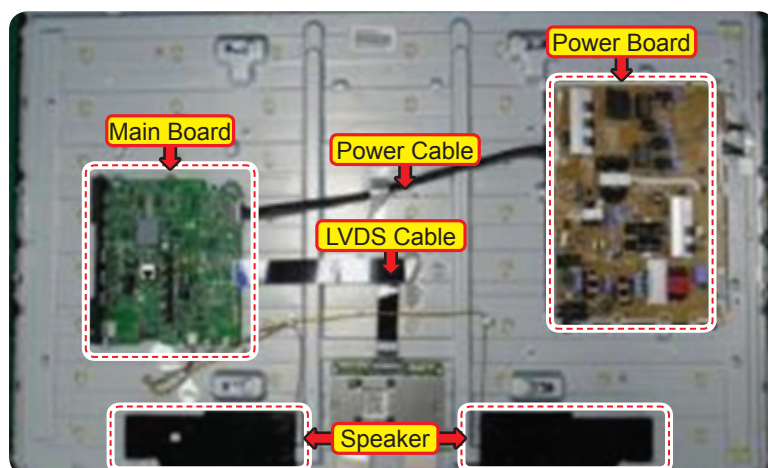


4. Troubleshooting

4-1. Troubleshooting

4-1-1. 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.



3. How to distinguish if the problem is caused by **Main Board** or **T CON**

- No Video

If the problem is No Video but BLU is on and Indication LED is blinking repeatedly and faster than normal booting, replace the T-CON board.

- Distorted Picture

Check the inner patterns.

- For All mode

X12	FOX_FT1 FRC Post	Picture	Problem
OK	OK	NG	Main Board or Signal Source
NG	OK	NG	Main Board
NG	NG	NG	Main Board or LVDS cable or T CON or Panel

- Only for HDMI mode (additional check)

HDMI	Picture	Problem
OK	NG	There is no problems after HDMI IC check HDMI source or HDMI jack.
NG	NG	There is no problems before HDMI IC check X10+ pattern or LVDS cable or T CON

■ How to check inner pattern?

1. Enter the service mode → Choose 'SVC' → Check the 'internal pattern.'

2. Enter 'Service Mode.'

- If you do not have Factory remote control



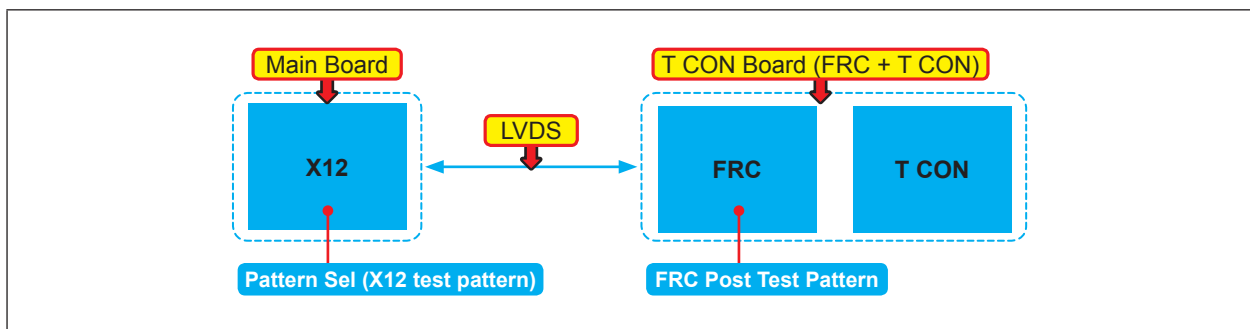
- If you have Factory remote control



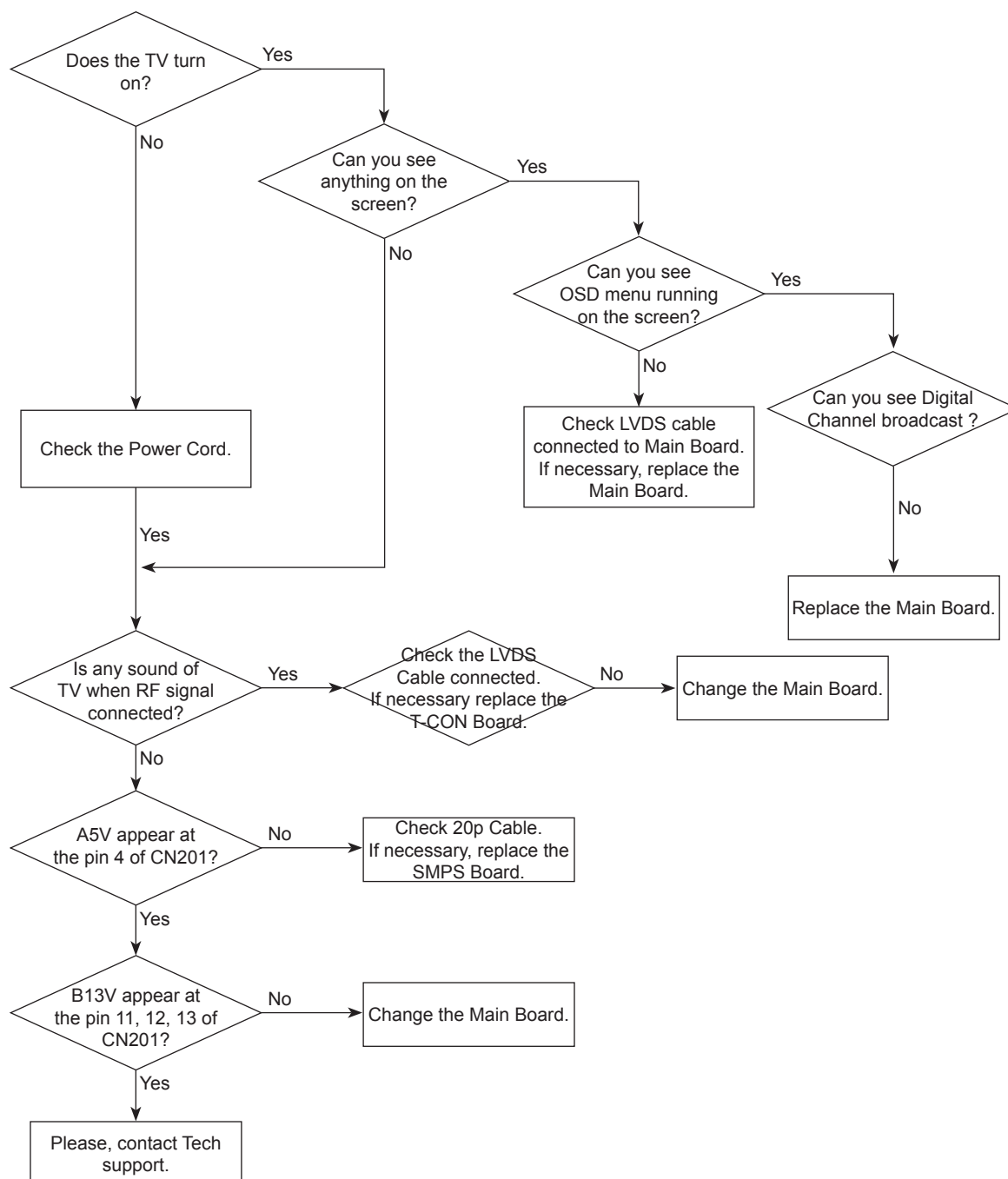
3. Choose 'SVC → Test pattern'.



4. Check inner patterns.



4-1-2. Simple flow chart of malfunction



4-2. How to Check Fault Symptom

4-2-1. NO Power

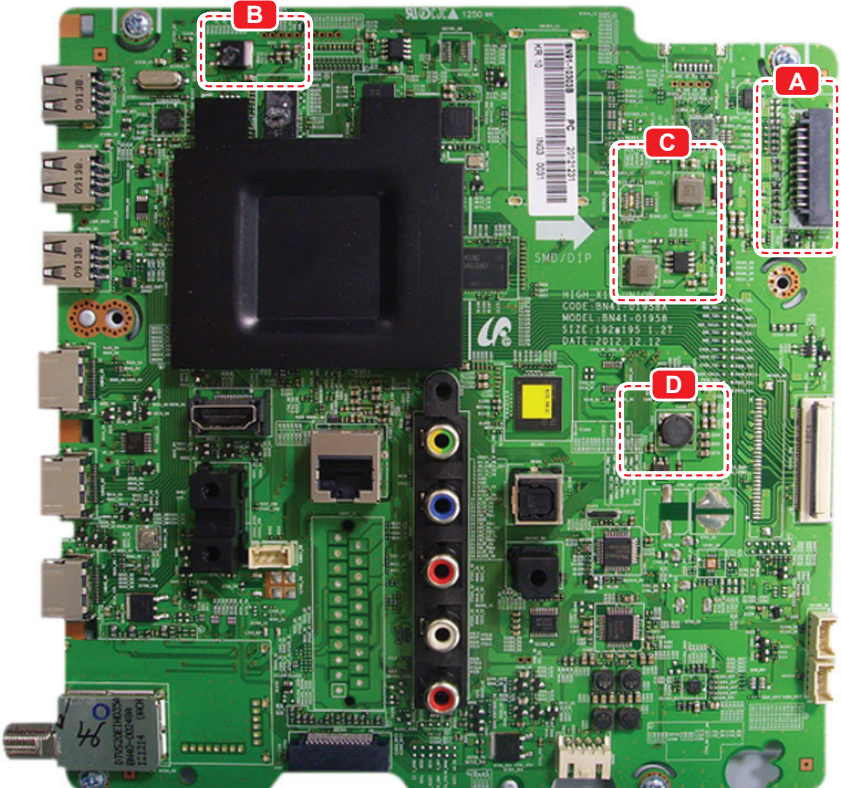
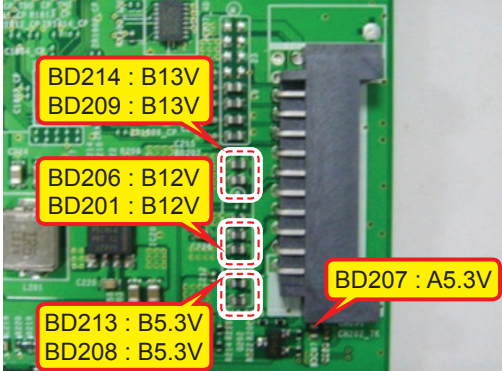
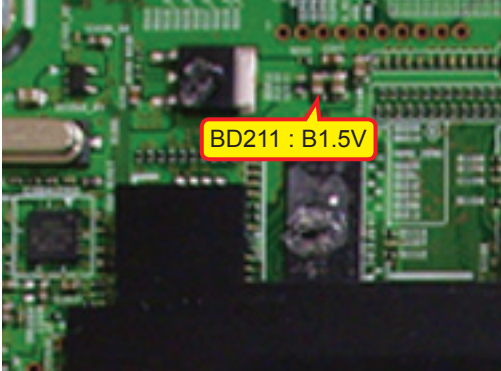
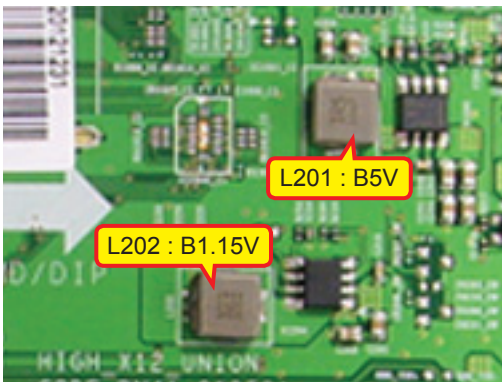
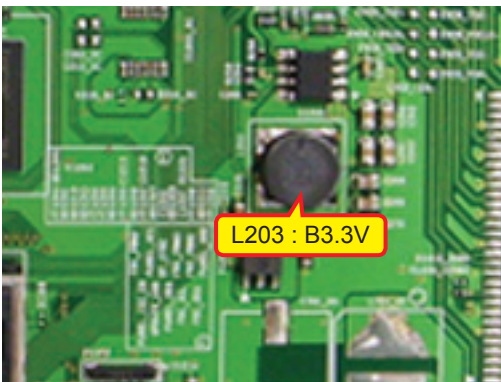

Note

Refer to the next page to check the location such a CN201 or IC201 SVC Manual mentioned.

