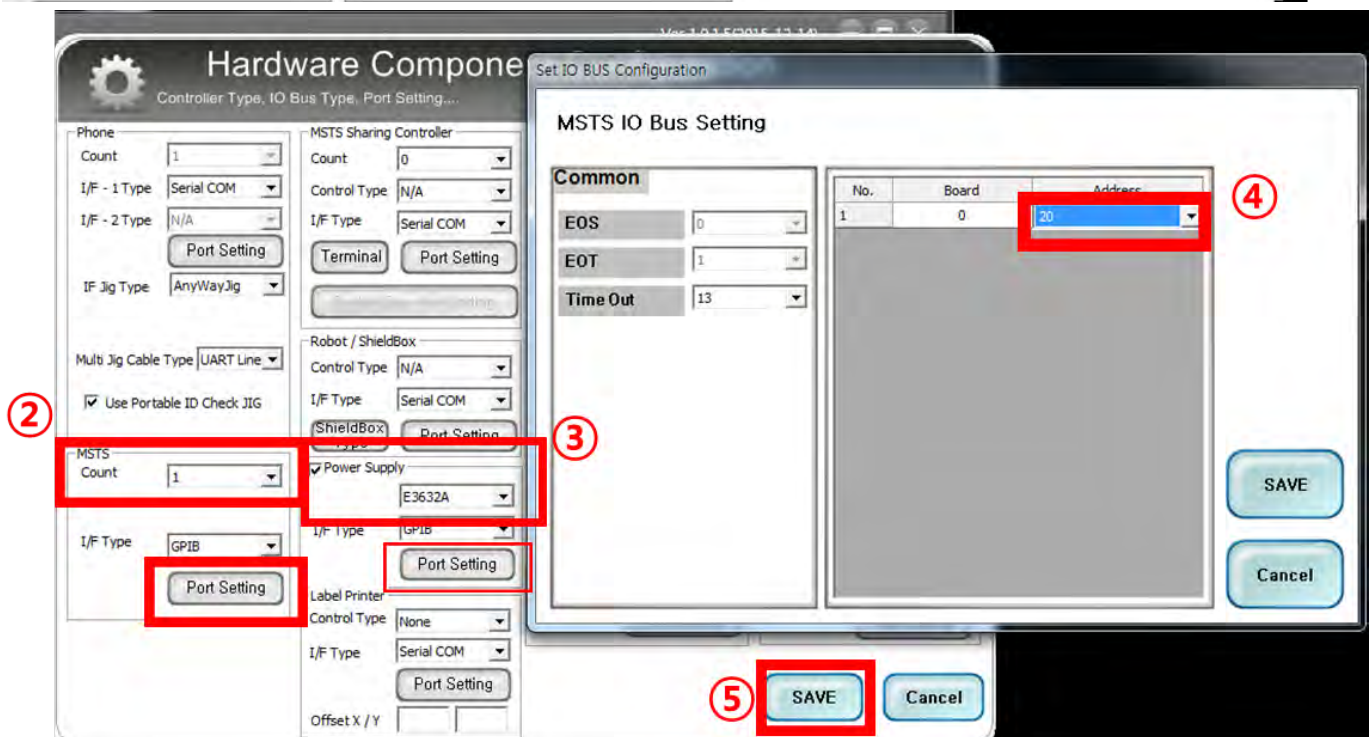
Start Number of Jig :

IP Address : 10.60.157.50

SKD Mode ☐  
MultiSharing(CMWS) ☐  
Developer Mode ☐  
Advanced Separating(ADS) ☐  
SubpartsLife ☐

**Operation Condition**

**Model Information**



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

Phone  
Count :   
I/F - 1 Type :   
I/F - 2 Type :   
IF Jig Type :   
Multi Jig Cable Type :   
☒ Use Portable ID Check JIG

MSTS Sharing Controller  
Count :   
Control Type :   
I/F Type :   
Terminal

Robot / ShieldBox  
Control Type :   
I/F Type :   
ShieldBox

☒ Power Supply  
E3632A

Label Printer  
Control Type :   
I/F Type :   
Offset X / Y :

