

## 2. Specification

### 2-1. GSM General Specification

	GSM850	EGSM 900	DCS1800	PCS1900	WCDMA 2100	WCDMA 1900	WCDMA 900	WCDMA 850
Freq. Band[MHz] Uplink/ Downlink	824~849 869~894	880~915 925~960	1710~1785 1805~1880	1850~1910 1930~1990	1922~1977 2110~2170	1852~1907 1932~1987	880~915 925~960	824~849 869~894
ARFCN range	128~251	0~124 & 975~1023	512~885	512~810	UL:9612~9888 DL:10562~10838	UL:9262~9538 DL:9662~9938	UL: 2712~2863 DL: 2937~3088	UL: 4132~4233 DL: 4357~4458
Tx/Rx spacing	45MHz	45MHz	95MHz	80MHz	190MHz	80MHz	45MHz	45MHz
Mod. Bit rate/ Bit Period	270.833kbps 3.692us	270.833kbps 3.692us	270.833kbps 3.692us	270.833kbps 3.692us	3.84Mcps	3.84Mcps	3.84Mcps	3.84Mcps
Time Slot Period/ Frame Period	576.9us 4.615ms	576.9us 4.615ms	576.9us 4.615ms	576.9us 4.615ms	FrameLength: 10ms Slotlength: 0.667ms	FrameLength: 10ms Slotlength: 0.667ms	FrameLength: 10ms Slotlength: 0.667ms	FrameLength: 10ms Slotlength: 0.667ms
Modulation	0.3GMSK	0.3GMSK	0.3GMSK	0.3GMSK	QPSK, HPSK	QPSK, HPSK	QPSKHQPSK	QPSKHQPSK
MS Power	33dBm~5dBm	33dBm~5dBm	30dBm~0dBm	30dBm~0dBm	24dBm~-50dBm	24dBm~-50dBm	24dBm~-50dBm	24dBm~-50dBm
Power Class	5pcl ~ 19pcl	5pcl ~ 19pcl	0pcl ~ 15pcl	0pcl ~ 15pcl	3(max+24dBm)	3(max+24dBm)	3(max+24dBm)	3(max+24dBm)
Sensitivity	-102dBm	-102dBm	-100dBm	-100dBm	-106.7dBm	-106.7dBm	-106.7dBm	-106.7dBm
TDMA Mux	8	8	8	8	8	8	8	8
Cell Radius	35Km	35Km	2Km	2Km	2Km	2Km	2Km	2Km

## 2-2. GSM Tx Power Class

<b>TX Power control level</b>	<b>GSM850</b>	<b>TX Power control level</b>	<b>EGSM900</b>	<b>TX Power control level</b>	<b>DCS1800</b>	<b>TX Power control level</b>	<b>PCS1900</b>
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±3dBm	17	9±3dBm	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

## 2-3. LTE General Specification

	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
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	UL: 21450~21799 DL: 3450~3799	UL: 24150~24449 DL: 6150~6449	38650~39649
Tx/Rx spacing	190MHz	95MHz	45MHz	120MHz	45MHz	-41MHz	TDD
Channel Bandwidth	5/10/15/20 MHz	1.4/3/5/10/15/20 MHz	1.4/3/5/10 MHz	5/10/15/20 MHz	1.4/3/5/10MHz	5/10/15/20 MHz	5/10/15/20 MHz
Modulation	QPSK,16/64QAM	QPSK,16/64QAM	QPSK,16/64QAM	QPSK,16/64QAM	QPSK,16/64QAM	QPSK,16/64QAM	QPSK,16/64QAM
MS Power (MPR)	-35~25.7 dBm	-35~25.7 dBm	-35~25.7 dBm	-35~25.7 dBm	-35~25.7 dBm	-35~25.7 dBm	-35~25.7 dBm
Sensitivit (QPSK) (BW 10MHz)	-97dBm	-94dBm	-95dBm	-95dBm	-94dBm	-94dBm	-97dBm
Cell Radius	>5Km	>5Km	>5Km	>5Km	>5Km	>5Km	>5Km

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## 3. Operation Instruction and Installation

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### Main Function

- Android OS: KitKat
- MSM8916 (Quad 1.2 Ghz)
- 16G Bytes (eMMC) + 2GByte LPDDR
- 5.0" on-Cell Touch AMOLED (1280 x 720(HD))
- 13MP Camera + 5MP Front Camera
- GPS / BT v4.0 / USB v2.0 / WiFi (802.11 a/b/g/n/ac)
- Sensors: Gyro/Accelerometer, Proximity, Light, RGB, Hall IC
- Additional :
  - FM Radio, Wifi Direct
  - Charger 5V / 1.55A
  - Data Cable 3.3pi, 1.0m
  - Ear phone 3.5p, 4pin

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## 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

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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.

## **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.

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## 6. Level 1 Repair

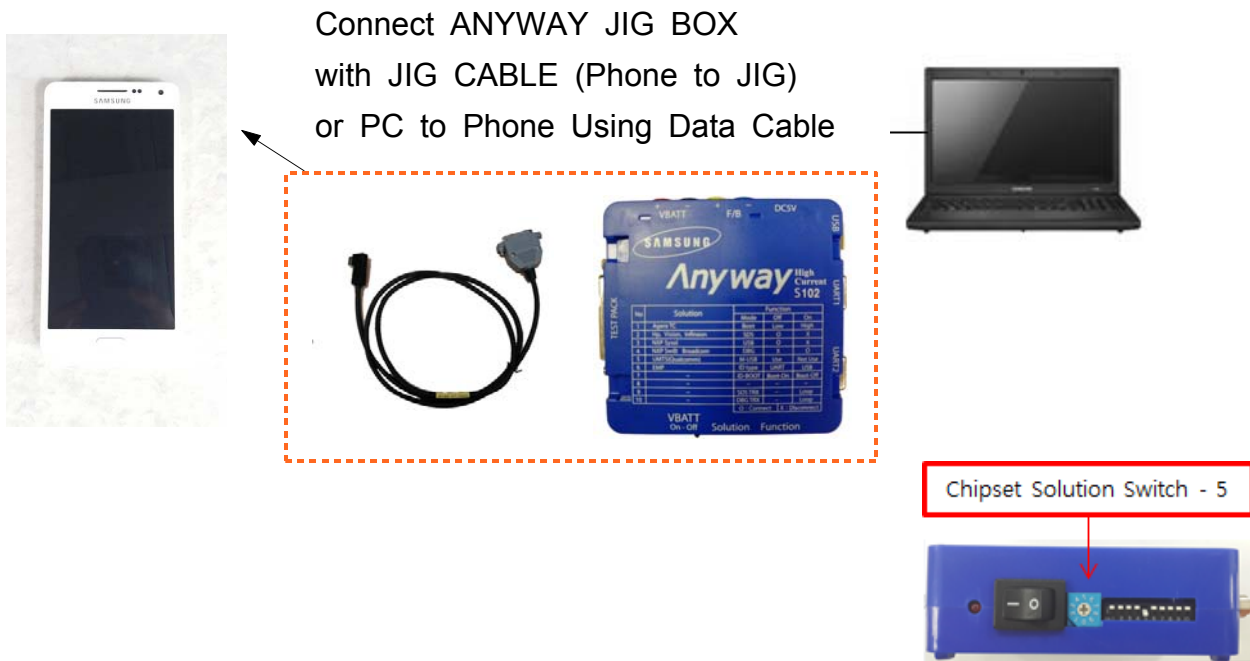
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### 6-1. S/W installation

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

- Installation program: Downloader Program (**Odin3 v3.09.exe with odin3.ini**)
- SM-A500G Mobile Phone
- Data Cable
- JIG BOX (GH81-11888A)
- JIG Cable (GH81-10623A)
- Adapter (GH81-11888K)
- Serial Cable
- Mobile device specific S/W: Binary files

