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# 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.



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# 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. WCDMA General Specification

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 Band2	LTE Band3	LTE Band4	LTE Band5	LTE Band7
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
ARFCN range	UL:18000~18599 DL:0~599	UL:18600~19199 DL:600~1199	UL:19200~19949 DL:1200~1949	UL:19950~20399 DL:1950~2399	UL:20400~20649 DL:2400~2649	UL:20750~21449 DL:2750~3449
Tx/Rx spacing (MHz)	190	80	95	400	45	120
Channel Bandwidth (MHz)	5/10/15/20	1.4/3/5/10/15/20	1.4/3/5/10/15/20	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)	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(↓)	25.7~-39(↓)	25.7~-39(↓)
Sensitivity (QPSK, BW 10MHz) (dBm)	-96.3	-94.3	-93.3	-96.3	-94.3	-94.3



## 2. Specification

Item	LTE Band8	LTE Band12	LTE Band13	LTE Band17	LTE Band20	LTE Band28
Freq. Band[MHz]	880~915	699~716	777~787	704~716	832~862	703~748
Uplink/Downlink	925~960	729~746	746~756	734~746	791~821	758~803
ARFCN range	UL:21450-21799 DL:3450-3799	UL:23010~23179 DL:5010~5179	UL:23180~23279 DL:5180~5279	UL:23730~23849 DL:5730~5849	UL:24150~24449 DL:6150~6449	UL:27210~27659 DL:9210~9659
Tx/Rx spacing (MHz)	45	30	-31	30	-41	55
Channel Bandwidth (MHz)	1.4/3/5/10	1.4/3/5/10	1.4/3/5/10	5/10	5/10/15/20	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)	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(↓)	25.7~-39(↓)	25.7~-39(↓)
Sensitivity (QPSK, BW 10MHz) (dBm)	-93.3	-93.3	-93.3	-93.3	-93.3	-94.8



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## 2. Specification

Item	LTE Band34	LTE Band38	LTE Band39	LTE Band40	LTE Band41	LTE Band66
Freq. Band[MHz] Uplink/Downlink	2010~2025	2570~2620	1880~1920	2300~2400	2496~2690	1710~1780 2110~2200
ARFCN range	UL/DL:36200 ~ 36349	UL/DL:37750 ~ 38249	UL/DL:38250 ~ 38649	UL/DL:38650 ~ 39649	UL/DL:39650 ~ 41589	UL:131972 ~ 132671 DL:66436 ~ 67335
Tx/Rx spacing (MHz)	0	0	0	0	0	400
Channel Bandwidth (MHz)	5/10/15	5/10/15/20	5/10/15/20	5/10/15/20	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)	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(↓)	25.7~-39(↓)	25.7~-39(↓)
Sensitivity (QPSK, BW 10MHz) (dBm)	-96.3	-96.3	-96.3	-96.3	-94.3	-95.8



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## 2. Specification

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### 2-5. TD-SCDMA General Specification

Item	TD-SCDMA2010(A)	TD-SCDMA1880(F)
Chip rate	1.28 Mcps	1.28 Mcps
OBW	1.6 MHz	1.6 MHz
Freq. Band[MHz] Uplink/Downlink	2010~2025	1880~1920
ARFCN range	10054~10121	9404~9596
Tx/Rx spacing (MHz)	0	0
MS Power (dBm)	25.7 ~ -48(↓)	25.7 ~ -48(↓)
Power Class	2(max+24dBm)	2(max+24dBm)
Sensitivity (dBm /1.28 MHz)	-107.3	-107.3



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## 2. Specification

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### 2-6. CDMA General Specification

Item	CDMA BC0
Freq. Band[MHz] Uplink/Downlink	815~849 860~894
Tx/Rx spacing (MHz)	45
Channel Bandwidth (MHz)	34



### 3. Product Function

#### Main Function

Item	Description
OS	Android V8.0 (OREO)
RF	GSM850 / GSM900 / DCS1800 / PCS1900 CDMA : N/A WCDMA: B1/ B2/ B4/ B5/ B8 TDSCDMA : N/A LTE: B1/ B3/ B5/ B7/ B8/ B28/ B40
Battery	3500mAh
Base Band	1.8GHz OCTA core
Other RF	GPS, Glonass, BEIDOU, BT4.2, USB 2.0, WIFI 802.11 a/b/g/n 2.4+5GHz
Camera	Rear(Main): 16M+5MP Dual A/F Front(Sub): 24MP F/F
Display	6.0", FHD+, 2200x1080
<b>SM-A605FN/GN/F</b> RAM	3GB RAM + 32GB eMMC
<b>SM-A605G</b> RAM	4GB RAM + 64GB eMMC
Sensor	Accelerometer, Fingerprint Sensor, Proximity Sensor, RGB Light Sensor, Geomagnetic Sensor, Hall Sensor, Gyro Sensor
Accessory	Charger: 5V/2A Data cable: 3.0pi, 0.8m(Type B/ USB-A) Ear phone: 3.5pi, 4pin



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## 6. Level 1 Repair

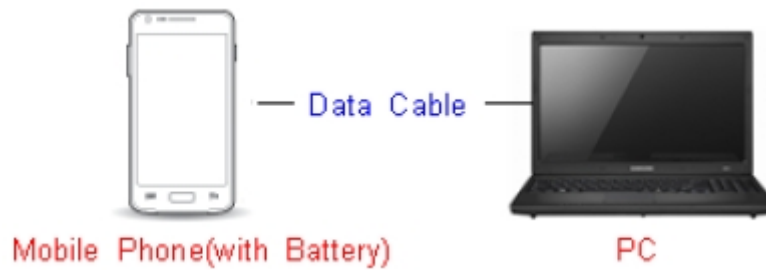
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### 6-1. S/W Update

#### 6-1-1. Preparation

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

#### ※ Settings



Data Cable : [GH39-01710D](#)



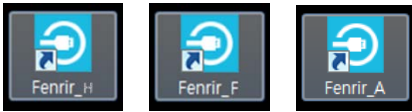
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## 6. Level 1 Repair

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

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



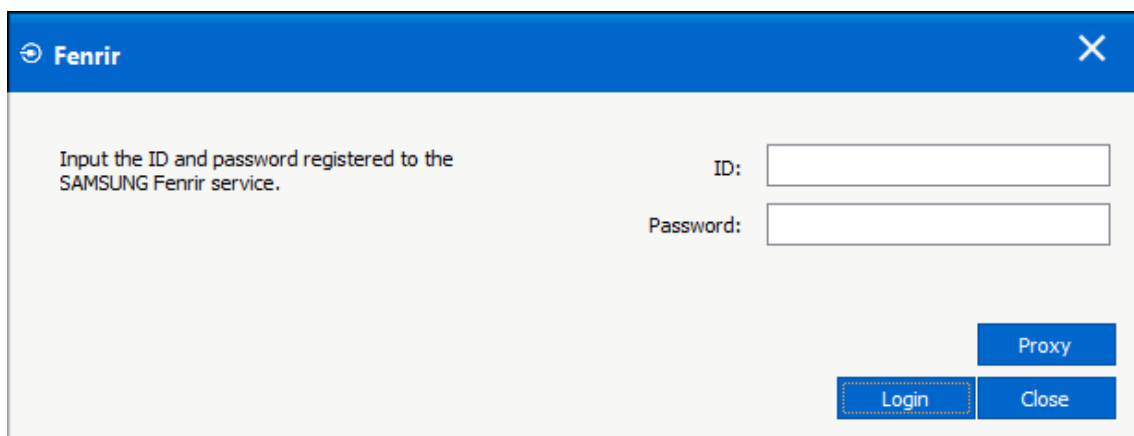
- SVH (Fenrir\_Home) : It uses Home binary which does not have user data area in the memory when flashed to a device. (Keep user data)

- 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

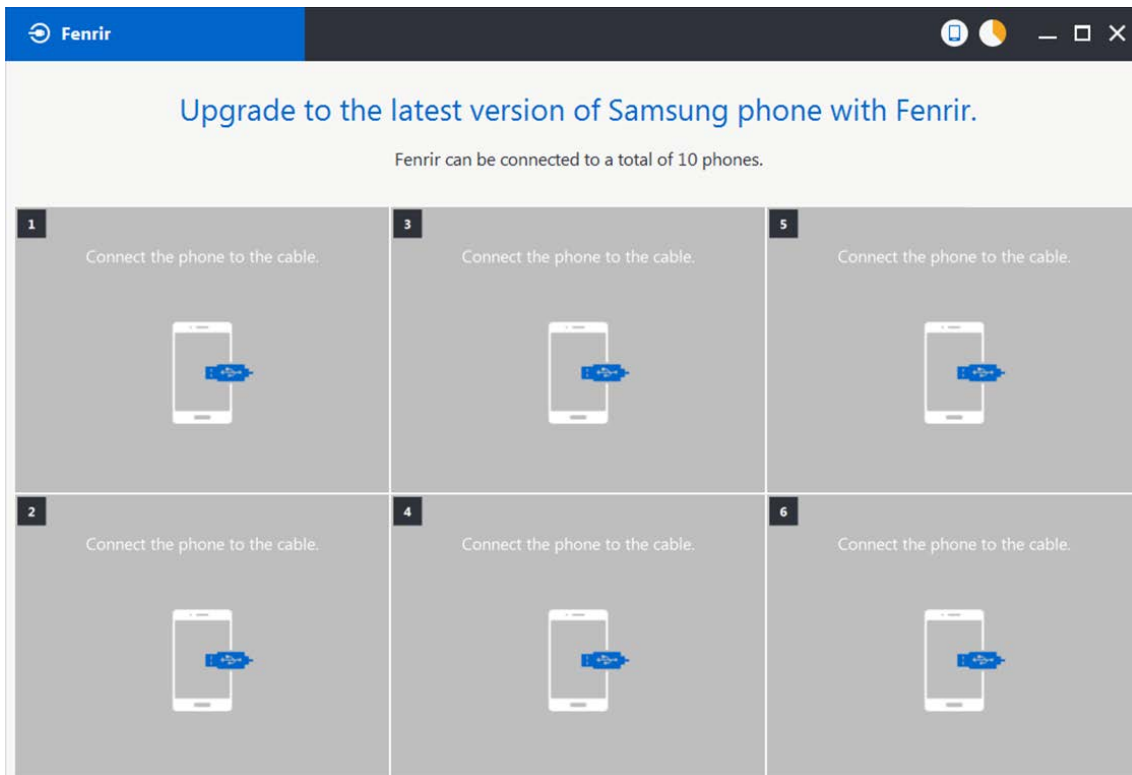
A screenshot of the Fenrir software interface. The window has a blue title bar with the 'Fenrir' logo and a close button. The main area is white and contains the text: 'Input the ID and password registered to the SAMSUNG Fenrir service.' Below this text are two input fields: 'ID:' and 'Password:'. At the bottom right, there are three buttons: 'Proxy', 'Login', and 'Close'. The 'Login' button is highlighted with a dashed border.

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## 6. Level 1 Repair

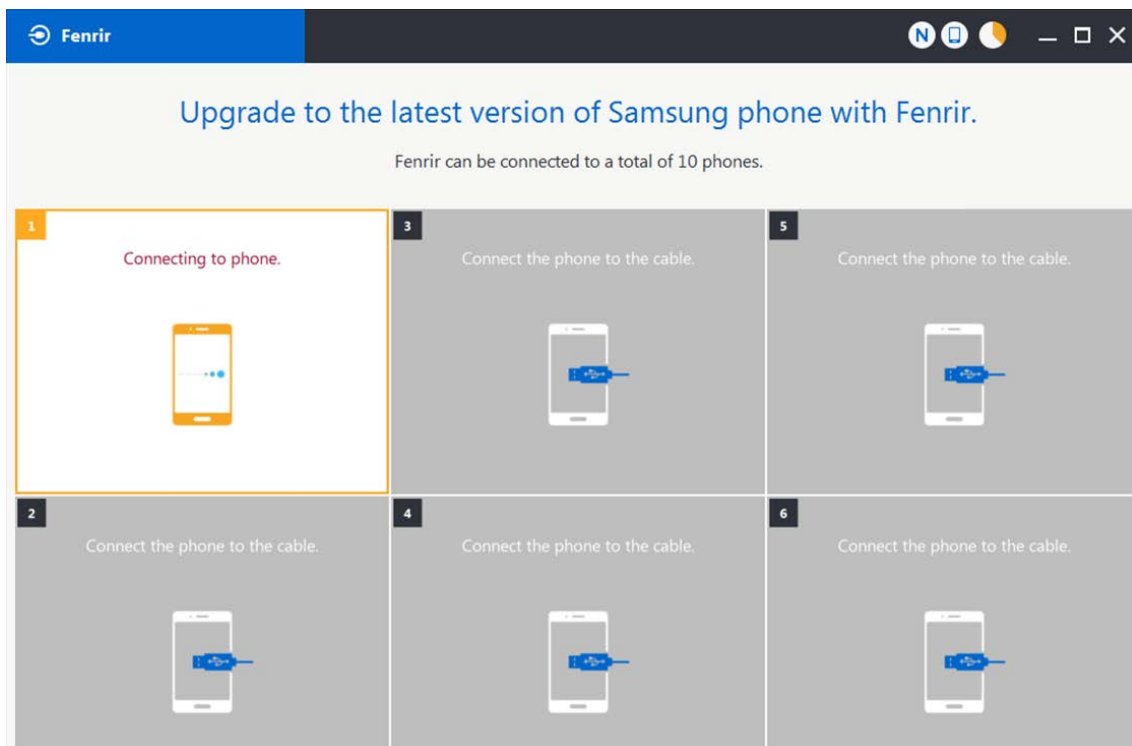
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3) Ensure device has sufficient charge (at least 20%) to start firmware update.