**MSTS IO Bus Setting**

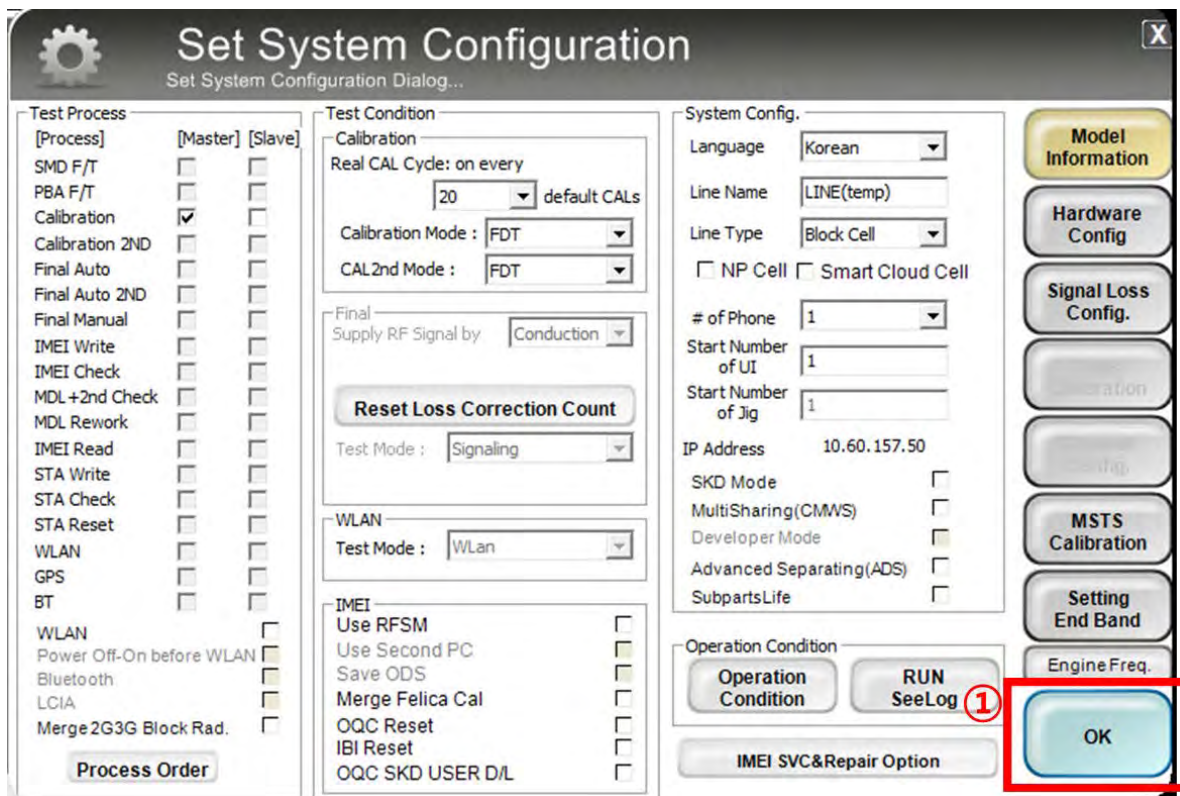
**Common**

EOS :   
EOT :   
Time Out :