#### ※ Settings

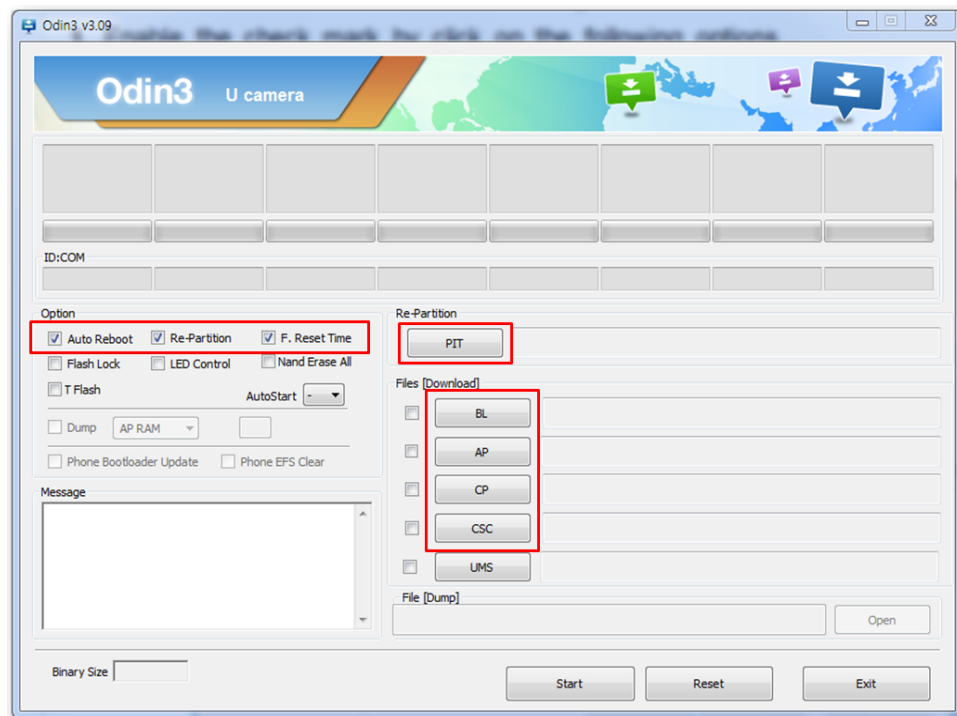




### 6-1-2. S/W Installation Program (Downloader program)

- Open up the S/W Installation Program by executing the **"Odin3 v3.09.exe"**  
**("odin3.ini" file should be in the same folder with odin3 v3.09.exe)**

1. Enable the check mark by click on the following options,
  - Check Re-Partition, Auto Reboot, and F. Reset Time
  - Check PIT
  - Check BL,AP,CP and CSC Files

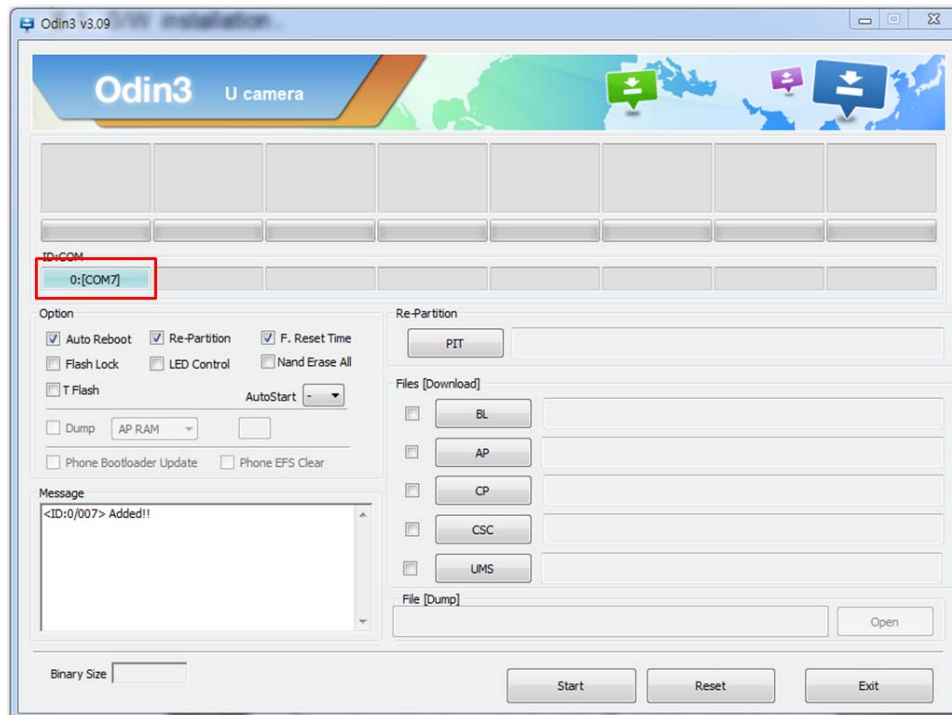


### 2. Enter into Download Mode

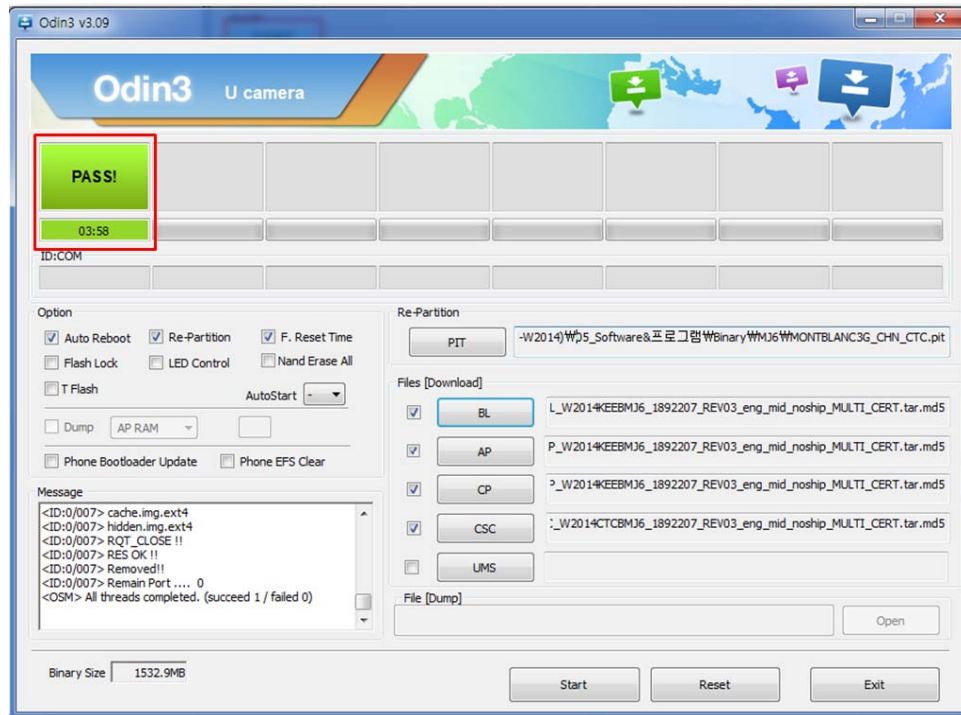
- ① Enter into Download Mode by pressing Volume Down button and ON/OFF Button simultaneously.
- ② Next, press Volume Up button.

3. Connect the device to PC via Data Cable.

Make sure that the one of communication port [ID:COM] box is highlighted in yellow. The device is now connected with the PC and ready to download the binary file into the device.



4. Start downloading binary file 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 file has been successfully downloaded into the device.