4) Connect the device to PC via data cable.

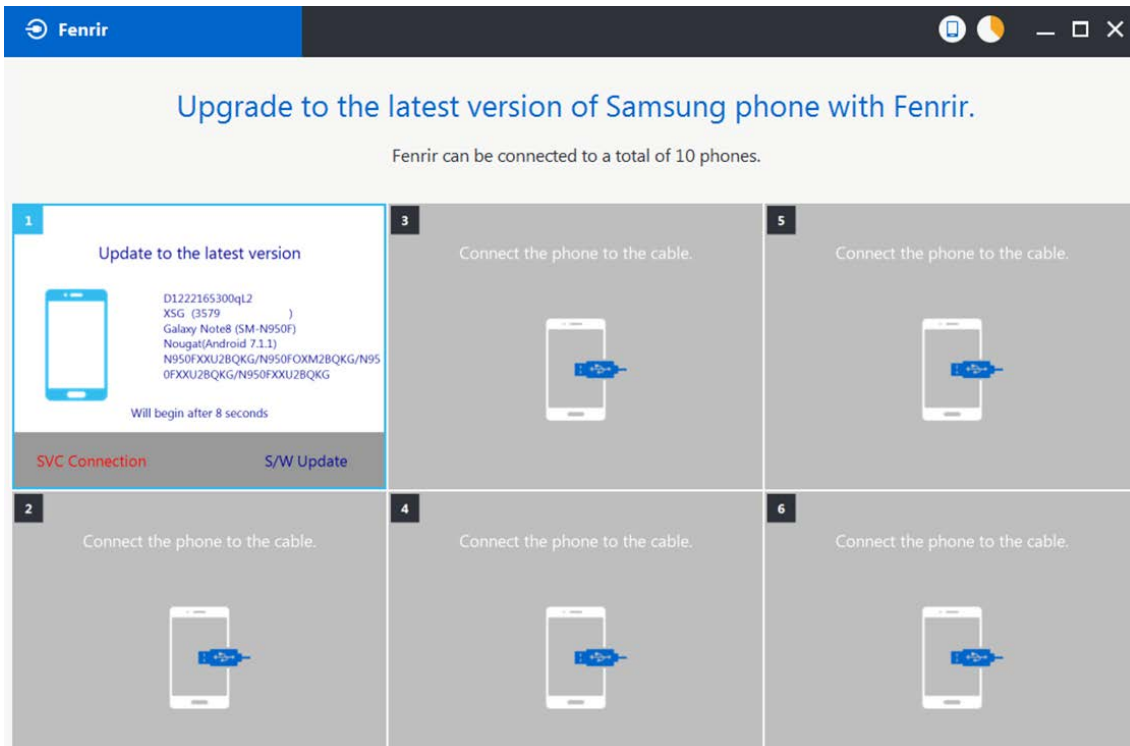
5) Upon USB connection, you will be presented with below screen.



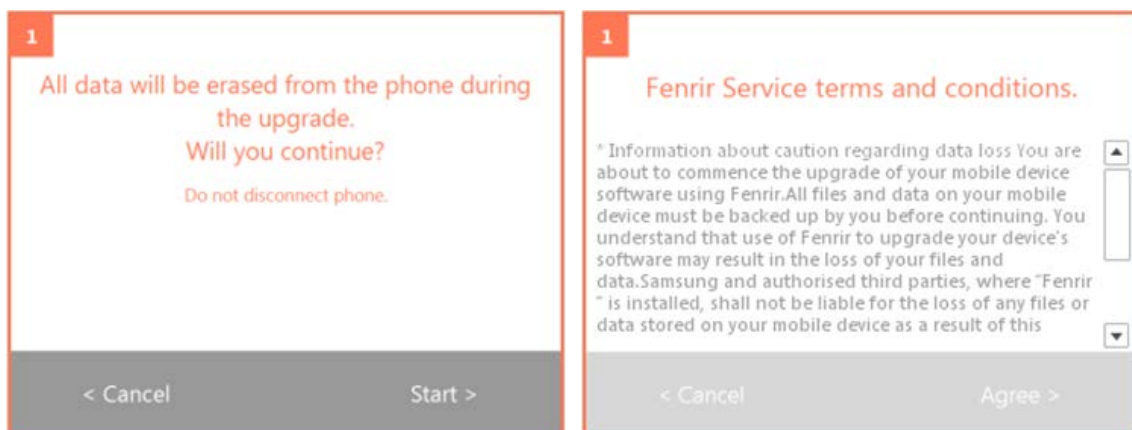
## 6. Level 1 Repair

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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.



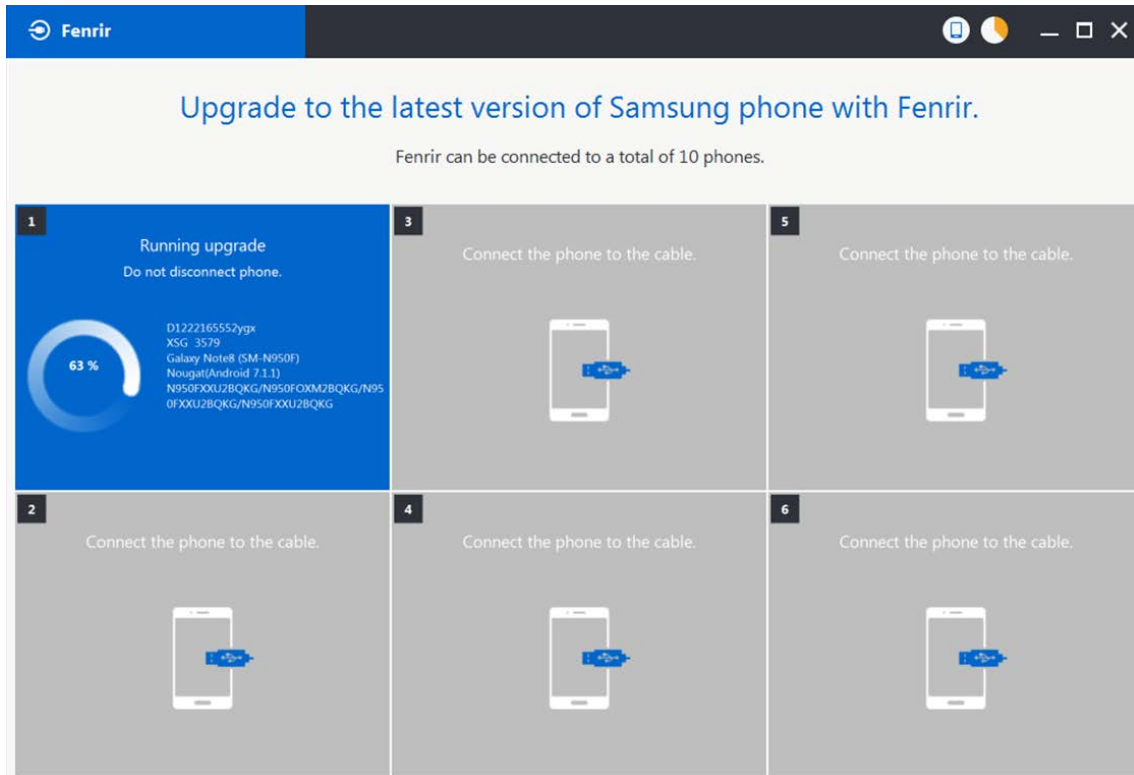
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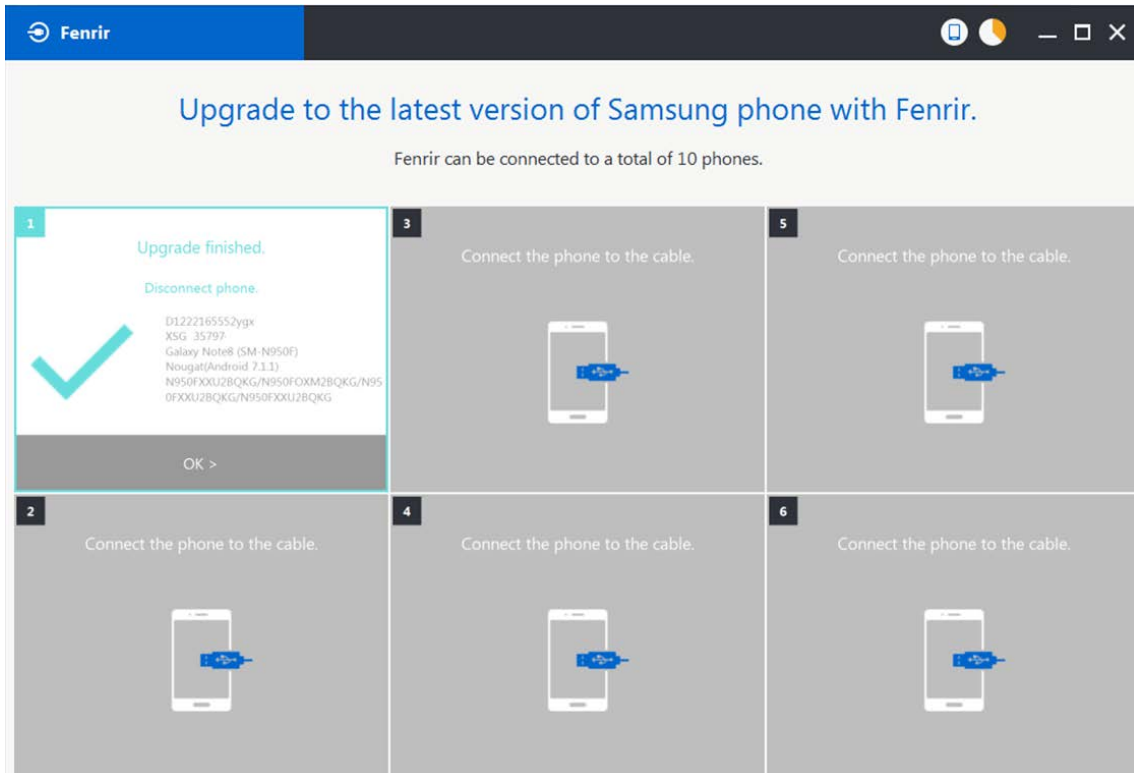
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## 6. Level 1 Repair

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.





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## 6. Level 1 Repair

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

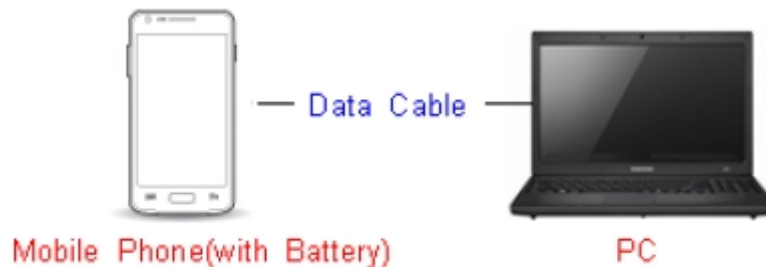
※ S/W Update via Fenrir is mandatory.

