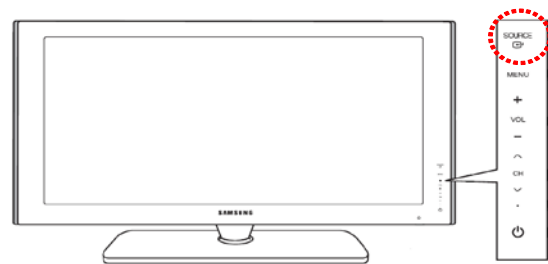


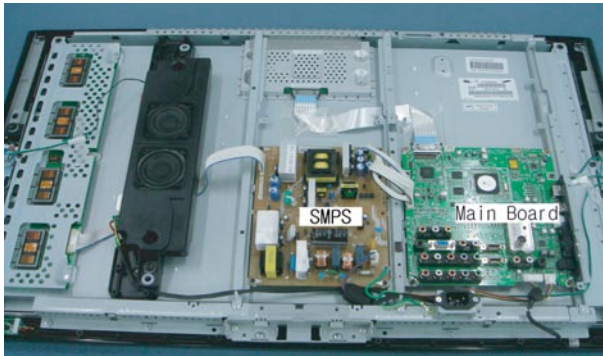
## 4. Troubleshooting

### 4-1. Troubleshooting

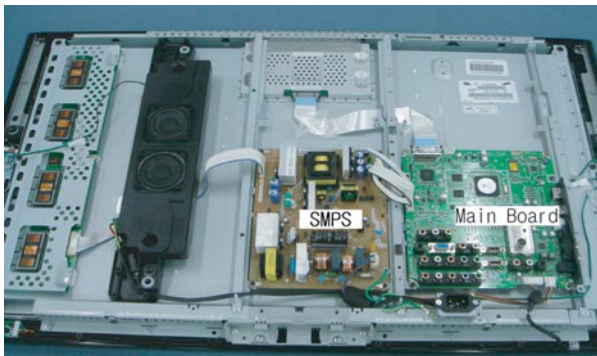
1. Check the various cable connections first.
  - Check to see if there is a burnt or damaged cable.
  - Check to see if there is a disconnected or loose cable connection.
  - Check to see if the cables are connected according to the connection diagram.
2. Check the power input to the Main Board.
3. Check internal Pattern FBE3 if there is some picture noise.  
FBE3: Factory mode(mute 1 - 8 - 2 power on)-> FBE3-> Pattern sel-> Press right button of Remocon.  
Case1: FBE3 NG, change the main board



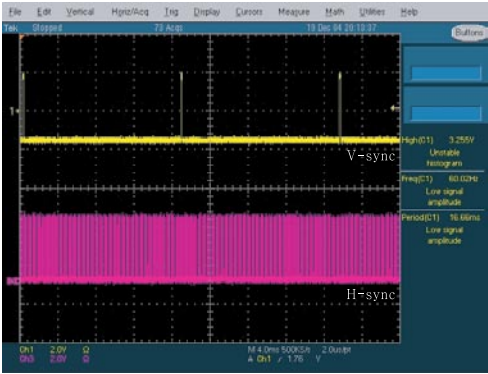
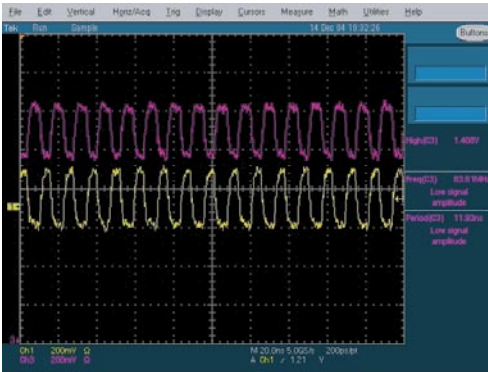
**4-1-1. No Power**

Symptom	<ul style="list-style-type: none"> <li>- The LEDs on the front panel do not work when connecting the power cord.</li> <li>- The SMPS / IP Board relay does not work when connecting the power cord.</li> <li>- The units appears to be dead.</li> </ul>
Major checkpoints	<p>The SMPS / IP Board 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:</p> <ul style="list-style-type: none"> <li>- Check the internal cable connection status inside the unit.</li> <li>- Check the fuses of each part.</li> <li>- Check the output voltage of SMPS.</li> <li>- Replace the Main Board.</li> </ul>
Diagnostics	 <pre> graph TD     Q1[Lamp(Backlight) Off, power indicator LED on?] -- No --&gt; A1[Check a connection power cable. (Code Number refer to each model's BOM)]     Q1 -- Yes --&gt; Q2[Does proper Stand-By DC A5V appear at C1002?]     Q2 -- No --&gt; A2[Change the Main Power assembly (Code Number refer to each model's BOM)]     Q2 -- Yes --&gt; Q3[Does proper Main DC B12VS, B5V, B12V appear at C2060, C1011, C1008_DE?]     Q3 -- No --&gt; A2     Q3 -- Yes --&gt; Q4[Does proper Inverter DC 12V appear at CN1001 in SMPS?]     Q4 -- No --&gt; A2     Q4 -- Yes --&gt; Q5[Does proper DC A3.3V appear at C1006?]     Q5 -- No --&gt; A3[Check IC1002 Change the Main Ass'y (Code Number refer to each model's BOM)]     Q5 -- Yes --&gt; Q6[Does proper DC B1.26VD, MT_DDRV18, B1.8V, B3.3V, B1.5VA appear at C1037, C1045, C1042, C1024, C1041?]     Q6 -- No --&gt; A4[Check IC1019, IC1008, IC1009, IC1005, IC1007 Change the Main Ass'y (Code Number refer to each model's BOM)]     Q6 -- Yes --&gt; Q7[A power is supplied to panel appear at C1025_DE?]     Q7 -- No --&gt; A5[Check a other function (No picture part) Replace a LCD Panel (Code Number refer to each model's BOM)]   </pre>
Caution	Make sure to disconnect the power before working on the SMPS / IP Board board.

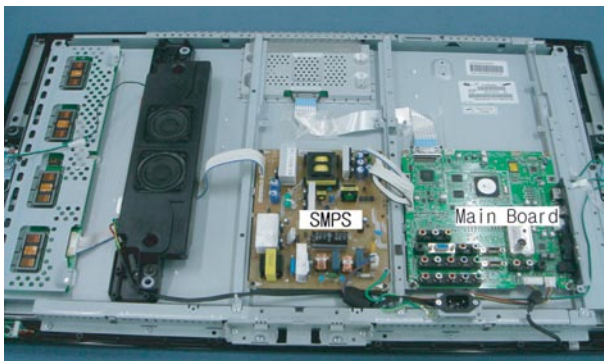
## 4-1-2. No Video (Analog PC signal)

Symptom	<ul style="list-style-type: none"> <li>Audio is normal but no picture is displayed on the screen.</li> </ul>
Major checkpoints	<ul style="list-style-type: none"> <li>Check the PC source</li> <li>Check the MT8226</li> <li>This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.</li> </ul>
Diagnostics	 <pre> graph TD     Start[Power Indicator is off. Lamp(Backlight) Off, no video] -- Yes --&gt; Q1{Check the PC source and check the connection of DSUB?}     Q1 -- No --&gt; A1[Input an analog PC signal. Check the connected cable.]     Q1 -- Yes --&gt; Q2{1 Does the signal appear at #B9, #B10, #A11, #D12, #C11 (R,G,B,H,V) of IC5004?}     Q2 -- No --&gt; A2[Check CN3009, PC cable. Change the PC cable. Change the main PCB assembly]     Q2 -- Yes --&gt; Q3{2 Does the digital data appear at output of RA5070~RA5075?}     Q3 -- No --&gt; A3[Check IC5004 Change the main PCB assembly]     Q3 -- Yes --&gt; Q4{3 Does the digital data appear at output of RA6074~RA6076, RA6078~RA6080, R6082_P, R6083_P, R6086_P, R6087_P?}     Q4 -- No --&gt; A4[Check IC6001_FBE Change the main PCB assembly]     Q4 -- Yes --&gt; Q5{Check the LVDS cable? Replace the LCD panel?}     Q5 -- No --&gt; A5[Please, Contact Tech support]   </pre>
Caution	Make sure to disconnect the power before working on the SMPS / IP Board board.