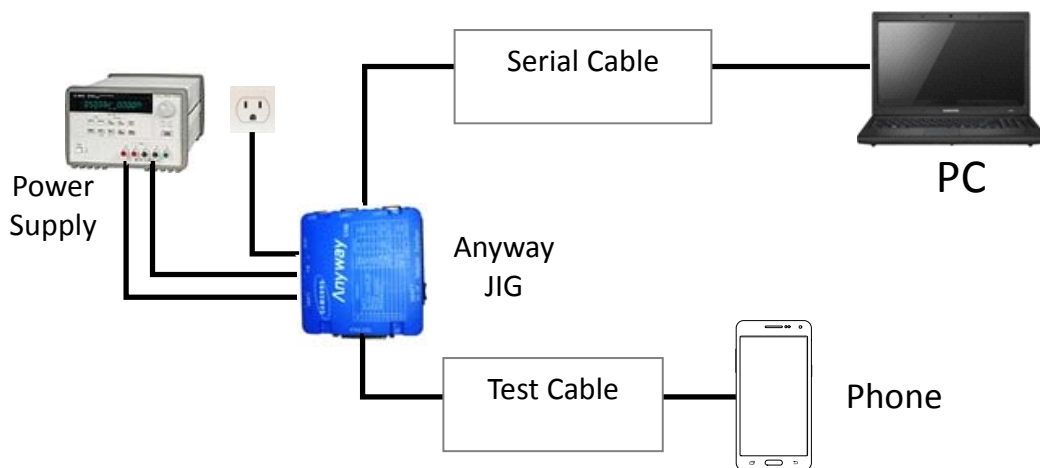
5. Disconnect the device from the Data cable.
6. Once the device boots up, you can check the version of the binary file or name by pressing the following code in sequence;  
**\*#1234#**

## 6-2 IMEI writing

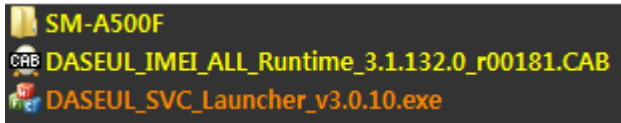
### 6-2-1 Preparation

- 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.(For SM-A500G Model)

#### - H/W

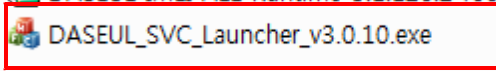


#### - S/W

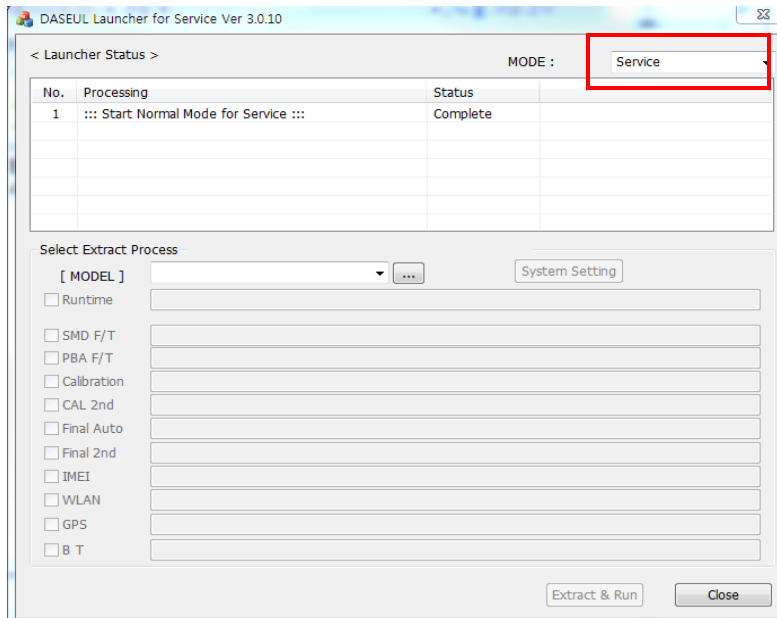
① Library Install	To use Daseul, library files should be installed. Refer to SVC Bulletin “(11-82) Daseul (New IMEI writing Program) Library Install guide_rev1.0”
② Launcher	DASEUL_SVC_Launcher_v3_0_10 or higher -Uploaded on HHPsvc Notice
③ Runtime File	1. DASEUL_IMEI_ALL_Runtime_129_r00165 .CAB or higher -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

## 6-2-2 IMEI writing Process

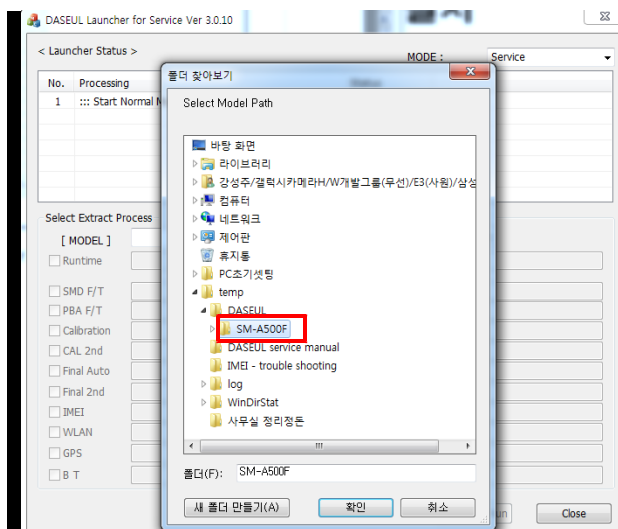
### 1. Run DASEUL\_SVC\_Launcher\_v3.0.10.exe



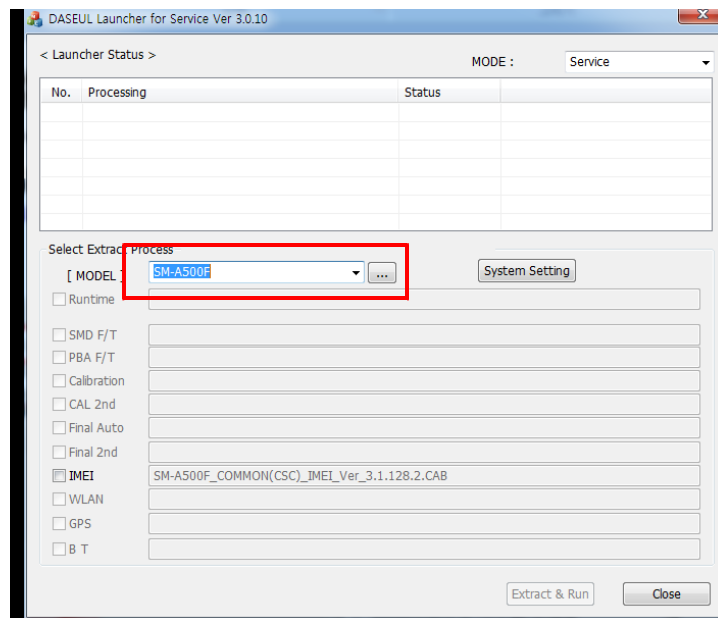
### 2. Select Service Mode



### 3. Click and Select folder where the Launcher exists

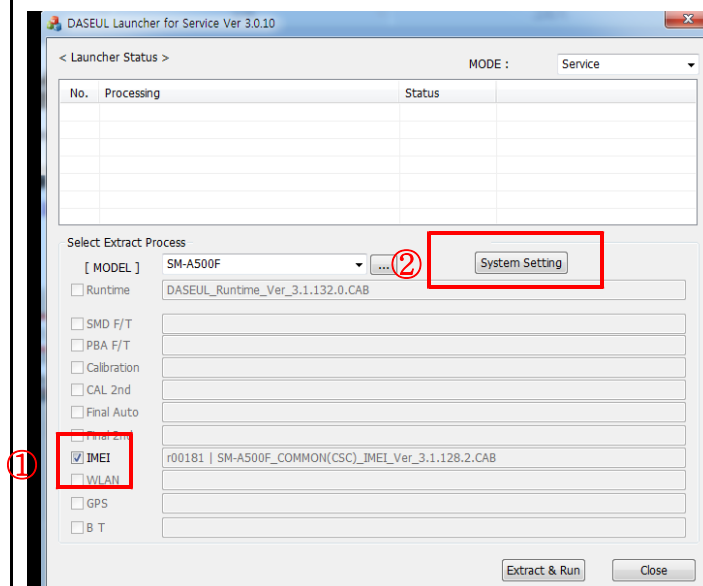


#### 4. Select Model



#### 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. 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

SKD Mode ☐

MultiSharing(CMWS) ☐

Developer Mode ☐

Advanced Separating(ADS) ☐

**Operation Condition**

☒ IMEI SVC&Repair Option

**Model Information**

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

OK CANCEL

#### 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"/>
Merge2G3G Block Rad.	<input type="checkbox"/>	<input type="checkbox"/>

Process Order

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: 10.244.246.165

SKD Mode ☐

MultiSharing(CMWS) ☐

Developer Mode ☐

Advanced Separating(ADS) ☐

Operation Condition

Operation

SeeLog

IMEI SVC&Repair Option

Model Information

Hardware Config

Signal Loss Config.

Loss Calibration

Channel Config.

