SELF DIAGNOSIS FUNCTION

The units in this manual contain a self-diagnostic function. If an error occurs, the Smart Core Red LED will automatically begin to flash.

The number of times the LED flashes translates to a probable source of the problem.

A definition of the Smart Core Red LED flash indicators is listed in the instruction manual for the user's knowledge and reference.

If an error symptom cannot be reproduced, the remote commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

DIAGNOSTIC TEST INDICATORS

When an error occurs, the Smart Core Red LED will flash a set number of times to indicate the possible cause of the problem.

If there is more than one error, the LED will identify the first of the problem areas.

Result for all of the following diagnostic items are displayed on screen.

If the screen displays a "0", no error has occurred .

<G>: Power supply board, <B>: Main board, <T>: Tcon board, (LD) board,<P>: Panel module, <S>: Speaker, <A>: Power Adapter, <D>: DPS 4K BE board, <T>: Temperature Board

RED LED blinking count	Detection Items
2x	<G/B/A> Main 12V over voltage [MAIN_POWER]
3x	<B> Main 5.0V failure [DC_ALERT]
	<B/S> Audio amp. protection [AUD_ERR]
4x	<LD/P/D> LED driver failure/LED voltage protection [LD_ERR] *<LD/P/D>Error detection of the I2C communication between the Main device and the LD IC.[BCM_ERR]*
5x	*<P/T/G/B> Panel ID EEPROM I2C No ACK (Also panel power failure is a suspect) [P_ID_ERR]*
	<T> Tcon IC I2C communication error [TCON_ERR]
6x	<G/P/B/LD/D> Backlight failure [BACKLIGHT]
7x	Over temperature protection [TEMP_ERR] <B/T> Temp. sensor I2C No ACK [TEMP_ERR] <B/D> V By One lock error between Main device and 4KBE device [4KBE_ERR] <B>4KBE device UART communication error detection.
8x	<B/D> Software error [SW_ERR]

Red italic: detect at startup sequence only.
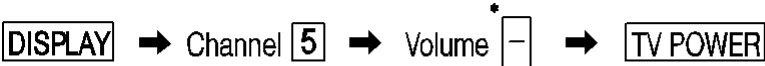
[SELF DIAGNOSTIC SCREEN DISPLAY]

Format of error timestamps
YYMMDDhhmmss (in UTC)
Example:
120823132523 -> Aug 23 2012 13:25:23 UTC
* Only when time is set, an error timestamp
is saved.

" These error item
does not work."

Smart Core Red LED
blinking count

• Panel Operation Time is recorded every 30 min,
but Total Operation Time is recorded every 1 hr.
Therefore, the panel op. time might become larger than the total op. time.

Total Operation Time [hr] – Boot Count – Panel Operation Time [hr]

Error Naming

Error count

SELF CHECK

Back

002	MAIN_POWER	000000000000	000000000000	000000000000	000
003	DC_ALERT	000000000000	000000000000	000000000000	000
003	AUD_ERR	150101000018	150101000018	150101000018	003
003	HDMI_EQ	150101000123	150101000045	150101000045	003
003	TU_DEMOD	150101000218	150101000223	150101000105	003
004	LD_ERR	000000000000	000000000000	000000000000	000
004	BCM_ERR	000000000000	000000000000	000000000000	000
005	TCON_ERR	150101000504	000000000000	000000000000	001
005	P_ID_ERR	000000000000	000000000000	000000000000	000
006	BACKLIGHT ERR	000000000000	000000000000	000000000000	000
007	TEMP_ERR	150101000200	150101000002	000000000000	002
007	4KBE_ERR	000000000000	000000000000	000000000000	000
008	SW_ERR	000000000000	000000000000	000000000000	000

00005   00414   00002

[Home]Exit

Error
timestamp for
last recorded
error

Error
timestamp for
second last
recorded error

Error
timestamp for
3rd last
recorded error

For errors with symptoms such as "power sometimes shuts off" or
"screen sometimes goes out" that cannot be confirmed,
it is possible to bring up past occurrences of failure for confirmation on the screen:
In standby mode, press buttons on the remote commander sequentially in rapid
succession as shown below:

DISPLAY ➡ Channel 5 ➡ Volume − ➡ TV POWER

* : Note that this differs from entering the service mode (volume +)

Since the diagnostic results displayed on the screen are not automatically cleared, always check the self-diagnostic screen.
After you have completed the repairs, clear the result display to "0".

Clearing the Self Check Diagnostic List
Panel operation time :   Press the Channel 7 => Channel 0 .