No.	Board	Address
1	0	<input type="text" value="20"/>

## 6. Level 1 Repair

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



**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 ☐

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 : 10.60.157.50

SKD Mode ☐

MultiSharing(CMWS) ☐

Developer Mode ☐

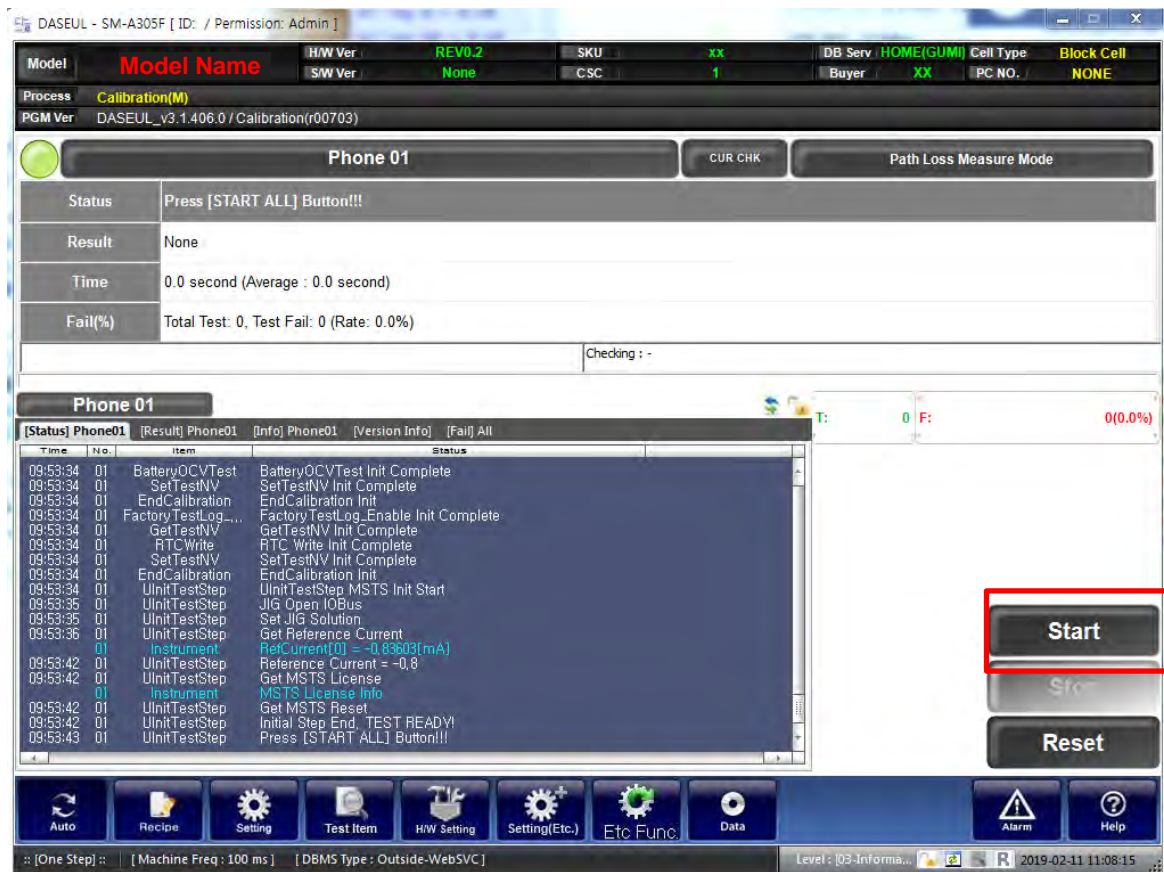
Advanced Separating(ADS) ☐

SubpartsLife ☐

**Operation Condition**

**IMEI SVC&Repair Option**

**Model Information**



DASEUL - SM-A305F [ ID : / Permission: Admin ]

Model	Model Name	H/W Ver	REV0.2	SKU	xx	DB Serv	HOME(GUMI)	Cell Type	Block Cell
Process	Calibration(M)	SW Ver	None	CSC	1	Buyer	XX	PC NO.	NONE

PGM Ver DASEUL\_v3.1.406.0 / Calibration(r00703)

**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%)

Checking : -

**Phone 01**

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

Time	No.	Item	Status
09:53:34	01	BatteryOCVTest	BatteryOCVTest Init Complete
09:53:34	01	SetTestNV	SetTestNV Init Complete
09:53:34	01	EndCalibration	EndCalibration Init
09:53:34	01	FactoryTestLog....	FactoryTestLog_Enable Init Complete
09:53:34	01	GetTestNV	GetTestNV Init Complete
09:53:34	01	RTCWrite	RTC Write Init Complete
09:53:34	01	SetTestNV	SetTestNV Init Complete
09:53:34	01	EndCalibration	EndCalibration Init
09:53:34	01	UnitTestStep	UnitTestStep MSTS Init Start
09:53:35	01	UnitTestStep	JIG Open IOBus
09:53:35	01	UnitTestStep	Set JIG Solution
09:53:36	01	UnitTestStep	Get Reference Current
09:53:42	01	Instrument	RefCurrent[0] = -0.83603[mA]
09:53:42	01	UnitTestStep	Reference Current = -0.8
09:53:42	01	UnitTestStep	Get MSTS License
09:53:42	01	Instrument	MSTS License Info
09:53:42	01	UnitTestStep	Get MSTS Reset
09:53:42	01	UnitTestStep	Initial Step End, TEST READY!
09:53:43	01	UnitTestStep	Press [START ALL] Button!!!

**Auto** **Recipe** **Setting** **Test Item** **H/W Setting** **Setting(Etc.)** **Etc Func.** **Data** **Alarm** **Help**

[One Step] [Machine Freq : 100 ms] [DBMS Type : Outside-WebSVC] Level : [03-Infoma... 2019-02-11 11:08:15

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## **9. Reference Abbreviation**

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### **Reference Abbreviation**

- **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