Symptom	- The LEDs on The front panel do not work when connecting The power cord. - The SMPS relay does not work when connecting The power cord. - The units appears to be dead.
Major checkpoints	The IP relay or the LEDs on the front panel does not work when connecting the power cord if the cables are improperly connected or the Main Board or SMPS is not functioning. In this case, check the following: - Check the internal cable connection status inside the unit. - Check the fuses of each part. - Check the output voltage of SMPS. - Replace the Main Board.
Diagnostics	<pre> graph TD Q1[Power indicator LED is on?] -- No --> A1[Check the power cord connection.] Q1 -- Yes --> Q2[Check the backlight on, when 20 PIN cable unconnected ?] Q2 -- No --> A2[Change 20p cable. Change Main Power Ass'y.] Q2 -- Yes --> Q3[Check 'Stand-By 5V' ? BD207 : A5.3V] Q3 -- No --> A2 Q3 -- Yes --> Q4[Check 'Power input of Main Ass'y' ? - BD206 / BD201 : B12VS - BD214 / 209 : B13V - BD208 / BD213 : B5V] Q4 -- No --> A2 Q4 -- Yes --> Q5[Check 'Power IC output of Main Ass'y' ? - IC202 : A3.3V - L202 : B1.15V / L201 : B5V - L203 : B3.3V / BD211 : B1.5V] Q5 -- No --> A3[Change the Main Ass'y.] Q5 -- Yes --> Q6[Check Input power of 'T CON Board' ? - F1(T CON) : B13V] Q6 -- No --> A4[Reconnect or Change. the LVDS cable.] Q6 -- Yes --> Q7[Check Power of 'T CON Board'. - BD1(T CON) : Panel_12V - B1.1V(T CON-TP) : FT1_1.1V_PW] Q7 -- No --> A5[Change the T CON Board.] </pre>

Diagnostics	↓ Yes ↓ Please, Contact tech support.
Caution	Make sure to disconnect the power before working on the IP Board.

■ Location of Parts

Main Board_Front			
			
Detail			
A	 BD214 : B13V BD209 : B13V BD206 : B12V BD201 : B12V BD213 : B5.3V BD208 : B5.3V BD207 : A5.3V	B	 BD211 : B1.5V
C	 L201 : B5V L202 : B1.15V	D	 L203 : B3.3V

4-2-2. No Video (HDMI 1, 2, 3, 4 - Digital Signal)

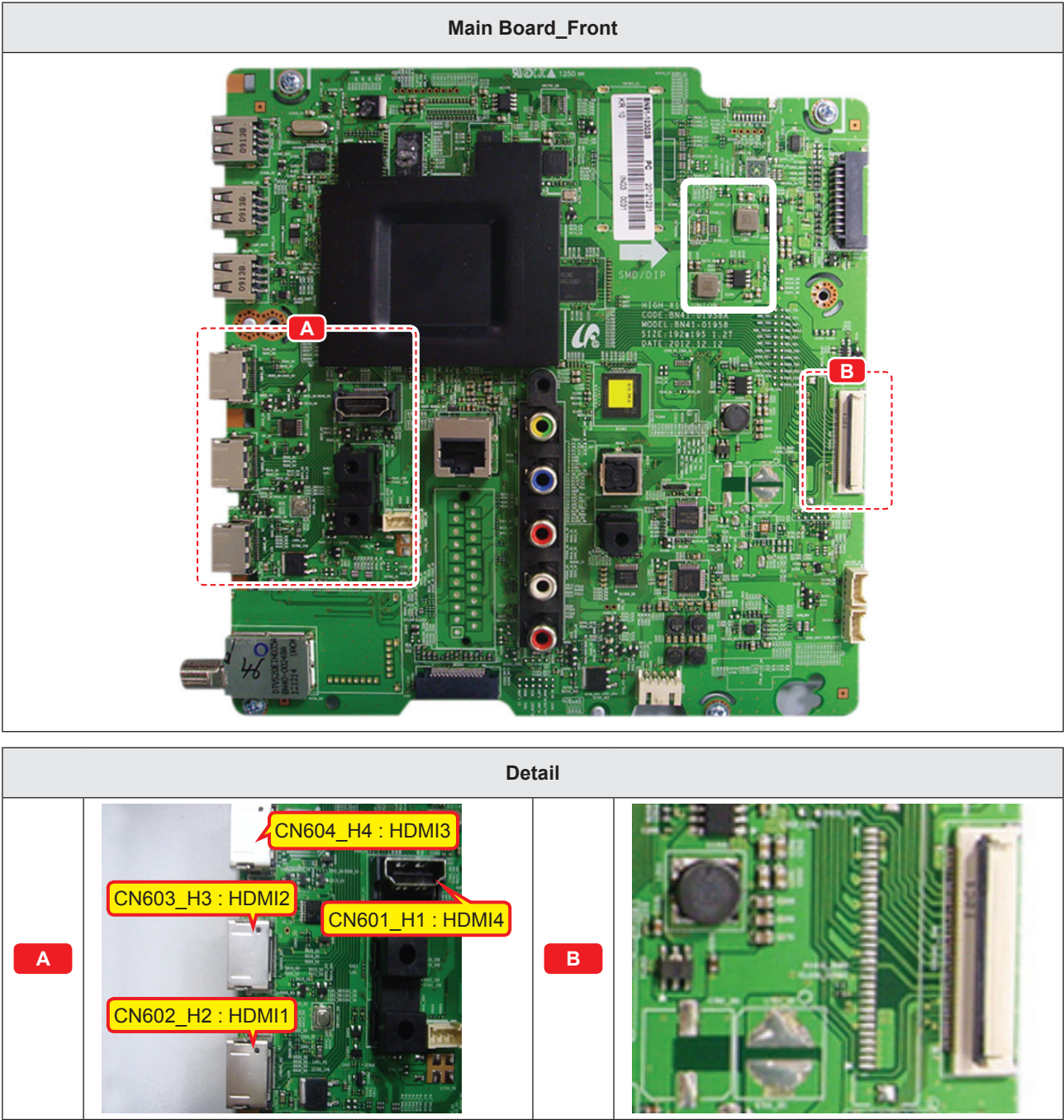


Note

Refer to the next page to check the location such a CN201 or IC201 SVC Manual mentioned.

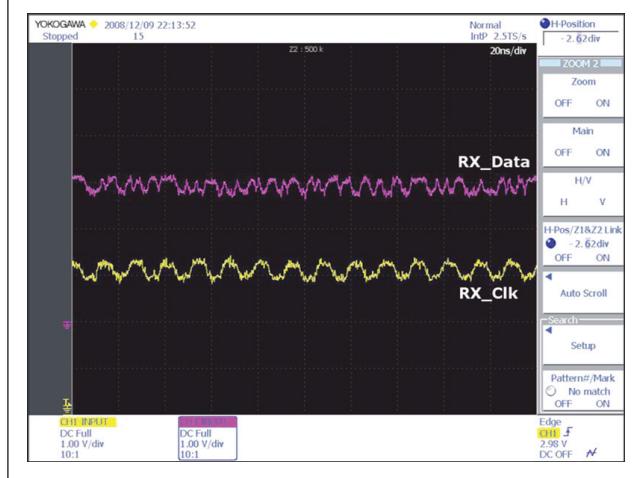
Symptom	Audio is normal but no picture is displayed on the screen.
Major checkpoints	- Check the HDMI source. - Check the HDMI switch. - This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	Power indicator LED is off. Lamp(Backlight) on, no video ? No → Check a set in the 'Stand-by mode'. Yes ↓ Check the HDMI source and check the connection of HDMI cable ? No → Input the HDMI signal properly. Yes ↓ Check the signal at Input of Main Board ? HDMI1 Clk Pin #10, #12 of CN602_H2 - DATA Pin #7, #9, #4, #6, #1, #3 of CN602_H2 HDMI2 Clk Pin #10, #12 of CN603_H3 - DATA Pin #7, #9, #4, #6, #1, #3 of CN603_H3 HDMI3 Clk Pin #10, #12 of CN604_H4 - DATA Pin #7, #9, #4, #6, #1, #3 of CN604_H4 HDMI4 Clk Pin #10, #12 of CN601_H1 - DATA Pin #7, #9, #4, #6, #1, #3 of CN601_H1 No → Check CN601~4. Check HDMI cable. Change the Main Ass'y. or Check IC1001(X12). Change the Main Ass'y. Yes ↓ Check the LVDS clk signal at output of Main Board. (TX) - TX2_CLK : ODD_TXCLK_DN/DP - TX4_CLK : EVEN_TXCLK_DN/DP No → Check IC1001(X12). Change the Main Ass'y. Yes ↓ Check the LVDS cable? Replace the T CON / LCD panel? No → Please, Contact tech support.
Caution	Make sure to disconnect the power before working on the IP Board.