To exit the Self Diagnostic screen...
*If you want to finish service mode app, do AC OFF/ON
→Service mode app is disable perfectly
*if you want to move home menu, push <HOME>button
→Service mode app do background(not disable perfectly)

NOTE:
This model does not have the function to clear the error history of self-diagnostic screen
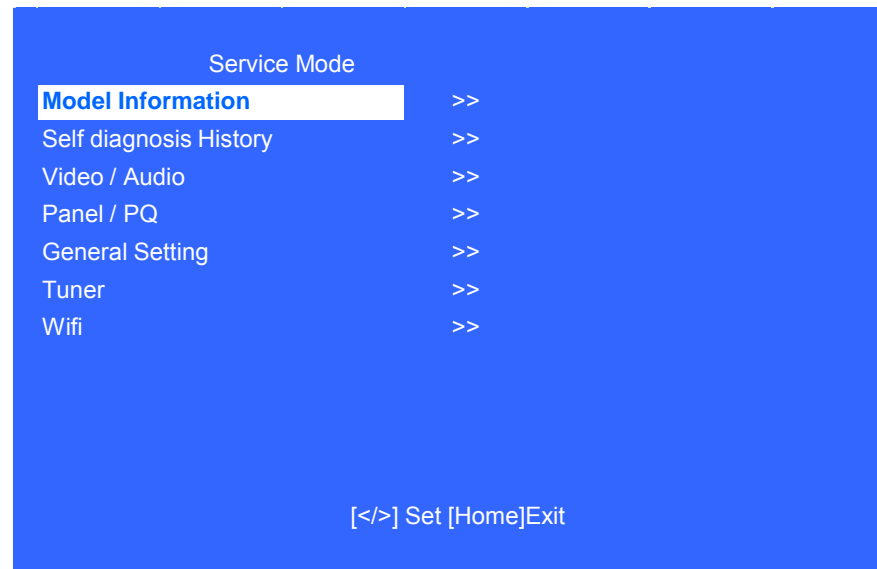by remote such as press the Channel 8 => Channel 0.

ADJUSTMENT

HOW TO ENTER SERVICE MODE

1) Turn on the main power switch to place the set in standby mode.

2) Press the buttons on the remote commander as follows, and entering service mode.

$\boxed{\text{DISPLAY}}$ ➡ Channel $\boxed{5}$ ➡ Volume $\boxed{+}$ ➡ $\boxed{\text{TV POWER}}$

3) Service mode display.

```
                    Service Mode
     Model Information              >>
     Self diagnosis History         >>
     Video / Audio                  >>
     Panel / PQ                     >>
     General Setting                >>
     Tuner                          >>
     Wifi                           >>




                [</>] Set [Home]Exit
```

4) How to use the remote commander.

Function	The flow of control
Service mode on	<Display><5><Vol Up><Power>
Service mode off	AC plug OFF/Menu*
Item up / down	<↑>/ <↓>
Item select left/right	<←>/<→>
Execute	<OK>

*When finished the operation of service mode , please AC Plug OFF/ON the TV set.
 If you don't do AC plug OFF/ON, remain the Service Mode App and User can see the Service Mode after RC ON.
 (Refer the previous page.)

SOFTWARE VERSION

1) In Service Mode, select "Model Information", press "Enter" or "→" button to enter Status Information.

```
        Service Mode
 Model  Information        >>
 Self diagnosis History    >>
 Video / Audio             >>
 Panel / PQ                >>
 General Setting           >>
 Tuner                     >>
 Wifi                      >>



        [</>] Set [Home]Exit
```

```
            Model

 Status Information        >>
 Model Information         >>
 Model Number Setting      >>
 SERIAL NUMBER EDIT        >>




        [</>] Set [Home]Exit
```

```
 Main Micro
   SW Version:        PKG2.011.0010NAB
   NVM Version:       0001 UC2
   Boot Version:      V1.000
   PQ Version:        102100006
   AQ Version:        AQ1.100
 <Ext>
   exFRC:             00.00.00.00
   CameraVID:         0
   CameraPIC:         0
   CameraFW:          0
 4k BE
   MLFW:              SF1.002
   MAFW:              SF0.360
   ADSP:              SF0.501
   NDAT:              SD0.370
   PDAT:              SD0.370
   BDAT:              SD1.011
   BCM:               SD-------
   FDAT:              SD0.002
   UDAT:              SD0.000
   BDIX:              SD0.370
```

2) Press "Enter" or "Return" button to return to Service Mode.

```
        Service Mode
 Model Information         >>
 Self diagnosis History    >>
 Video / Audio             >>
 Panel / PQ                >>
 General Setting           >>
 Tuner                     >>
 Wifi                      >>




        [</>] Set [Home]Exit
```

SERIAL NUMBER EDIT (1)

1) In "Service Mode", select "Model Information" by pressing "↑" or "↓" then pressing "Enter" or

   "→" button to enter inside.

2) Select "Serial Number Edit" by pressing "↑" or "↓" button then pressing "→" button.