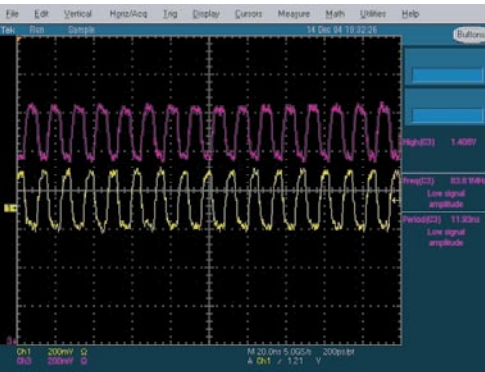
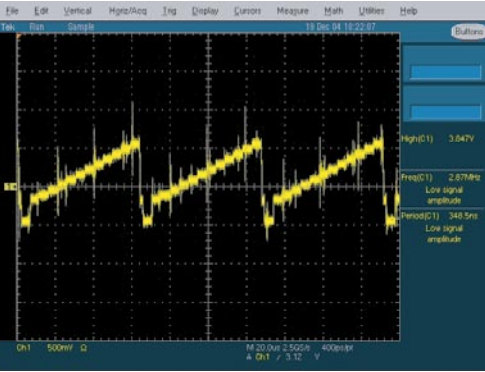
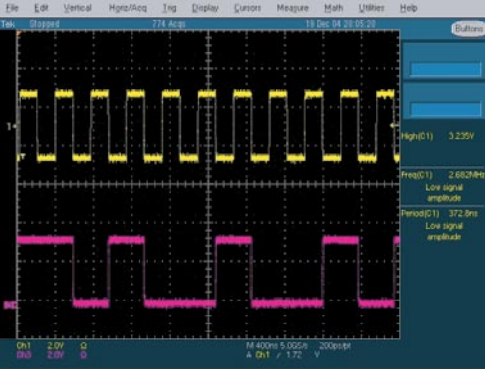
WAVEFORMS

<div>12</div>	PC Input (V-Sync, H-Sync)
<div></div>	
<div>3</div>	LVDS Out (CLK + / -)
<div></div>	

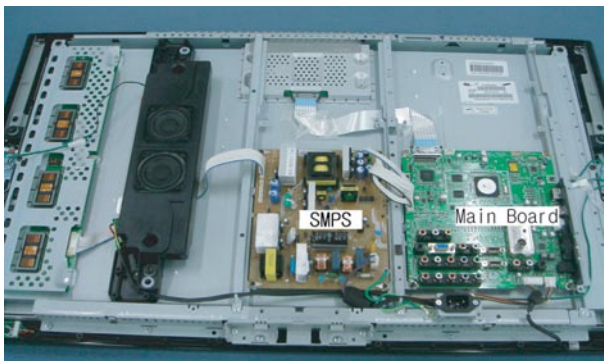
### 4-1-3. No Video (HDMI - Digital Signal)

Symptom	<ul style="list-style-type: none"> <li>Audio is normal but no picture is displayed on the screen.</li> </ul>
Major checkpoints	<ul style="list-style-type: none"> <li>Check the HDMI source</li> <li>Check the MT8226</li> <li>This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.</li> </ul>
Diagnostics	 <pre> graph TD     Start[Power Indicator is off. Lamp(Backlight) Off, no video] -- Yes --&gt; Q1{Check the HDMI source and check the connection of HDMI cable?}     Q1 -- No --&gt; A1[Input an HDMI signal. Check the connected cable.]     Q1 -- Yes --&gt; Q2{4 Does the signal appear at R3220~R3227, R3346~R3453, R3321~R3328?}     Q2 -- No --&gt; A2[Check JA3001, JA3003, CN3003_NSIDE, HDMI cable.Change the HDMI cable. Change the main PCB assembly]     Q2 -- Yes --&gt; Q3{5 Does the digital data appear at output of R5094~R5101, R5163, R5164, D5003, D5004, D5006?}     Q3 -- No --&gt; A3[Check IC3012 Change the main PCB assembly]     Q3 -- Yes --&gt; Q4{6 Does the digital data appear at output of RA5070~RA5075?}     Q4 -- No --&gt; A4[Check IC5004 Change the main PCB assembly]     Q4 -- Yes --&gt; Q5{7 Does the digital data appear at output of RA6074~RA6076, RA6078~RA6080, R6082_P, R6083_P, R6086_P, R6087_P?}     Q5 -- No --&gt; A5[Check IC6001_FBE Change the main PCB assembly]     Q5 -- Yes --&gt; Q6{Check the LVDS cable? Replace the LCD panel?}     Q6 -- No --&gt; A6[Please, Contact Tech support]           </pre>
Caution	Make sure to disconnect the power before working on the SMPS / IP Board.

WAVEFORMS

4 5	HDMI Input (CLK + / -)
	
6	Tuner CVBS Out (Pattern: Grey Bar)
	
7	TS DATA Out (Clk, Data [0])
	

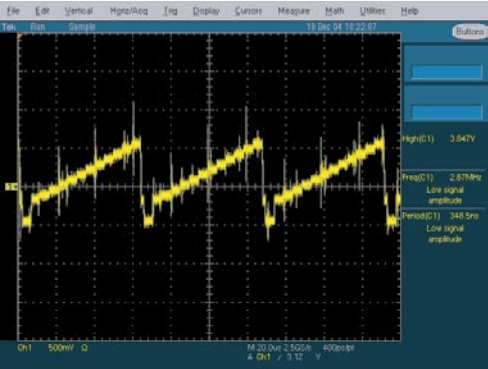
### 4-1-4. No Video (Tuner\_CVBS)

Symptom	<ul style="list-style-type: none"> <li>Audio is normal but no picture is displayed on the screen.</li> </ul>
Major checkpoints	<ul style="list-style-type: none"> <li>Check the Tuner CVBS source</li> <li>Check the MT8226</li> <li>This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.</li> </ul>
Diagnostics	 <pre> graph TD     Start[Power Indicator is off. Lamp(Backlight) Off, no video] -- Yes --&gt; Q1{Check the RF source and check the connection of RF cable?}     Q1 -- No --&gt; A1[Input the RF signal. Check the connected cable.]     Q1 -- Yes --&gt; Q2{8 Does the signal appear at TU3001?}     Q2 -- No --&gt; A2[Check TU3001. Change the main PCB assembly or tuner.]     Q2 -- Yes --&gt; Q3{6 Does the digital data appear at output of RA5070~RA5075?}     Q3 -- No --&gt; A3[Check IC5004 Change the main PCB assembly]     Q3 -- Yes --&gt; Q4{7 Does the digital data appear at output of RA6074~RA6076, RA6078~RA6080, R6082_P, R6083_P, R6086_P, R6087_P?}     Q4 -- No --&gt; A4[Check IC6001_FBE Change the main PCB assembly]     Q4 -- Yes --&gt; Q5{Check the LVDS cable? Replace the LCD panel?}     Q5 -- No --&gt; A5[Please, Contact Tech support]           </pre>
Caution	Make sure to disconnect the power before working on the SMPS / IP Board.

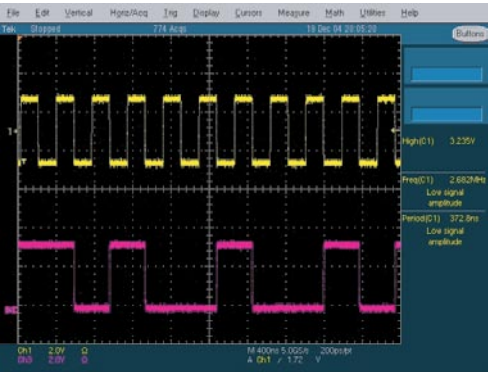


WAVEFORMS

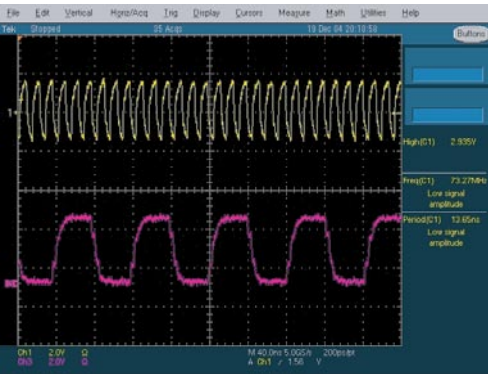
6 Tuner CVBS Out (Pattern: Grey Bar)