■ Location of Parts

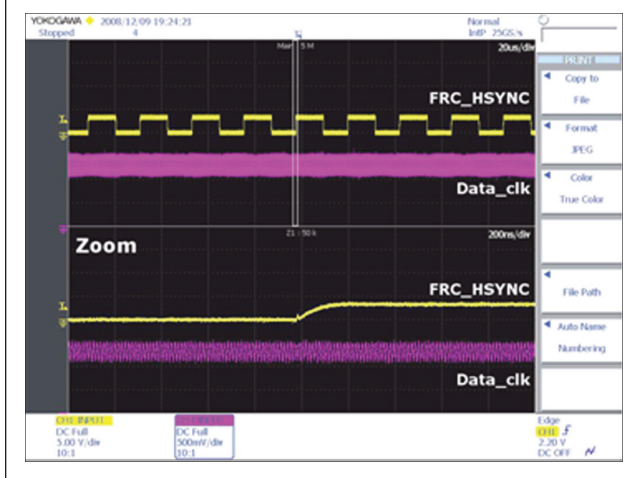


■ Waveforms

① HDMI input (RX_Data, RX_Clk)



② LVDS output



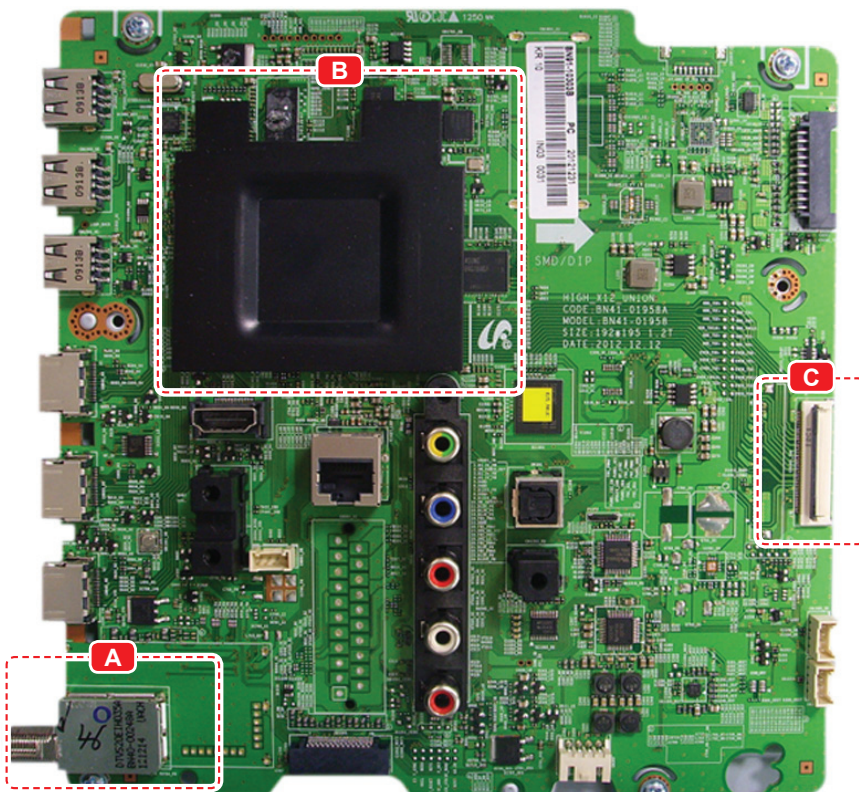
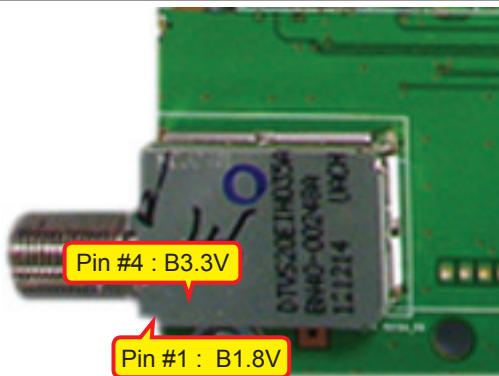
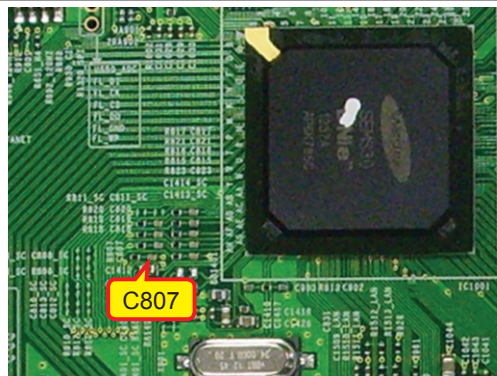
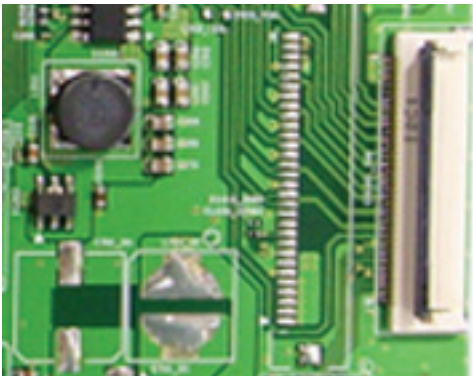
4-2-3. No Video (Tuner_CVBS)


Note

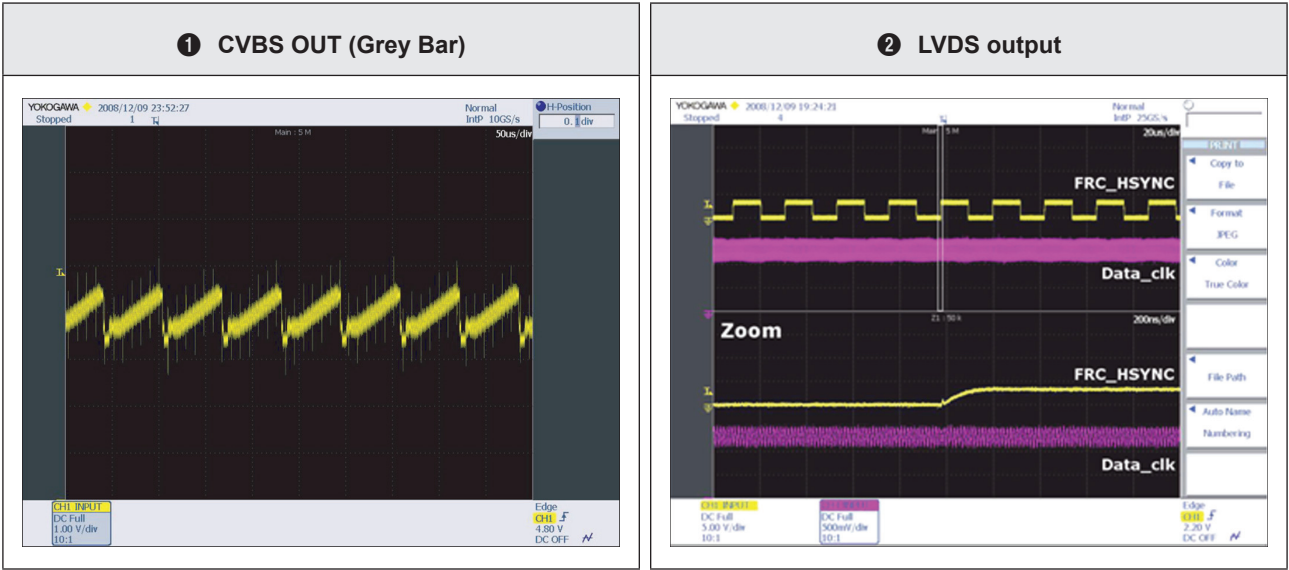
Refer to the next page to check the location such a CN201 or IC201 SVC Manual mentioned.

Symptom	Audio is normal but no picture is displayed on the screen.
Major checkpoints	- Check the Tuner CVBS source. - Check the Tuner. - This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	<pre> graph TD Q1[Power indicator LED is off. Lamp(Backlight) on, no video ?] -- No --> A1[Check a set in the 'Stand-by mode'.] Q1 -- Yes --> Q2[Check the RF source and check the connection of RF cable.] Q2 -- No --> A2[Input the RF source properly.] Q2 -- Yes --> Q3[Check the Power of Tuner ? - Pin #4 of Tuner : B3.3V_Tuner - Pin #1 of Tuner : B1.8V_Tuner] Q3 -- No --> A3[Change the Main Ass'y.] Q3 -- Yes --> Q4[Check the CVBS data out of IC1001 ? C807 : Tuner CVBS] Q4 -- No --> A4[Check IC1001(X12). Change the Main Ass'y.] Q4 -- Yes --> Q5[Check the LVDS clk signal at output of Main board. (TX) - TX2_CLK : ODD_TXCLK_DN/DP - TX4_CLK : EVEN_TXCLK_DN/DP] Q5 -- No --> A5[Check IC1001(X12). Change the Main Ass'y.] Q5 -- Yes --> Q6[Check the LVDS cable? Replace the T CON / LCD panel?] Q6 -- No --> A6[Please, Contact tech support.] </pre>
Caution	Make sure to disconnect the power before working on the IP Board.

Location of Parts

Main Board_Front	
	
Detail	
A	 Pin #4 : B3.3V Pin #1 : B1.8V
	 C807
C	

■ Waveforms



4-2-4. No Vido (Tuner DTV)

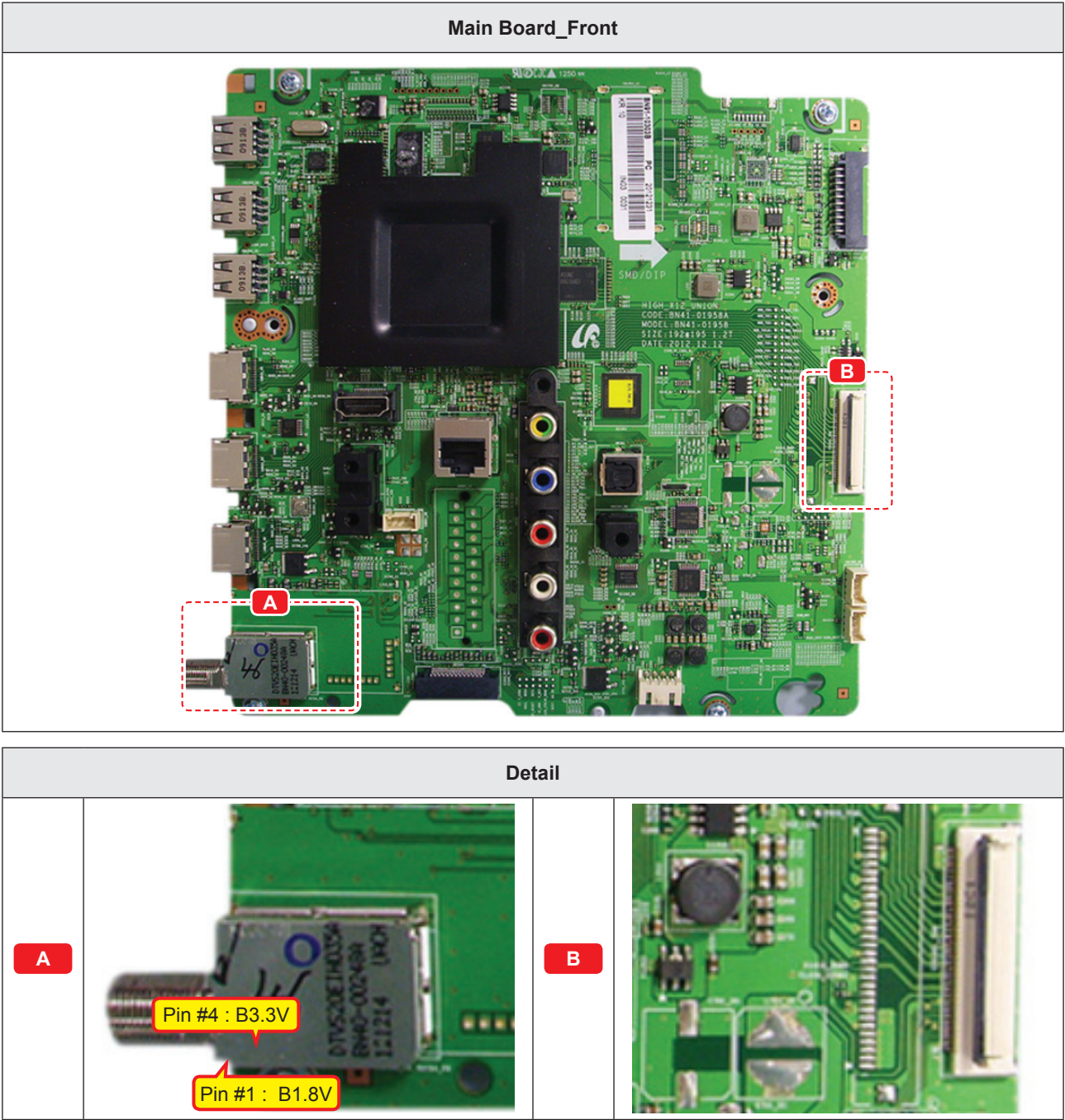


Note

Refer to the next page to check the location such a CN201 or IC201 SVC Manual mentioned.