3) Press "↑" or "↓" to input numbers.

4) After user input data , press <Enter> .

   • Pop-up dialog appear to confirm input data correct

   • **Serial Number can be set ONLY ONCE**

5) Press "→" or "←" button to select YES or NO.

   Select YES if input data is correct.

   Select NO if input data is incorrect.

   Press <Enter> to save answer.

Service Mode	
Model Information	>>
Self diagnosis History	>>
Video / Audio	>>
Panel / PQ	>>
General Setting	>>
Tuner	>>
Wifi	>>

[</>] Set [Home]Exit

Service Mode	
Status Information	>>
Model Information	>>
Model Number Setting	>>
Serial Number Edit	_ _ _ _ _ _ _

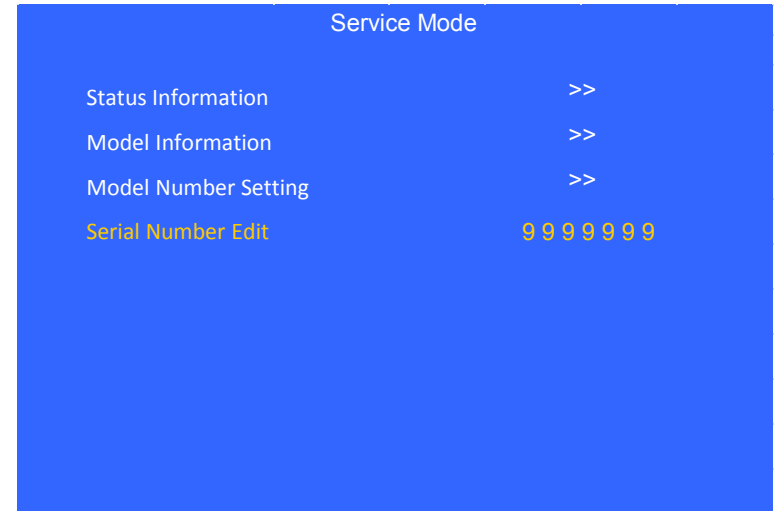| Service Mode	
Status Information	>>
Model Information	>>
Model Number Setting	>>
Serial Number Edit	9 9 9 9 9 9 9

Input Data correct?

Yes   **No**
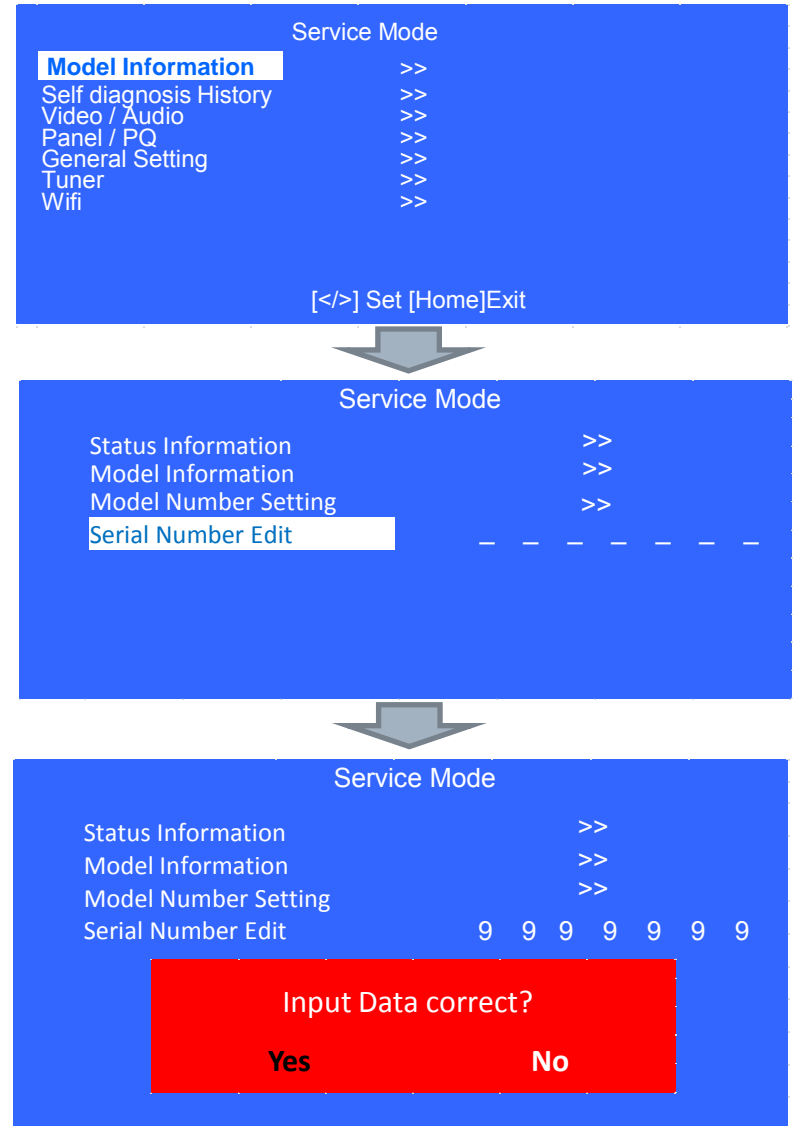
SERIAL NUMBER EDIT (2)

If YES is selected, the input data is saved into EEPROM.