7 TS DATA Out (Clk, Data [0])

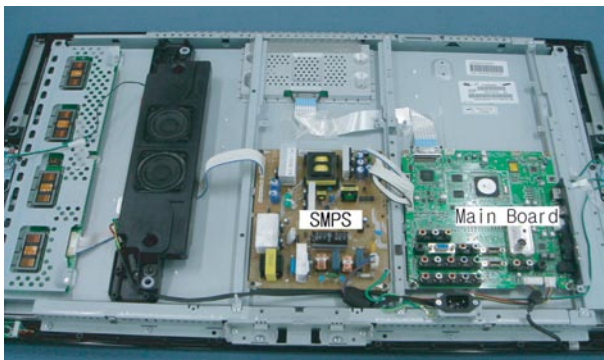


8 Eagle+ Out (Clk, H-Sync)



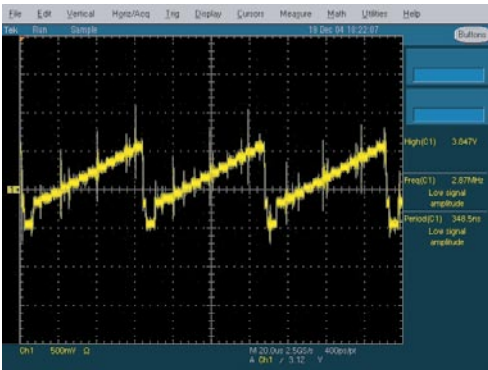


### 4-1-5. No Video (Video CVBS)

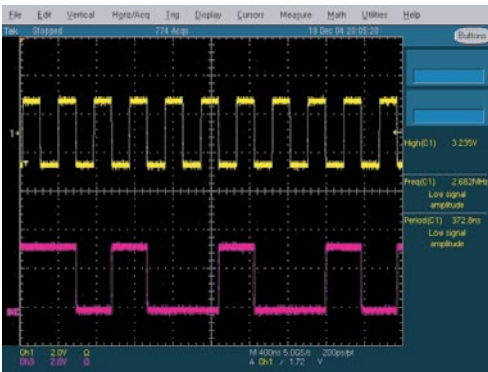
Symptom	<ul style="list-style-type: none"> <li>Audio is normal but no picture is displayed on the screen.</li> </ul>
Major checkpoints	<ul style="list-style-type: none"> <li>Check the Video CVBS source</li> <li>Check the MT8226</li> <li>This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.</li> </ul>
Diagnostics	 <pre> graph TD     A[Power Indicator is off. Lamp(Backlight) Off, no video] -- Yes --&gt; B[Check the video source and check the connection of video cable?]     B -- No --&gt; C[Input a video signal. Check the connected cable.]     B -- Yes --&gt; D[6 Does the signal appear at R3115_NT, R3152_NT, R3208_NSIDE ~ R3211_NSIDE?]     D -- No --&gt; E[Check JA3019_NT or Side-AV Change the main PCB ass'y or Side-AV Ass'y]     D -- Yes --&gt; F[6 Does the digital data appear at output of RA5070~RA5075?]     F -- No --&gt; G[Check IC5004 Change the main PCB assembly]     F -- Yes --&gt; H[7 Does the digital data appear at output of RA6074~RA6076, RA6078~RA6080, R6082_P, R6083_P, R6086_P, R6087_P?]     H -- No --&gt; I[Check IC6001_FBE Change the main PCB assembly]     H -- Yes --&gt; J[Check the LVDS cable? Replace the LCD panel?]     J -- No --&gt; K[Please, Contact Tech support]           </pre>
Caution	Make sure to disconnect the power before working on the SMPS / IP Board.

WAVEFORMS

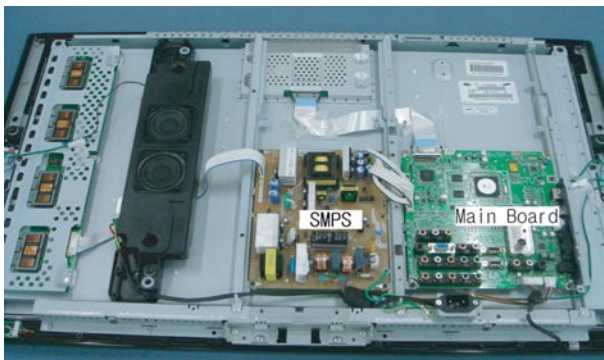
6 Tuner CVBS Out (Pattern: Grey Bar)



7 TS DATA Out (Clk, Data [0])

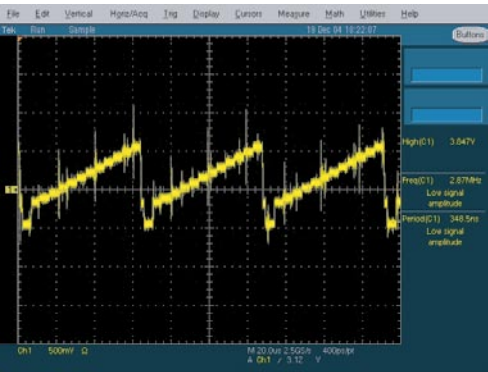


## 4-1-6. No Video (S-Video)

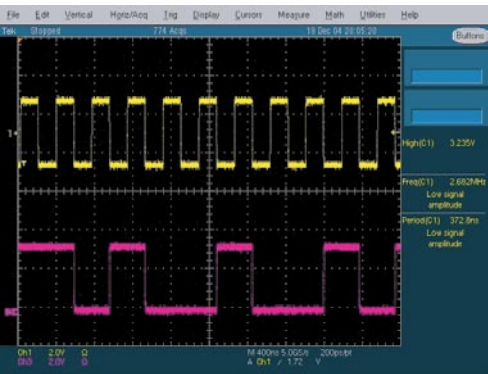
Symptom	<ul style="list-style-type: none"> <li>Audio is normal but no picture is displayed on the screen.</li> </ul>
Major checkpoints	<ul style="list-style-type: none"> <li>Check the S-Video source</li> <li>Check the MT8226</li> <li>This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.</li> </ul>
Diagnostics	 <pre> graph TD     Start[Power Indicator is off. Lamp(Backlight) Off, no video] -- Yes --&gt; Q1[Check the video source and check the connection of video cable?]     Q1 -- No --&gt; A1[Input a video signal. Check the connected cable.]     Q1 -- Yes --&gt; Q2[9 Does the signal appear at R3204_NSIDE ~ R3206_NSIDE?]     Q2 -- No --&gt; A2[Check Side-AV Change the main PCB ass'y or Side-AV assembly]     Q2 -- Yes --&gt; Q3[6 Does the digital data appear at output of RA5070~RA5075?]     Q3 -- No --&gt; A3[Check IC5004 Change the main PCB assembly]     Q3 -- Yes --&gt; Q4[7 Does the digital data appear at output of RA6074~RA6076, RA6078~RA6080, R6082_P, R6083_P, R6086_P, R6087_P?]     Q4 -- No --&gt; A4[Check IC6001_FBE Change the main PCB assembly]     Q4 -- Yes --&gt; Q5[Check the LVDS cable? Replace the LCD panel?]     Q5 -- No --&gt; A5[Please, Contact Tech support]           </pre>
Caution	Make sure to disconnect the power before working on the SMPS / IP Board.

WAVEFORMS

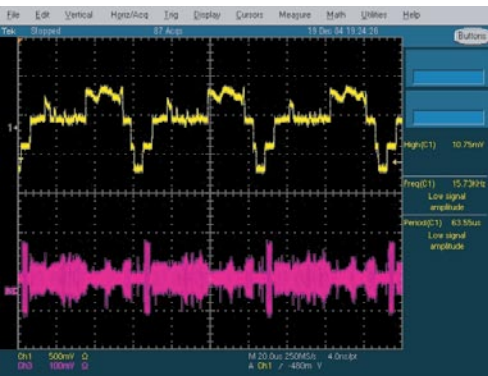
6 Tuner CVBS Out (Pattern: Grey Bar)



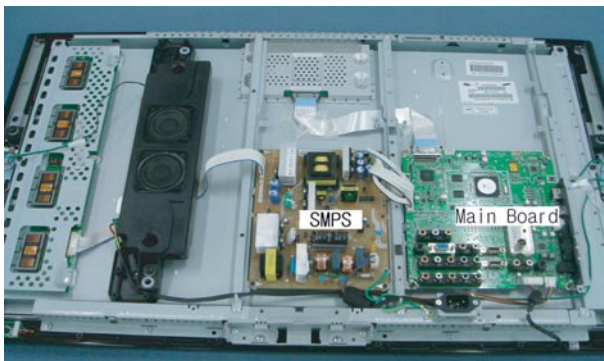
7 TS DATA Out (Clk, Data [0])



9 S-VIDEO Input (Y/C)

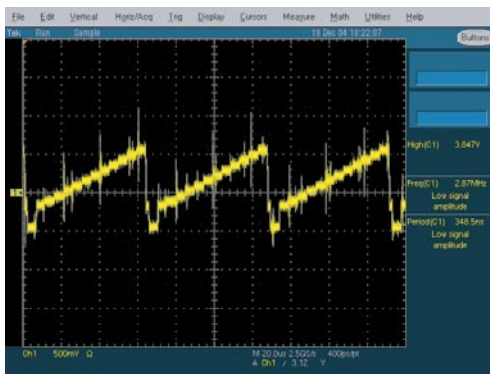


## 4-1-7. No Video (Component 1, 2)

Symptom	<ul style="list-style-type: none"> <li>Audio is normal but no picture is displayed on the screen.</li> </ul>
Major checkpoints	<ul style="list-style-type: none"> <li>Check the Component source</li> <li>Check the MT8226</li> <li>This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.</li> </ul>
Diagnostics	 <pre> graph TD     A[Power Indicator is off. Lamp(Backlight) Off, no video] -- Yes --&gt; B[Check component source and check the connection of component cable ?]     B -- No --&gt; C[Input a component signal. Check the connected cable.]     B -- Yes --&gt; D[10 Does the signal appear at C3028, C3030, C3027, C3064_NT, C3066_NT, C3063_NT?]     D -- No --&gt; E[Check JA3013_NT, JA3016_NT Change the main PCB ass'y]     D -- Yes --&gt; F[6 Does the digital data appear at output of RA5070~RA5075?]     F -- No --&gt; G[Check IC5004 Change the main PCB assembly]     F -- Yes --&gt; H[7 Does the digital data appear at output of RA6074~RA6076, RA6078~RA6080, R6082_P, R6083_P, R6086_P, R6087_P?]     H -- No --&gt; I[Check IC6001_FBE Change the main PCB assembly]     H -- Yes --&gt; J[Check the LVDS cable? Replace the LCD panel?]     J -- No --&gt; K[Please, Contact Tech support]           </pre>
Caution	Make sure to disconnect the power before working on the SMPS / IP Board.