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 : [GH39-01710D](#)



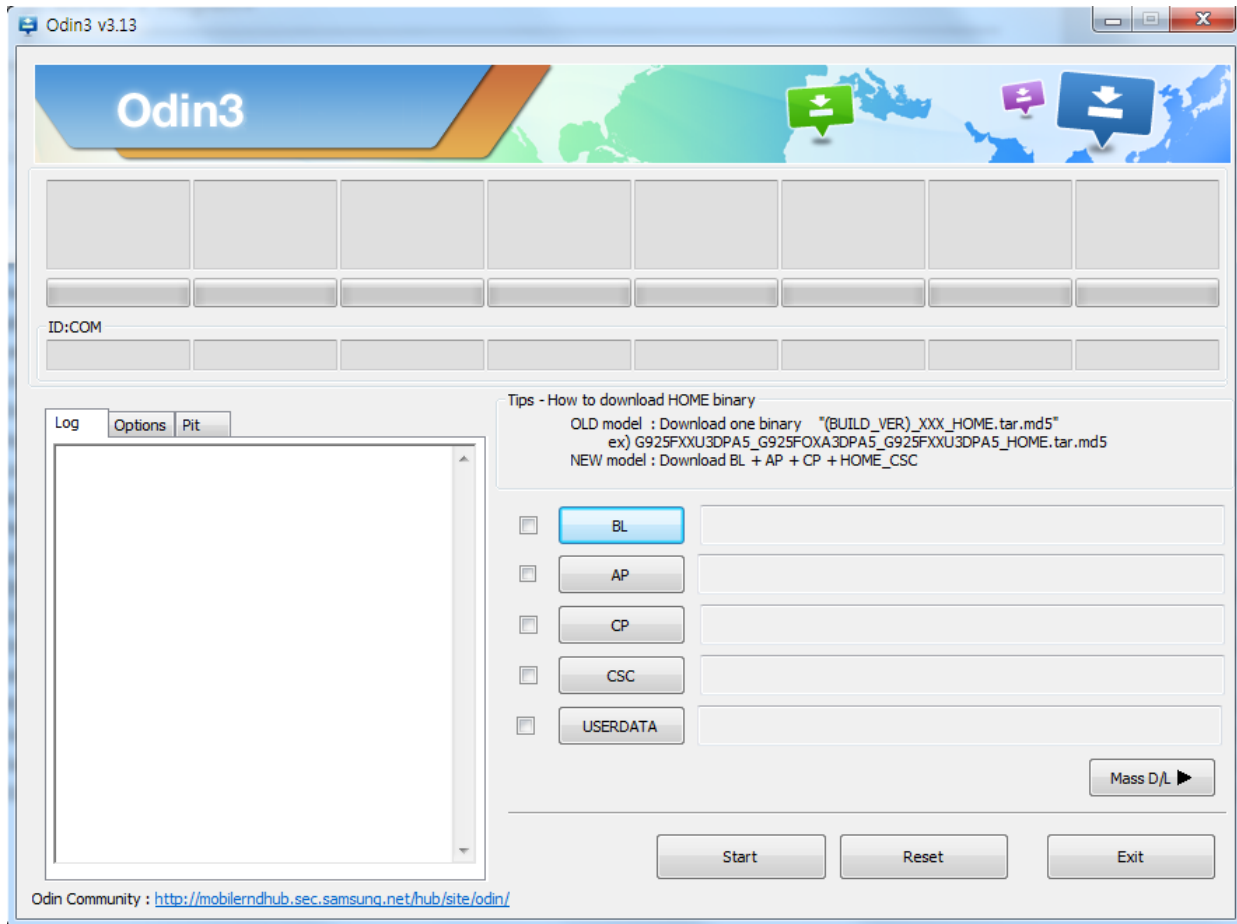
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## 6. Level 1 Repair

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

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

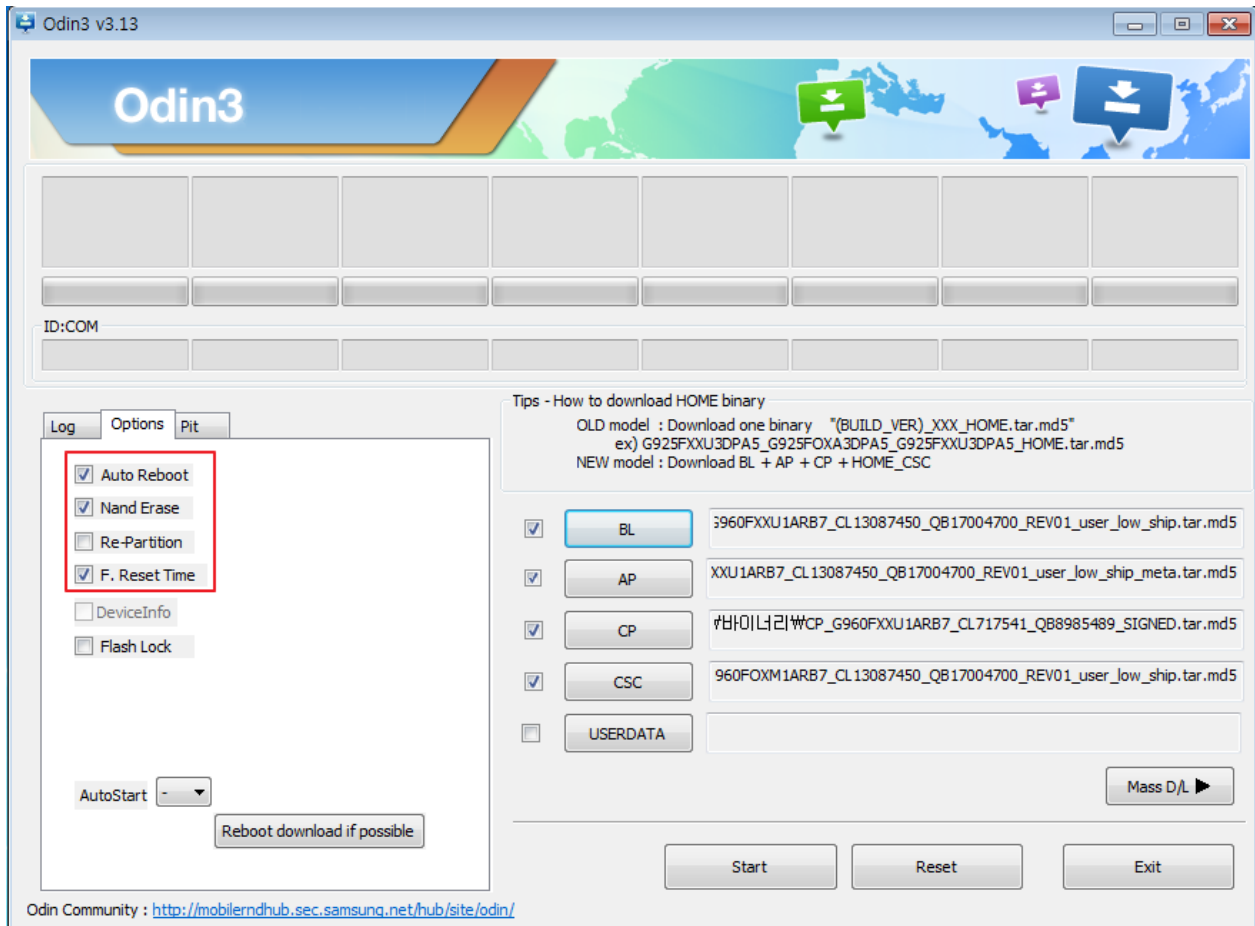


## 6. Level 1 Repair

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.



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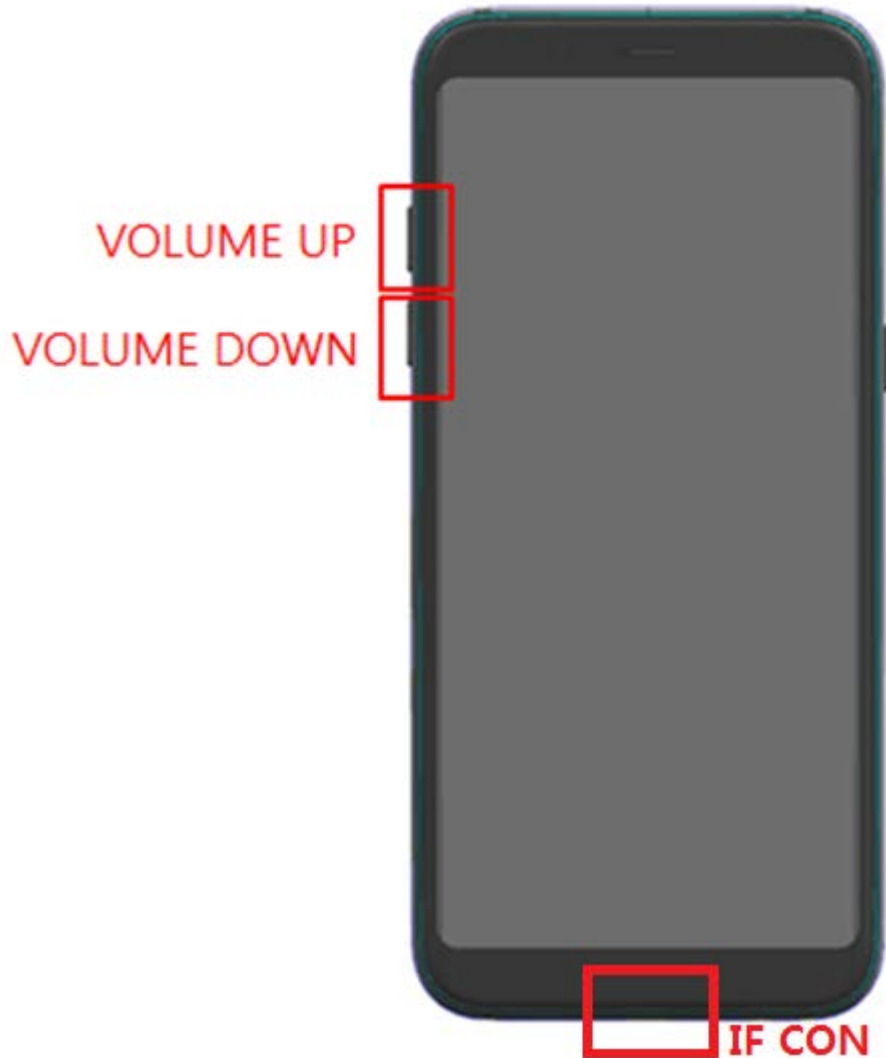
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## 6. Level 1 Repair

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### 2. Enter into Download Mode