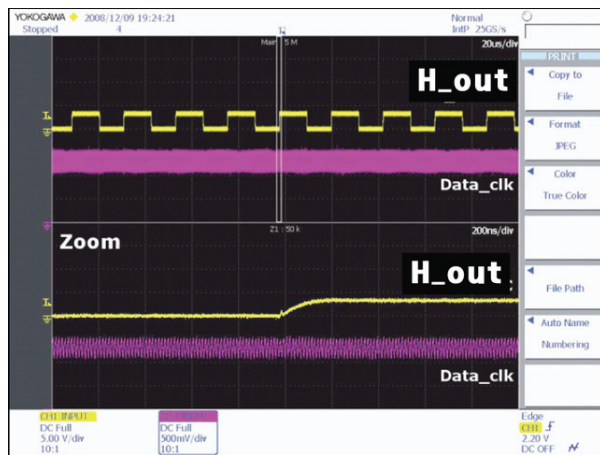
Symptom	Audio is normal but no picture is displayed on the screen.
Major checkpoints	- Check the DTV source. - Check the Tuner. - This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	<pre> graph TD Q1[Power indicator LED is off. Lamp(Backlight) on, no video ?] -- No --> A1[Check a set in the 'Stand-by mode'.] Q1 -- Yes --> Q2[Check the RF source and check the connection of RF cable.] Q2 -- No --> A2[Input the RF source properly.] Q2 -- Yes --> Q3[1 Check the 'signal strength' in Self Diagnosis menu Strength is enough ?] Q3 -- No --> A3[Check the D-TV source.] Q3 -- Yes --> Q4[2 Check the Power of Tuner ? - Pin #4 of Tuner : B3.3V_Tuner - Pin #1 of Tuner : B1.8V_Tuner] Q4 -- No --> A4[Change the Main Ass'y.] Q4 -- Yes --> Q5[2 Check the LVDS clk signal at output of Main board. (TX) - TX2_CLK : ODD_TXCLK_DN/DP - TX4_CLK : EVEN_TXCLK_DN/DP] Q5 -- No --> A5[Check IC1001(X12) Change the Main Ass'y.] Q5 -- Yes --> Q6[Check the LVDS cable? Replace the T CON / LCD panel?] Q6 -- No --> A6[Please, Contact tech support.] </pre>
Caution	Make sure to disconnect the power before working on the IP Board.

■ Location of Parts

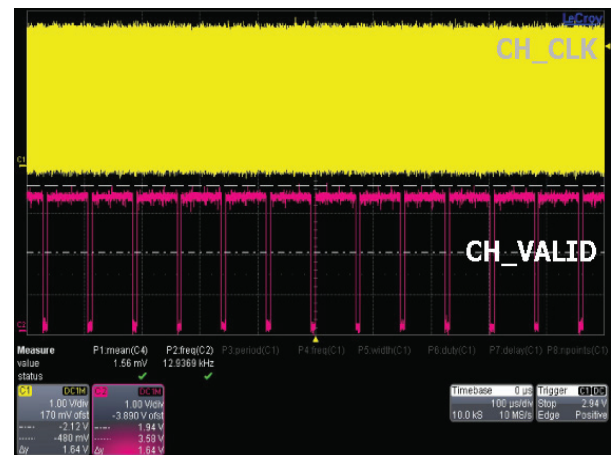


Waveforms

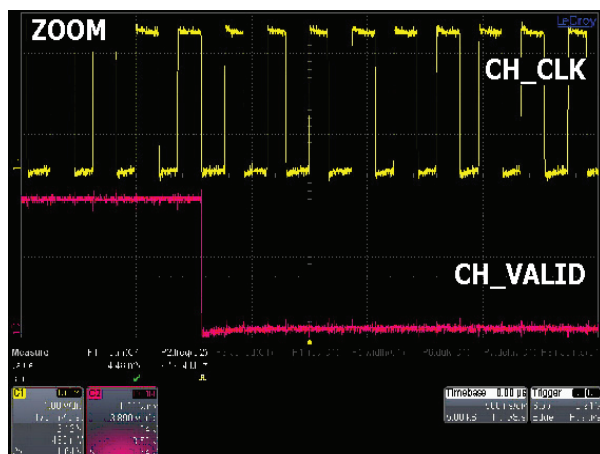
① CVBS OUT (Grey Bar)



② CH_CLK, CH_VALID



② CH_CLK, CH_VALID



4-2-5. No Video (Video AV)



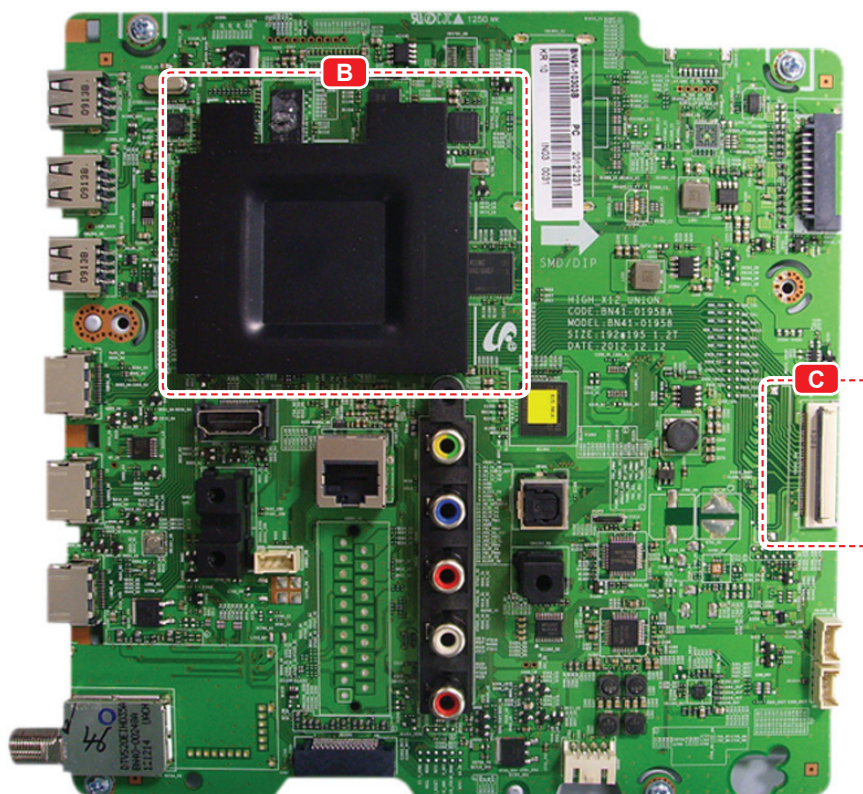
Note

Refer to the next page to check the location such a CN201 or IC201 SVC Manual mentioned.

Symptom	Audio is normal but no picture is displayed on the screen.
Major checkpoints	- Check the Video CVBS source. - This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	Power indicator LED is off. Lamp(Backlight) on, no video ? No → Check a set in the 'Stand-by mode'. Yes ↓ Check the video source and check the connection of video cable? No → Input the video source properly. Yes ↓ 2 Check the LVDS clk signal at output of Main board. (TX) - TX2_CLK : ODD_TXCLK_DN/DP - TX4_CLK : EVEN_TXCLK_DN/DP No → Check IC1001(X12) Change the Main Ass'y. Yes ↓ Check the LVDS cable? Replace the T CON / LCD panel? No → Please, Contact tech support.
Caution	Make sure to disconnect the power before working on the IP Board.

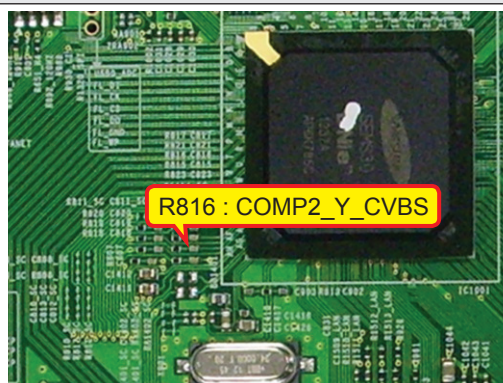
Location of Parts

Main Board_Front

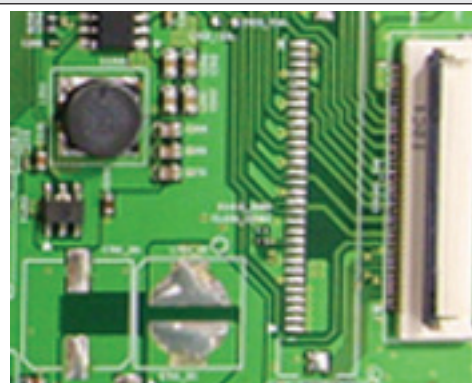


Detail

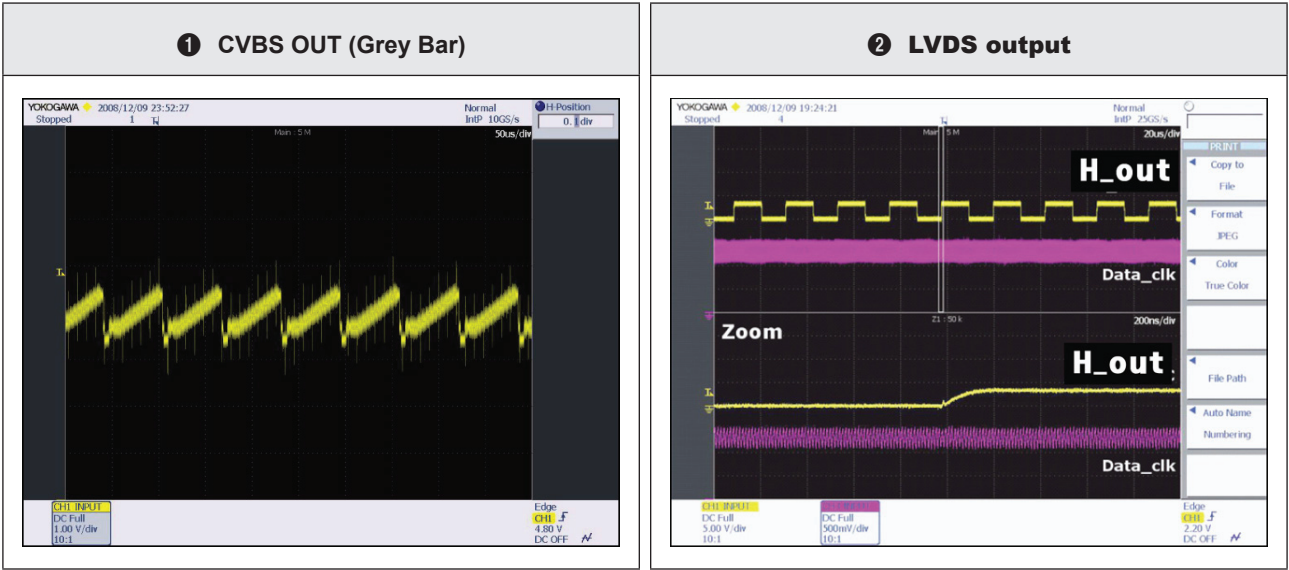
A



B



■ Waveforms



4-2-6. No Video (COMPONENT)