Tests Calibration

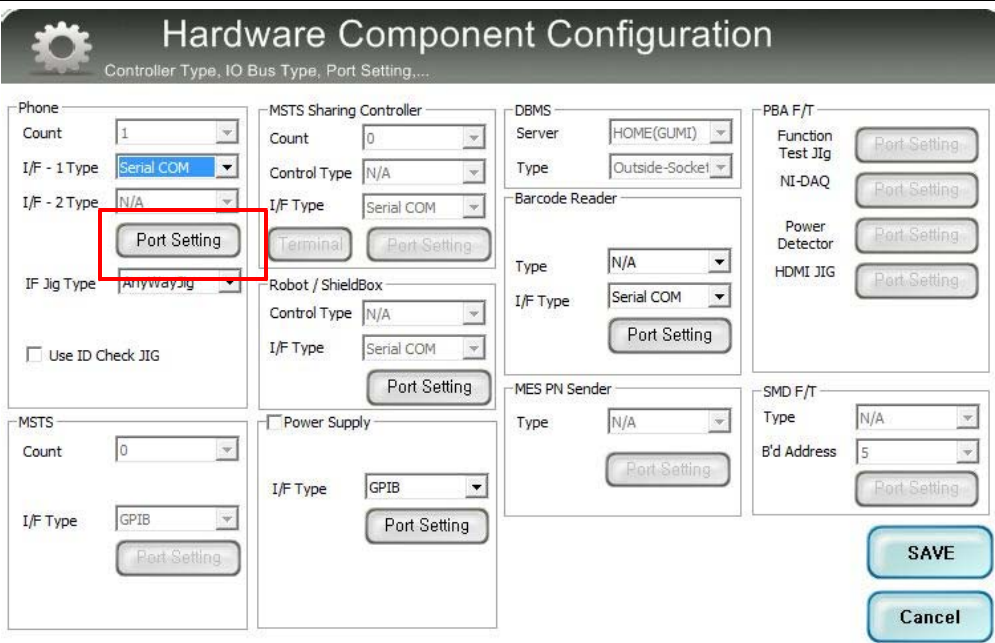
Setting End Band

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  
IF 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

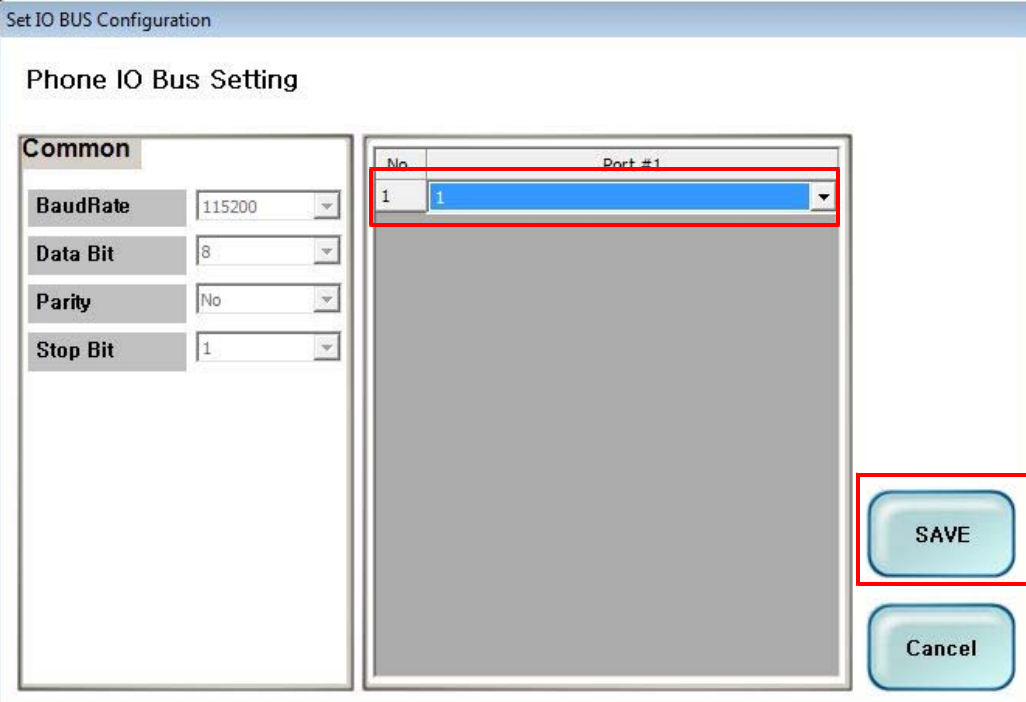
**MES PN Sender**  
Type: N/A  
Port Setting