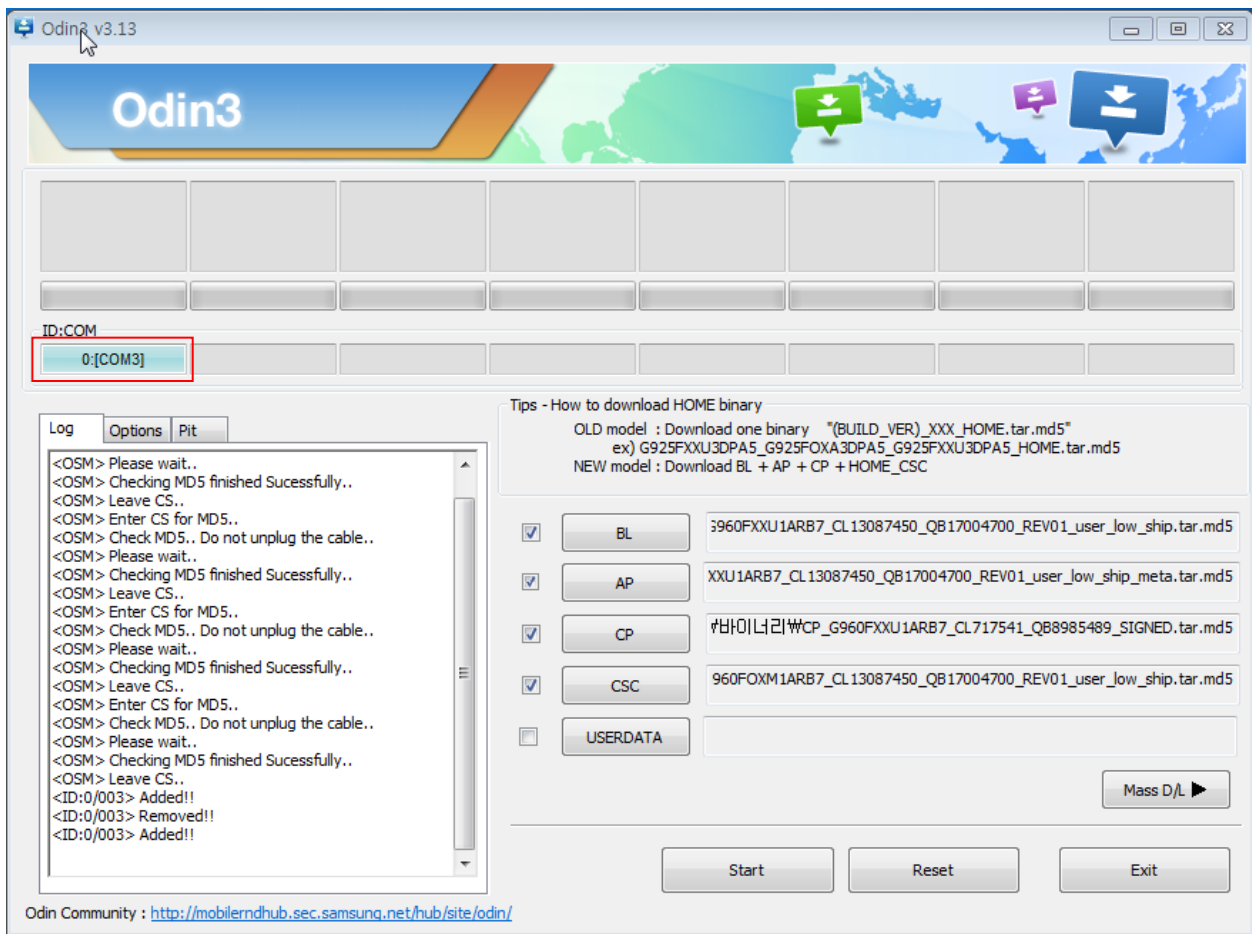
- Enter into Download Mode by pressing Volume Down button, Intelligence button and ON/OFF Button simultaneously followed by pressing Volume up button as a direction of the phone.



## 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.



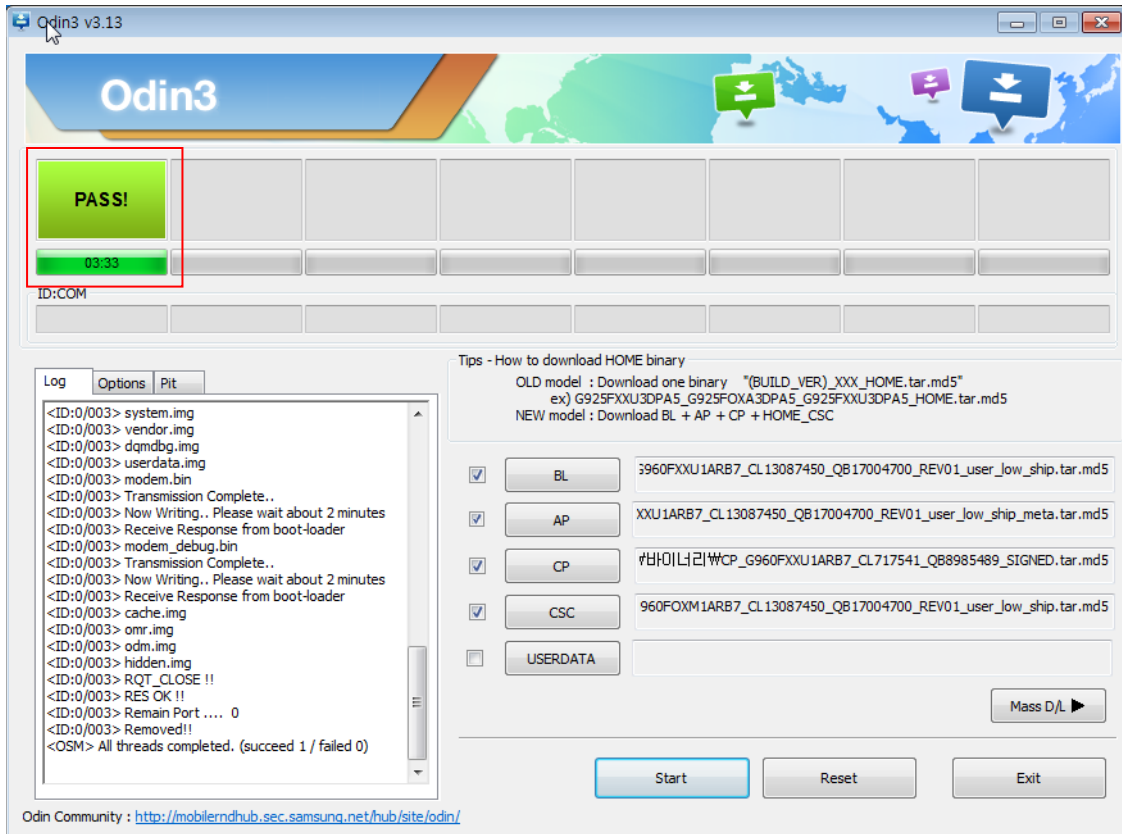
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## 6. Level 1 Repair

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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.**



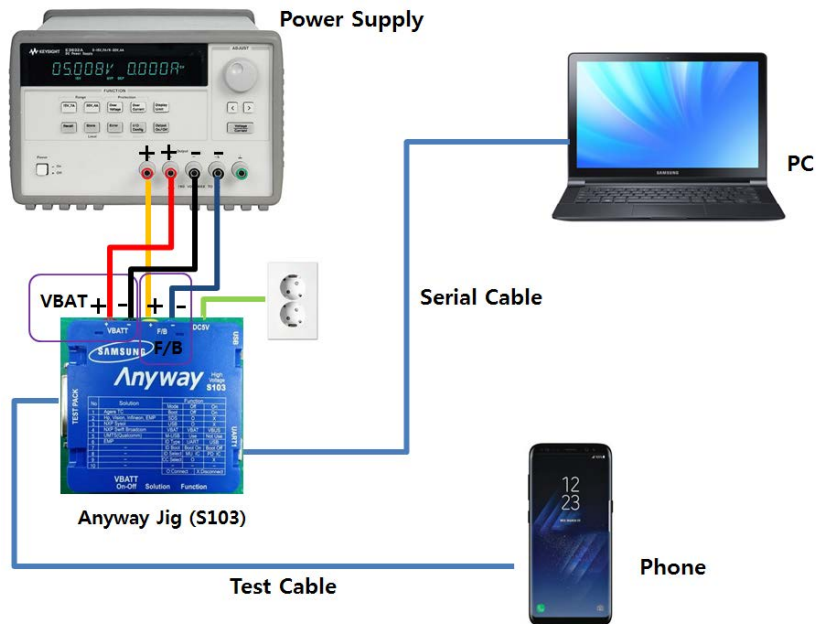
## 6. Level 1 Repair

### 6-3. IMEI writing

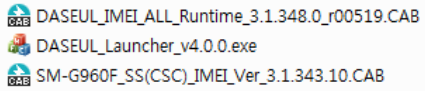
#### 6-3-1. Preparation

- 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



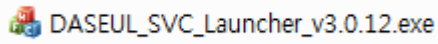
#### - S/W

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 'ModelName' folder at the same position with launcher & Runtime file. 
④ Model File	Copy Model File under the 'SM-A600FN' folder

## 6. Level 1 Repair

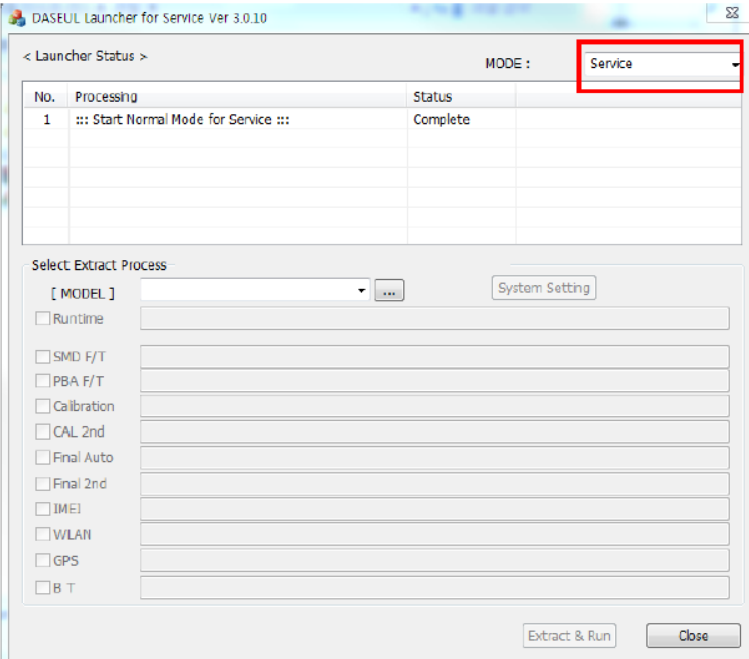
### 6-3-2. IMEI writing Process


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

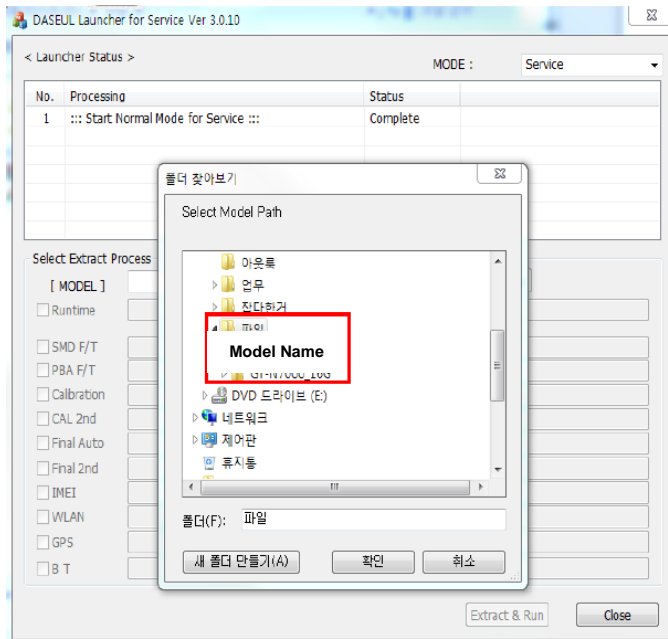


DASEUL\_SVC\_Launcher\_v3.0.12.exe

2. Select Service Mode



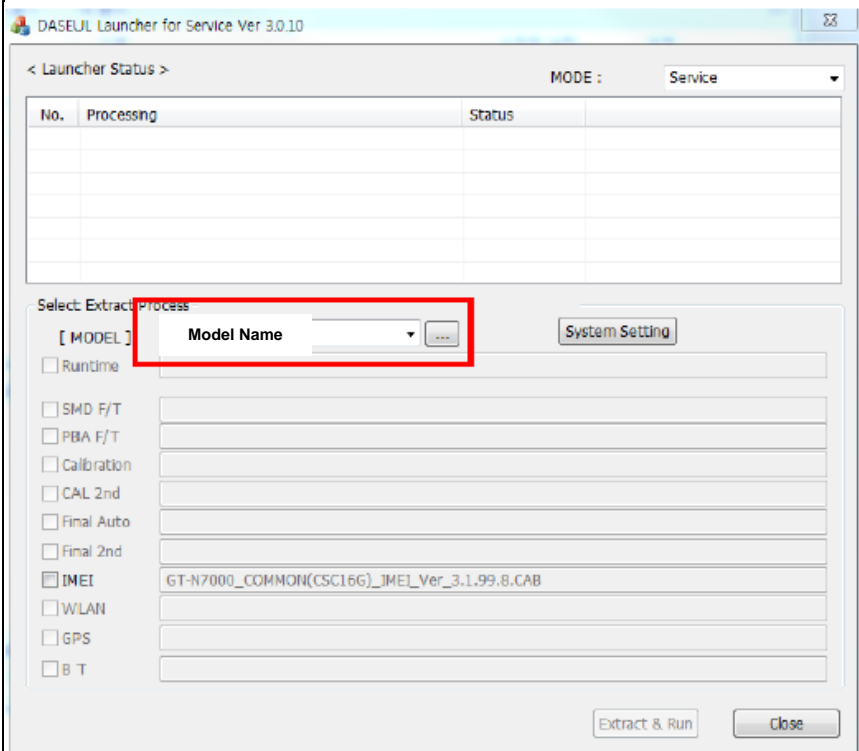
3. Click  and Select folder where the Launcher exists