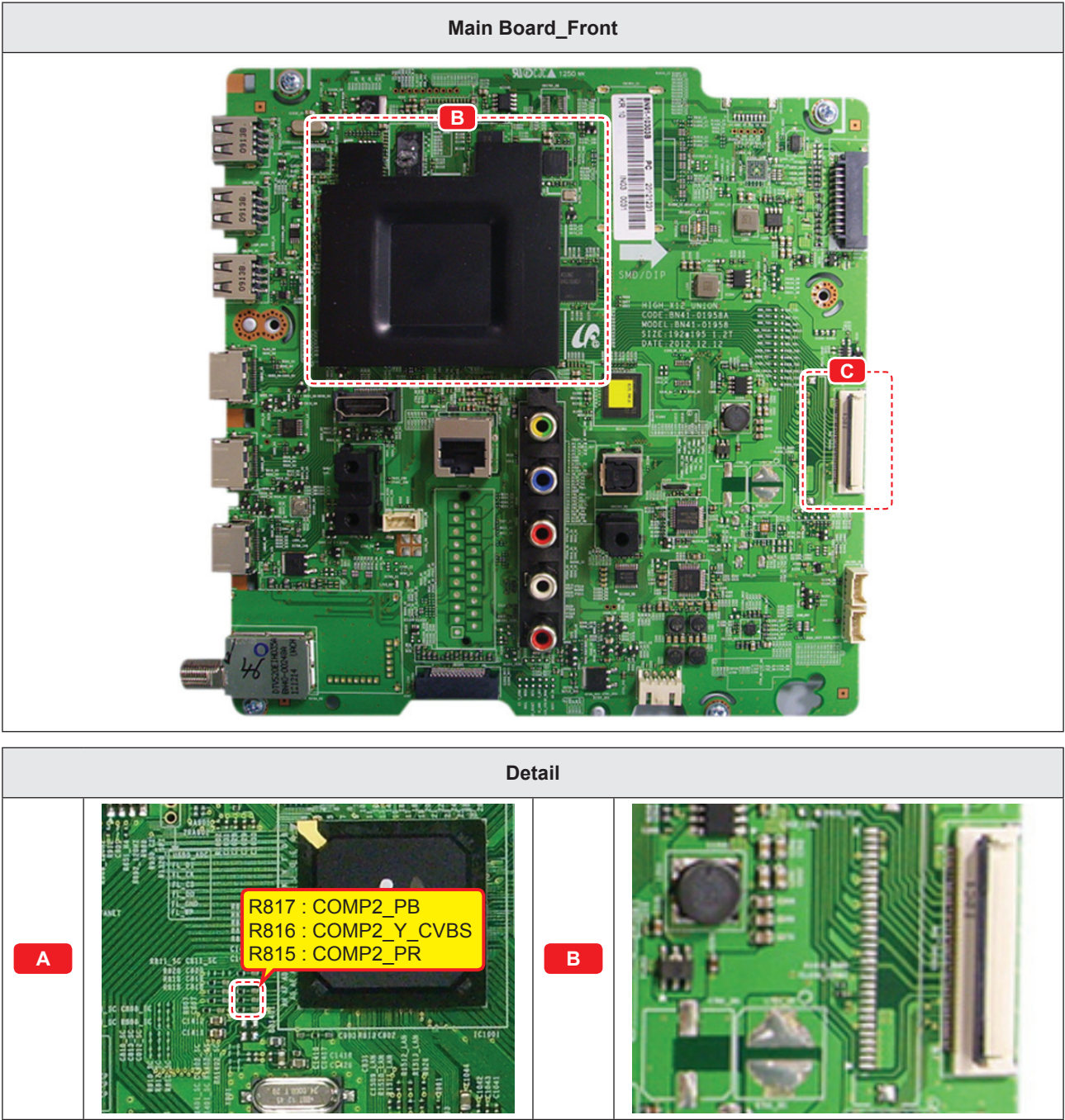


Note

Refer to the next page to check the location such a CN201 or IC201 SVC Manual mentioned.

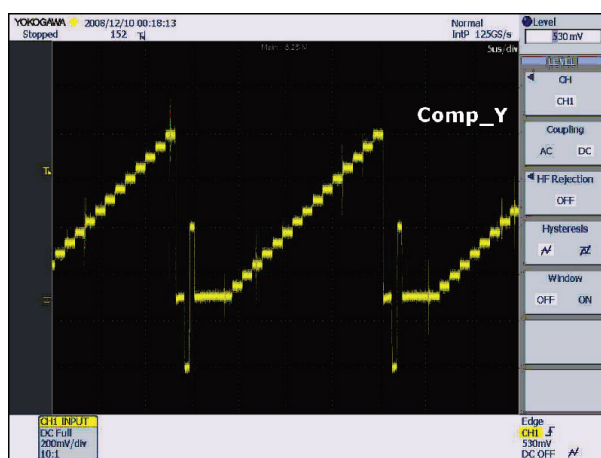
Symptom	Audio is normal but no picture is displayed on the screen.
Major checkpoints	- Check the Component source - This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	Power indicator LED is off. Lamp(Backlight) on, no video ? No → Check a set in the 'Stand-by mode'. Yes ↓ Check the component source and check the connection of component cables ? Y, Pb, Pr No → Input the component source properly. Yes ↓ ① Does the component data appear at ? - COMP2_Y_CVBS : R816 - Pb : R817 - Pr : R815 No → Check CN502. Change the Main Ass'y. Yes ↓ ② Check the LVDS clk signal at output of Main Board. (TX) - TX2_CLK : ODD_TXCLK_DN/DP - TX4_CLK : EVEN_TXCLK_DN/DP No → Check IC1001(X12). Change the Main Ass'y. Yes ↓ Check the LVDS cable? Replace the T CON / LCD panel? No → Please, Contact tech support.
Caution	Make sure to disconnect the power before working on the IP Board.

■ Location of Parts

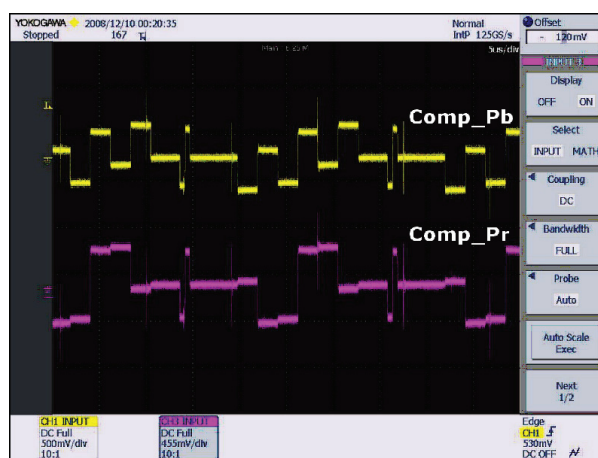


■ Waveforms

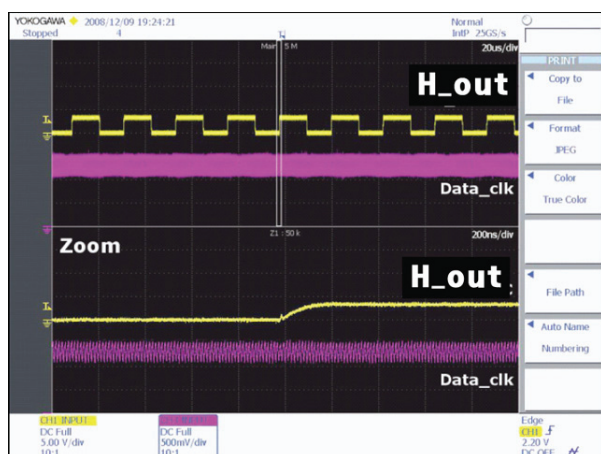
① Component_Y (Gray scale) / Pb / Pr (Color bar)



① Component_Y (Gray scale) / Pb / Pr (Color bar)



② LVDS output



4-2-7. No Sound (1.Speaker 2.Monitor_out 3.Optical)