**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**

10. Select Port Number and SAVE



**Set IO BUS Configuration**

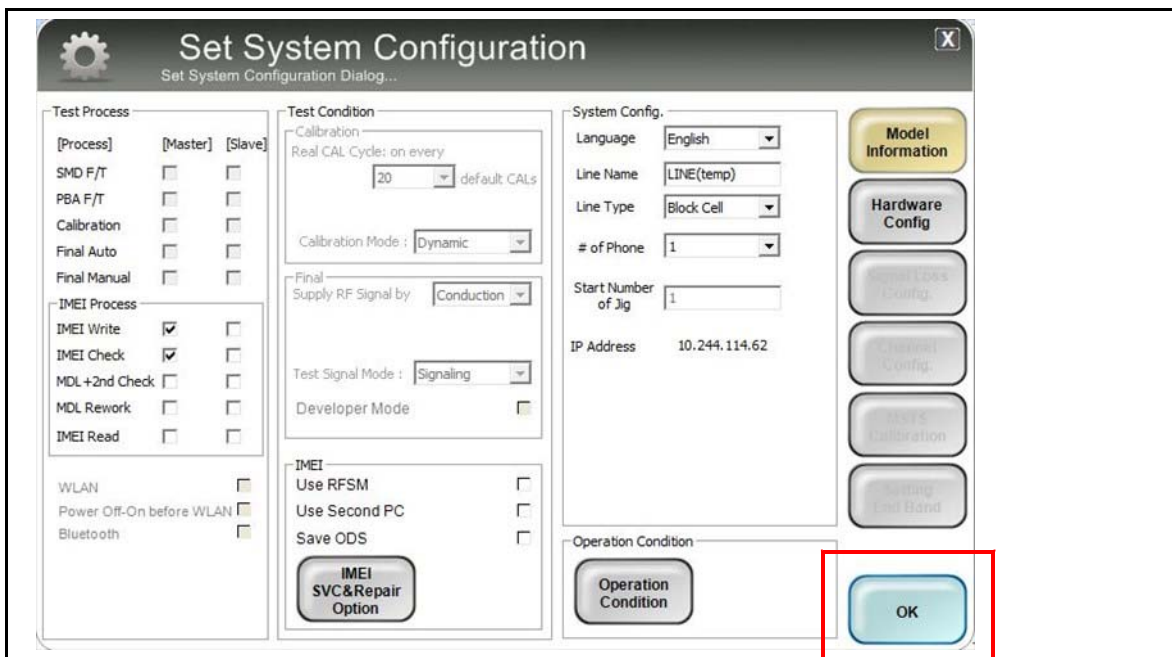
**Phone IO Bus Setting**

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

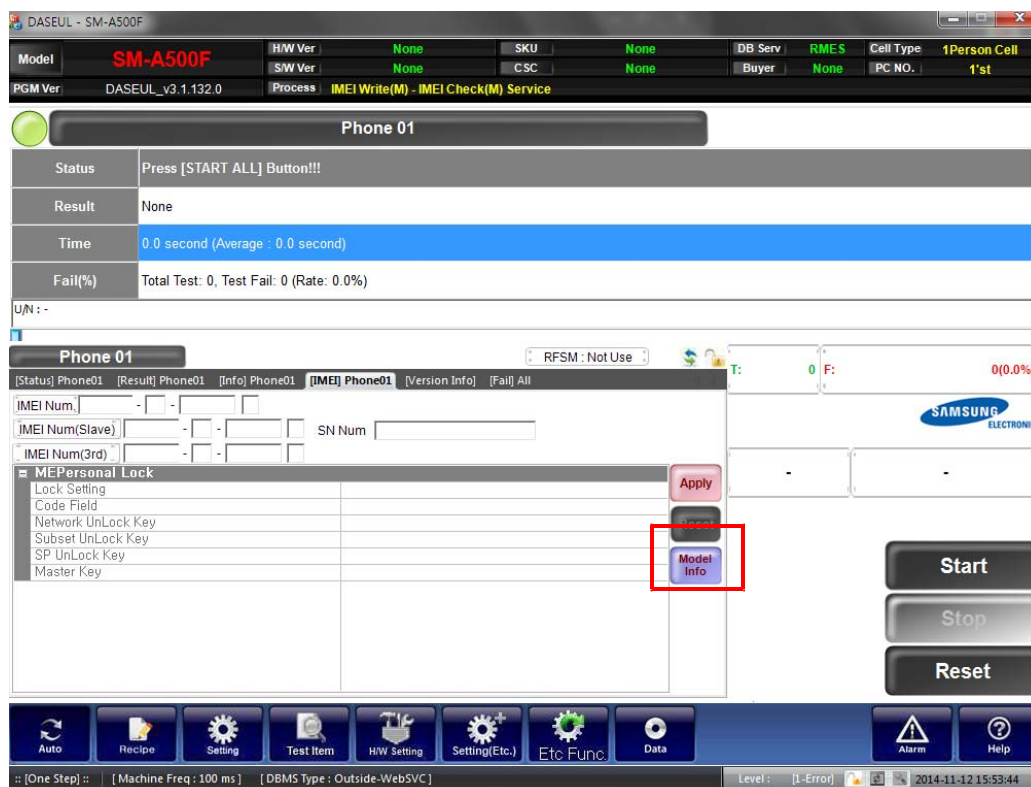
No.	Port #1
1	1

**SAVE**  
**Cancel**

11. Click OK to proceed



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

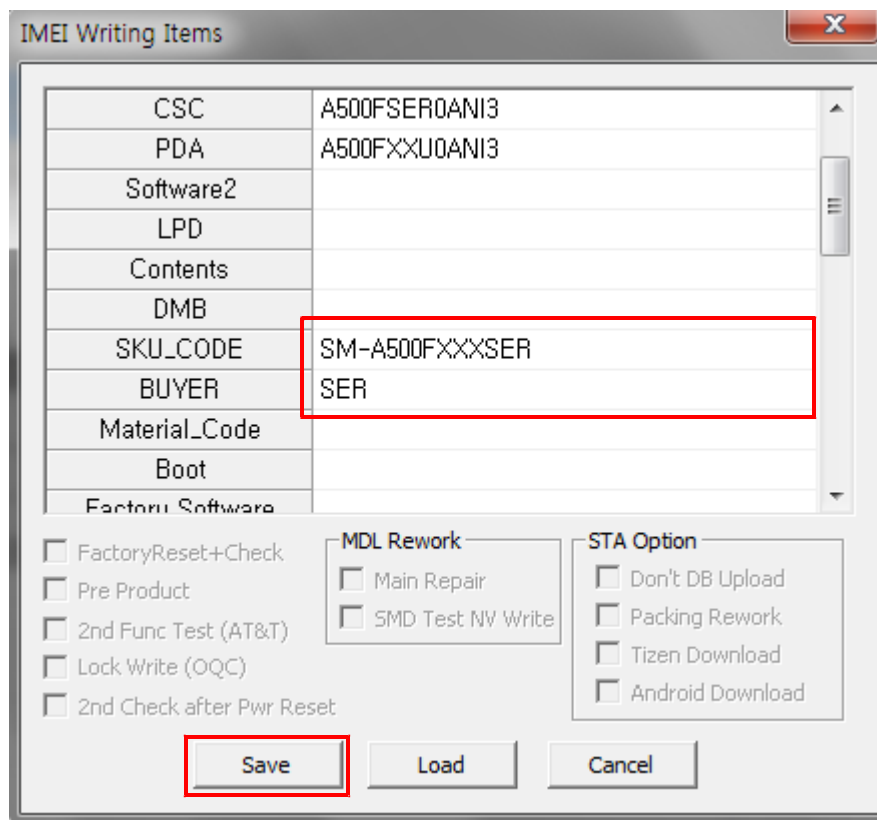


## 13. Click OK



## 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

Model: SM-A500F HW Ver: A500F.03 SKU: SM-A500FXXXSER DB Serv: HOME(GUMI) Cell Type: 1Person Cell  
 PGM Ver: DASEUL\_V3.1.132.0 Process: IMEI Write(M) - IMEI Check(M) Service  
 Buyer: SER PC NO.: 1'st

Phone 01

Status: Wait End of Prior Test.  
 Result: None  
 Time: 0.0 second (Average : 0.0 second)  
 Fail(%): Total Test: 0, Test Fail: 0 (Rate: 0.0%)

UN :-

Phone 01

IMEI Num: 359973 - 06 - 013273 - 4

IMEI Num(Slave): 359974 - 06 - 013273 - 2 SN Num:

IMEI Num(3rd): - - - - -

MEPersonal Lock

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

Apply

Start  
 Stop  
 Pause

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

[One Step] [Machine Freq: 100 ms] [DBMS Type: Outside-WebSVC] Level: [I-Error] 2014-11-12 15:58:16

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

Model: SM-A500F HW Ver: A500F.03 SKU: SM-A500FXXXSER DB Serv: HOME(GUMI) Cell Type: 1Person Cell  
 PGM Ver: DASEUL\_V3.1.132.0 Process: IMEI Write(M) - IMEI Check(M) Service  
 Buyer: SER PC NO.: 1'st

Phone 01

Status: [TEST END]  
 Result: Test Stopped  
 Time: 65.1 second (Average : 0.0 second)  
 Fail(%): Total Test: 0, Test Fail: 0 (Rate: 0.0%)

UN :-

Phone 01

IMEI Num: 359973 - 06 - 013273 - 4

IMEI Num(Slave): 359974 - 06 - 013273 - 2 SN Num:

IMEI Num(3rd): - - - - -

MEPersonal Lock

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

User Login

User ID: js1306.kang  
 Password: \*\*\*\*\*

Login

Message :-

Start  
 Stop  
 Reset

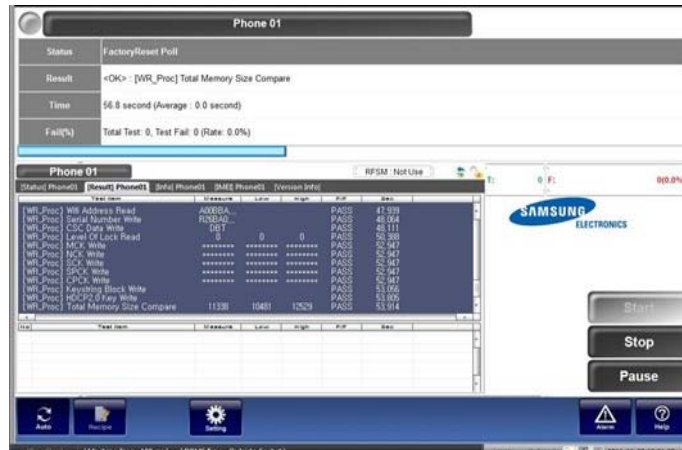
Auto Recipe Setting Test Item HW Setting Setting(Etc.) Etc Func Data Alarm Help

[One Step] [Machine Freq: 100 ms] [DBMS Type: Outside-WebSVC] Level: [I-Error] 2014-11-12 16:00:11

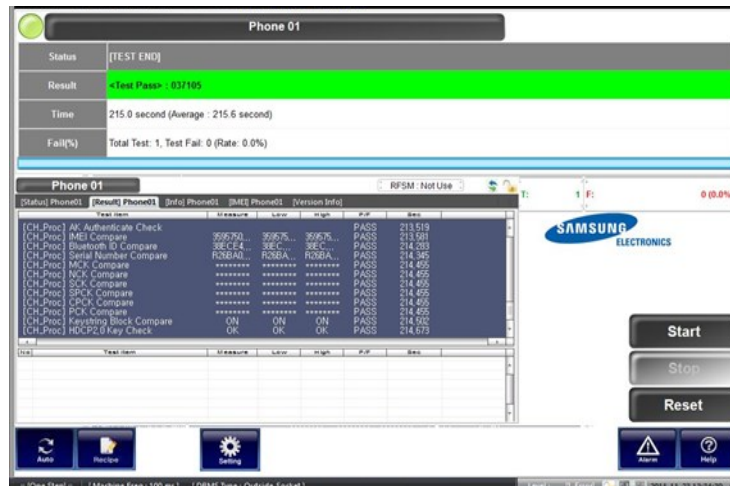
## 17. Connect the phone to Anyway JIG

- ※ When you connect the phone, the phone should be turned off.  
After connecting the phone, the phone will be booted automatically.