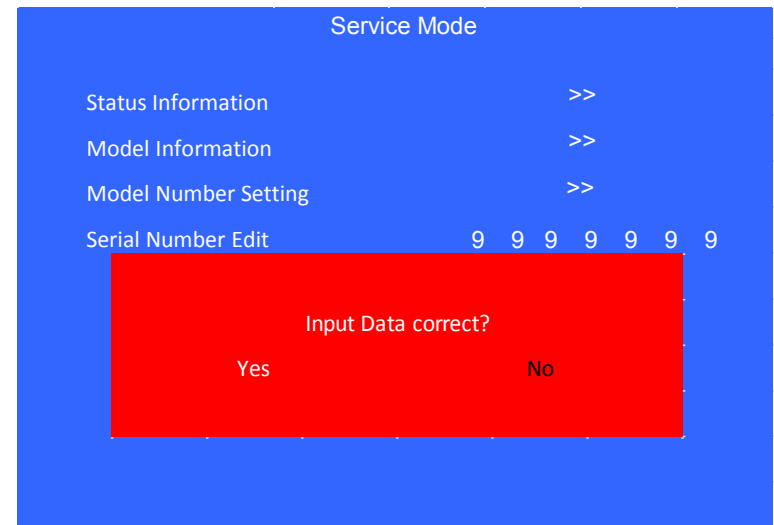SERIAL NUMBER EDIT is greyed out and the serial number that has been input is displayed.

User will not able to edit anymore.

Service Mode	
Status Information	>>
Model Information	>>
Model Number Setting	>>
Serial Number Edit	9 9 9 9 9 9

If NO is selected, the input data is not saved into EEPROM.

The serial number that has been input is displayed.

User can still edit the Serial Number.
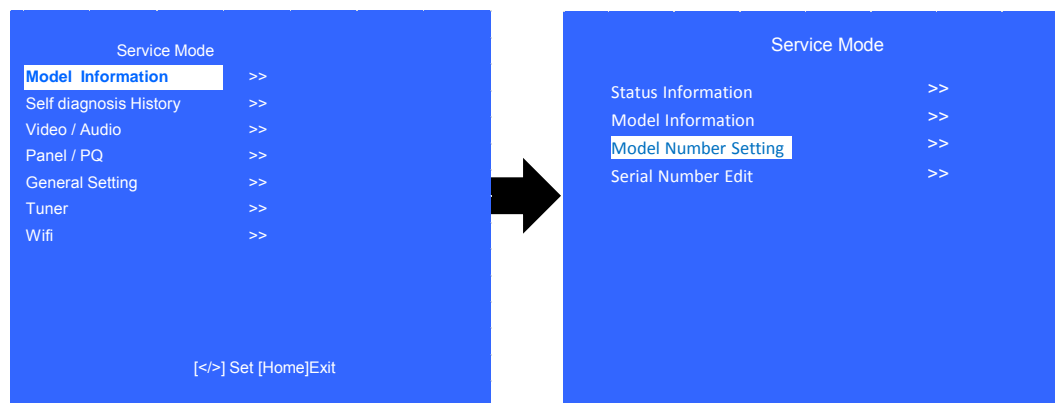
Service Mode	
Status Information	>>
Model Information	>>
Model Number Setting	>>
Serial Number Edit	9 9 9 9 9 9 9

Input Data correct?

Yes   No

MODEL NUMBER SETTING

1) In "Service Mode", select "Model Information" by pressing "↑" or "↓"   then pressing "Enter" or "→" button to enter inside.

2) Select "Model Number Setting" by pressing "↑" or "↓" button then pressing "Enter" or "→" button.

3) Press "↑" or "↓" arrow key to scroll Product Name Candidate.