WAVEFORMS

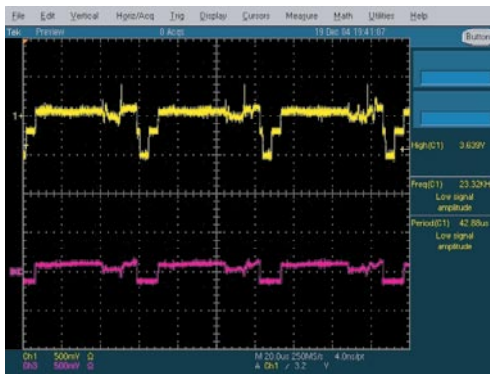
6 Tuner CVBS Out (Pattern: Grey Bar)



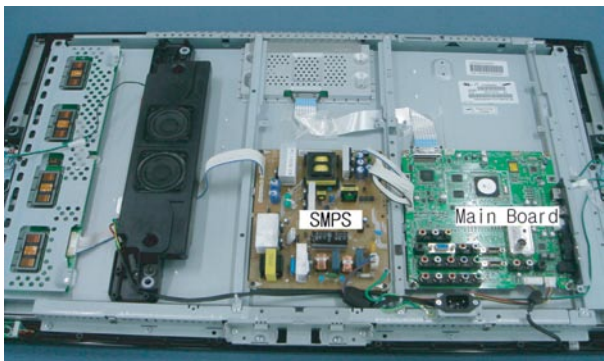
7 TS DATA Out (Clk, Data [0])



10 Component Input (Y/Pb)

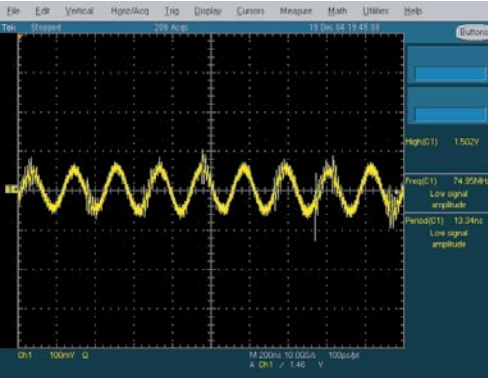

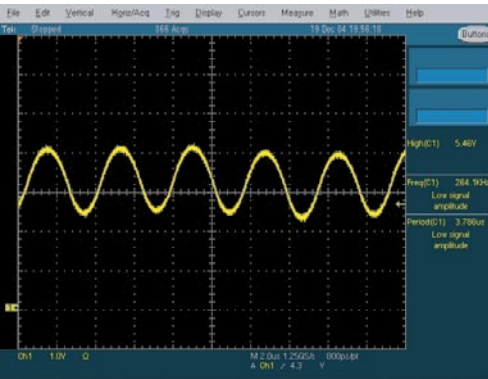


## 4-1-8. No Sound

Symptom	<ul style="list-style-type: none"> <li>Video is normal but there is no sound..</li> </ul>
Major checkpoints	<ul style="list-style-type: none"> <li>When the speaker connectors are disconnected or damaged.</li> <li>When the sound processing part of the Main Board is not functioning.</li> <li>Speaker defect..</li> </ul>
Diagnostics	 <pre> graph TD     Start[Lamp(Backlight) Off, no sound.] -- Yes --&gt; Q1{Check the sound source and check the connection of sound cable?}     Q1 -- No --&gt; A1[Input a sound signal. Check the connected cable.]     Q1 -- Yes --&gt; Q2{11 Does the signal appear at R2002 ~ R2007 (PC, AV(Side AV), COMP1/2, DVI), R5094 ~ R5101 (HDMI)?}     Q2 -- No --&gt; A2[Check IC2002 or Side-AV. Change the main PCB ass'y or side-AV assembly]     Q2 -- Yes --&gt; Q3{12 Does the digital data appear at R2041, R2044~R2046?}     Q3 -- No --&gt; A3[Check IC5004 Change the main PCB assembly]     Q3 -- Yes --&gt; Q4{13 Does the signal appear at L2001, L2002?}     Q4 -- No --&gt; A4[Check IC2004 Change the main PCB assembly]     Q4 -- Yes --&gt; Q5{Check the Speaker? Replace the Speaker?}     Q5 -- No --&gt; A5[Please, Contact Tech support]   </pre>
Caution	Make sure to disconnect the power before working on the SMPS / IP Board.



WAVEFORMS

11	Audio Input (Sign Wave)
	
12	12S Input (Clk, Data)
	
13	Audio Amp Out (Sign Wave)
	

## **4-2. Alignments and Adjustments**

### **4-2-1. General Alignment Instruction**

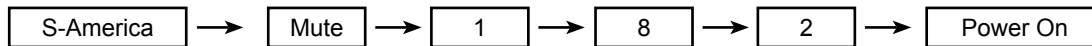
1. Usually, a color LCD-TV needs only slight touch-up adjustment upon installation.  
Check the basic characteristics such as height, horizontal and vertical sync.
2. Use the specified test equipment or its equivalent.
3. Correct impedance matching is essential.
4. Avoid overload. Excessive signal from a sweep generator might overload the front-end of the TV. When inserting signal markers, do not allow the marker generator to distort test result.
5. Connect the TV only to an AC power source with voltage and frequency as specified on the backcover nameplate.
6. Do not attempt to connect or disconnect any wire while the TV is turned on. Make sure that the power cord is disconnected before replacing any parts.
7. To protect against shock hazard, use an isolation transformer.

## 4-3. Factory Mode Adjustments

### 4-3-1 Entering Factory Mode

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

- If you do not have Factory remote - control



### 4-3-2 How to Access Service Mode

#### Using the Customer Remote

1. Turn the power off and set to stand-by mode
2. Press the remote buttons in this order; POWER OFF-MUTE-1-8-2-POWER ON to turn the set on.
3. The set turns on and enters service mode. This may take approximately 20 seconds.
4. Press the Power button to exit and store data in memory.  
- If you fail to enter service mode, repeat steps 1 and 2 above.
5. Initial SERVICE MODE DISPLAY State

Panel On Time (Hour) XXXX	XXXX (Source)
Option Table (Service) 20 20 20 20 20 20 20 20 20	
WB Adjust	
Information	
Checksum	XXXX
Advanced Menu	
T-PRMSAM-0000 (Main Micom Name/Ver) Month / Day / Year / Hour / Min. / Sec.	
T-PRLPEUS-0000 (Sub Micom Name/Ver) Month / Day / Year / Hour / Min. / Sec.	

- "T\_PRLMEAM-0000" and "T\_PRLPEUS-0000" are firmware.....

6. Buttons operations withn Service Mode

Menu	Full Menu Display/Move to Parent Menu
Direction Keys ▲/▼	Item Selection by Moving the Cursor
Direction Keys ◀/▶	Data Increase / Decrease for the Selected Item
Source	Cycles through the active input source that are connected to the unit

## 4-3-3 Factory Data

### 1. Option Table (Service)

Name	Range	
Factory RESET		
Country	GreenGain	
Ready	On/Off	
Panel Inch	19"/22"/23"/26"/27"/32"/37"/40"/42"/46"/50"/52"/57"	
Dimm Type	INT/INT_NEG/EXT_POS/EXT_NEG/EXT	
Panel Type	32AU_AG50_00 / 32AM_AG50_00 / 37AU_AG50_00 / 40CM_AG50_00 / 40AU_AG50_00 / 46CM_AG50_00 / 46AU_AG50_00	
Model Option	TLP_SIDE/CALLA_CHINA/SAFFRON/SAFFRON_CHINA/CALLA/LILY/BDP_TLP/JASMINE/BDP_CHINA/TLP_CHINA	
Anynet +	On/Off	
Light Effect	On/Off	
TTX	On/Off	
TTX List	Flof / List	
TTX Group	WestEurope/ EastEurope / Russian / Greek / Turkey / Arab/Hbrw / Farsian / Arabic / UserOSD	
Carrier Mute	On/Off	
High Devi	On/Off	
Volume Table	Small / Large	
Hot Plug	On/Off	
Clock Control	On/Off	
Hot Plug Dly	3-50	
Auto Power	On/Off	
LNA	On/Off	
Hotel Option	Hotel Mode Power On Channel Power On Band Power On Volume Max Volume Local Key Lock Power On Source	On/Off 2-69 STD 0-100 0-100 On/Off "TV / AV1 / AV2 / S-Video / Component1 / Component2 / PC / HDMI1/ HDMI2 / HDMI3 / HDMI4 / Bypass"

#### 4. Troubleshooting

Gamma	On/Off	
PC Ident	On/Off	
Language	French / Spanish / Portuguese / English	
Channel Table	SUWON / TTSEC / SEIN / SDMA / TSE / SAVINA	
DDR	QIMONDA / SAMSUNG	
Shop Mode	On/Off	
Nordic	On/Off	
NT Conversion	Defect Log	
Control	WM Calib EDID Protect EDID Type EDID Write WB Data EEPROM Reset Logic Download Uart Select USB	Defect Log 0 Defect Log 0 128 Defect Log Defect Log On/Off
PDP Filter	42EA MRT	
PDP Group	C4E RMA	
Spread Spectrum	Spread Spectrum Step 480i/576i Range 480i/576i Step 480p/576p Range 480p/576p Step 720p Range 720p Step 1080i Range 1080i Step 640*480 Range 640*480 Step 800*600 Range 800*600 Step 1024*768 Range 1024*768 Step 1360*768 Range 1360*768 FBE_Spectrum	On/Off 0-255 0-80 0-255 0-80 0-255 0-80 0-255 0-80 0-255 0-80 0-255 0-80 0-255 0-80 0-255 0-80 123