## 18. IMEI Writing Proceeding



## 19. IMEI Writing Success



### 6-3. Boot Recovery

#### 6-3-1. Symptom

- No Power on, Unable to enter download mode.

#### 6-3-2. Coverage

- The device which get damaged for bootloader.

#### 6-3-3. Required items in order to do Boot Recovery

- Downloader Program ([Odin3 v3.09.3.exe](#))
- SM-A500G Mobile Phone(Normal device)
- Data Cable
- Micro SD Card (Higher than SDHC type and 4GB)
- Full S/W binary(pit, BL, AP, CP)
- Recovery pit file and bootloader
  - pit file: A5LTE\_EUR\_OPEN.pit
  - boot loader: normal bootloader(BL)

#### 6-3-4. Brief process for Boot Recovery

1. Download recovery pit and bootloader to SD card by using normal device
2. Insert SD card to no power device and try to enter download mode.
3. Download full S/W to the defected device

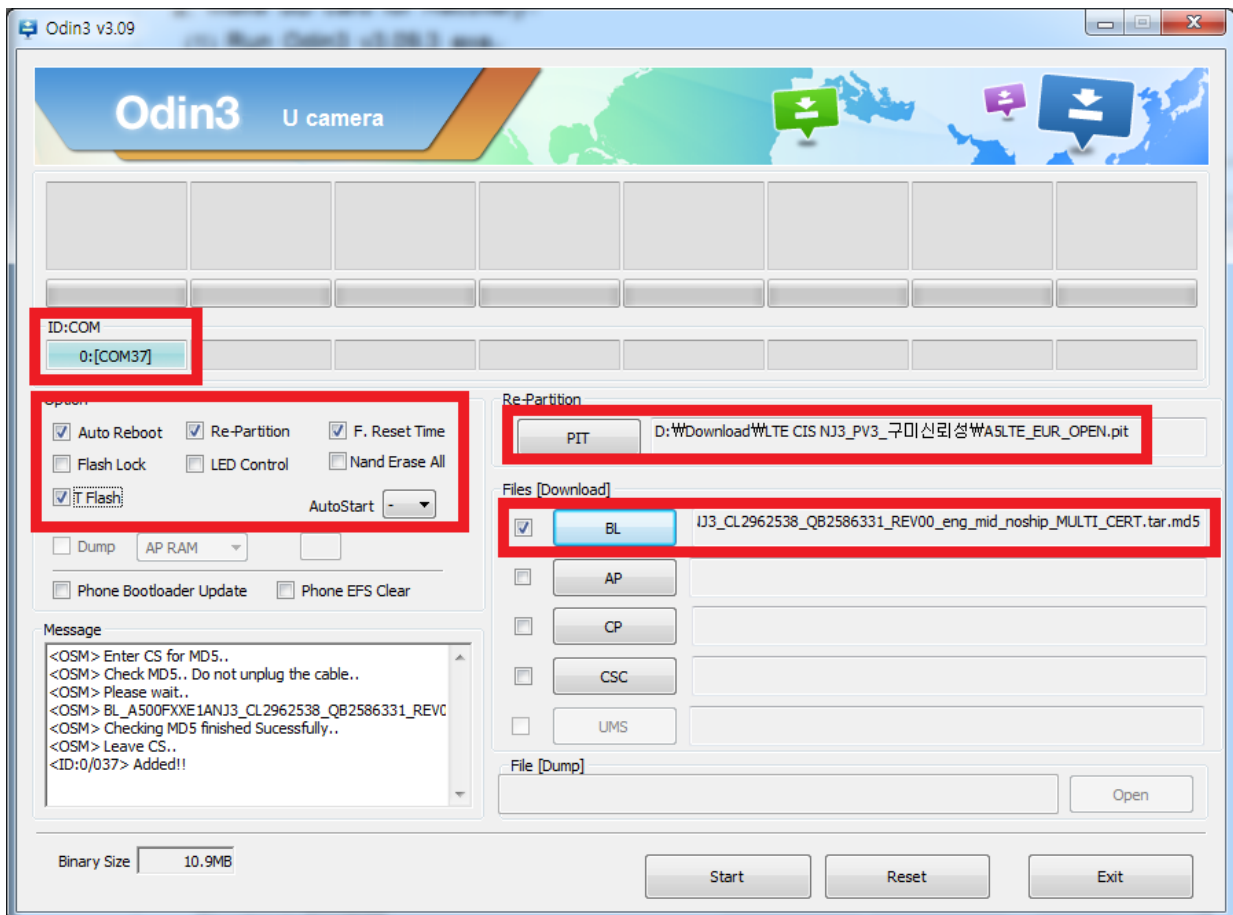
### 6-3-5. Process of Boot Recovery

#### 1. SW download

- (1) Download full S/W(BL, AP, CP, CSC) to normal device.

#### 2. Make SD card for Recovery

- (1) Run Odin3 v3.09.3 exe
- (2) Load "A5LTE\_EUR\_OPEN.pit" in PIT tap and "normal bootloader file" in BL tap.
- (3) Check "T-Flash" option
- (4) Insert SD card to normal device and enter to download mode.
- (5) Connect the device to PC

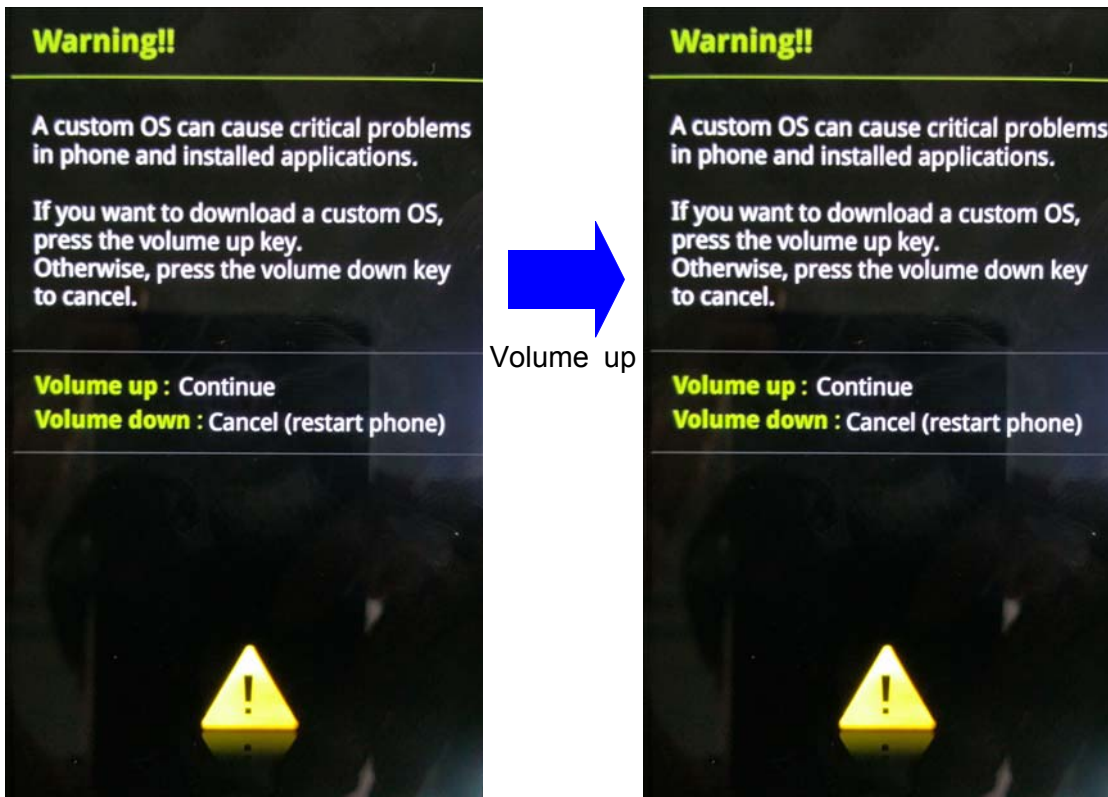


- (6) Click "Start" button to download Recovery pit and bootloader files to SD card.
  - If it is **Pass**, SD card has successfully made for boot recovery.
  - If it is **Fail**, try to this with another SD card.(It would be defect of SD card)