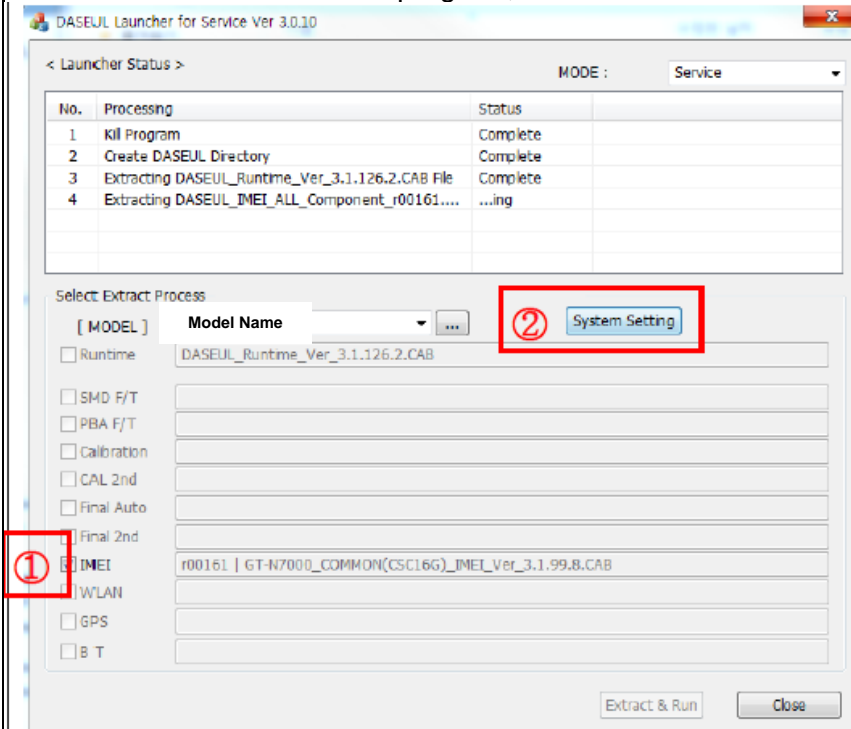
## 6. Level 1 Repair

### 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.

**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:

Final  
Supply RF Signal by:

Test Signal Mode:

Developer Mode

**IMEI**

Use RFSM   
Use Second PC   
Save ODS

**System Config.**

Language:   
Line Name:   
Line Type:   
# of Phone:   
Start Number of Jig:   
IP Address: 10.244.114.62

**Operation Condition**

Model Information  
Hardware Config  
Signal Loss Config.  
Terminal Config.  
MSTs 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:   
I/F - 1 Type:   
I/F - 2 Type:   
IF Jig Type:   
 Use ID Check JIG

**MSTS Sharing Controller**

Count:   
Control Type:   
I/F Type:

**Robot / ShieldBox**

Control Type:   
I/F Type:

**Power Supply**

I/F Type:

**DBMS**

Server:   
Type:

**Barcode Reader**

Type:   
I/F Type:

**MES PN Sender**

Type:

**PBA F/T**

Function Test Jig   
NI-DAQ   
Power Detector   
HDMI JIG

**MSTS**

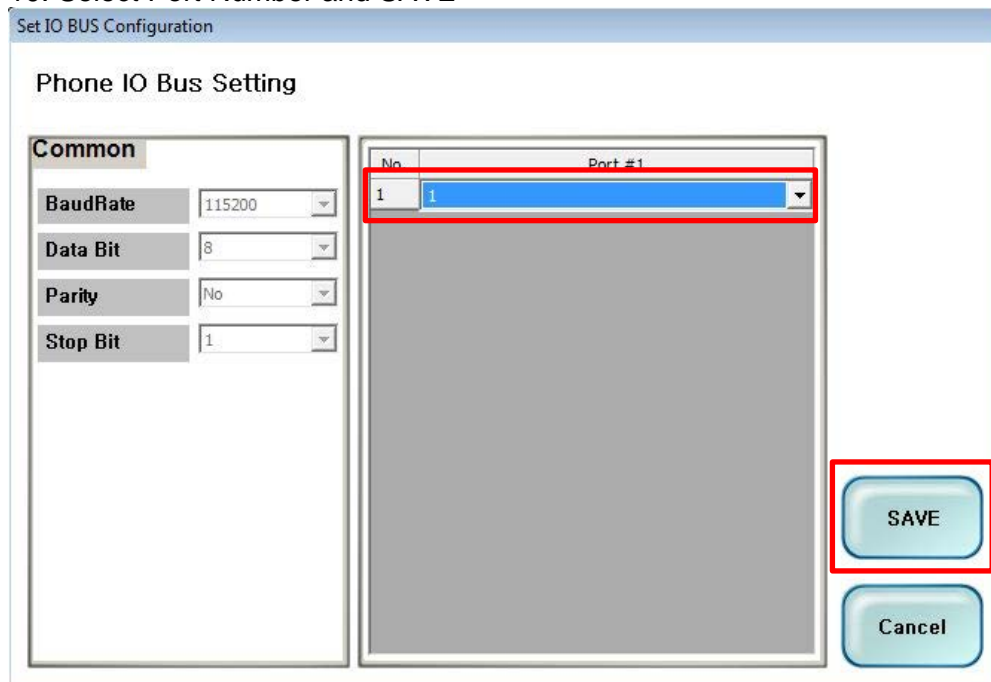
Count:   
I/F Type:

**SMD F/T**

Type:   
B'd Address:

## 6. Level 1 Repair

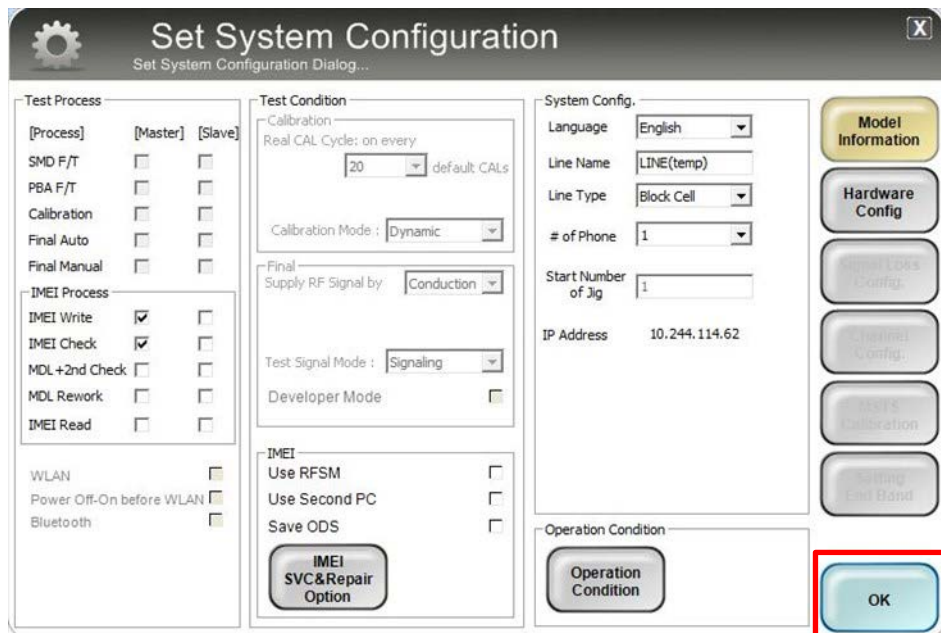
### 10. Select Port Number and SAVE



The image shows a dialog box titled "Set IO BUS Configuration". It has a "Phone IO Bus Setting" section. On the left, there are four settings: BaudRate (115200), Data Bit (8), Parity (No), and Stop Bit (1). On the right, there is a table with two columns: "No." and "Port #1". The first row has "1" in both columns, and this row is highlighted with a red border. Below the table are two buttons: "SAVE" and "Cancel", with the "SAVE" button highlighted by a red border.

No.	Port #1
1	1

### 11. Click OK to proceed



The image shows a dialog box titled "Set System Configuration". It has several sections: "Test Process" with checkboxes for SMD F/T, PBA F/T, Calibration, Final Auto, Final Manual, IMEI Write, IMEI Check, MDL +2nd Check, MDL Rework, IMEI Read, WLAN, Power Off-On before WLAN, and Bluetooth; "Test Condition" with a "Calibration" section (Real CAL Cycle: on every 20, Calibration Mode: Dynamic) and a "Final" section (Supply RF Signal by: Conduction, Test Signal Mode: Signaling, Developer Mode); "System Config." with fields for Language (English), Line Name (LINE(temp)), Line Type (Block Cell), # of Phone (1), Start Number of Jig (1), and IP Address (10.244.114.62); and "Operation Condition" with an "Operation Condition" button. On the right side, there are several buttons: "Model Information", "Hardware Config", "Signal Loss Config.", "Channel Config.", "Factory Calibration", "Setting End Band", and "OK". The "OK" button is highlighted with a red border.



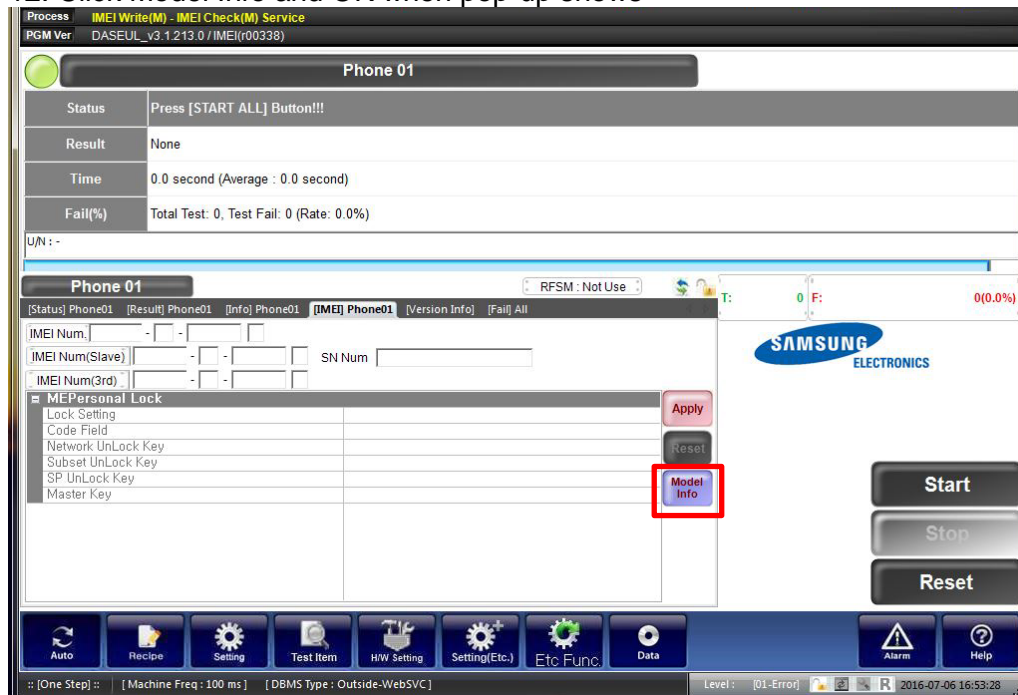
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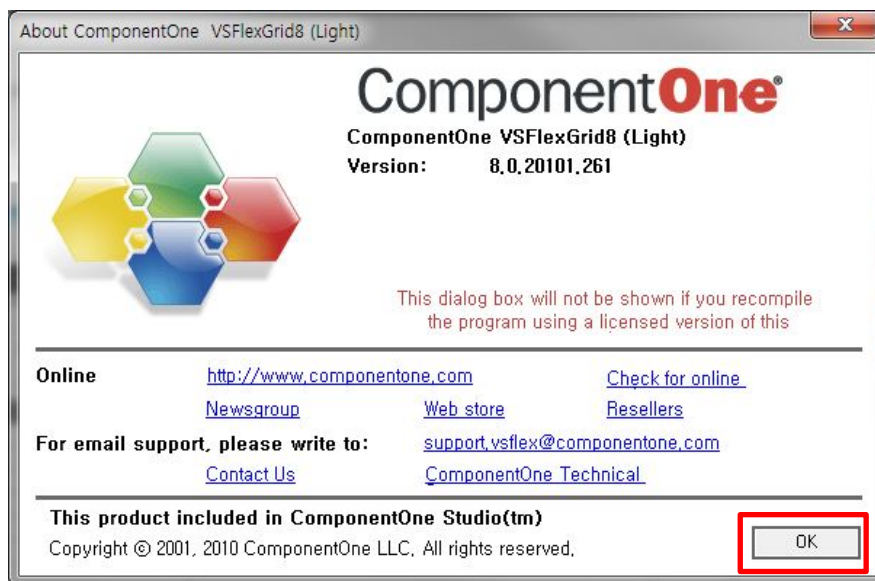
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## 6. Level 1 Repair