## 2. WB Adjust

## 1) Calibration

Name	Range
AV Calibration	Failure/Success
DTV Calibration	Failure/Success
PC Calibration	Failure/Success
HDMI Calibration	Failure/Success

## 2) White Balance

Name	Range
SubBright	0-255
Roffset	0-255
Goffset	0-255
Boffset	0-255
SubContrast	0-255
Red Gain	0-255
Green Gain	0-255
Blue Gain	0-255

## 3) EPA Standard

Name	Range
S.Contrast	0-100
S.Brightness	0-100
S.Sharpness	0-100
S.Color	0-100
S.tint	0-100
S.Backlight	0-10

#### 4. Troubleshooting

---

##### 4) Movie W/B

Name	Range
W/B MOVIE	On / Off
Mode	Movie / Dynamic
Color Tone	"Normal / Warm1 / Warm2 / Cool1 / Cool2"
MSub Contrast	0-255
MSub Brightness	0-255
Cool2 R Gain	0-255
Cool2 B Gain	0-255
Cool2 R Offset	0-255
Cool2 B Offset	0-255
Normal R Gain	0-255
Normal B Gain	0-255
Normal R Offset	0-255
Normal B Offset	0-255
Warm1 R Gain	0-255
Warm1 B Gain	0-255
Warm1 R Offset	0-255
Warm1 B Offset	0-255
Warm2 R Gain	0-255
Warm2 B Gain	0-255
Warm2 R Offset	0-255
Warm2 B Offset	0-255
Mov. Contrast	100
Mov. Brightness	45
Mov. Color	55
Mov. Sharpness	75
Mov.tint	50
Mov.Backlight	10
Mov.Gamma	"Off / 0.85 / 0.90 / 0.92 / 0.94 / 0.98 / 1.05 /"

##### 3. Information

Checksum
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## 4. Advanced Menu

**MT8226**

## Cal. Adjustment

<b>Name</b>	<b>Range</b>	<b>Value</b>
R_Offset	0-128	128
G_Offset	0-128	128
B_Offset	0-128	128
R_Gain	0-128	128
G_Gain	0-128	128
B_Gain	0-128	128
Y_Offset	0-128	128
Cb_Offset	0-128	128
Cr_Offset	0-128	128
Y_Gain	0-255	128
Cb_Gain	0-255	128
Cr_Gain	0-255	128
CVBS Offset	0-255	89
CVBS Gain	0-255	128
Red OFFSET	0-255	128
Green OFFSET	0-255	128
Blue OFFSET AFTER	0-255	128
RED GAIN	0-255	128
GREEN GAIN	0-255	128
BLUE GAIN	0-255	128

## Cal. Target

<b>Name</b>	<b>Range</b>	<b>Value</b>
AV OFFSET	0-255	16
AV Delta	0-255	3
AV Gain	0-255	220
Y_Offs	0-255	16
Y Delta	0-255	3
Y Gain	0-255	235
PC Offset	0-255	1
PC Delta	0-255	3
PC Gain	0-255	254
2nd Offset	0-255	2
2nd Delta	0-255	1
2nd Gain	0-255	235

#### 4. Troubleshooting

---

##### TVD/Comb

Name	Range	Value
Manual AGC	On/Off	off
MIN_HWIDTH	0-15	7
MAX_HWIDTH	0-63	20
TH_HIGH	0-255	7
TH_SUPER	0-255	26
Color System		3
Noise level		1

##### IPC/MJC

Name	Range	Value
IPC_Film	0	0
MJC_Film	0	0
MJC Status	0	0
Rand X Gain L	0-255	1
Rand Y Gain L	0-255	1
Vsi X Gain L	0-255	2
Vsi Y Gain L	0-255	2
Fbck Vsi Th L	0-255	7
Fbck Vsi Th2 L	0-255	14
Mv DownScale L	0-5	0
Rand X Gain M	0-255	2
Rand Y Gain M	0-255	2
Vsi X Gain M	0-255	3
Vsi Y Gain M	0-255	3
Fbck Vsi Th M	0-255	11
Fbck Vsi Th2 M	0-255	21
Mv DownScale M	0-5	0
Rand X Gain H	0-255	3
Rand Y Gain H	0-255	3
Vsi X Gain H	0-255	4
Vsi Y Gain H	0-255	4
Fbck Vsi Th H	0-255	14
Fbck Vsi Th2 H	0-255	28
Mv DownScale H	0-5	0

## Picture enhance

Name	Range	Value
Low Gain	0-255	64
Middle Gain	0-255	66
High Gain	0-255	67
Local Low	0-255	74
Local Middle	0-255	112
Local High	0-255	96
Gain1	0-255	0
Gain2	0-255	0
Gain3	0-255	0
Gain4	0-255	5
Gain5	0-255	10
Gain6	0-255	4
Gain7	0-255	3
Gain8	0-255	13
LTI_Gain	0-255	2
ECTI_Gain	0-255	5
SCTI_Cgain	0-255	4
SCTI_Fgain	0-255	20
Color_mid_value	0-255	149

## Option Block

## FBE3

Name	Range	Value
Patt-Sel	Test Pattern (0 ~ 20)	0
B-Slope gain	0-255	60
B-Tilt min	0-255	30
B-Tilt max	0-255	110
Lfunc-Basis	0-255	75
Hfunc-Basis	0-255	80
Mean-Offset1	0-255	30
Mean-Offset2	0-255	235
Mean-Slope	0-255	112
ACR-Offset	0-255	10
ACR-Th1	0-255	10
ACR-Th2	0-255	110
Skin-Enable	On/Off	On
Skin-Uv	0-255	110
Sub color	0-255	110
M-Skin-UV	0-255	128
M Sub color	0-255	128

**FRCM**

<b>Name</b>	<b>Range</b>	<b>Value</b>
FW Version	32"	32"
EEPROM State		
Spread Spectrum		
SS Width	0-255	20
SS Freq	0-255	60
TP Before DDR	0-255	0
TP After DDR	0-255	0
FMD DEMO		
Video L Jud	0-255	0
Video M Jud	0-255	0
Video H Jud	0-255	0
SD FilmL22Jud	0-255	13
SD FilmL32Jud	0-255	13
SD FilmM22Jud	0-255	8
SD FilmM32Jud	0-255	10
SD FilmH22Jud	0-255	3
SD FilmH32Jud	0-255	5
HD FilmL22Jud	0-255	13
HD FilmL32Jud	0-255	13
HD FilmM22Jud	0-255	8
HD FilmM32Jud	0-255	10
HD FilmH22Jud	0-255	3
HD FilmH32Jud	0-255	5

**Pdp logic**

<b>Name</b>	<b>Range</b>	<b>Value</b>
Patt-Sel	0	0
FRC Mode	32"	32"
FRC DBG MarkOn	0	0
FRC Bypass	32"	32"
FRC MV Force	32"	32"
MB SW	32"	32"
MB Offset1	0	0
Ve Sig Control	0	0

**Checksum 00 00**
**Panel Type 00**
**Panel Inch 00 SD**
**Panel Version N/A**
**Logic Sw Ver. 00Y 00M 00D**
**Panel Temp**

**Sound**

<b>Name</b>	<b>Range</b>	<b>Value</b>
AM_mute Th_High	0-20	9
AM_mute Th_Low	0-20	8
FM_mute Th_High	0-96	14
FM_mute Th_Low	0-96	6
NICAM Fine VOL	0-40	20
FM FINE VOL	0-40	20
AM FINE VOL	0-40	19
Fine Tune Vol	0-40	20
SC1 Fine Vol	0-40	20
SC2 Fine Vol	0-40	20
Output Matrix	Bypass / L Mono / R Mono	Bypass
Num Check	0-80	50
Pilot Num	0-50	35
Pilot Low	64-134	112
Pilot High	89-160	128
SAP Num	0-50	20
SAP Low	69-132	101
SAP High	101-202	167
SAP Mute Lvl	0-100	0
Fine Vol	0-40	20
SAP Fine Vol	0-40	20
FM Mute Th_H	0-150	58
FM Mute Th_L	0-150	58
MNSelect	128	128
AMP Master Vol.	0-48	30
AMP PWM Mod.	128-254	254
DRC Thresh.	0-127	17
Speaker EQ	On/Off	On

**YC Delay**

Name	Range	Value
RF PAL-B/G	0-10	6
RF PAL-D/K	0-10	5
RF PAL- I	0-10	5
RF PAL- L/L'	0-10	5
RF SECAM-B/G	0-10	7
RF SECAM-D/K	0-10	5
RF SECAM-I	0-10	5
RF SECAM-L/L'	0-10	5
RF NTSC3.58	0-10	5
RF NTSC4.43	0-10	6
RF PAL-M	0-10	7
RF PAL-N	0-10	5
AV PAL	0-10	6
AV SECAM	0-10	7
AV NTSC3.58	0-10	6
AV NTSC4.43	0-10	6
AV PAL60	0-10	5
AV PAL-M	0-10	7
AV PAL-N	0-10	5