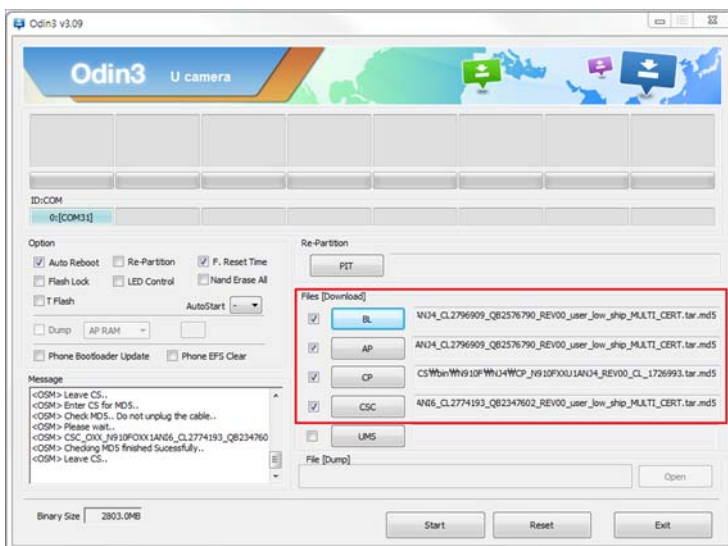


### 3. Boot Recovery for damaged device

- (1) Insert SD card to "No power" device
- (2) Enter to download mode, using key combination(Volume down + Home + Power)
- (3) If the device is successfully recovered, the device will enter download mode.



- (4) After entering download mode, download full S/W to the device including BL(Bootloader), AP(Platform binary), CP(Modem binary) and CSC.





## 6-4. RF Calibration

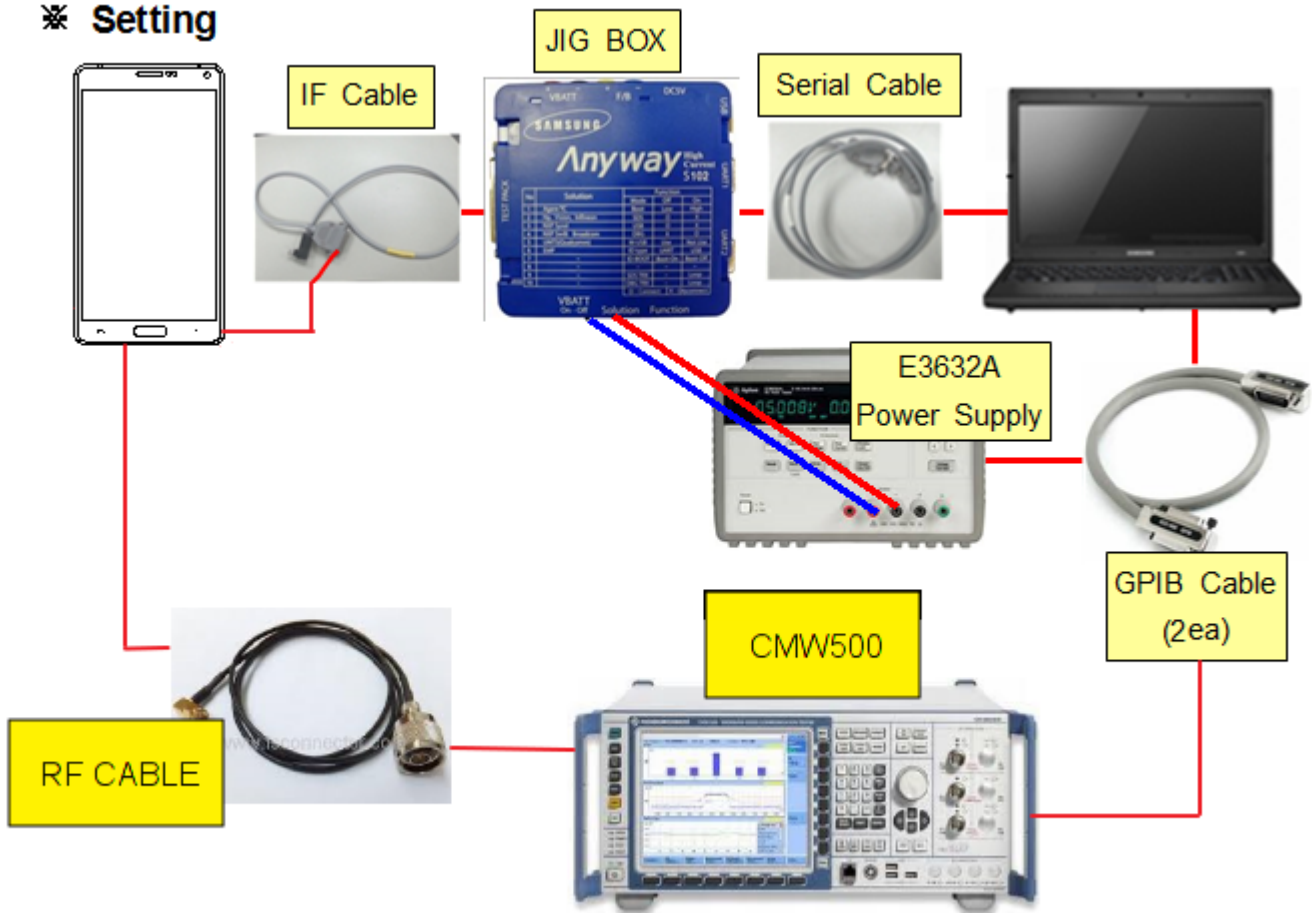
### 6-1-1. Required items in order to calibrate RF

- Installation program: RF Calibration Program
  - Daseul\_Launcher\_vx.x.xx.exe
  - Daseul\_CAL\_ALL\_Runtime\_x.x.xxx.x.CAB
  - Model File (SM-A500G\_OPEN\_CALIBRATION\_VER\_x.x.xxx.xx.CAB)

※ It is required to use the latest program.

- SM-A500 Mobile Phone
- E3632A Power Supply
- JIG BOX (GH81-11888A)
- Adapter (GH81-11888K)
- 1.6T RF Cable (GH81-11456A, 1ea)
- R&S CMW500
- GPIB Cable (2ea)
- IF Cable (GH81-10631A)
- UART Serial Cable

### ※ Setting

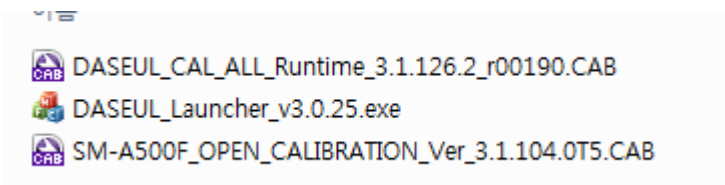


- Table of test cables

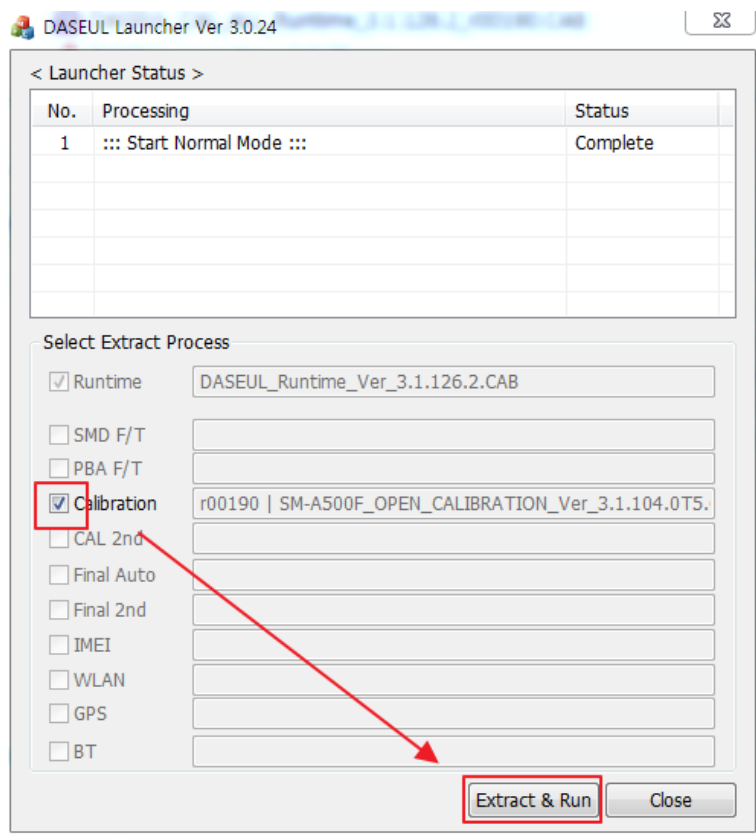
IF Cable	GH81-10631A	GH81-10952A	GH81-11171A	
	11 pin	7 pin (New)	7 pin (Old)	
RF Cable	GH81-11962D	GH81-11962G	GH81-11962C	GH81-11456A
	1.35T, Short	1.35T, Long	1.6T, Short	1.6T, Long
4 Port Divider	GH81-11962A			
	Use / No use			