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



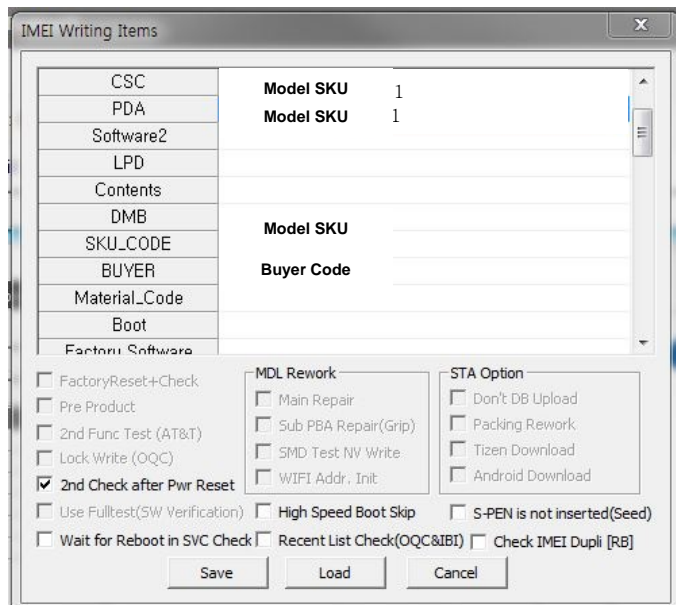
### 13. Click OK



## 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 titled "IMEI Writing Items" contains a list of items on the left and a table on the right. The table has columns for item name, label, and value. The "Model SKU" label is used for CSC, PDA, SKU\_CODE, and BUYER. The "Buyer Code" label is used for BUYER. Below the table are three groups of checkboxes: "Factory Software", "MDL Rework", and "STA Option".

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

**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**

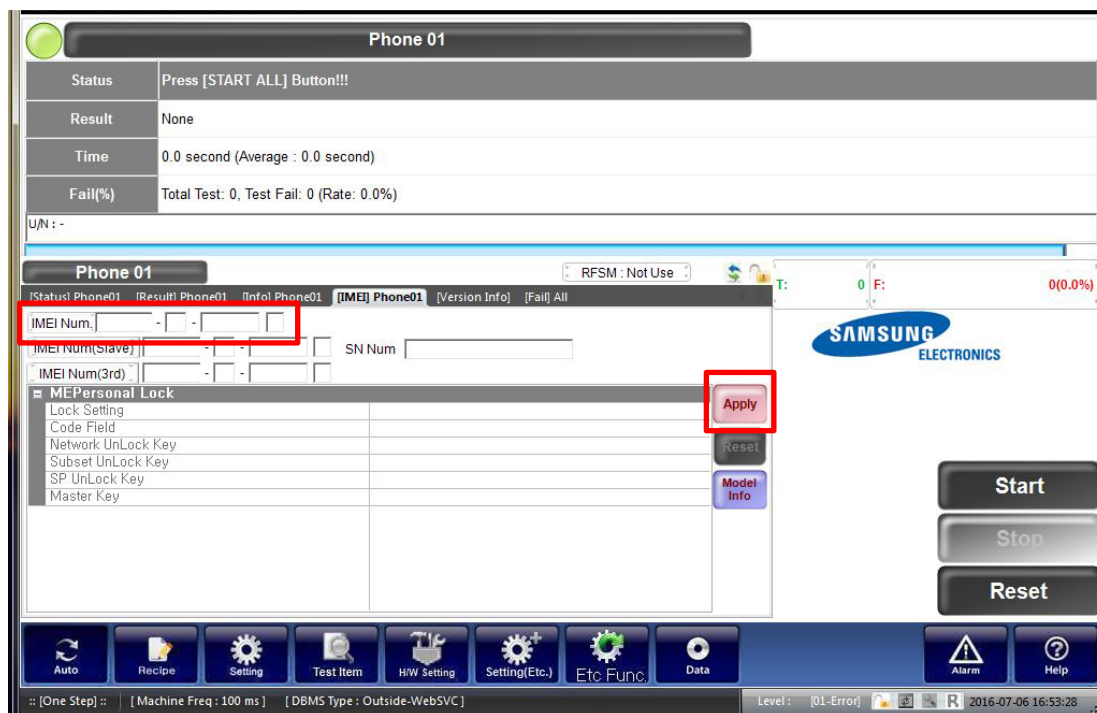
- Main Repair
- Sub PBA Repair(Grip)
- SMD Test NY Write
- WIFI Addr. Init
- High Speed Boot Skip
- Recent List Check(OQC&IBI)

**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

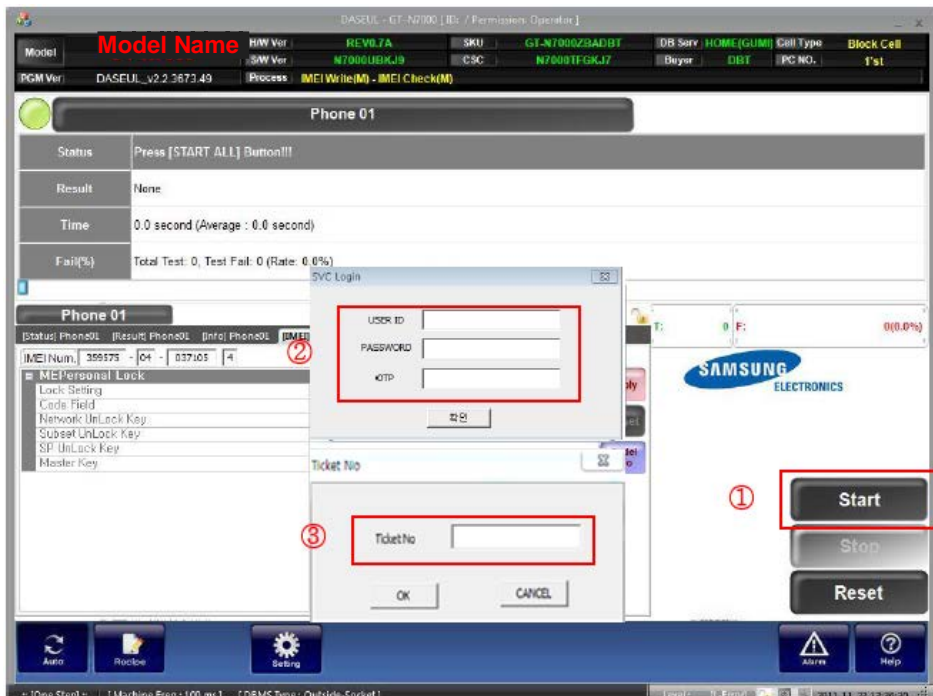
15. Input IMEI Number and click Apply



The screenshot shows the "Phone 01" test interface. The top section displays test status: Status (Press [START ALL] Button!!!), Result (None), Time (0.0 second), and Fail(%) (Total Test: 0, Test Fail: 0). Below this is a table for "Phone 01" with columns for IMEI Num., IMEI Num(Slave), and IMEI Num(3rd). The "IMEI Num." field is highlighted with a red box. To the right of the table is a red "Apply" button. The interface also features a "SAMSUNG ELECTRONICS" logo, "Start", "Stop", and "Reset" buttons, and a bottom toolbar with icons for Auto, Recipe, Setting, Test Item, HW Setting, Setting(Etc.), Etc Func., and Data. The status bar at the bottom shows "Level : [01-Error]" and the date "2016-07-06 16:53:28".

## 6. Level 1 Repair

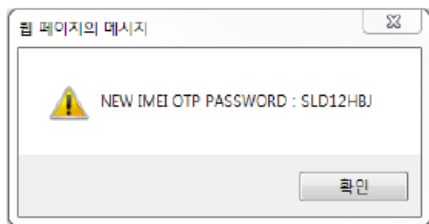
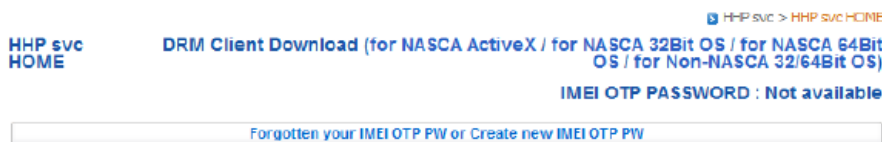
16. ① Click Start → ② Input IMEI writing ID and Password & OTP → ③ Input Ticket No



※ 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

Phone 01

Status: Factory/Reset Poll

Result: <OK> : [WR\_Proc] Total Memory Size Compare

Time: 56.8 second (Average : 0.0 second)

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

Test Item	Measure	Low	High	Pass	Fail
WR_Proc	IMEI Address Read	00000000	00000000	PASS	47.639
WR_Proc	Serial Number Write	R0B0A0	R0B0A0	PASS	48.004
WR_Proc	CSC Data Write	00T	0	PASS	48.111
WR_Proc	Level 0 Lock Read	0	0	PASS	50.388
WR_Proc	MCK Write	*****	*****	PASS	52.347
WR_Proc	NCK Write	*****	*****	PASS	52.347
WR_Proc	SCK Write	*****	*****	PASS	52.347
WR_Proc	CPCK Write	*****	*****	PASS	52.347
WR_Proc	Keystring Block Write	*****	*****	PASS	53.006
WR_Proc	HDCP2.0 Key Write	*****	*****	PASS	53.006
WR_Proc	Total Memory Size Compare	11330	10461 12529	PASS	53.914

### 19. IMEI Writing Success

Phone 01

Status: [TEST END]

Result: <Test Pass> : 037195

Time: 215.0 second (Average : 215.6 second)

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

Test Item	Measure	Low	High	Pass	Fail
CH_Proc	AK Authenticate Check	3995701	3995701	PASS	213.519
CH_Proc	IMEI Compare	3995701	3995701	PASS	213.561
CH_Proc	Brwathw0 0 Compare	3995701	3995701	PASS	214.033
CH_Proc	Serial Number Compare	R0B0A0	R0B0A0	PASS	214.345
CH_Proc	MCK Compare	*****	*****	PASS	214.455
CH_Proc	NCK Compare	*****	*****	PASS	214.455
CH_Proc	SCK Compare	*****	*****	PASS	214.455
CH_Proc	CPCK Compare	*****	*****	PASS	214.455
CH_Proc	PCK Compare	*****	*****	PASS	214.455
CH_Proc	Keystring Block Compare	ON	ON	PASS	214.532
CH_Proc	HDCP2.0 Key Check	OK	OK	PASS	214.673