**Adjust**

Name	Range	
User Control Init	TTX PWM	0-255
	Dyn. Contrast	0-255
	Dyn. Brightness	0-255
	Dyn. Color	0-255
	Dyn. Sharpness	0-255
	Std. Contrast	0-255
	Std. Brightness	0-255
	Std. Color	0-255
	Std. Sharpness	0-255
	Melody Volume	0-55
	Brightness Center	0-255
	Contrast Gain	0-255
	DSP Recovery	On/Off
	Sound Delay	0-70

Name	Range	
LNA PLUS	LNA PLUS	On/Off
	NR1_Coring	0-32
	NR2_Coring	0-32
	NR3_Coring	0-32
	NR4_Coring	0-32
	RF_dB0_TH	0-255
	RF_dB1_TH	0-255
	RF_dB2_TH	0-255
	RF_dB3_TH	0-255
Pixel Shift Test	Min / Sec	
Video Mute Time	0-10	
Dynamic Dimming	On / Off	
Dynamic CE	On / Off	
Tuner Select	AUTO / ALPS / ALPS SL / SEMCO / SEMCO SL	
Tuner Top Semco	0-31	
Tuner Top Alps	0-31	
Magazine LNA	On / Off	
Debug	On / Off	
ACR	On / Off	
D-Watch Dog	On / Off	
FBE Select	FBE / FBE2X	
A-Watch Dog	On / Off	
MJC/PDP FRC	All On / All Off / MJC Only / FRC Only	
Visual test	On / Off	
FBE Mute	On / Off	
V-Chip	On / Off	
Caption	On / Off	
Color System	Auto / PAL-M / PAL-N / NTSC-M	

**Bus Stop**

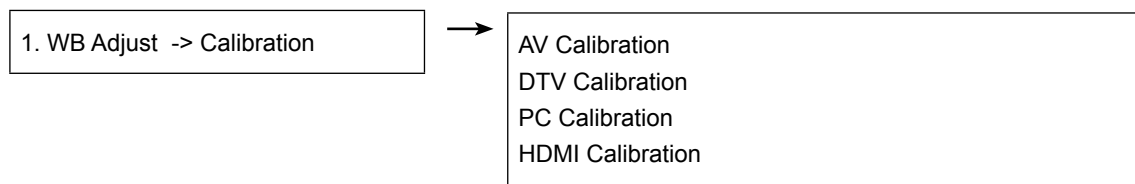
Name	Range	Value
Main Loop	On / Off	Off
Eeprom	On / Off	Off
Tuner	On / Off	Off
Normal	On / Off	Off
A-Watch Dog	On / Off	On

**Defect Log**



## 4-4. White Balance - Calibration

### 4-4-1 White Balance -Calibration

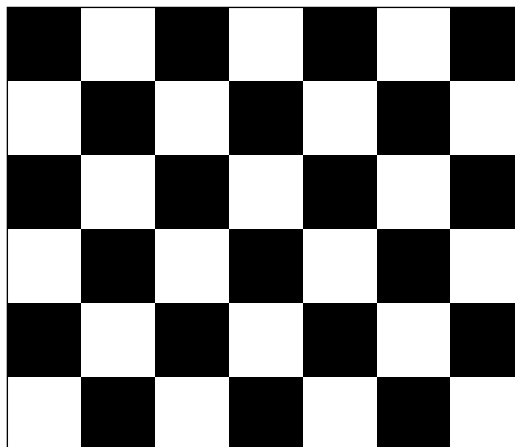


### 4-4-2 Service Adjustment - You must perform Calibration in the Lattice Pattern before adjusting the White Balance.

#### ■ Color Calibration

Adjust spec.

1. Source : HDMI
2. Setting Mode : 1280\*720@60Hz
3. Pattern : Pattern #24 (Chess Pattern)



( Chess Pattern )

4. Use Equipment : CA210 & Master MSPG925 Generator

- 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

<Table 1>

Caution !!!

You have to check information and resolution with Model Number.  
Because each Equipment has different Model Number.

---

### ■ Method of Color Calibration (AV)

- 1) Apply the PAL Lattice (N0. 2) pattern signal to the AV IN 1 port
- 2) Press the Source key to switch to "AV1" mode
- 3) Enter Service mode
- 4) Select "2 WB Adjust" menu.
- 5) Select the "Calibration" menu
- 6) Select the "AV Calibration" menu.
- 7) In "AV Calibration Failure" status, press the "►" key to perform Calibration.
- 8) When Calibration is complete, it returns to the high-level menu.
- 9) 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 "2 WB Adjust" menu.
- 5) Select the "Calibration" menu
- 6) Select the "DTV Calibration" menu.
- 7) In "DTV Calibration Failure" status, press the "►" key to perform Calibration.
- 8) When Calibration is complete, it returns to the high-level menu.
- 9) You can see the change of the "DTV 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 "2 WB Adjust" menu.
- 5) Select the "Calibration" menu
- 6) Select the "PC Calibration" menu.
- 7) In "PC Calibration Failure" status, press the "►" key to perform Calibration.
- 8) When Calibration is complete, it returns to the high-level menu.
- 9) 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 "2 WB Adjust" menu.
- 5) Select the "Calibration" menu
- 6) Select the "HDMI Calibration" menu.
- 7) In "HDMI Calibration Failure" status, press the "►" key to perform Calibration.
- 8) When Calibration is complete, it returns to the high-level menu.
- 9) You can see the change of the "HDMI Calibration" status from Failure to Success.

## 4-4-3 White Balance - Adjustment

	(low light)	(hight light)
3. White Balance	Sub Bright Red offset Green offset Blue offset	Sub Contrast Red gain Green gain Blue gain

(W/B adjustment Condition refer next page)

## 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. (Refer to Table 1, 2)  
It varies with Panel's size and Specification.

- Equipment : CA-210
- Pattern: MIK K-7256 #92 "Flat W/B Pattern" as standard
- Use other equipment only after comparing the result with that of the Master equipment.
- Set Aging time : 60min ↑



- Calibration and Manual setting for WB adjustment.

HDMI : Calibration at #24 Chessboard Pattern → Manual adjustment #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 (PAL)

- If finishing in HDMI mode, adjustment coordinate is almost same in AV/COMP mode.
- White Balance Manual Adjustment

	Adjustment Coordinate				
		x	y	Y(L)	T(K) + MPCD
CVBS (NTSC)	H/L	272	287	(Sub_CT:132)	11,000 (+10)
	L/L	272	287	12.0cd/m <sup>2</sup> (3.5 Ft)	11,000 (+10)
COMP (720P)	H/L	272	287	(Sub_CT:132)	11,000 (+10)
	L/L	272	287	12.0cd/m <sup>2</sup> (3.5 Ft)	11,000 (+10)
HDMI (720P)	H/L	272	287	(Sub_CT:132)	11,000 (+10)
	L/L	272	287	12.0cd/m <sup>2</sup> (3.5 Ft)	11,000 (+10)

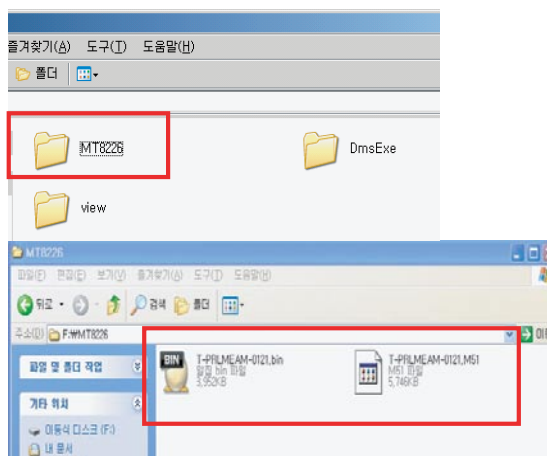
- Adjustment Specification

White Balance : High light ( $\pm 2$ ), Low light ( $\pm 3$ )

Luminance : High light (Don't care), Low light ( $\pm 0.2$  Ft/L)

## 4-6. Main S/W Update

### 4-6-1 USB



1-1.

Update S/W by using USB 2.0 port.

In USB, make the folder "MT8226" and put to update file in the folder.

- Connect USB to Wiselink (Side AV-USB).