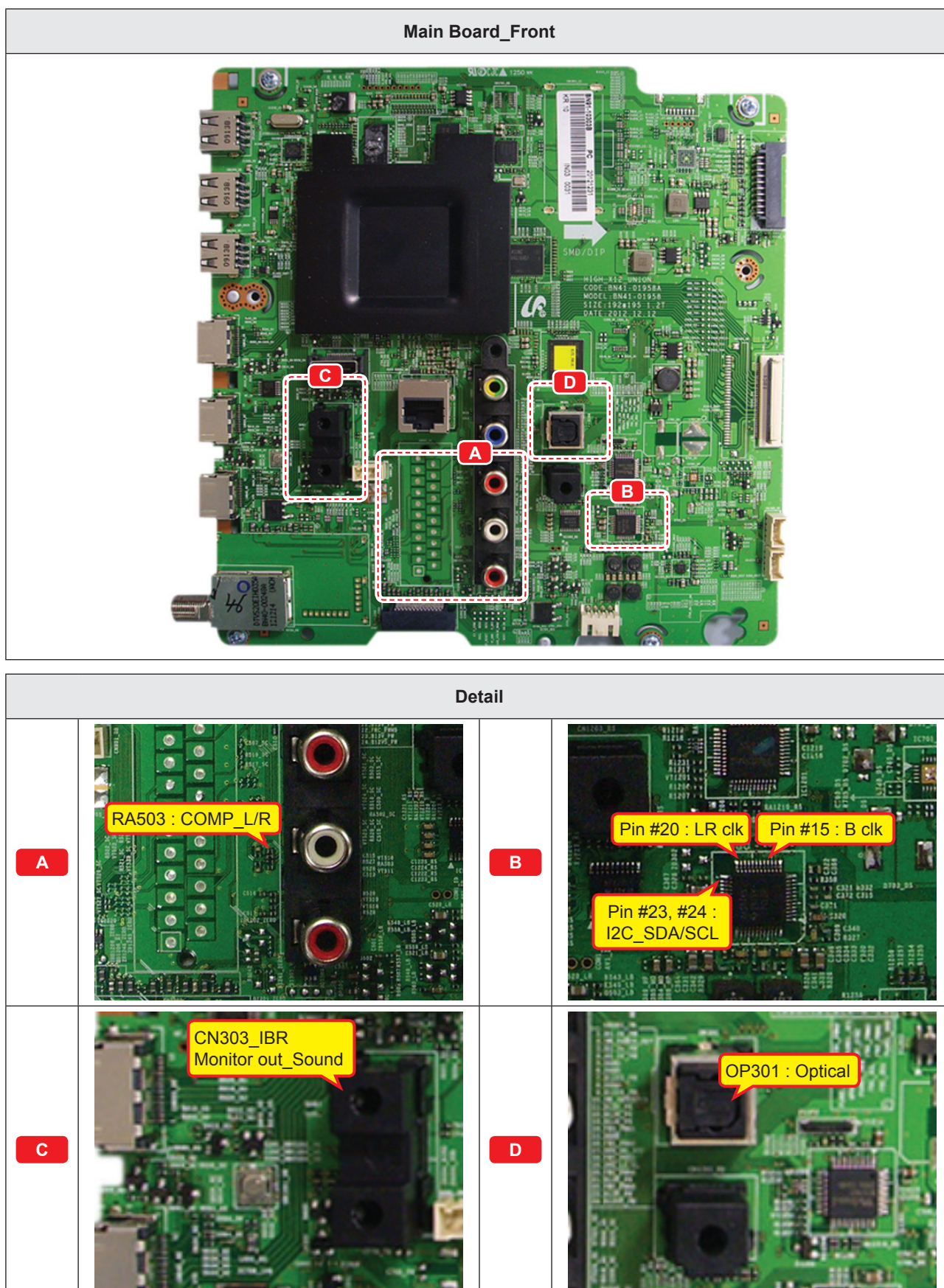


Note

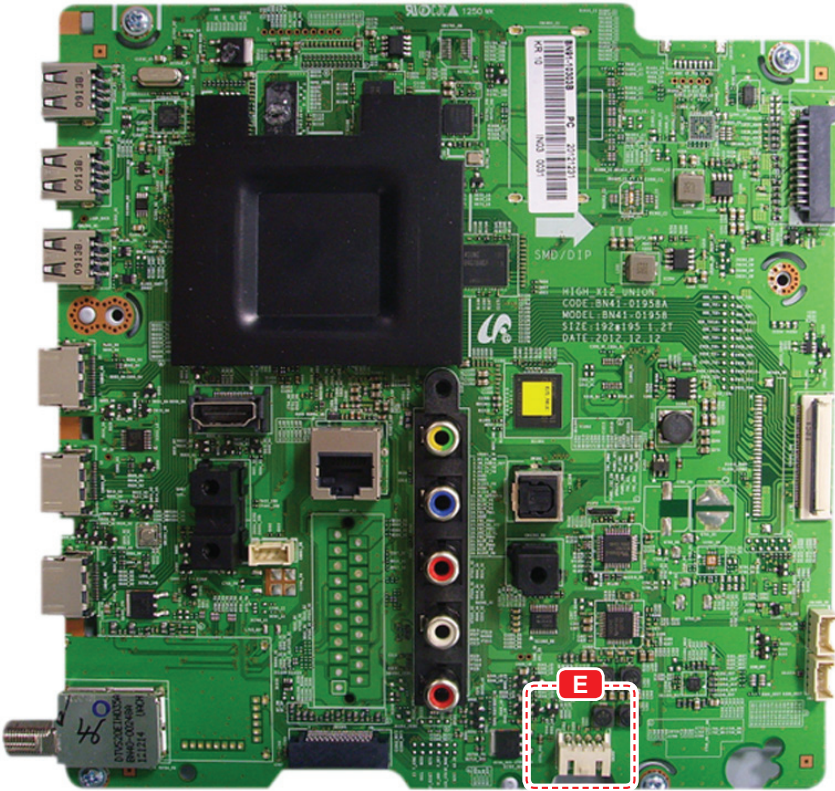
Refer to the next page to check the location such a CN201 or IC201 SVC Manual mentioned.

Symptom	Video is normal but there is no sound.
Major checkpoints	- When the speaker connectors are disconnected or damaged. - When the sound processing part of the Main Board is not functioning. - Speaker defect.
Diagnostics	Check the source and check the connection of sound cable ? COMP No → Input the sound source properly. Yes ↓ Check the signal at input of Main Board? AV, COMP L/R : RA503 No → Check CN502. Change the Main Ass'y. Yes ↓ 1 Check the DATA between the Audio IC's ? - Pin #15 of IC301 : B clk - Pin #20 of IC301 : LR clk - Pin #23, #24 of IC301 : I2C_SDA/ SCL No → Check IC301. Change the Main Ass'y. Yes ↓ 2 1. Check the Speaker sound data at ? - CN302 2. Check the Monitor out sound data at ? - CN303_IBR 3. Does the SODIF OUT sound data appear at ? - OP301 No → Change the Main Ass'y. Yes ↓ Replace speaker ? No → Please, Contact Tech support.
Caution	Make sure to disconnect the power before working on the IP Board.

Location of Parts

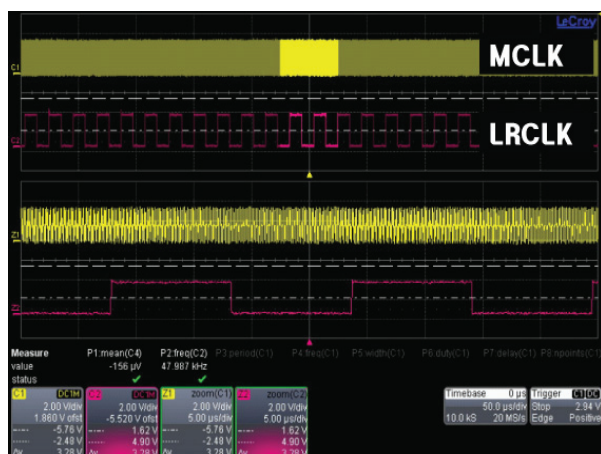


■ Location of Parts

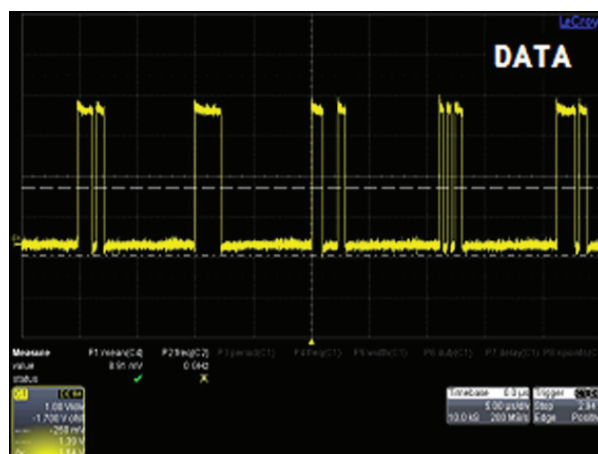
Main Board_Front			
			
Detail			
			

Waveforms

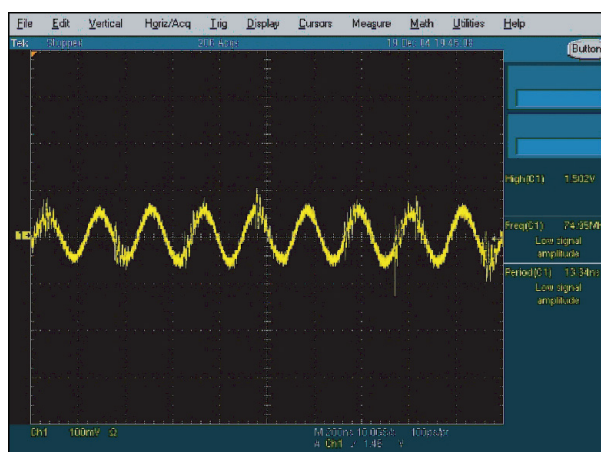
① MCLK / LRCLK / PCM_I2C_DATA



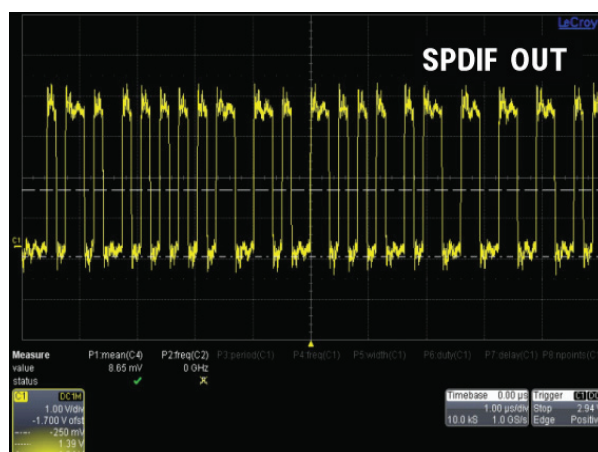
① MCLK / LRCLK / PCM_I2C_DATA



② Speaker / Monitor OUT , SPDIF OUT



② Speaker / Monitor OUT , SPDIF OUT



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**F6400AGXZD

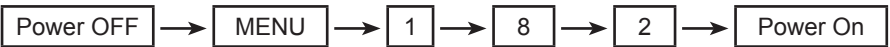
Inches		40"	46"	55"	60"
PANEL	Vendor	SDC	SDC	SDC	Sharp
	Code	BN95-00889A	BN95-00893A	BN95-00895A	BN95-00914A
	Spec.	CY-HF400CSLV1V	CY-HF460CSLV1V	CY-HF550CSLV1V	CY-HF600CSSV2H/V
SMPS	Vendor	SEM	SEM	SEM	Dongyang
	Code	BN44-00622A	BN44-00623A	BN44-00625A	BN44-00626A
	Spec.	L42X1Q_DSM	L46X1Q_DSM	L55X1Q_DSM	L60X1Q_DDY
MAIN ASSY	Chassis Ass'y	BN91-10303S	BN91-10303T	BN91-10303U	BN91-10303V
	PBA Ass'y	BN94-06169S	BN94-06169T	BN94-06169U	BN94-06169V
Byte	Item				
0	Factory Reset	-	-	-	-
1	Type	40A1AF0S	46A1AF0S	55A1AF0S	60H1AF6S
2	Local set	BRA_DTV	BRA_DTV	BRA_DTV	BRA_DTV
3	SW Model	UF6400	UF6400	UF6400	UF6400
4	BOM Model	6400	6400	6400	6400
5	Tuner	ISDB-T	ISDB-T	ISDB-T	ISDB-T
6	Ch table	NONE	NONE	NONE	NONE