## 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.

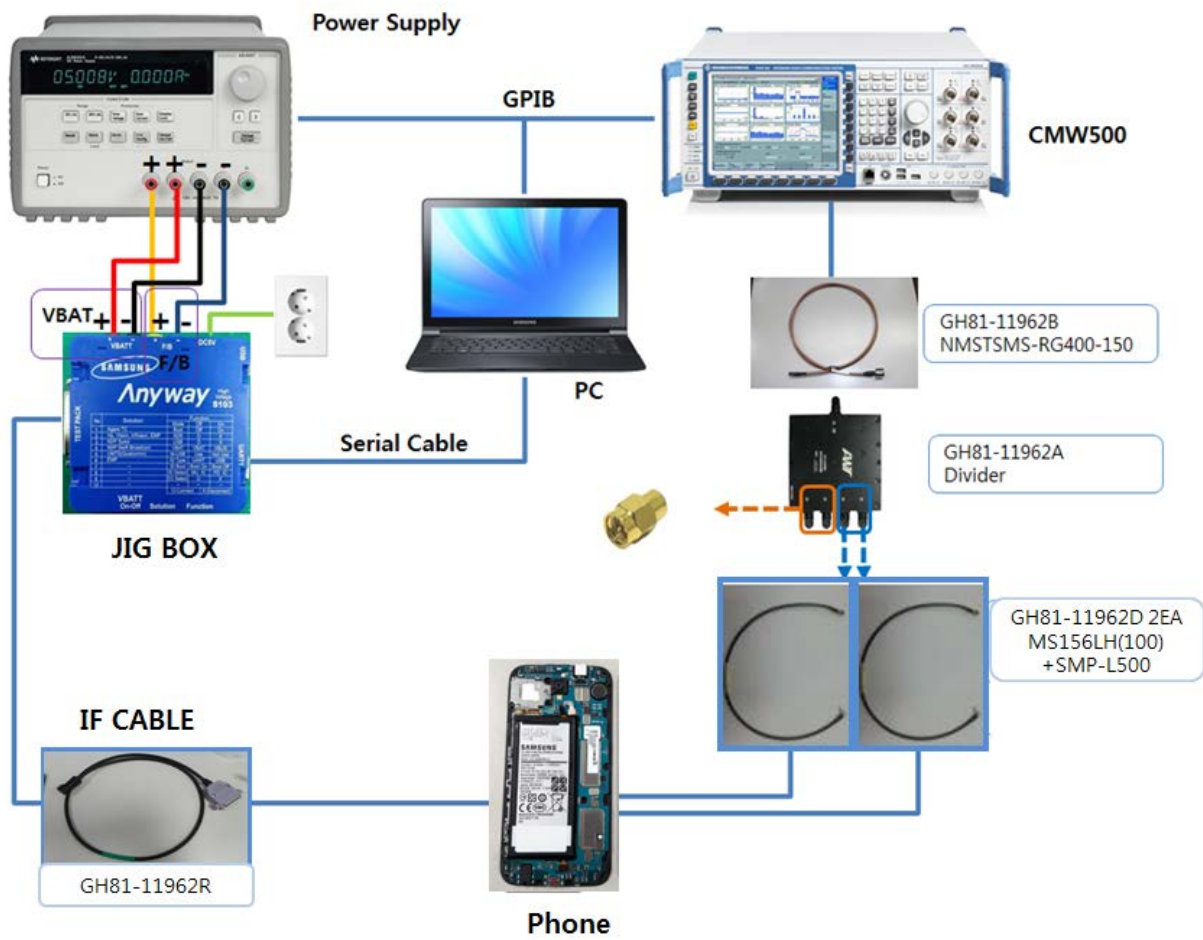
- Mobile Phone
- R&S CMW500
- E3632A Power Supply
- GPIB Cable (2ea)
- JIG BOX (S103)
- Adapter
- UART Serial Cable
- IF Cable (GH81-11962R)

#### ❖ Table of test cables

<b>RF Cable (Manual)</b>	<b>GH81-11962D 2EA</b>		
	<b>1.35T Short</b> 		
<b>4 Port Divider</b>	<b>GH81-11962A</b>	<b>GH81-11962B</b>	<b>GH81-11962E 2EA</b>
	<b>Divider</b> 	<b>Divider Cable</b> 	<b>50Ω terminator</b> 