#### 4. Troubleshooting

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##### 1-2. Enter to Factory Mode

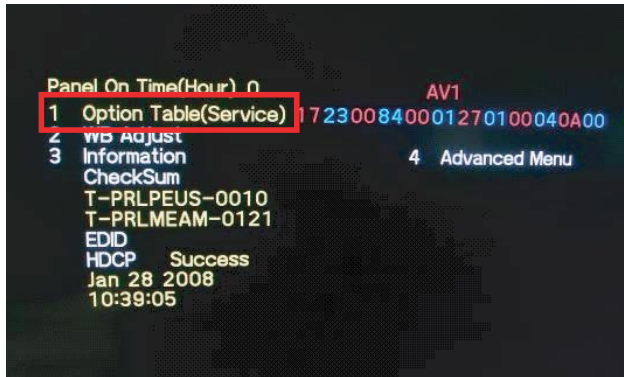
###### 1) On Stand by Mode,

@ EU / Asia : INFO > Menu > Mute > Power On

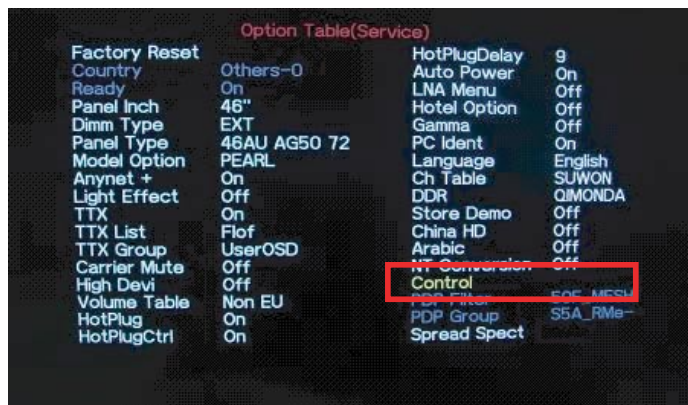
@ S-America : Mute > 1 > 8 > 2 > Power On

###### 2) With Factory Remote Controller

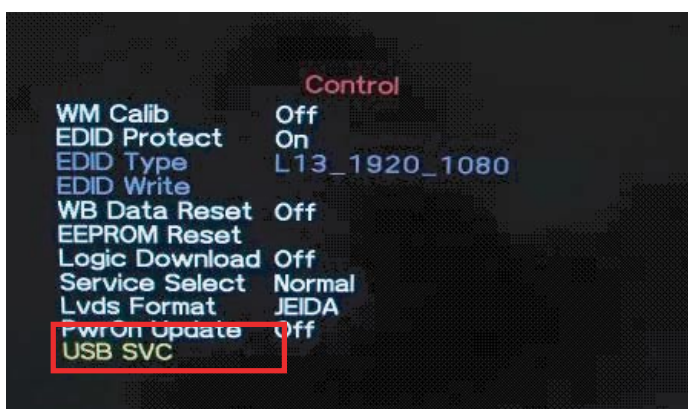
Power on Main Board, then press the button (Info + Factory).



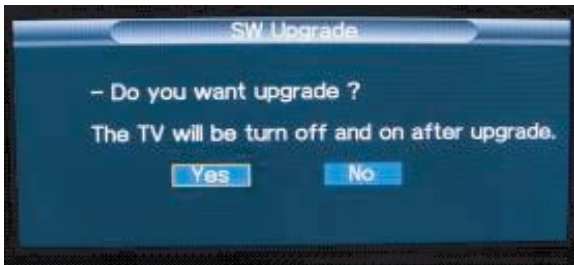
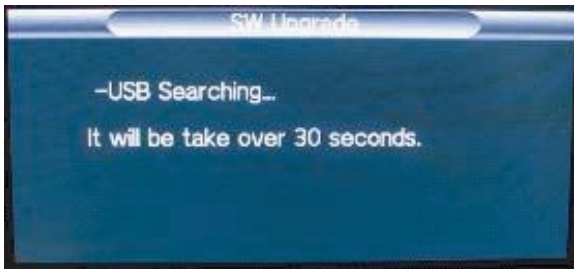
- Select Option Table (Service)



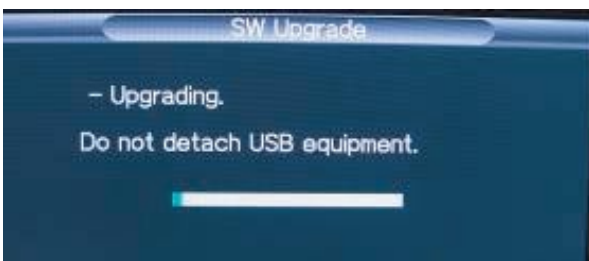
- Select Control



- Select USB SVC



- Select "YES"



- Start Upgrading automatically.

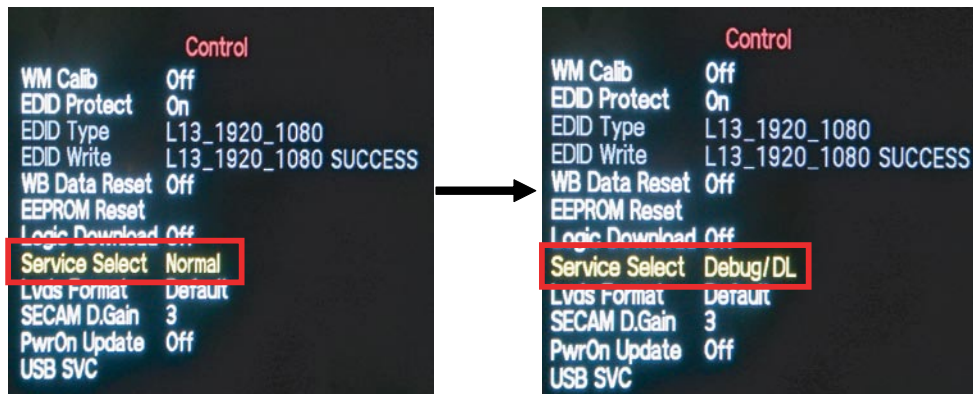
1-3.

- When Upgrading finish, Turn off the Set (waiting a few seconds) and turn on again automatically.

## 4-6-2 RS-232C

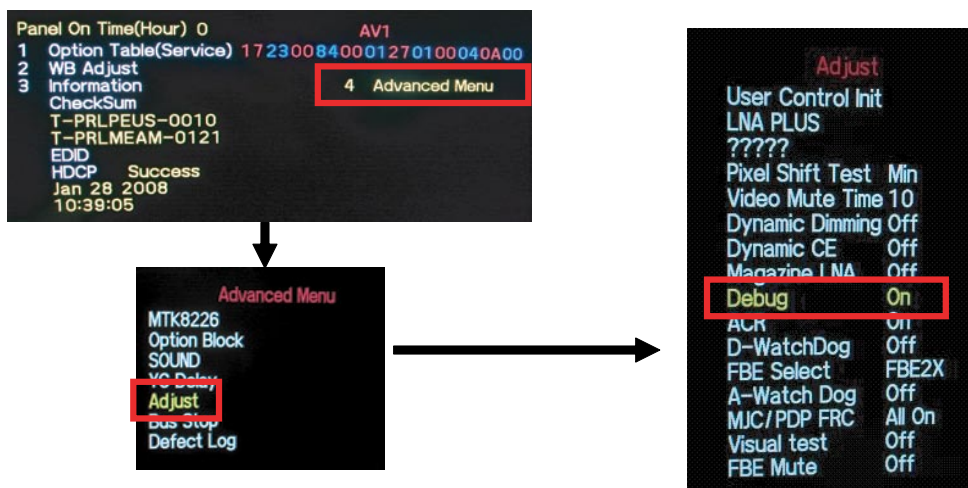
2-1.

- Before S/W Update, set the value "Service Select Debug/DL"
- To set the value, enter to "1.Option Table (Service) -> Control"



2-2.

- Set the value "Debug On"
- To enter "4. Advanced Menu", we have to press the Password.  
( now, Password is "0000")
- Turn off (=AC Power off) the Set (waiting a few seconds) and turn on again.



Caution !!! If Debug is on, Wall\_Mount is not active.

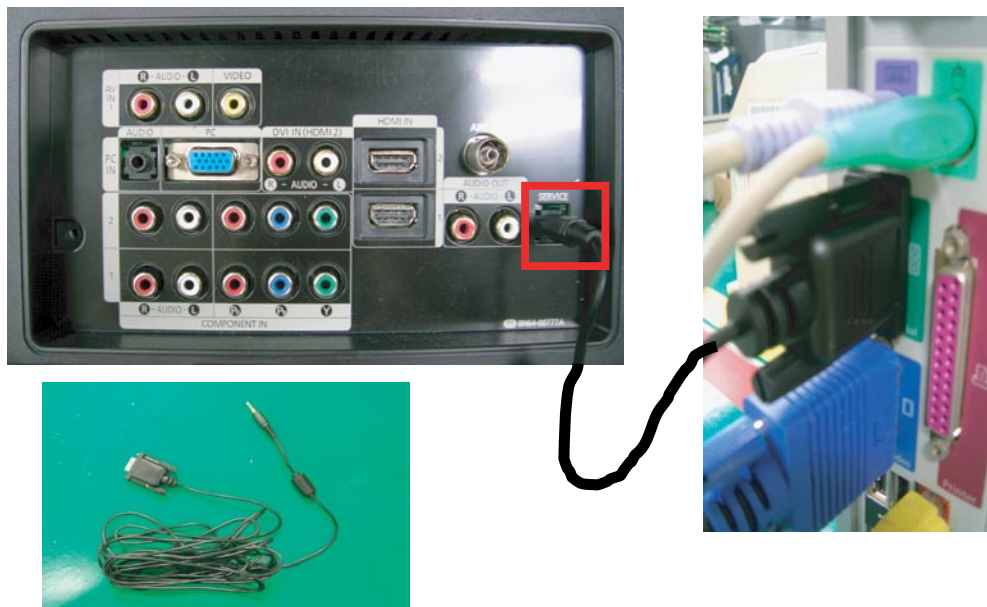
Debug On : RS-232C (Baudrate=115200 bps) for Debugging