> ➢ (e.g. KDL-40X500B CO1,KDL-40X500C BR6)

4) Select one Product Name from the list, press <Enter> will pop dialog to inform user to confirm data. Model dependent settings will be overwritten into EEPROM.
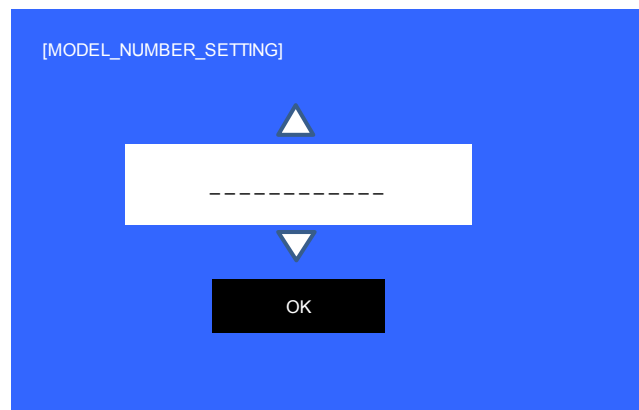
WB ADJUSTMENT

(Please apply when the Main board or panel is replaced.)

In "Panel/PQ" service mode.

a. Go to "WB Adjustment" category by "↑" or "↓".

Service Mode

Model Information	>>
Self diagnosis History	>>
Video / Audio	>>
Panel / PQ	>>
General Setting	>>
Tuner	>>
Wifi / BT	>>

[</>] Set [Home]Exit

Panel / PQ

Back	<<
WB Adjustment	>>
WB/Mura/CUC data transfer	>>

[</>] Set [Home]Exit

c. To change data , press "←" or "→" on remote commander.

Back	<<		
R WB Gain	<[	0	]>
G WB Gain	<[	0	]>
B WB Gain	<[	0	]>
R WB Offset	<[	0	]>
G WB Offset	<[	0	]>
B WB Offset	<[	0	]>

[</>] Set [Home]Exit
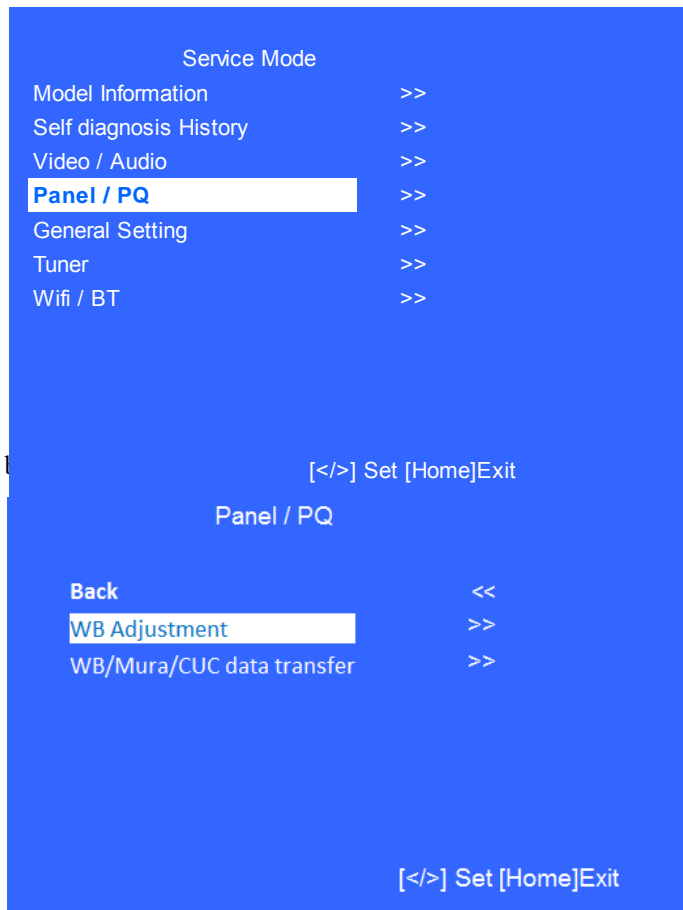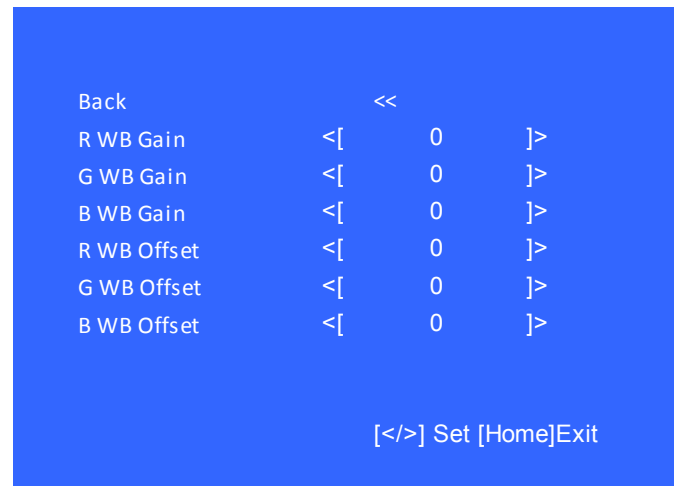
WB/MURA/CUC DATA TRANSFER

(Please apply when the Main board or panel is replaced.)

1. In "Panel/PQ" service mode.

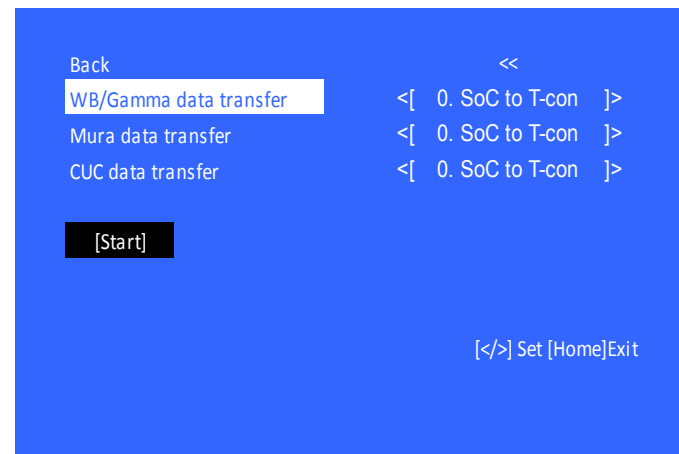   a. Go to "WB/Mura/CUC data transfer" category by "↑" or "↓".

```
              Service Mode
Model Information              >>
Self diagnosis History         >>
Video / Audio                  >>
Panel / PQ                     >>
General Setting                >>
Tuner                          >>
Wifi / BT                      >>




              [</>] Set [Home]Exit
```

```
              Panel / PQ

Back                           <<
WB Adjustment                  >>
WB/Mura/CUC data transfer      >>
```
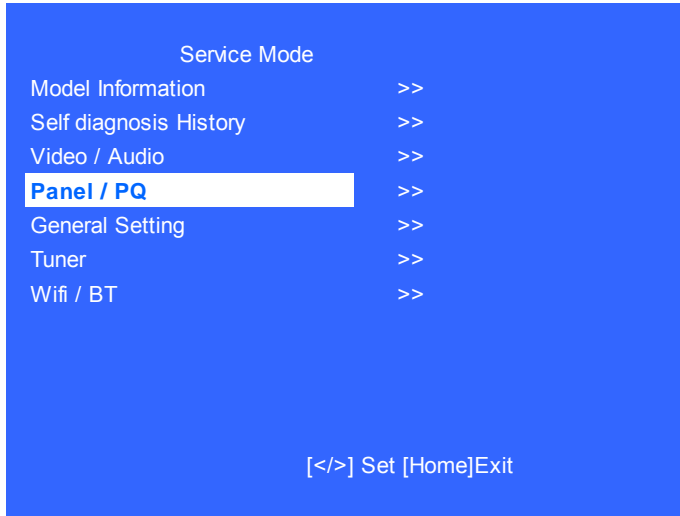
2. In "WB/Mura/CUC data transfer".

    a. Select "WB/Gamma data transfer" by pressing "↑" or "↓" on remote commander.

    b. To change the items, press "←" or "→" on remote commander and press "Enter"

    button.

    Selectable items are:

    0. SoC to T-con

    1. T-con to SoC

    2. Not action

    c. Select "[start]" and press "Enter" button to start transfer.

```
Back                              <<
WB/Gamma data transfer    <[  0. SoC to T-con   ]>
Mura data transfer        <[  0. SoC to T-con   ]>
CUC data transfer         <[  0. SoC to T-con   ]>

  [Start]




                      [</>] Set [Home]Exit
```

*Please refer to another manual "Service Procedure for Panel, Board and Software Change / Upgrade(P/N:98881800x)" for details. GN2SK chassis is the same as GN1T chassis basically.

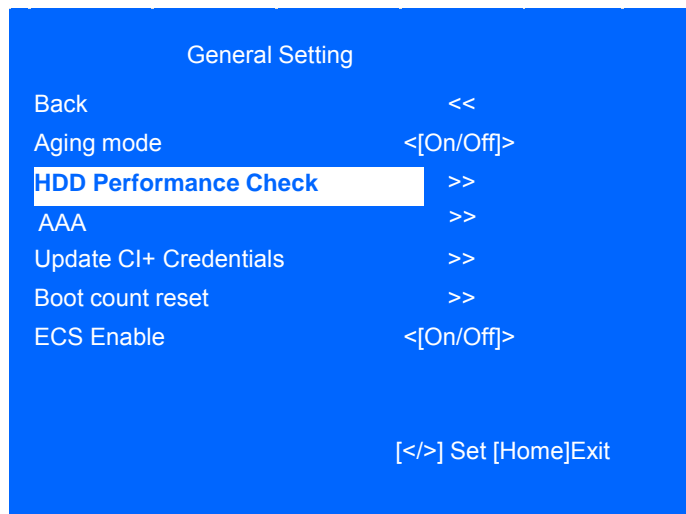|	B-board replace	T-con replace	Panel replace
WB/ Gamma	1.T-con to Soc	0.SoC to T-con	0.SoC to T-con
Mura	1.T-con to Soc	0.SoC to T-con	1.T-con to Soc
CUC	1.T-con to Soc	0.SoC to T-con	1.T-con to Soc

HDD PERFORMANCE CHECK

1. In "Service Mode", select "General Setting" by pressing "↑" or "↓" then
   pressing "Enter" or "→" button to enter inside.

```
              Service Mode
Model Information              >>
Self diagnosis History         >>
Video / Audio                  >>
Panel / PQ                     >>
General Setting                >>
Tuner                          >>
Wifi / BT                      >>




              [</>] Set [Home]Exit
```

2. Select "HDD Performance Check" by pressing "↑" or "↓" then pressing
   "Enter" or "→" button to enter inside.

```
              General Setting
Back                           <<
Aging mode                     <[On/Off]>
HDD Performance Check          >>
 AAA                           >>
Update CI+ Credentials         >>
Boot count reset               >>
ECS Enable                     <[On/Off]>



              [</>] Set [Home]Exit
```
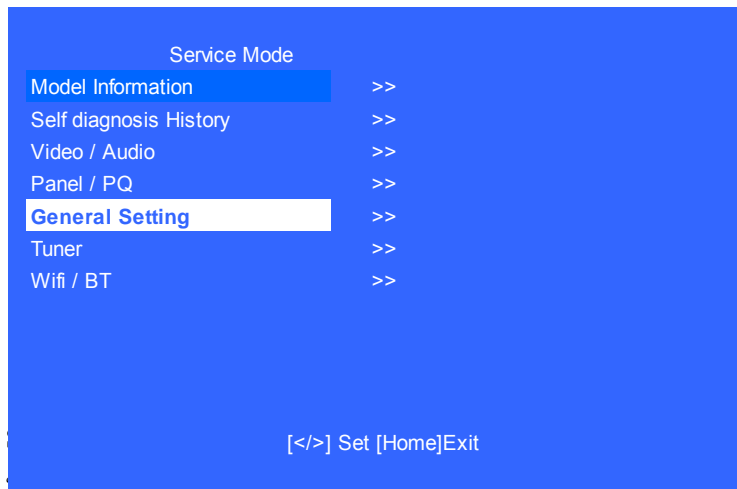
3. A message "Please wait ..." is displayed during performance check processing.

```
              Service Mode


   Please wait...
```

```
   HDD Performance Check

   Result                 <[    NG    ]>
   Back                        <<
```

HDD RE-REGISTRATION
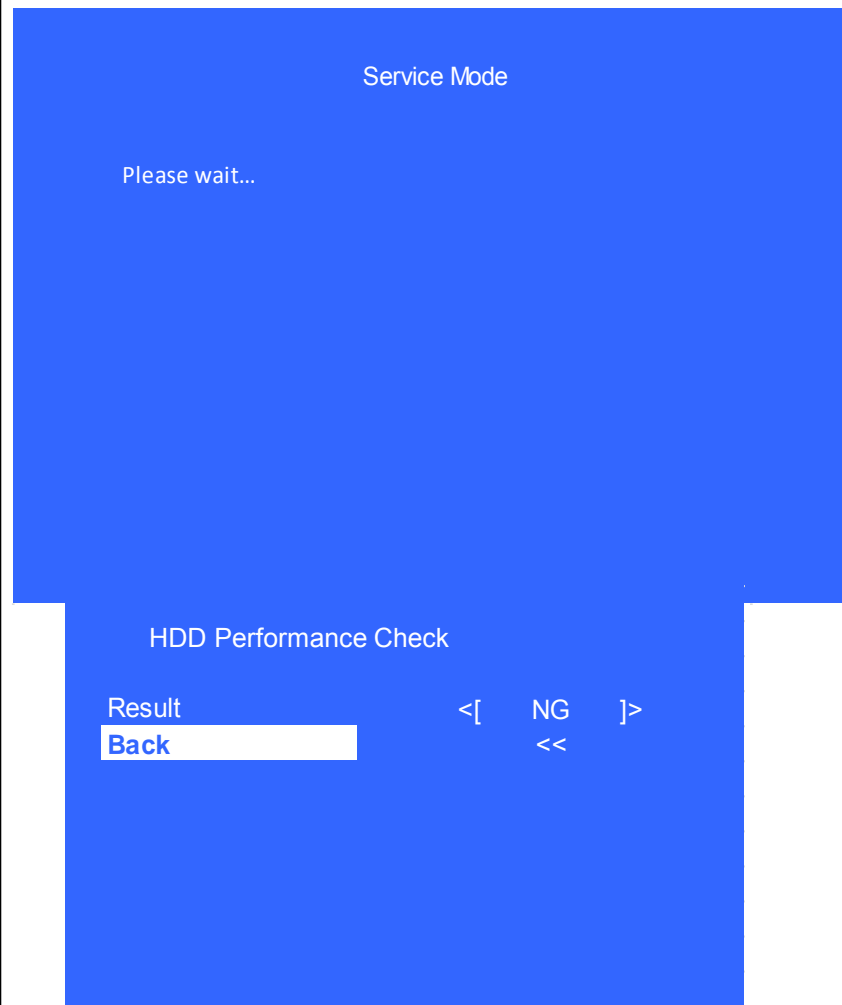
1) In "Service Mode", select "General Setting" by pressing "↑" or "↓" then pressing "Enter" or "→" button to enter inside.

2) Select "AAA" by pressing "↑" or "↓" then pressing "Enter" or "→" button to enter inside.

Service Mode	
Model Information	>>
Self diagnosis History	>>
Video / Audio	>>
Panel / PQ	>>
General Setting	>>
Tuner	>>
Wifi / BT	>>

[</>] Set [Home]Exit

General Setting	
Back	<<
Aging mode	<[On/Off]>
HDD Performance Check	>>
AAA	>>
Update CI+ Credentials	>>
Boot count reset	>>
ECS Enable	<[On/Off]>

[</>] Set [Home]Exit
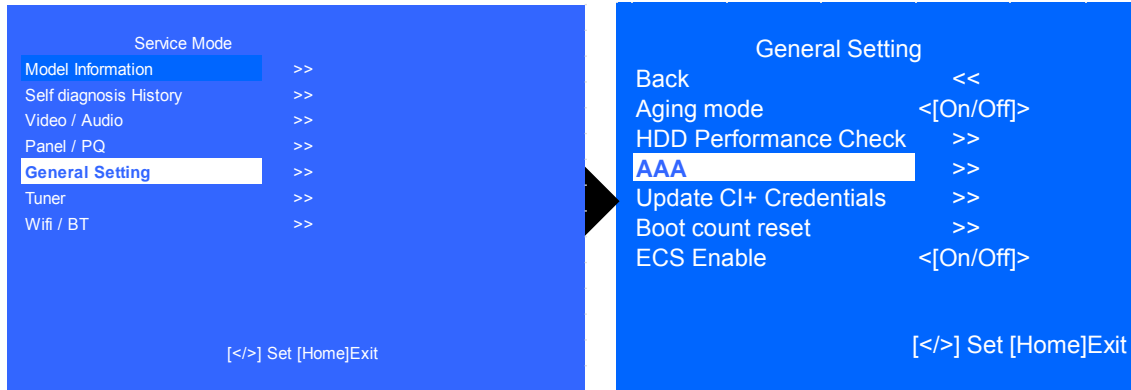
3) Result **OK** or **NG** will be displayed after HDD re-registration is succeed/failed.

HDD Re-Register

Result	<[NG]>
Back	<<
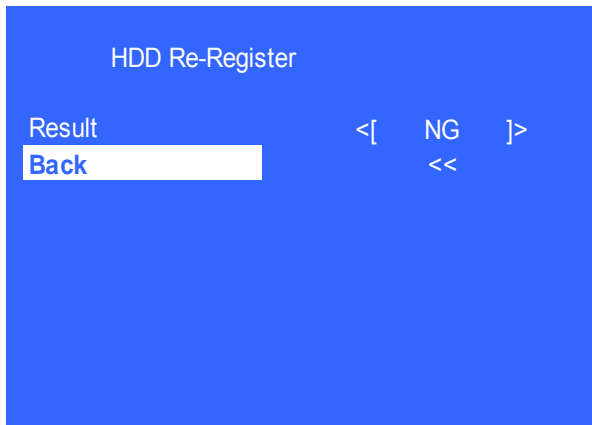
USB UPDATE

*Please refer to another manual "Service Procedure for Panel, Board and Software Change / Upgrade(P/N:98881800x)" for details. GN2SK chassis is the same as GN1T chassis basically.

1:Download USB image and unzip file.

2: copy unzip file to USB memory root folder.

3: USB memory insert TV.

4:USB image is newer soft version.
Automatically show message and start update.
Please follow directions.

4:USB image is not newer soft version.
Automatically show message and start update.
Please follow directions.

System software update

Copying USB update file. Please wait…   46%

Preparing for system software update. During the system software update, the TV will automatically restart.
Please do not remove the USB device until an update complete message is displayed . The update may take up to
30 minutes to complete.

System software update   OK

The system software update is complete .
Some user settings may have changed during the update.
Please remove the USB device and select "OK" to exit

System software update   OK

Your software is up to date
Please remove the USB device and select [OK] to exit

5: finished

5: finished