## 6. Level 1 Repair

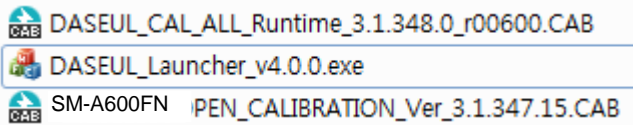
### ❖ Setting



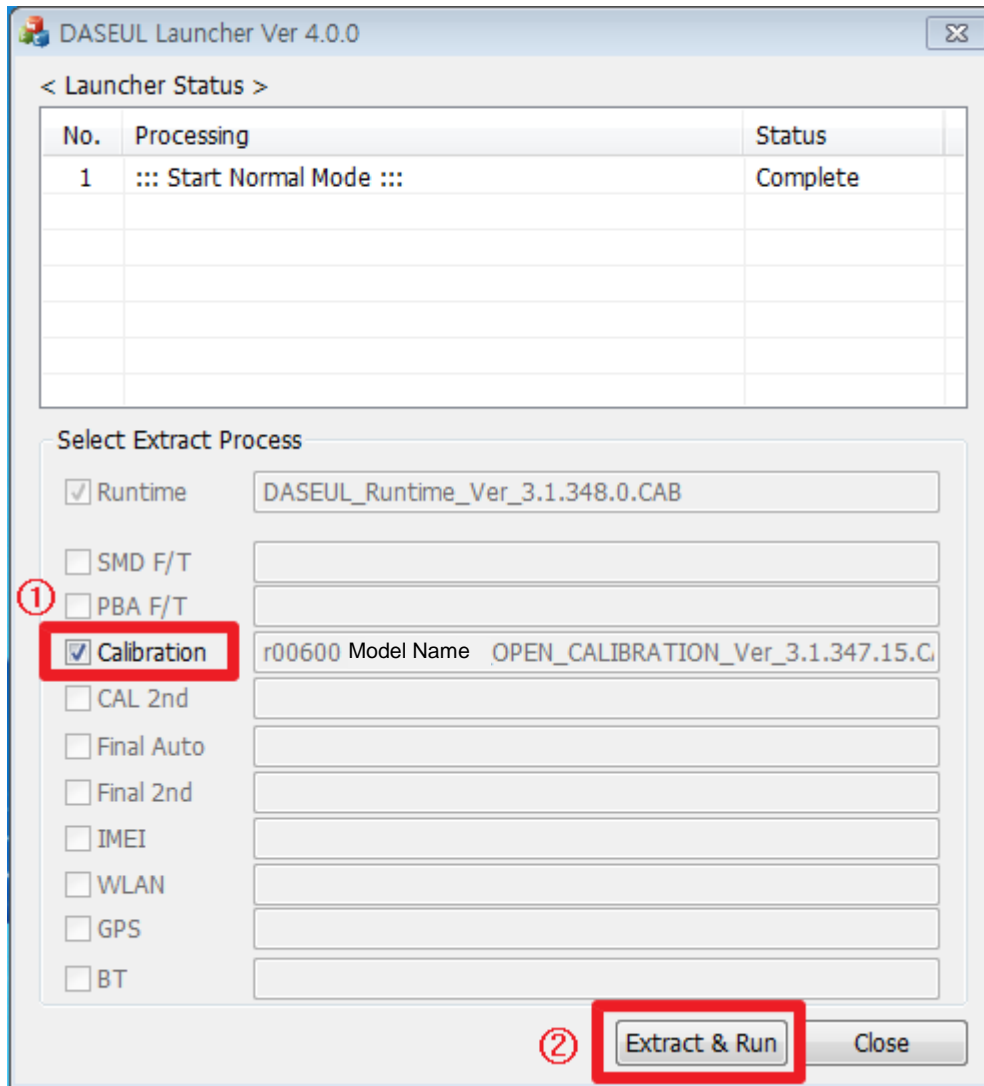
## 6. Level 1 Repair

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

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

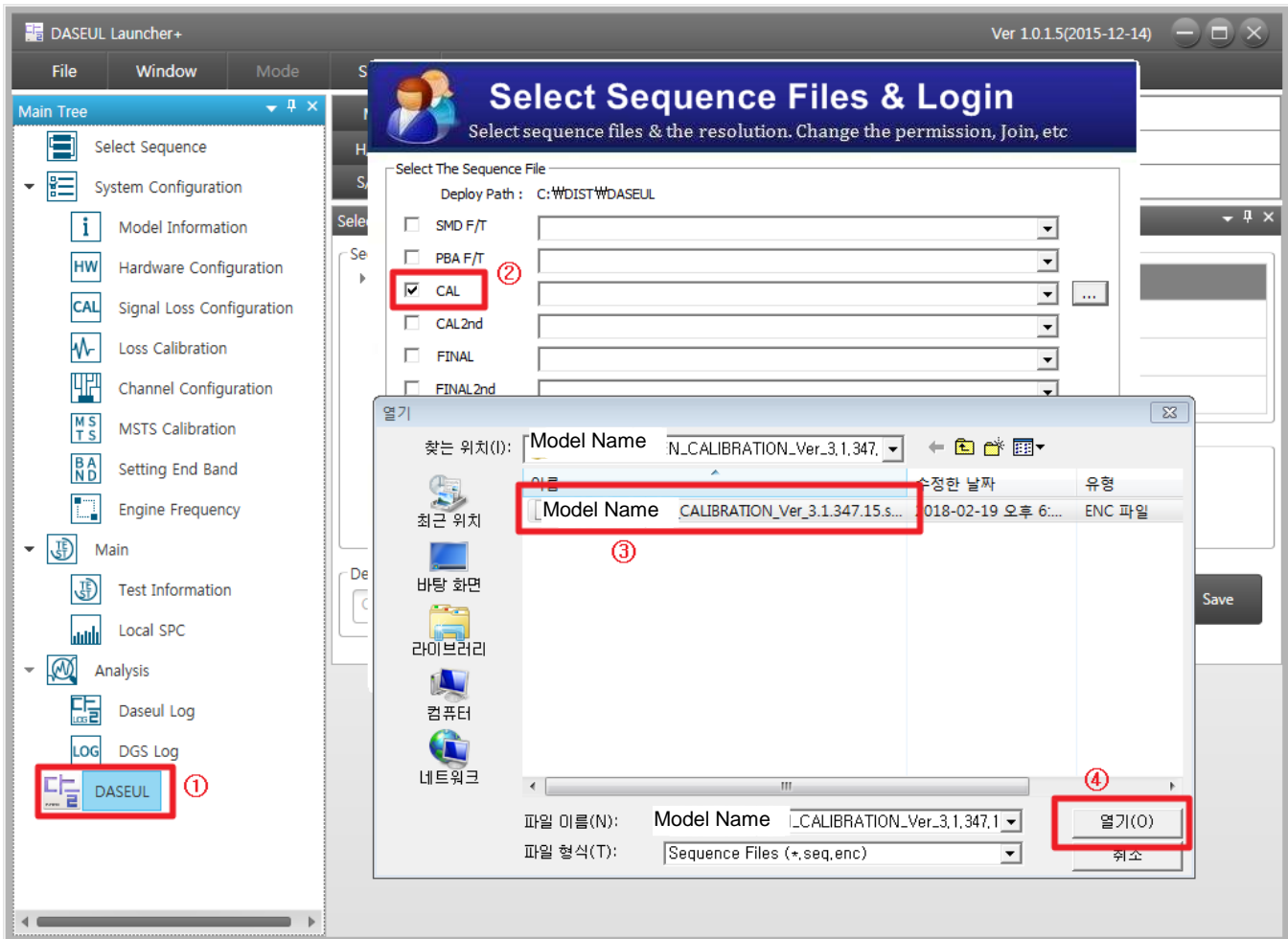


2. Check the 'Calibration' option and Click 'Extract & Run'.



## 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'.

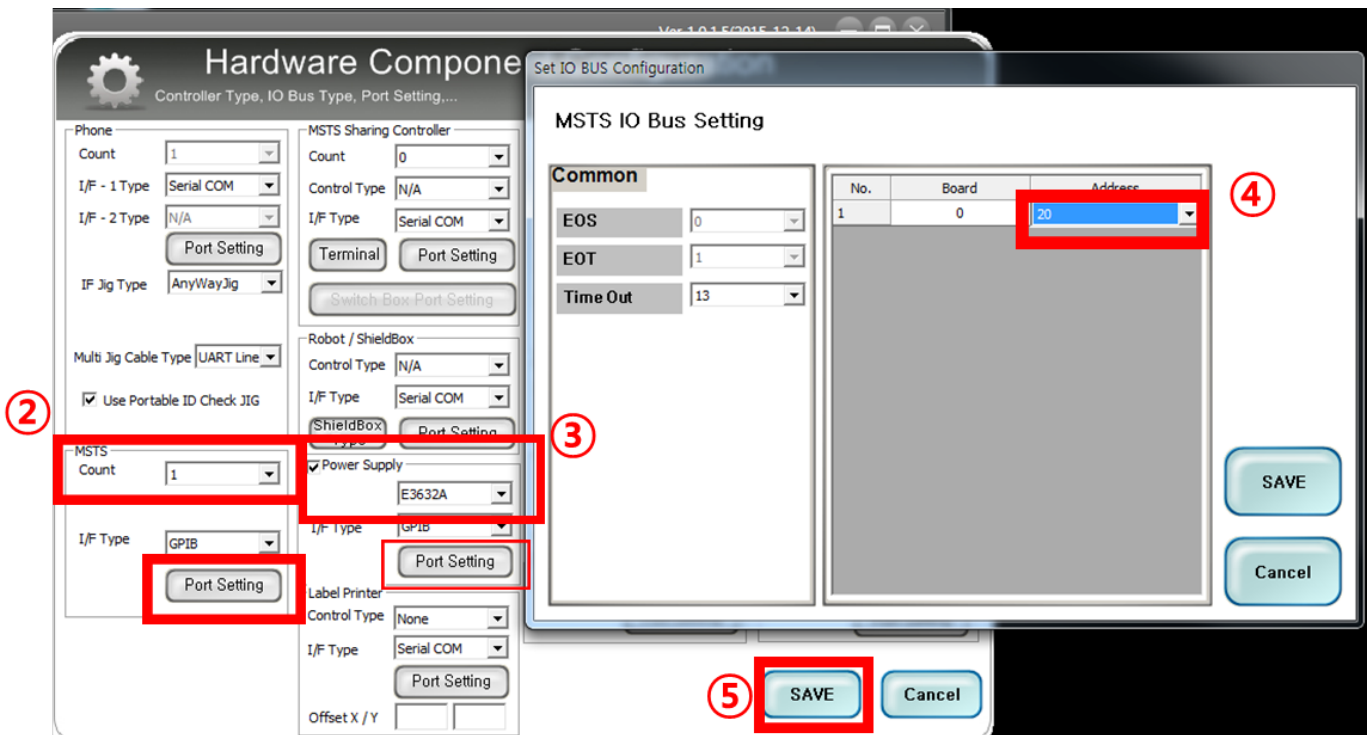
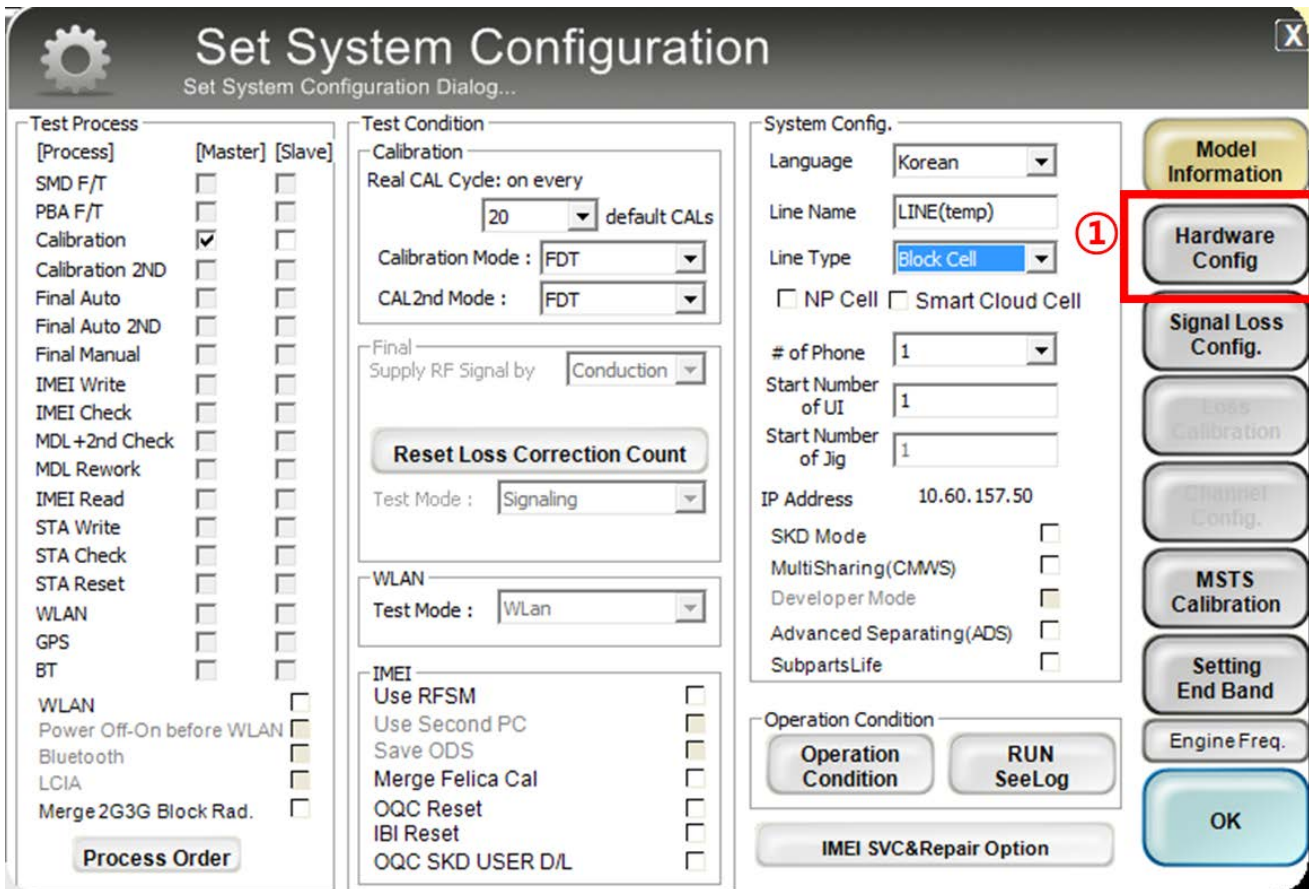
The screenshot shows the 'Set System Configuration' dialog box with the following settings:

- Test Process:** Calibration is checked under the [Master] column.
- Test Condition:** Real CAL Cycle: on every 20 default CALs; Calibration Mode: FDT; CAL2nd Mode: FDT; Final Supply RF Signal by: Conduction; 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 are all unchecked.
- System Config.:** Language: Korean; Line Name: LINE(temp); Line Type: Block Cell; NP Cell: unchecked; Smart Cloud Cell: unchecked; # 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 are all unchecked.
- Operation Condition:** Operation Condition and RUN SeeLog buttons are visible.
- Buttons:** Model Information, Hardware Config, Signal Loss Config., Loss Calibration, Channel Config., MSTS Calibration, Setting End Band, Engine Freq., and OK buttons are on the right side.



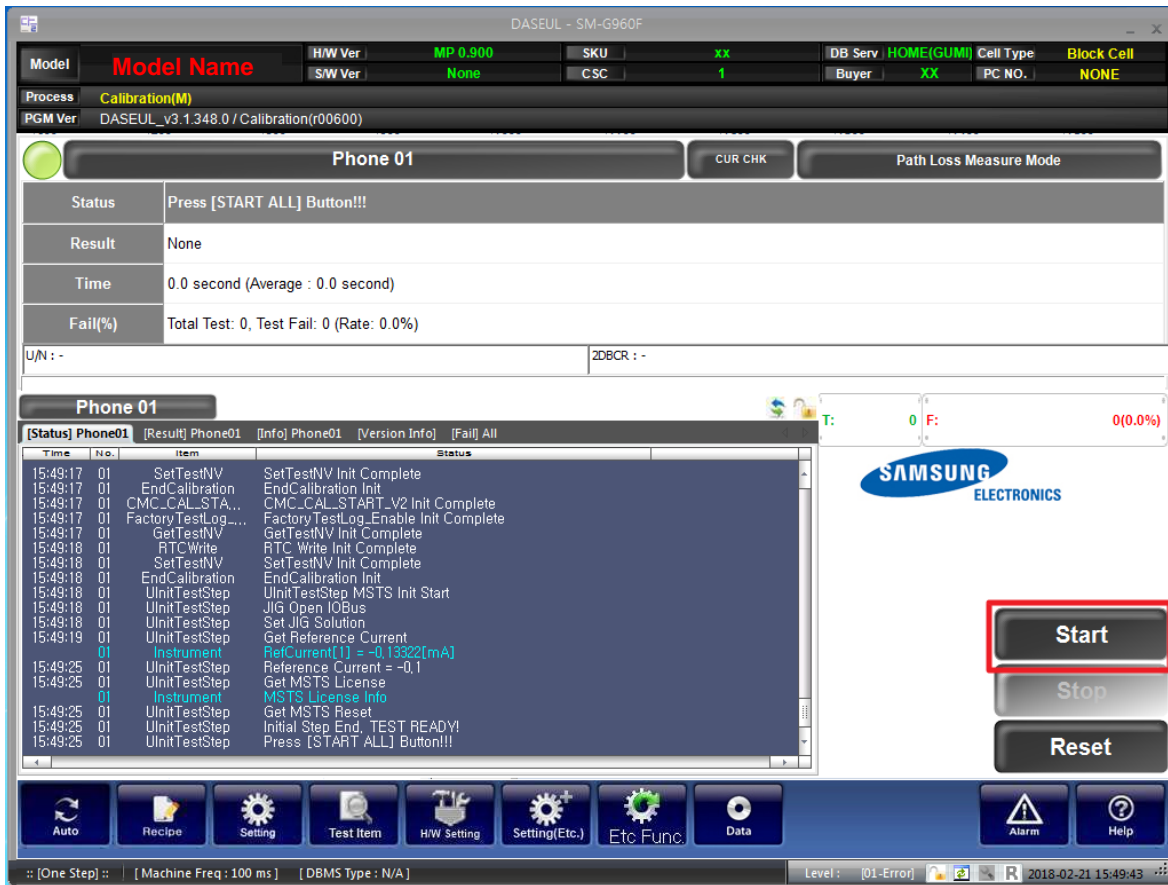
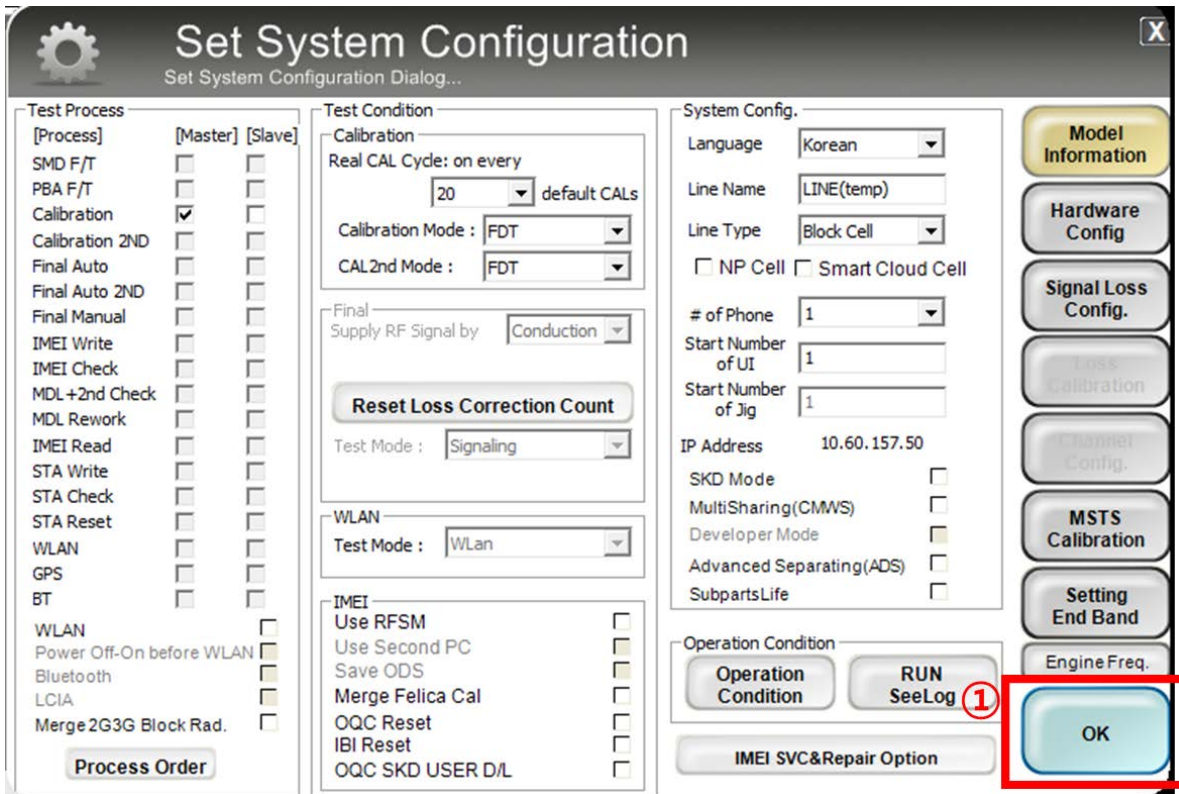
## 6. Level 1 Repair

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)



## 6. Level 1 Repair

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



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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