## 6-1-2. RF Calibration Program

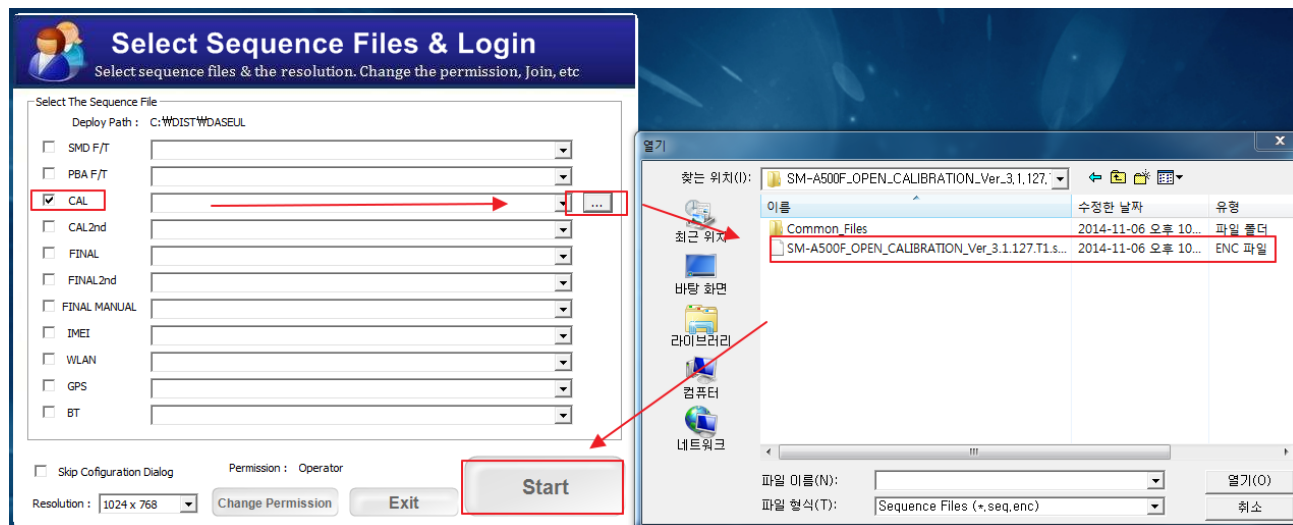
1. Run the RF Calibration Program Launcher, '[DASEUL\\_Launcher\\_vx.x.xx.exe](#)'.



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



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



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

**Set System Configuration**

Set System Configuration Dialog...

**Test Process**

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

**Test Condition**

Calibration

Real CAL Cycle: on every  default CALs

Calibration Mode :

CAL2nd Mode :

Final Supply RF Signal by :

**Reset Loss Correction Count**

Test Mode :

WLAN

Test Mode :

IMEI

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

**System Config.**

Language :

Line Name :

Line Type :

☐ Smart Cloud Cell

# of Phone :

Start Number of UI :

Start Number of Jig :

IP Address : 10.244.247.23

SKD Mode ☐

MultiSharing(CMWS) ☐

Developer Mode ☐

Advanced Separating(ADS) ☐

**Operation Condition**

**Model Information**

**Hardware Config**

**Signal Loss Config.**

**Loss Calibration**

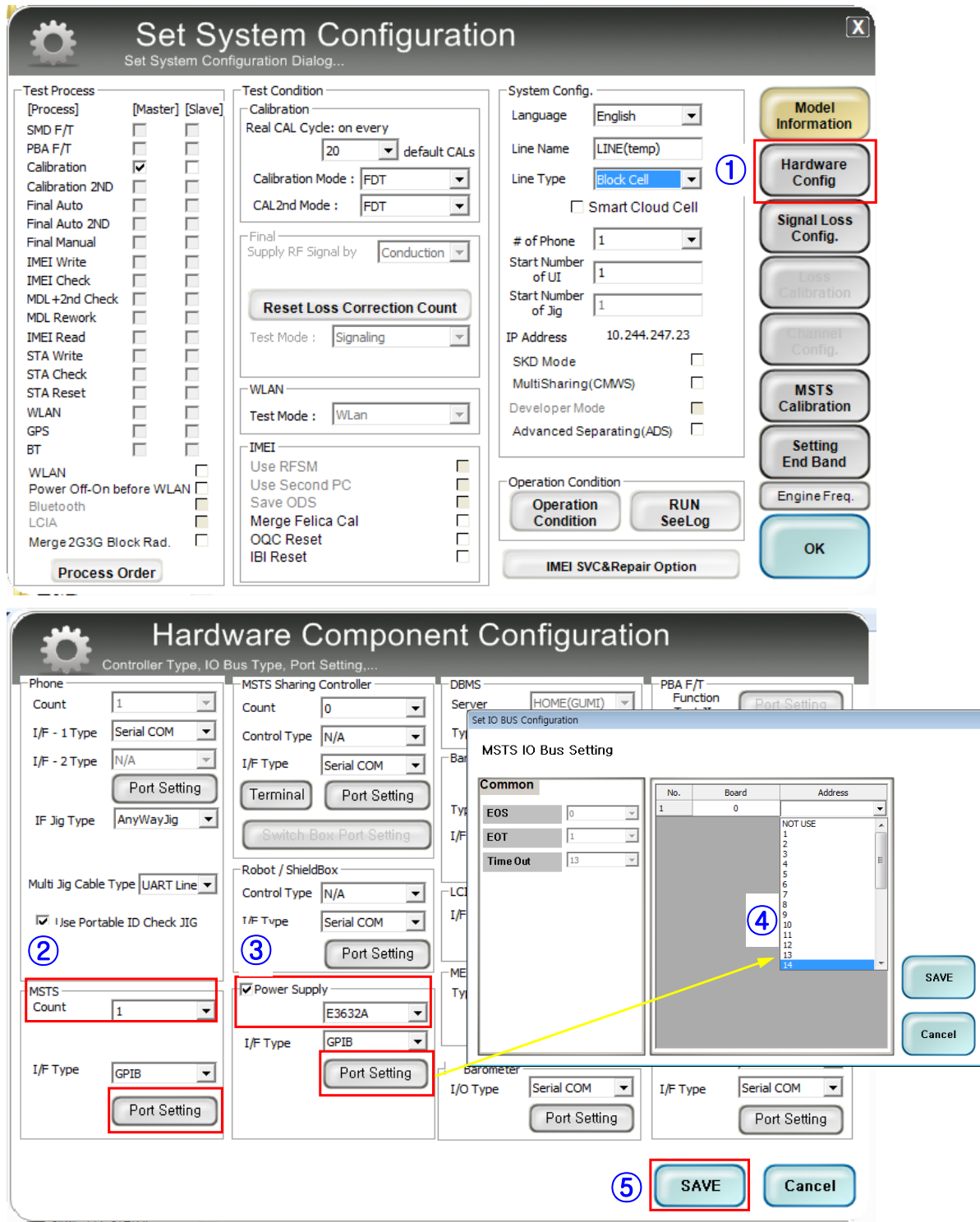
**Channel Config.**

**MSTS Calibration**

**Setting End Band**

**Engine Freq.**

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