Inches		75"
PANEL	Vendor	1) SDC 2) SDC
	Code	1) BN95-00886A 2) BN95-01068A
	Spec.	1) GF750CSL-V1 2) GF750DSL-V2
SMPS	Vendor	Hansol
	Code	BN44-00621A
	Spec.	L75X1Q_DHS
MAIN ASSY	Chassis Ass'y	1) BN91-10871W 2) BN91-10871X
	PBA Ass'y	1) BN94-06437W 2) BN94-06437X
Byte	Item	
0	Factory Reset	-
1	Type	1) 75A1UF6V 2) 75A1UF6V
2	Local set	BRA_DTV
3	SW Model	UF6400
4	BOM Model	6400
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. (Expert, Advanced menu)

Option
Control
Debug
SVC
ADC/WB
Advanced

T-MST12UABC-xxxx
T-MST12AKUS-xxxx
BT Version : xxxx
Camera Version : xxxx
E-Manual : xxxx
EDID SUCCESS
CALIB : AV/COMP/PC/HDMI/
Option : xxxx,US,6400,NONE
USB RS232C : OFF

SDAL-X12-MAIN-xxxx-xxxx
RFS : "X12 0071" KER/201x-xx-xx
KERNEL : 8.0837, D / Onboot :xxxx.x
Backend IC[x], Data Ver : xxxx
TCON Version : xxxx
DTP-DTVTD-xxxx

Model : UN46F6400
Wired MAC SUCCESS
Wireless MAC SUCCESS
DRM : Crt O, Nf O, Wv O, Hc O, Dc O, Mx O, MI O
Factory Data Ver : 97
EERC Version : 51
DTP-BP-HAL-3183
DTP-AP-CNC-3151
DTP-AP-MM-3145
DTP-AP-WP-3148
DTP-BP-MW-3156
DTP-BP-APP-3156
POP-FLA-13-TEMP
Date of purchase : mm/dd/yyyy

- How to enter the hidden factory mode.
1. Into the factory mode.
 2. Move the tap to Advanced.
 3. Key input : 0 + 0 + 0 + 0.



NOTE

hidden menu : Advanced

4-3-3. Factory Data

■ Option

Factory Menu Name	Data	Range
Factory Reset	-	
Type	40A1AF0S 46A1AF0S 55A1AF0S 60H1AF6S 75A1UF6V ; 75A1UF6V	
Local Set	BRA_DTV	
SW Model	UF6400	
BOM Model	6400	
TUNER	ISDB-T	
Ch Table	NONE	
MRT Option		
Front Color	-	
LVDS FORMAT	JEIDA	
Language_Arabic	US	
Region	USA	
PnP Language	ENG_US	
WIFI REGION	S	
OTN Support	ON	
OTA Support	OFF	
TTX	OFF	
China HD	OFF	
NT Conversion	OFF	
Num of DTV	1	
Num of AV	1	
Num of COMP	1	
Num of HDMI	4	
Num of SCART	0	
Num of USB Port	3	
Num of HeadPhone	0	
Num of RVU	1	
Num of Display	2	
Num of IPTV	0	
Num of RUI	0	
Num of PVR RECORD	0	
TOOLS Support	40	

4. Troubleshooting

Factory Menu Name	Data	Range
LNA Support	OFF	
24Px4 Support	OFF	
BD Wise Support	ON	
Data Service Support	OFF	
PVR Support	OFF	
CI Support	OFF	
LEDMotionPlus Support	ON	
Natural Mode Support	ON	
Relax Mode Support	OFF	
HDMI/DVI SEL	4	
Select LCD/PDP	LCD	
Wall Mount	OFF	
HV Flip		HV Flip / H Filp / OFF
Light Effect	OFF	
e-Pop Default	1	
CAMERA Support	OFF	
NETWORK Support	3	
EcoSensor Support	ON	
3D Support	ON	
BT Support	ON	
BT ADDRESS		
Engineer Option		
Auto Power	MEMORY	
Type Of PANEL KEY	None	
5 Way Function Key	R BACK	
Contents Bar	OFF	
Cable Modulation	QAM	
Standby led on/off	OFF	
Recognition Support		
IF AGC	0	
D AGC	0	
PH BW	0	
FQ BW	0	
PH RATE	0	
PD EN	0	
PEQ Inx	0	
WF Scale		

Factory Menu Name	Data	Range
WF Type	0	
Nu of Network Stream	1	
DP V Size	0	
Backend Device	FOX-FT1	
BT_AUDIO_ON_OFF	OFF	
Config_AV_PATH		
ECO Standby	OFF	
Fast Logo Delay	0	
Num of PANEL KEY	6	

■ Control

Factory Menu Name	Data	Range
EDID		
EDID ON/OFF	OFF	
EDID WRITE ALL	...	
EDID WRITE HDMI	...	
EDID Ver	...	
EDID Port		
Sub Option		
RS-232 Jack	UART	Debug/UART
Watchdog	OFF	
Checksum	0x0000	
Fast Boot in Production	OFF	
USB Serial	OFF	
Eeprom Reset		
ECO IC TYPE	NONE	
Info Link Server Type	development	
Info Link Country	None	
TTX Group	-	
Visual Test	-	
MediaPlayDB	-	
OPTION_SWU		
OTN Server Type	operating	
OTN Test Server	OFF	
SWU Reset		
SWU Duration	OFF	
SWU Fail Test	OFF	

4. Troubleshooting

Factory Menu Name	Data	Range
OPTION_NUM		
Num of ATV	1	
Num of SVIDEO	0	
Num of PC	0	
Num of DVI	0	
Num of OPTICAL Link	1	
Num of MEDIA	1	
Num of Tuner	1	
Num of ISP	1	
RF Remocon Support	OFF	
CDD mode	-	
DPMS Support	OFF	
Num of IPTV CIP	0	
Num of CI	0	
Num of DECODER	0	
T-CON Device		
BOARD CONTROL	OFF	
HP LINE	LineOut	
RM		
Server Type	Operating	
RTS Mode	OFF	
PSA		
FKP Download1	0	
FKP Download2	0	
LMK threshold	3	
Low threshold	10	
High threshold	15	
CSB	ON	
CLB	ON	
PDP Option		
Pixel Shift Test	OFF	
Logic SW	0	
Panel Temperature	0	
LOGIC Waveform Day	0	
Logic CheckSum	0	
MRT	0	
SAPC Timer		

Factory Menu Name	Data	Range
APC Speed		
Hotel Option		
Hospitality Mode	OFF	
Power On	...	
Menu OSD	...	
Operation	...	
Music Mode	...	
External Source	...	
Eco Solution	...	
Cloning	...	
Shop Option		
Shop Mode	OFF	
Exhibition Mode	OFF	
3D Cube	OFF	
Asia Option		
Unbalance	OFF	
AF Level adjust	3	
TX Power Level	0	
Mono Last Memory	OFF	
H Shaking	OFF	
SOUND		
Carrier_Mute	OFF	
High Devi	OFF	
Speaker Delay Normal	0x6Eh	
SPDIF PCM Gain	-9dB	
FM M Prescale	0x30h	
FM Prescale	0x00h	
AM Prescale	0x32h	
NICAM Prescale	0x48h	
BTSC Mono Prescale	0x19h	
BTSC stereo Prescale	0x2Fh	
BTSC SAP Prescale	0x2Bh	
A2Ident High THID	31	
A2Ident Low THID	0	
Pilot Level High Thld	0x28h	
Pilot Level Low Thld	0x10h	
Carrier2 Amp High THID	4	

4. Troubleshooting

Factory Menu Name	Data	Range
Carrier2 Amp Low THID	3	
Carrier2 SNR High THR	16	
Carrier2 SNR Low THR	80	
Sig Error On	35	
Sig Error Off	41	
Amp Model	TAS5745	
Amp Volume	0xcbh	
Amp Scale	0x35h	
Amp Check Sum	0x000821B2	
Woofer Type	0	
Woofer Scale	0	
Woofer Check Sum	0x8ah	
Woofer Local EQ Checksum	0	
Speaker EQ	ON	
PEQ Test	Ready	
Local Speaker EQ	0	
Local EQ Checksum	0	
Speaker cut-off Ferq	4	
Audio-IP Test		
SRS Tuning Parm	0	
TruBass-CheckSum	0	
Mic Scale	0	
Subwoofer Support	0	
India Sound	OFF	
AudioDock BT delay	50	
Wall Filter Type	0	
Wiselink Delay Menu	90	

■ Debug

Factory Menu Name	Data	Range
Spread Spectrum		
LVDS Spread	ON	
DDR Spread	1.0% Spectrum	
Period	30K	
Amplitude	1	
HD SSC ON/Off	ON	
HD SSC Value	1	

Factory Menu Name	Data	Range
LVDS SSC ON/Off	ON	
LVDS SSC Value	0	
DDR SSC ON/Off	ON	
DDR SSC Value	1	
FRC LVDS SSC ON/OFF	ON	
FRC LVDS SSC MRR	10	
FRC LVDS SSC MFR	1	
FRC LVDS SSC Period	1	
FRC LVDS SSC Modulation	1	
FRC DDR SSC ON/OFF	ON	
FRC DDR SSC MRR	15	
FRC DDR SSC MFR	1	
FRC DDR SSC Period	1	
FRC DDR SSC Modulation	1	
DDR Margin		
A CTRL_OFFSET_0_3	0x0	
A CTRL_OFFSET_D	0x0	
B CTRL_OFFSET_0_3	0x0	
B CTRL_OFFSET_D	0x0	
ND ADJ Support	OFF	
MICOM POWER OFF	OFF	
RF Mute Time	6ms	
CI+1.3	OFF	
FRC		
FRC FDISPLAY ON/OFF	0	
3D FDISPLAY ON/OFF	OFF	
PC Mode ON/OFF	OFF	
Tuner Margin	10	
MPEG Margin	1000	
H.264 Margin	8	
CAM Wait Time		
TS Clock deldy	0	
TCON_TEMP READ	0	
TEMP LAST	60	
DCC VERSION	0x0	
DCC CHK SEL	0	
DCC CHECK LOCAL	0x0	

4. Troubleshooting

Factory Menu Name	Data	Range
DCC CHECK TOTAL	0x0	
MultACC Checksum	0	
IIC Bus stop	OFF	
Tuner Status		
DVB		
SNR		
BER		
Signal Strength		
Bandwidth		
Frequency		
LNA Status		
FFT		
Modulation		
Code Rate		
GI		
Hier Modulation		
Frequency offset		
Timing offset		
AGC		
UCB		
PLL Type		
DEMODO Type		
TPS Lock		
RS Lock		
SSI		
SQI		
Firmware Version		
ISDB-T		
FFT Size_1		
Guard Interval_1		
Freq. Offset_1		
SNR_1		
IF AGC_1		
TMCC Lock_1		
TS Packer_1		
Master Lock_1		
A_Modulation_1		