Debug Off : RS-232C (Baudrate=9600 bps) for Wallmount



## 2-3. Install the MTK Tool

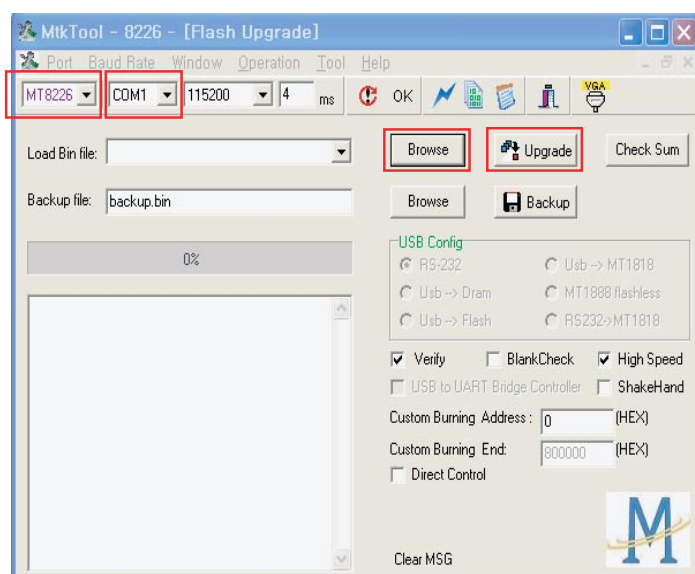
- Connect Set (Service JACK) and JIG Cable to execute Program Update.



JIG Cable (RS-232C cable)

## 2-4. Turn on the Set (or on Stand by mode)

- Run "MTK Tool"



- Click Reset
- Choose MT8226
- Select Com Port (Auto Detect)
- Select Bin file (to update new S/W version file), by Browse
- Click Upgrade button

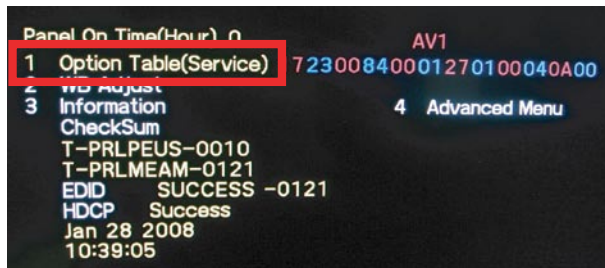
- 2-5. If Upgrade is finished, Turn off (=AC Power off) the Set (waiting a few seconds) and turn on again.



### 4-6-3 After Main S/W update

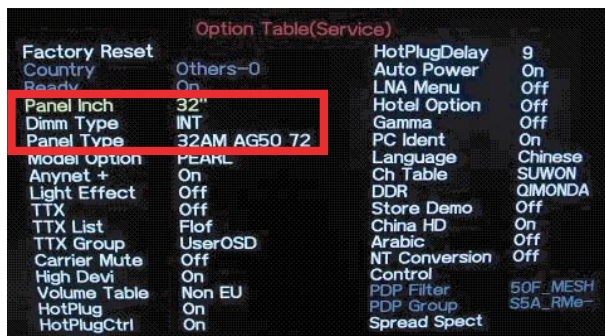
3-1.

After S/W Update, set the value "Panel Inch", "Dimm Type", "Panel Type" to optimize each Inch SET.



Check the "Panel Type" and Change it ,suitable for Each Panel.

Inch / Vendor / GlassType/Freq./Gamut  
Ex) 32 AM AG 50 72  
→ 32inch + AMLCD + Anti Glare + 50Hz  
+ 72% Gamut



Check the Dimming Type  
: 32"/37" – INT (Internal Dimming)  
40"/46" – EXT (External Dimming)

L550 - Panel Inch / Dimm Type / Panel Type

Series	Area	Inch	1'st			2'nd		
			Panel	Panel type	Dimming Type	Panel	Panel type	Dimming Type
550	ASIA	46"	AUO 50Hz 72%AG	46AU_ AG50_00	EXT	CMO 50Hz 72%AG	46CM_ AG50_00	TBD
		40"	CMO 50Hz 72%AG	40CM_ AG50_00	EXT	AMLCD 50Hz 72%AG	40AM_ AG50_00	TBD
		37"	AUO 50Hz 72%AG	37AU_ AG50_00	INT	TBD	TBD	TBD
		32"	AMLCD 50Hz 72%AG	32AM_ AG50_00	INT	AUO 50Hz 72%AG	32AU_ AG50_00	TBD
	China	46"	AUO 50Hz 72%AG	46AU_ AG50_00	EXT	CMO 50Hz 72%AG		
		40"	CMO 50Hz 72%AG	40CM_ AG50_00	EXT	AMLCD 50Hz 72%AG		
		37"	AUO 50Hz 72%AG	37AU_ AG50_00	INT	TBD	TBD	TBD
		32"	AMLCD 50Hz 72%AG	32AM_ AG50_00	INT	AUO 50Hz 72%AG	32AU_ AG50_00	TBD
	Taiwan	46"	AUO 60Hz 72%AG	46AU_ AG60_00	EXT	CMO 60Hz 72%AG	46CM_ AG60_00	TBD
		40"	CMO 60Hz 72%AG	40CM_ AG60_00	EXT	AMLCD 60Hz 72%AG	40AM_ AG60_00	TBD
		32"	AMLCD 60Hz 72%AG	32AM_ AG60_00	INT	AUO 60Hz 72%AG	32AU_ AG60_00	TBD

Series	Area	Inch	1'st			2'nd		
			Panel	Panel type	Dimming Type	Panel	Panel type	Dimming Type
550	Brazil	46"	AMLCD 60Hz 72%AG	46AM_ AG60_00	EXT	CMO 60Hz 72%AG	46CM_ AG60_00	TBD
		40"	AMLCD 60Hz 72%AG	40AM_ AG60_00	EXT	CMO 60Hz 72%AG	40CM_ AG60_00	TBD
		32"	AMLCD 60Hz 72%AG	32AM_ AG60_00	INT	AUO 60Hz 72%AG	32AU_ AG60_00	TBD
	Latin America	46"	AMLCD 60Hz 72%AG	46AM_ AG60_00	EXT	CMO 60Hz 72%AG	46CM_ AG60_00	TBD
		40"	AMLCD 60Hz 72%AG	40AM_ AG60_00	EXT	CMO 60Hz 72%AG	40CM_ AG60_00	TBD
		32"	AMLCD 60Hz 72%AG	32AM_ AG60_00	INT	AUO 60Hz 72%AG	32AU_ AG60_00	TBD

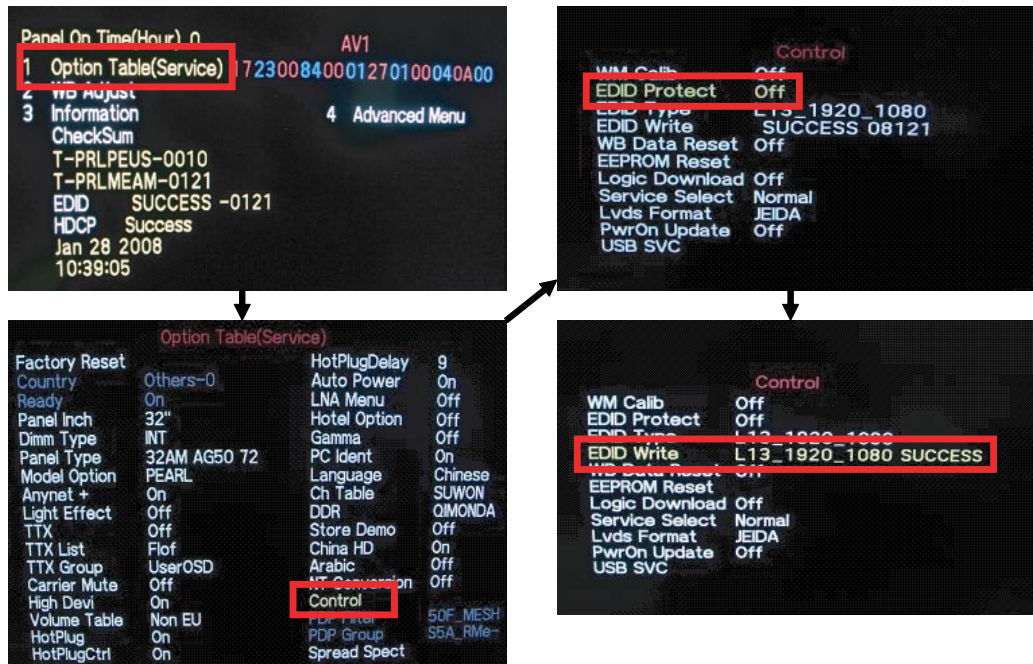
**L650 - Panel Inch / