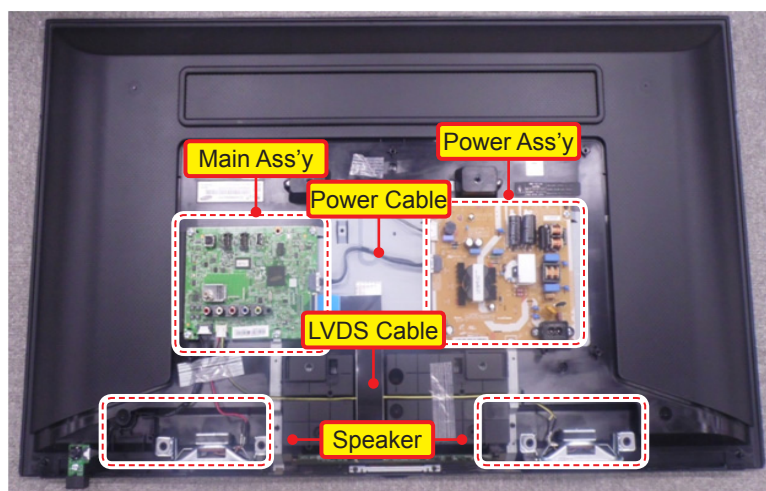


4. Troubleshooting

4-1. Troubleshooting

■ Previous Check

1. Check the various cable connections first.
 - Check to see if there is a burnt or damaged cable.
 - Check to see if there is a disconnected or loose cable connection.
 - Check to see if the cables are connected according to the connection diagram.
2. Check the power input to the Main Board.



Main Board Assy (CN202)			
9	A13V	10	UNDER_DRIVER
7	A13V	8	PWM_DIM
5	A13V	6	SW_POWER_TO_SMPS
3	A13V	4	GND
1	GND	2	GND

3. Check the power in & output between SMPS & Main Board, Main Board & Panel, IP & Panel.

■ How to know it is from Main Board or T-Con when some problems happen

1. No Picture : Backlight is on, but there is no picture and LED indicator in front of TV is blinking.
 - Check the LVDS Cable connection. If still problems, change the T-Con Board and then Main Board step by step.
2. Picture distortion : Enter the service mode → Choose 'SVC' → Check the 'internal pattern.'
 - Enter 'Service Mode.'
 - If you do not have Factory remote control

Power OFF

 →

Info

 →

MENU

 →

Mute

 →

Power On
 - If you have Factory remote control

INFO

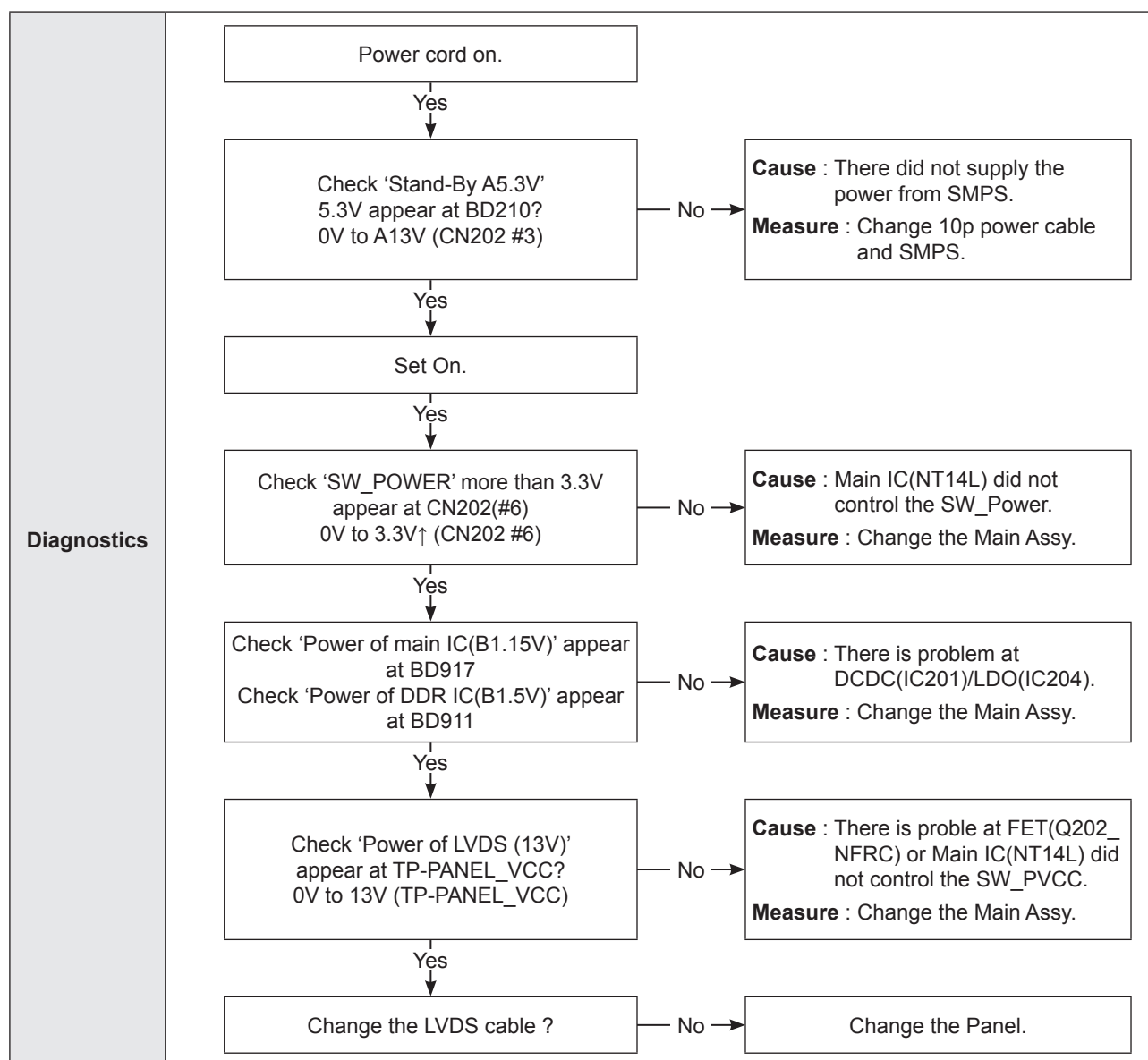
 →

Factory
3. Choose 'SVC.'
4. Choose 'Test pattern.'
5. Select the each pattern and then check all pattern is ok or not.

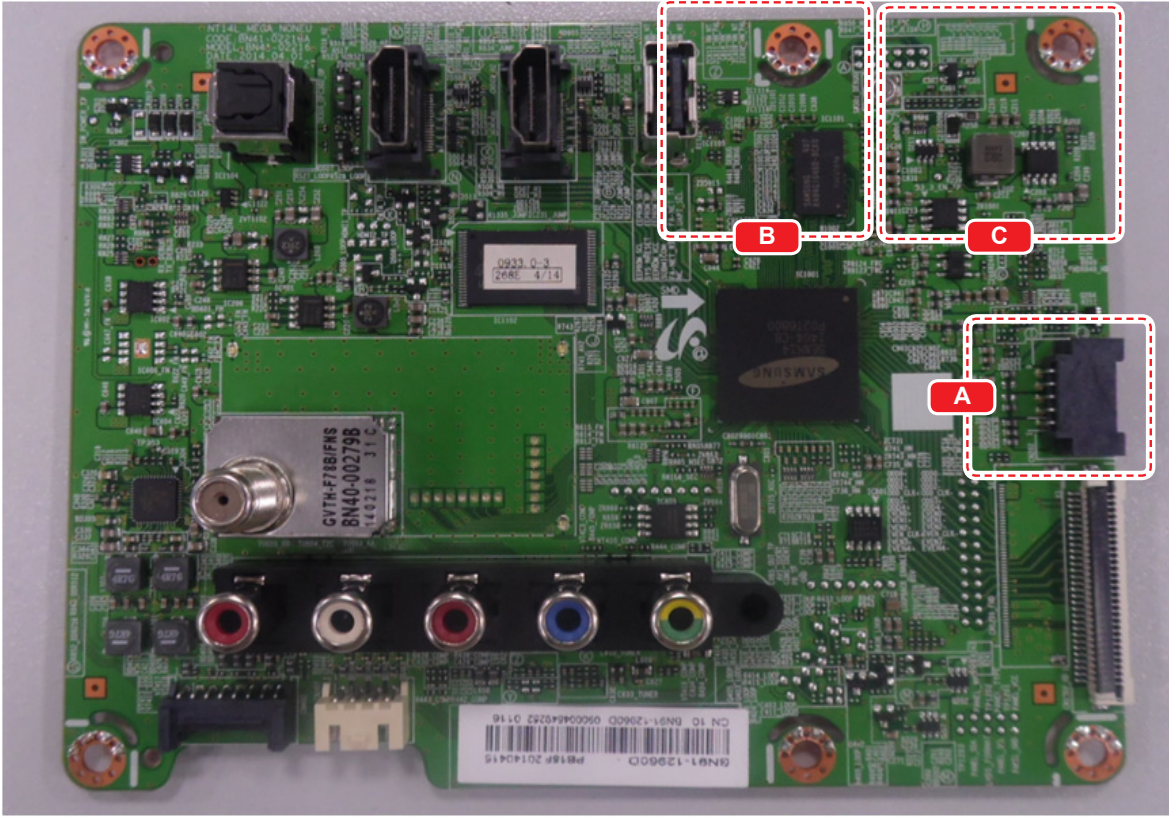
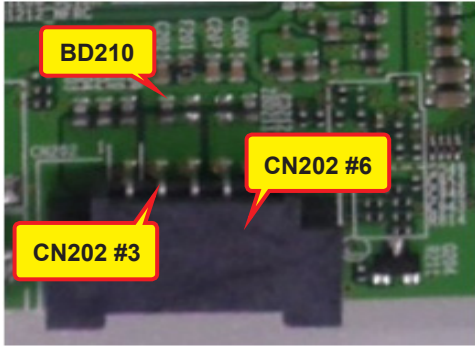
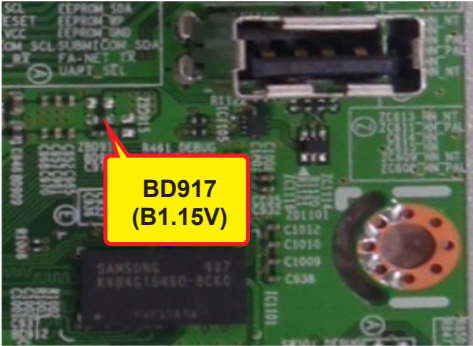
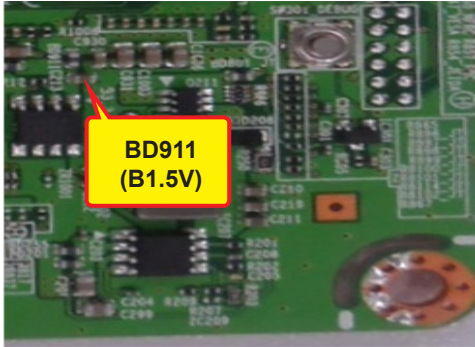


Pattern Status is	Change the	Test Pattern is made by the NOVATEK IC
OK	Main Board	We guess front of NOVATEK IC has problem.
NG	Panel and T-Con Board	We guess back of NOVATEK IC has problem.

4-2. How to Check Fault Symptom



■ Location of Parts

Main Board_Front			
			
Detail			
A		B	
C			

4-3. Factory Mode Adjustments

4-3-1. Detail Factory Option



NOTE

If you replace the main board with new one, please change the factory option as well.
The options you must change are "Type".

■ UN**H4200AGXPE

Model Name		40"	48"
Panel	Vendor	SDC	SDC
	Code	BN95-01722A	BN95-01723A
	Spec.	HH040AGLV1H/V	HH048AGLV1H/V
SMPS	Vendor	SEM	SEM
	Code	BN44-00754A	BN44-00757A
	Spec.	L40G0B_ESM	L48G0B_ESM
MAIN ASSY	Chassis Ass'y	BN91-12960D	BN91-12960L
	PBA Ass'y code	BN94-07319D	BN94-07319L
Byte	Item		
0	Factory Reset	-	
1	Type	40A6AH0S	48A6AH0S
2	Basic Model	UH4200	
3	SVC Model	4200	
4	Local Set	depending on the country	
5	Tuner	ISDB-T	
6	Ch Table	NONE	

4-3-2. Entering Factory Mode

To enter 'Service Mode' Press the remote -control keys in this sequence :

- If you do not have Factory remote control



- If you have Factory remote control



- If you don't have Factory remote control, can't control some menus

■ Initial SERVICE MODE DISPLAY State

Option	T-NT14LIBRC-xxxx.x
Control	T-NT14LAUSS-xxxx
Debug	E-Manual : NLISDBBRH-xxxx
SVC	EDID SUCCESS
ADC/WB	CALIB : AV/COMP/PC/HDMI/
Advanced	Option : 40A6AH0S,BRA_DTV,4200,NONE
	DTP-SDAL-NT14L-xxxx
	RFS:"NT14L xxxx" K/20xx-xx-xx
	KERNEL:xxxx.xxxx,/Onboot: xxxx
	TCON Version:----
	NSP-DTVTD-xxxx
	Model: UN40H4200
	Factory Data Ver:xxx
	EERC Version: xxx
	NSP-BP-HAL-xxxx
	NSP-AP-CNC-xxxx
	NSP-AP-MM-xxxx
	NSP-BP-MW-xxxx
	NSP-BP-APP-xxxx
	NSP-PNG-xx-xxxx
	Date of purchase:-/-----

4-3-3. Factory Data



Note

- Black : I should not be possible to adjust or change that does not require a change item
- Blue : Adjustment Services for the corresponding
- Red : Items that are secured

■ Option

Factory Menu Name	Data	Range	Remark	Key
Factory Reset	-	-		
Type	40A6AH0S			
Local Set	Local Set	Select Local		
SW Model	UH4200	UH4200		
BOM Model	4200	4200		
TUNER	S-TC	Not Detected/S_TC/S-T2C/S_TCS2/S_T2CS2		
Ch Table	NONE			
MRT Option				
Front Color	U-S-C-5K			
Lvds Format	JEIDA			
Language_Arabic	-			
Region	-			
PnP Language	-			
WIFI REGION	D	A~Z/AA/AB		
OTN Support	OFF	ON/OFF		
MediaPlay DLNA	...			
TTX	OFF	ON/OFF		
China HD	OFF	ON/OFF		
NT Conversion	OFF	ON/OFF		
Num of DTV	1	0~2		
Num of AV	1	0~3		
Num of COMP	1	0~3		
Num of HDMI	2	0~4		
Num of SCART	0	0~2		
Num of USB Port	1	0~2		
Num of RVU	0	0~1		
Num Of Display	2	1~2		
Num of IPTV	0	0~1		
Num of RUI	0	0~1		
TOOLS Support	313			

4. Troubleshooting

Factory Menu Name	Data	Range	Remark	Key
LNA Support	0	0~1		
24Px4 Support	OFF	ON/OFF		
BD Wise Support	OFF	ON/OFF		
Data Service Support	OFF	ON/OFF		
PVR Support	OFF	ON/OFF		
CI Support	OFF	ON/OFF		
OTA Support	OFF	General/OFF		
LEDMotionPlus Support	OFF	ON/OFF		
Natural Mode Support	OFF	ON/OFF		
Relax Mode Support	OFF	ON/OFF		
HDMI/DVI SEL	2	1~4		
Select LCD/PDP	LCD	LCD/PDP		
Wall Mount	0	0~1		
HV Flip	HV Flip	OFF/HV Flip/V Flip/H Flip		
PVR RECORD NUM	0	0~2		
Light Effect	OFF	ON/OFF		
e-POP Default	ON	ON/OFF		
CAMERA Support	OFF	ON/OFF		
NETWORK Support	Not Support	Not Support/Cable/Ext-Wifi/Int-Wifi/ ExtOnly-Wifi/Error		
EcoSensor Support	ON	ON/OFF		
3D Support	OFF	ON/OFF		
BT Support	OFF	ON/OFF		
BT ADDRESS	Not Support	Not Support		
HP LINE	NONE	Headphone/LineOut/NONE		
Capture Recording Support	OFF	ON/OFF		
JAVA Date Service Support	OFF	ON/OFF		
Engineer option				
Type Of PANEL KEY	Horizontal	Horizontal/Vertical/PDPVertical/ PDPHorizon/None		
5 Way Function Key	R_BOTTOM	L_BOTTOM/R_BOTTOM/L_BACK/R_ BACK/4		
Contents Bar	0	0~1		
Cable Modulation	...			
Standby led on/off	OFF	ON/OFF		
Recognition Support	OFF	ON/OFF		
IF AGC	0	0~10		
D AGC	0	0~10		
PH BW	3	0~10		

Factory Menu Name	Data	Range	Remark	Key
FQ BW	3	0~10		
PH RATE	4	0~10		
PD EN	1	0~10		
PEQ Inx	164			
WF Scale				
Num of Network Stream	0	0~1		
DP V Size	1	0~1		
Backend Device	ECHO_FS	NONE/ECHO_FP/ECHO_FS/PARMA		
BT_AUDIO_ON_OFF	OFF	ON/OFF		
Config_AV_PATH				
V_HDMI IDENT TYPE	2134			
V_HDMI PATH TYPE	BACD			
V_EDID TYPE	LCD_HD	LCD_FHD/LCD_HD		
V_ATV	CVBS_PORT_2			
V_AV1	AV_COMP_G1			
V_AV2	CVBS_PORT_3			
V_COMP1	ADC_PORT_1			
V_COMP2	None			
V_PC	ADC_PORT_0			
V_SCART1_CVBS	CVBS_PORT_3			
V_SCART1_RGB	ADC_PORT_2			
V_SCART2_CVBS	None			
V_SCART2_RGB	None			
A_ATV	SIF			
A_DTV	DECODER			
A_AV1	AUIN1			
A_AV2	AUIN0			
A_COMP1	AUIN1			
A_COMP2	None			
A_PC	AUIN0			
A_SCART1	AUIN0			
A_SCART2	None			
A_DVI	None			
A_HDMI	None			
A_Media	DECODER			
USING_PSI_UPDATE	...			
Fast Logo Delay	0	0~20		
Num Of PANEL KEY	6	0~20		

■ Control

Factory Menu Name	Data	Range	Remark	Key
EDID				
EDID ON/OFF	ON	ON/OFF		
EDID WRITE ALL	Success			
EDID WRITE PC	...			
EDID WRITE HDMI	Success			
EDID WRITE HDMI1	...			
EDID WRITE HDMI2	...			
EDID WRITE HDMI3	...			
EDID WRITE HDMI4	...			
EDID Ver	HDMI 1.3			
EDID Port	NONE			
EDID WRITE DVI	...			
Sub Option				
RS-232 Jack	UART	Debug/UART		
Serial Log On/Off	OFF	ON/OFF		
Watchdog	ON	ON/OFF		
Checksum	0x0000			
Fast Boot in Production	ON	ON/OFF		
USB Serial	OFF	ON/OFF		
Eeprom Reset				
EER Reset	0			
NVR All Clear	OFF	ON/OFF		
ECO IC TYPE	MC8121	NONE/CT802FN/NLS1106/MC8121/ MC8121_REV		
Info Link Server Type	operating	operating/development/developing		
Info Link Country	None			
TTX Group	UserOSD	WestEurope/EastEurope/Russian/ Greek/Turkey/Arabic/Farsian/Arab/ Hbrw/UserOSD		
Visual Test	...			
MediaPlay DB	...			
OPTION_SWU				
OTN Server Type	operating	operating/development		
OTN Test Server	OFF	ON/OFF		
SWU Reset				
SWU Duration	OFF	ON/OFF		
SWU Fail Test	OFF	ON/OFF		
SWU_Diag_Code				

Factory Menu Name	Data	Range	Remark	Key
OPTION_NUM				
Num of ATV	1	0~2		
Num of SVIDEO	0	0~3		
Num of PC	0	0~1		
Num of DVI	0	0~1		
Num of OPTICAL Link	1	0~1		
Num of MEDIA	1	0~1		
Num of Tuner	1	0~1		
Num of PVR RECORD	0	0~1		
RF Remocon Support	OFF	ON/OFF		
CDD mode	...			
DPMS Support	OFF	ON/OFF		
Num of IPTV CIP	0	0~1		
Num of CI	1	0~1		
Num of DECODER	0	0~1		
T-CON Device				
BOARD CONTROL	OFF	ON/OFF		
RM				
Server Type	Operating	operating/development		
RTS Mode	0	0~1		
PSA				
FKP Download1				
FKP Download2				
LMK threshold	0			
Low threshold	0			
High threshold	0			
CSB	ON	ON/OFF		
CLB	ON	ON/OFF		
EEPG Enable	OFF	ON/OFF		
FAnet Thread	2			
PDP Option				
HOTEL Option				
Hospitality Mode	OFF	ON/OFF		
Power On				
Menu OSD				
Music Mode				
External Source				
Eco Solution				

4. Troubleshooting

Factory Menu Name	Data	Range	Remark	Key
Cloning				
Shop Option				
Shop Mode	OFF	ON/OFF		
Exhibition Mode	OFF	ON/OFF		
3D Cube	OFF	ON/OFF		
Asia Option				
Sepco 120Hz	OFF	ON/OFF		
Unbalance	OFF	ON/OFF		
FMTransmitter Support	OFF	ON/OFF		
FMTransmitter Carrier	OFF	ON/OFF		
AF Level adjust	3	0~7		
TX Power Level	0	0~3		
Mono Last Memory	OFF	ON/OFF		
H Shaking	OFF	ON/OFF		
SOUND				
High Devi	OFF	ON/OFF		
Carrier_Mute	OFF	ON/OFF		
Speaker Delay Normal	0			
Wiselink Delay Menu	0			
Pilot Level High Thld	0x1Fh			
Pilot Level Low Thld	0x1Dh			
Pilot_Phase_diff_on_THR	OFF	ON/OFF		
FM Prescale	0x17h			
AM Prescale	0x1Ah			
NICAM Prescale	0x1Dh			
Amp Model	NTP7414			
Amp Volume	0xc5h			
Amp Scale	0x9ah			
Amp Check Sum	0x1F7E5EC2			
SubWoofer Support	0	0~7		
Woofer Type	0	0~7		
Woofer Volume	0xcbh			
Woofer Scale	0x8ah			
Woofer Check Sum	NONE			
Woofer Local Check Sum	NONE			
Amp local Check Sum	NONE			
Speaker EQ	ON	ON/OFF		
PEQ Test	Ready	Ready/Set1~Set5		

Factory Menu Name	Data	Range	Remark	Key
Speaker cut-off Freq	5			
SPDIF PCM Gain	-9dB			
FM M Prescale	0			
BTSC Mono Prescale	15			
BTSC stereo Prescale	29			
SAP Prescale	29			
A2 Ident High Thld	11			
A2 Ident Low Thld	5			
Carrier2 Amp High Thld	27			
Carrier2 Amp Low Thld	22			
Carrier2 SNR High THR	32			
Carrier2 SNR Low THR	15			
Audio-IP Test	Ready	Ready/Set1~Set9		
SRS Tuning Parm	4			
TruBass-Checksum	0			
Mic Scale	0			
India Sound	OFF	ON/OFF		
Wall Filter Type	0			
SAP High Thld	9			
SAP Low Thld	7			
Bottom Checksum	0			
Bottom Local CChecksum	0			

■ DEBUG

Factory Menu Name	Data	Range	Remark	Key
Spread spectrum				
LVDS Spread	ON			
LVDS Period	40K			
LVDS Amplitude	1.0			
DDR Spread	ON			
DDR Period	20K			
DDR Amplitude	1			
FRC LVDS SSC ON/OFF	ON	ON/OFF		
FRC LVDS SSC MFR	1			
FRC LVDS SSC MRR	10			
FRC LVDS SSC Period	0			
FRC LVDS SSC Modulation	1			

4. Troubleshooting

Factory Menu Name	Data	Range	Remark	Key
FRC DDR SSC ON/OFF	ON	ON/OFF		
FRC DDR SSC MFR	1			
FRC DDR SSC MRR	10			
FRC DDR SSC Period	1			
FRC DDR SSC Modulation	1			
DDR Margin				
A CTRL_OFFSET_0_3	0	0~1		
A CTRL_OFFSET_D	0	0~1		
B CTRL_OFFSET_0_3	0	0~1		
B CTRL_OFFSET_D	0	0~1		
ND ADJ Support	0	0~1		
MICOM POWER OFF	0	0~1		
RF Mute Time	6ms	0ms~10ms		
CI+1.3	0	0~1		
FRC				
FRC FDISPLAY ON/OFF	OFF	ON/OFF		
PC Mode ON/OFF	OFF	ON/OFF		
Home Panel FRC	OFF	ON/OFF		
Tuner Margin	0			
MPEG Margin	1000			
H.264 Margin	8			
CAM Wait Time	0			
TS Clock delay	0			
TCON_TEMP READ	0.00			
TEMP LAST	60.00			
DCC VERSION	0x0			
DCC CHK SEL	0			
DCC CHECK LOCAL	0x0			
DCC CHECK TOTAL	0x0			
MultiACC Checksum	0			
IIC Bus Stop	OFF	ON/OFF		
Tuner Status				
DVB				
SNR	0	0		
BER	0	0		
Signal Strength	0	0		
Bandwidth	0	0		
Frequency	0	0		

Factory Menu Name	Data	Range	Remark	Key
LNA Status	0	0		
FFT	0	0		
Modulation	0	0		
Code Rate	0	0		
GI	0	0		
Hier Modulation	0	0		
Frequency Offset	0	0		
Timing Offset	0	0		
AGC	0	0		
UCB	0	0		
PLL Type	0	0		
DEMOD Type	0	0		
TPS Lock	0	0		
RS Lock	0	0		
SSI	0	0		
SQI	0	0		
Firmware Version	0	0		
ISDB-T				
FFT Size_1	0	0		
Guard Interval_1	0	0		
Freq.Offset_1	0	0		
SNR_1	0	0		
IF AGC_1	0	0		
TMCC Lock_1	0	0		
TS Packet_1	0	0		
Master Lock_1	0	0		
A_Modulation_1	0	0		
A_Code Rate_1	0	0		
A_Timer InterLeave_1	0	0		
A_Segments Num_1	0	0		
A_BER_1	0	0		
B_Modulation_1	0	0		
B_Code Rate_1	0	0		
B_Timer InterLeave_1	0	0		
B_Segments Num_1	0	0		
B_BER_1	0	0		
C_Modulation_1	0	0		

4. Troubleshooting

Factory Menu Name	Data	Range	Remark	Key
C_Code Rate_1	0	0		
C_Timer InterLeave_1	0	0		
C_Segments Num_1	0	0		
C_BER_1	0	0		

■ SVC

Factory Menu Name	Data	Range	Remark	Key
Test Pattern				
Pattern Sel	OFF	OFF/CHESS/VISON1/ VISON2/8COLOR_BAR/RGB_ RAMP/WHITE/RED/GREEN/ BLUE/16GRAY/32GRAY/BLACK/ RGB_COMP		
Logic Pattern Sel	...			
Logic Level Sel	...			
FRC Pre Test Pattern	0			
FRC Post Test Pattern	0			
SOC TCON Test Pattern	0	0~1		
SOC TCON Pattern Level	0	0~1		
SOC TCON FRC Pattern	0	0~1		
HDMI WB Pattern	0	0~1		
HDMI Pattern Sel	0	0~1		
Panel Display Time	4Hr			
SVC Info	0			
Delete S/N	Failure	Failure/Success		
Upgrade				
T-CON Usb Download	Failure	Failure/Success		
T-CON CheckSum	N/A			
Logic Usb D/L	...			
SUBMICOM UPGRADE	Ready			
BT UPGRADE				
BT FREPAIRING	ON	ON/OFF		
Function Upgrade	Failure	Failure/Success		
FRC3D FW Upgrade				
Camera Upgrade	0	0~1		
Mic Upgrade	0	0~1		
CPLD USB Download	0	0~1		
JP MICOM UPGRADE	Failure	Failure/Success		

Factory Menu Name	Data	Range	Remark	Key
DP MICOM UPGRADE	Failure	Failure/Success		
Jump Upgrade	Failure	Failure/Success		
MIC PROGRAM UPGRADE	Failure	Failure/Success		
Smart Hub Reset	0			
ER Count				
WD Count	0			
AR Count	0			
WIFI ER Count	0			
BT ER Count	1			
HDMI Stable Cnt	1			
Camera ER Count	0			
Power Fail Error Count	255			
LOG				
Select Log Type	MICOM			
Log View	0			
Delete Log				
Debug Log Down				
Self Diagnosis				
Loop Back				
LAN Test				
AV Audio Test	Failure	Failure/Success		
DVIN Audio Test	Failure	Failure/Success		
CVBS Test	Failure	Failure/Success		
COMP Test	Failure	Failure/Success		
USB HUB Test				
HDMI Test	NG/NG/NG/NG			
SCART Audio Test	Failure	Failure/Success		
SCART CVBS Test	Failure	Failure/Success		
SCART RGB Test	Failure	Failure/Success		
PC Audio Test	Failure			
PC Self Test	Failure			
CPU	Failure	Failure/Success		
DDR				
FLASH				
EEPROM				
X-TAL	Failure	Failure/Success		
Tuner1				

4. Troubleshooting

Factory Menu Name	Data	Range	Remark	Key
Sound AMP	Failure	Failure/Success		
HDMI Switch IC	Failure	Failure/Success		
USB HUB IC	Failure	Failure/Success		
WIFI	Failure			
LVDS				
T-CON/FRC				
PCB Test	Failure	Failure/Success		
MOIP	0			
BT				
EcoSensor				
Voltage	0			
Device Self Test	0			
App Self Test				
EXT Sound Inspection				
Woofer Sound Inspection	NONE			
ATV CH Inspection	Failure	Failure/Success		
DTV CH Inspection				
Satellite CH Inspection				
PDP Discharge Voltage				
IREPF	Stopped	Stopped/running		
OPTION_HDMI				
DVI/HDMI SOUND	Auto	Auto/DVI		
HDMI HOT PLUG	Disable	Disable/Enable		
HOT PLUG SWITCHING	Boot	Boot/Source		
HOT PLUG DURATION	200ms			
CLK TERM DURATION	200ms			
HDMI FLT CNT SIG	100ms			
HDMI FLT CNT LOS	100ms			
UNSTABLE BAN CNT	3500ms			
HDMI ROBIN	1	0~1		
HDMI Callback	0	0~1		
HDMI CTS Thld	8	0~15		
HDMI CTS Cnt1	1	0~15		
HDMI EQ	AUTO	AUTO/Low/Middle/High/Strong		
HDMi Write Type	Combine	Combine/Separate		
HDMI Switch	NONE	NONE/SIL9287/TMDS461		
DVI SET TIME	300ms			

Factory Menu Name	Data	Range	Remark	Key
HDMI Sync	DE	DE/HV		
HDMI 3D DET	0	0~1		
HOT PLUG OFF HOLD TIME	0	0~1		
DVB CI				
TS Clock delay TC	0			
TS Clock delay S	0			
CI Control Buf ON	ON			
TS Clock delay CPU	-1			
CAL Data Backup_Copy	...			
CAL Data Restore_Copy	...			
Expert				
N/D ADJ	...			
Source	...			
ATV IF AGC SPEED	0	0~16		
Reset				
EEPROM_Reset				
Factory_Reset				
Auto Power	MEMORY	MEMORY/ALWAYS ON/ALWAYS OFF		

■ ADC/WB

Factory Menu Name	Data	Range	Remark	Key
ADC				
AV Calibration	/			
Comp Calibraion	/			
PC Calibration	/			
HDMI Calibration	/			
ADC Result				
1st_Y_GH	128			
1st_Y_GL	128			
1st_Cb_BH	0			
1st_Cb_BL	0			
1st_Cr_RH	0			
1st_Cr_RL	0			
2nd_R_L	133			
2nd_G_L	133			

4. Troubleshooting

Factory Menu Name	Data	Range	Remark	Key
2nd_B_L	133			
2nd_R_H	70			
2nd_G_H	70			
2nd_B_H	70			
White Balance				
R-Offset	128			
G-Offset	128			
B-Offset	128			
R-Gain	128			
G-Gain	128			
B-Gain	128			
WB_W2_R_Offset	128			
WB_W2_B_Offset	128			
WB_W2_R_Gain	159			
WB_W2_B_Gain	66			
WB_N_R_Offset	128			
WB_N_B_Offset	128			
WB_N_R_Gain	151			
WB_N_B_Gain	112			
MGA				
MAG On/Off	OFF			
R1_Gain	512			
G1_Gain	512			
B1_Gain	512			
R2_Gain	512			
G2_Gain	512			
B2_Gain	512			
R3_Gain	512			
G3_Gain	512			
B3_Gain	512			
R4_Gain	512			
G4_Gain	512			
B4_Gain	512			
R5_Gain	512			
G5_Gain	512			
B5_Gain	512			
R6_Gain	512			

Factory Menu Name	Data	Range	Remark	Key
G6_Gain	512			
B6_Gain	512			
R7_Gain	512			
G7_Gain	512			
B7_Gain	512			
R8_Gain	512			
G8_Gain	512			
B8_Gain	512			
R9_Gain	512			
G9_Gain	512			
B9_Gain	512			
R10_Gain	512			
G10_Gain	512			
B10_Gain	512			

■ Advanced

4-4. White Balance

4-4-1. Calibration

1. Into the Factory Mode.
2. Select **SVC** Menu.
3. Select **ADC/WB** menu.
4. Select **ADC** menu.

Option
Control
Debug
SVC
ADC/WB
Advanced

ADC

AV Calibration
Comp Calibration
PC Calibration
HDMI Calibration

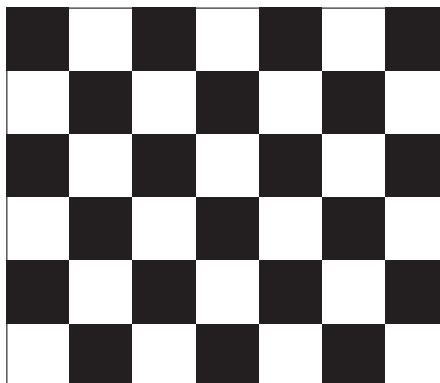
4-4-2. Service Adjustment

You must perform Calibration in the Lattice Pattern before adjusting the White Balance.

■ Color Calibration

- Adjust Specification

Source	Setting Mode	Pattern	Use Equipment
HDMI	1280 x 720@60 Hz	Pattern #24 (Chess Pattern)	CA210 & Master MSPG925 Generator



(Chess Pattern)

- Use other equipment only after comparing the result with that of the Master equipment.

Input mode	Calibration	Pattern
CVBS IN (Model_#1)	Perform in NTSC B&W Pattern #24	Lattice
Component IN (Model_#6)	Perform in 720p B&W Pattern #24	Lattice
PC Analog IN (Model_#21)	Perform in VESA XGA (1024x768) B&W Pattern #24	Lattice
HDMI IN	Perform in 720p B&W Pattern #24	Lattice

■ Method of Color Calibration (AV)

1. Apply the NTSC Lattice (N0. 3) pattern signal to the AV IN 1 port.
2. Press the Source key to switch to "AV1" mode.
3. Enter Service mode.
4. Select the "ADC" menu.
5. Select the "AV Calibration" menu.
6. In "AV Calibration Off" status, press the "▶" key to perform Calibration.
7. When Calibration is complete, it returns to the high-level menu.
8. You can see the change of the "AV Calibration" status from Failure to Success.

■ Method of Color Calibration (Component)

1. Apply the 720p Lattice (N0. 6) pattern signal to the Component IN 1 port.
2. Press the Source key to switch to "Component1" mode.
3. Enter Service mode.
4. Select the "ADC" menu.
5. Select the "Comp Calibration" menu.
6. In "Comp Calibration Off" status, press the "▶" key to perform Calibration.
7. When Calibration is complete, it returns to the high-level menu.
8. You can see the change of the "Comp Calibration" status from Failure to Success.

■ Method of Color Calibration (PC)

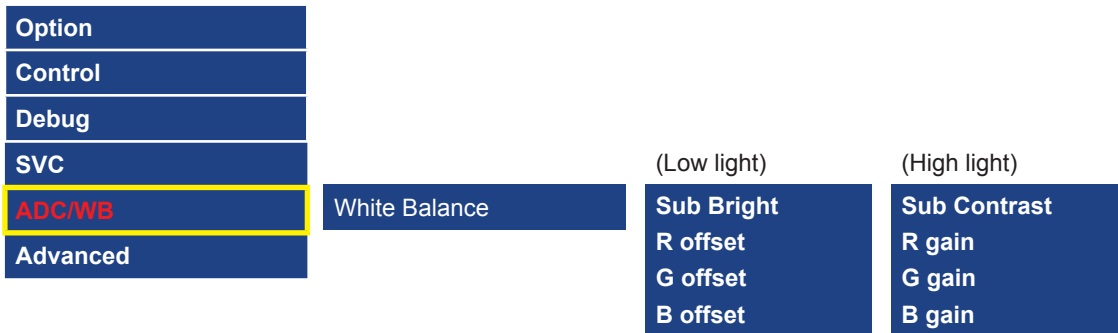
1. Apply the VESA XGA Lattice (N0. 21) pattern signal to the PC IN port.
2. Press the Source key to switch to "PC" mode.
3. Enter Service mode.
4. Select the "ADC" menu.
5. Select the "PC Calibration" menu.
6. In "PC Calibration Off" status, press the "▶" key to perform Calibration.
7. When Calibration is complete, it returns to the high-level menu.
8. You can see the change of the "PC Calibration" status from Failure to Success.

■ Method of Color Calibration (HDMI)

1. Apply the 720p Lattice (N0. 6) pattern signal to the HDMI1/DVI IN port.
2. Press the Source key to switch to "HDMI1" mode.
3. Enter Service mode.
4. Select the "ADC" menu.
5. Select the "HDMI Calibration" menu.
6. In "HDMI Calibration Off" status, press the "▶" key to perform Calibration.
7. When Calibration is complete, it returns to the high-level menu.
8. You can see the change of the "HDMI Calibration" status from Failure to Success.

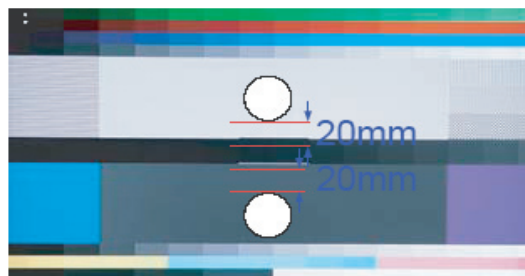
4-4-3. Adjustment

- 1. Into the Factory Mode.
- 2. Select **SVC** Menu.
- 3. Select **ADC/WB** menu.
- 4. Select **WB** menu.



4-5. White Ratio (Balance) Adjustment

1. You can adjust the white ratio in factory mode (1:Calibration, 3:White-Balance).
2. Since the adjustment value and the data value vary depending on the input source, you have to adjust these in CVBS, Component 1 and HDMI 1 modes.
3. The optimal values for each mode are configured by default. It varies with Panel's size and Specification.
 - Equipment : CS-210
 - Pattern: MIK K-7256 #92 "Flat W/B Pattern" as standard
 - Alternate Equipment : CA200& anyone Master supported pattern#92(refer to right photo)
 - Use other Equipment only after comparing the result with that of the Master equipment.
 - Set Aging time : 60 min



Calibration and Manual setting for WB adjustment

- HDMI : Calibration at #24 Chessboard Pattern Manual adjustment at #92 pattern (720p)
- COMP: Calibration at #24 Chessboard Pattern Manual adjustment at #92 pattern (720p)
- CVBS: Calibration at #24 Chessboard Pattern Manual adjustment at #92 pattern (NTSC)



Note

If finishing in HDMI mode, adjustment coordinate is almost same in AV/COMP mode.

White Balance Manual adjustment

DEVICES	PANEL-TYPE
CA-210	40A6AF0V

RGB Measurement		
Levels	Code	Check
10 IRE	0x01	O
20 IRE	0x02	O
30 IRE	0x03	X
40 IRE	0x04	O
50 IRE	0x05	X
60 IRE	0x06	X
70 IRE	0x07	O
80 IRE	0x08	X
90 IRE	0x09	X
100 IRE	0x0A	O

Panel Inspection Spec.				
Levels	Check	x(±)	y(±)	Gamma(±)
10 IRE	O	0.020	0.020	0.40
20 IRE	O	0.020	0.020	0.40
30 IRE	O	0.020	0.020	0.40
40 IRE	O	0.020	0.020	0.40
50 IRE	O	0.020	0.020	0.40
60 IRE	O	0.020	0.020	NA
70 IRE	O	0.020	0.020	NA
80 IRE	O	0.020	0.020	NA
90 IRE	O	0.020	0.020	NA
100 IRE	O	NA	NA	NA

4. Troubleshooting

Gray Check			Adjust Spec(xyL)			Adjust Target offset(xyL)		
Levels	Code	Check	x(±)	y(±)	L(±)	x(±)	y(±)	L(±)
10 IRE	0x01	X	0.007	0.007	0.11	0.000	0.000	0.000
20 IRE	0x02	O	0.007	0.007	0.08	0.000	0.000	0.000
30 IRE	0x03	X	0.007	0.007	0.06	0.000	0.000	0.000
40 IRE	0x04	O	0.005	0.005	0.05	0.000	0.000	0.000
50 IRE	0x05	X	0.005	0.005	0.04	0.000	0.000	0.000
60 IRE	0x06	X	0.005	0.005	0.03	0.000	0.000	0.000
70 IRE	0x07	O	0.004	0.004	0.02	0.000	0.000	0.000
80 IRE	0x08	X	0.004	0.004	0.01	0.000	0.000	0.000
90 IRE	0x09	X	0.004	0.004	0.01	0.000	0.000	0.000
100 IRE	0x0A	X	NA	NA	NA	NA	NA	NA

Target Gamma		2.20	
Black	x	y	Contrast
	0.231	0.208	300000
Target xy	Option	x	y
	Auto	0.282	0.299

Panel Spec.		±	
Gamma	2.2	0.35	20~128
x	0.281	0.030	255
y	0.288	0.030	
ACC x	255 white	0.015	26~255
ACC y	x,y value	0.015	

Color Tone Target			Spec.	
High	x	y	x(±)	y(±)
COOL	0.262	0.276	0.004	0.004
NORMAL	0.281	0.295		
WARM2	0.313	0.340		
Low	x	y	x(±)	y(±)
COOL	NA	NA	NA	NA
NORMAL	NA	NA		
WARM2	NA	NA		

10IRE Gamma target	2.20
RetryCount	6

4-6. Software Upgrade

Software Upgrade can be performed by downloading the latest firmware from samsung.com to a USB memory device.

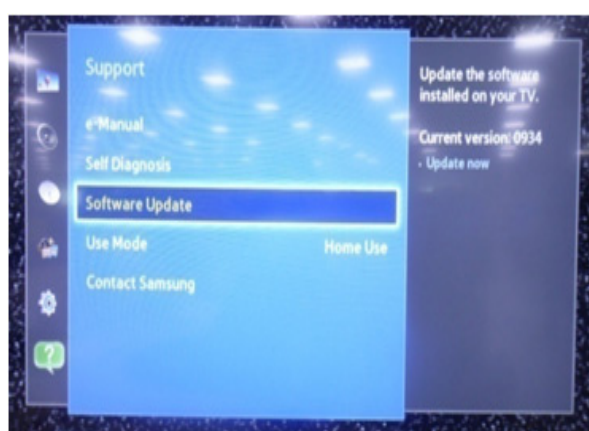
- Current Version - The software already installed in the TV.

Software is represented as 'Year/Month/Day_Version'.

4-6-1. How to Check the Software Version

■ Use the Main Menu

1. Click the "MENU" key in remote controller.
2. Select "Support" menu.
3. Locate the menu cursor "Software Upgrade" menu.
4. Click the "INFO" key.
 - Check the Main SW and Micom version.



■ Use the Factory Mode

Option	T-NT14LIBRC-xxxx.x
Control	T-NT14LAUSS-xxxx
Debug	E-Manual : NLISDBBRH-xxxx
SVC	EDID SUCCESS
ADC/WB	CALIB : AV/COMP/PC/HDMI/
Advanced	Option : 40A6AH0S,BRA_DTV,4200,NONE
	DTP-SDAL-NT14L-xxxx
	RFS:"NT14L xxxx" K/20xx-xx-xx
	KERNEL:xxxx.xxxx,/Onboot: xxxx
	TCON Version:----
	NSP-DTVTD-xxxx
	Model: UN40H4200
	Factory Data Ver:xxx
	EERC Version: xxx
	NSP-BP-HAL-xxxx
	NSP-AP-CNC-xxxx
	NSP-AP-MM-xxxx
	NSP-BP-MW-xxxx
	NSP-BP-APP-xxxx
	NSP-PNG-xx-xxxx
	Date of purchase:-/-----

4-6-2. How to Upgrade Software and Micom

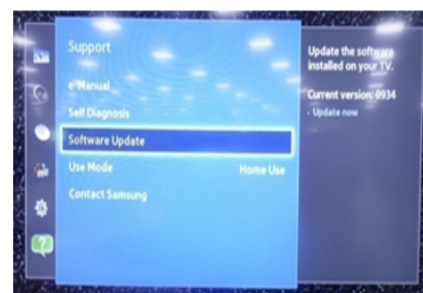
Insert a USB drive containing the firmware upgrade downloaded from samsung.com into the TV. Please be careful not to disconnect the power or remove the USB drive while upgrades are being applied. The TV will turn off and turn on automatically after completing the firmware upgrade. Please check the firmware version after the upgrades are complete (the new version will have a higher number than the older version). When software is upgraded, video and audio settings you have made will return to their default (factory) settings. We recommend you write down your settings before beginning firmware update. After update is completed, restore your previous settings.

■ Main Software Upgrade

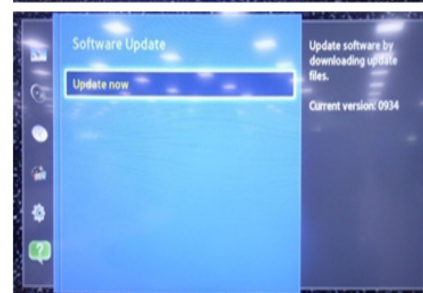
1. Store the sw program named "T-NT14LDEUC" in USB memory stick.
 - Connect the USB.



2. Click the "MENU" key in Remote Controller.
3. Select "Support" menu.
 - Locate the menu cursor "Software Update" menu.

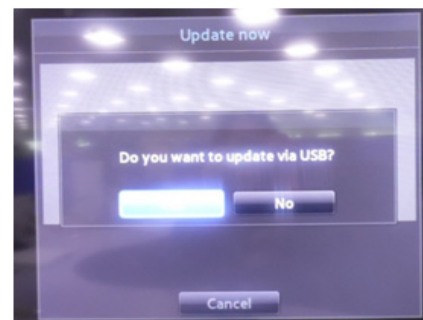


4. Locate the menu cursor "Update now" menu.



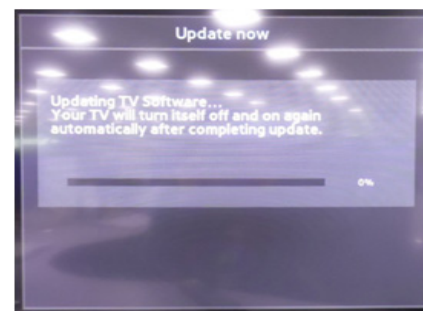
4. Troubleshooting

5. Click the "ENTER" key.



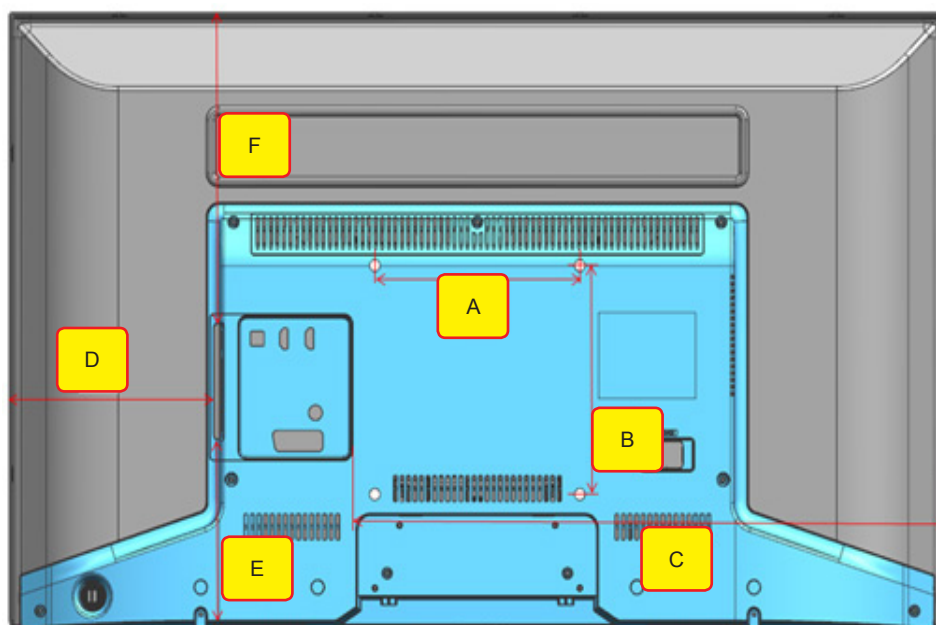
6. Click the "ENTER" key.

- Wait for upgrade complete.
- Check the Software Version.



4-7. Rear Cover Dimension

■ H4200



Rear Cover Dimension	H4200	
	40"	48"
A	200	200
B	200	200
C	581.1	667.2
D	200	284.6
E	159.6	208.3
F	272.7	320.3