Factory Menu Name	Data	Range
A_Code Rate_1		
A_Timer InterLeave_1		
A_Segments Num_1		
A_BER_1		
B_Modulation_1		
B_Code Rate_1		
B_Timer InterLeave_1		
B_Segments Num_1		
B_BER_1		
C_Modulation_1		
C_Code Rate_1		
C_Timer InterLeave_1		
C_Segments Num_1		
C_BER_1		

■ SVC

Factory Menu Name	Data	Range
Test Pattern		
Pattern Sel	OFF	
Logic Pattern Sel	...	
Logic Level Sel	...	
FRC Pre Test Pattern	0	
FRC Post Test Pattern	0	
FRC3D Fdisplay	OFF	
FRC3D PC Mode	OFF	
SOC TCON Test Pattern	0	
SOC TCON Pattern Level	255	
SOC TCON FRC Pattern	0	
HDMI WB Pattern	OFF	
HDMI Pattern Sel	0	
Parma Pre Test Pattern	0	
Parma Post Test Pattern	0	
Panel Display Time	0Hr	
SVC Info	0	
Delete S/N	0	
Upgrade		
T-CON Usb Download	Failute	

4. Troubleshooting

Factory Menu Name	Data	Range
T-CON CheckSum	Error	
Logic Usb D/L	...	
SUBMICOM UPGRADE	Failute	
BT UPGRADE		
BT FREEPAIRING	ON	
Function Upgrade	Failute	
FRC3D FW Upgrade		
Camera Upgrade		
Mic Upgrade		
CPLD USB Download		
JP MICOM UPGRADE	Failute	
DP MICOM UPGRADE	Failute	
Jump Upgrade	Failute	
Smart Hub Reset	0	
ER Count		
WD Count	0	
AR Count	0	
WIFI ER Count	0	
BT ER Count	0	
HDMI Err Cnt	0	
Camera ER Count	0	
LOG(View Log)		
Select Log Type	NVRAM	
Log View	0	
Delete Log		
Debug Log Down		
Emergency Log Copy		
Self Diagnosis		
Loop Back		
LAN Test		
AV Audio Test		
DVIN Audio Test		
CVBS Test		
COMP Test		
USB HUB Test		
HDMI Test		
SCART Audio Test		

Factory Menu Name	Data	Range
SCART CVBS Test		
SCART RGB Test		
CPU		
DDR		
FLASH		
EEPROM		
Sound AMP		
HDMI Switch IC		
USB HUB IC		
WIFI		
LVDS		
T-CON/FRC		
PCB Test		
MOIP		
App Self Test		
Device self Test		
Voltage		
EcoSensor		
BT		
EXT Sound Inspection		
Woofer Sound Inspection	NONE	
ATV CH Inspection		
DTV CH Inspection		
Satellite CH Inspection		
IPERF	Stopped	
OPTION HDMI		
Expert		
DVB CI		
CAL Data Backup	...	
CAL Data Restore	...	

■ ADC/WB

Factory Menu Name	Data	Range
ADC		
AV Calibration	Success	
Comp Calibraion	Success	
PC Calibration	Success	

4. Troubleshooting

Factory Menu Name	Data	Range
HDMI Calibration	Success	
ADC Result		
1st_Y_GH	258	
1st_Y_GL	128	
1st_Cb_BH	...	
1st_Cb_BL	...	
1st_Cr_RH	...	
1st_Cr_RL	...	
2nd_R_L	132	
2nd_G_L	132	
2nd_B_L	132	
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	164	
WB_W2_B_Gain	63	
WB_N_R_Offset	128	
WB_N_B_Offset	128	
WB_N_R_Gain	151	
WB_N_B_Gain	108	
MGA		
MGA On/Off	OFF	
R1_Gain	...	
B1_Gain	...	
G1_Gain	...	
R2_Gain	...	
B2_Gain	...	
G2_Gain	...	

Factory Menu Name	Data	Range
R3_Gain	...	
B3_Gain	...	
G3_Gain	...	
R4_Gain	...	
B4_Gain	...	
G4_Gain	...	
R5_Gain	...	
B5_Gain	...	
G5_Gain	...	
R6_Gain	...	
B6_Gain	...	
G6_Gain	...	
R7_Gain	...	
B7_Gain	...	
G7_Gain	...	
R8_Gain	...	
B8_Gain	...	
G8_Gain	...	
R9_Gain	...	
B9_Gain	...	
G9_Gain	...	
R10_Gain	...	
B10_Gain	...	
G10_Gain	...	

4-4. White Balance

4-4-1. Calibration

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

Option	AV Calibration
Control	Comp Calibration
Debug	HDMI Calibration
SVC	
ADC/WB	
Advanced	

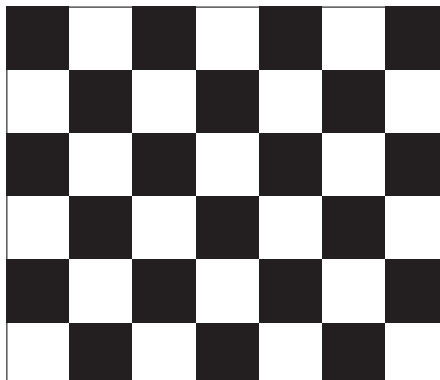
4-4-2. Service Adjustment

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
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 (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.

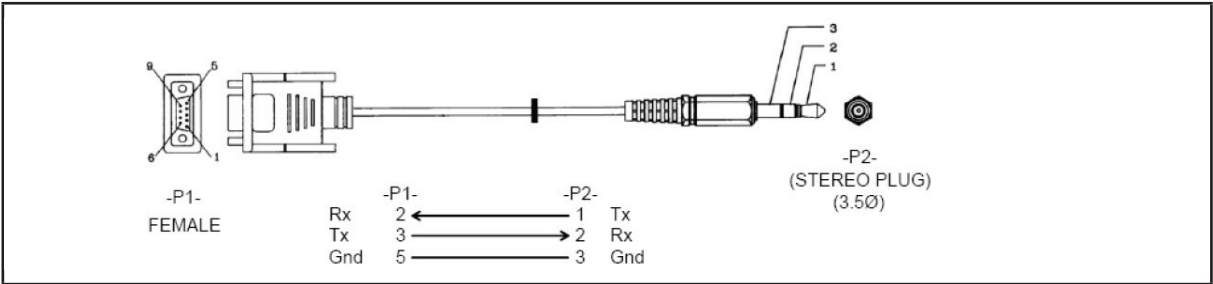
4-4-3. Adjustment

9. Into the Factory Mode.
10. Select **ADC/WB** menu.
11. Select **White Balance** menu.

Option			
Control			
Debug			
SVC			
ADC/WB	White Balance	(Low Light) Sub Brightness R offset G offset B offset	(High Light) Sub Contrast R gain G gain B gain
Advanced			

4-5. RS-232C

- **RS232C Control**
 - Port : COM#(Serial)
 - Bit rate : 115200
 - Data Bit : 8 bit
 - Parity : None
 - Stop Bits : 1
 - Flow Control : None



- Description of RS232C

Pin#	Name	Full Name	Pin#	Name	Full Name	Pin#	Name	Full Name
1	CD	Carrier Detect	4	DTR	Data Terminal Ready	7	RTS	Request To Send
2	RxD	Received Data	5	GND	Signal Ground	8	CTS	Clear To Send
3	TxD	Transmitted Data	6	DSR	Data Set Ready	9	RI	Ring Indicator

4-6. Software Upgrade

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

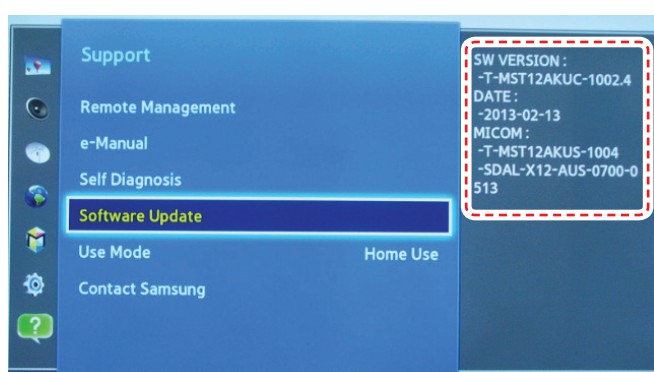
- Current Version - The software already installed in the TV.

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
Control
Debug
SVC
ADC/WB
Advanced

```

T-MST12UABC-xxxx
T-MST12AKUS-xxxx
BT Version : xxxx
Camera Version : xxxx
E-Manual : xxxx
EDID SUCCESS
CALIB : AV/COMP/PC/HDMI/
Option : xxxx,US,6400,NONE
USB RS232C : OFF
  
```

4-6-2. How to Upgrade Software

1. Insert a USB drive containing the firmware upgrade downloaded from samsung.com into the TV.



NOTE

Please be careful not to disconnect the power or remove the USB drive while upgrades are being applied.

2. The TV will turn off and turn on automatically after completing the firmware upgrade.
3. Please check the firmware version after the upgrades are complete.
 - the new version will have a higher number than the older version.



NOTE

- 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.

4. After update is completed, restore your previous settings.

■ Main Software Upgrade

1

Store the sw program named "**T-MST12UABC**" in USB memory stick.

2

Click the "**MENU**" key in Remote Controller.

3

Select "**Support - Software Update - Update Now**" menu.

4

- Click the "**ENTER**" key.
- Wait for upgrade complete.
 - Check the Software Version.

■ Sub Software Upgrade

USB Download

1. After Main Software upgrade, Enter the Factory menu by below method.

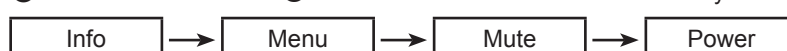
– Factory Remocon

- Click the Remocon button continuedly. (Info key+ Factory key)



– Nomal Remocon

- ① Turn off the TV. → ② Click the Remocon button continuedly.



2. Select the “SVC”.

Option
Control
Debug
SVC
ADC/WB
Advanced

3. Select the “SUBMICOM UPGRADE”.

Test pattern		DCC CHK SEL	0
Panel Display Time	1Hr	DCC CHECK LOCAL	0x0
Tuner Status		DCC CHECK TOTAL	
T-CON Usb Download	Failure	Fuction Upgrade	off
T-CON CheckSum	Error	Smart Hub Reset	off
Tuner Margin	10	WIFI ER COUNT	0
TS Clock delay	0	BT ER COUNT	0
SUBMICOM UPGRADE	off	Debug Log Down	
BT ADDRESS	0000	MulitACC Checksum	Error
BT UPGRADE		SVC Info	
BT FREEPAIRING	ON	TS Clock delay TC	0
SVC Reset		TS Clock delay S	0
TCON_TEMP READ	0.00	CAL Data Backup	
TEMP LAST	60.00	CAL Data Restore	
DCC VERSION	0x0		

4. Click the “→” remocon key.

SUBMICOM UPGRADE	Wait
-------------------------	-------------

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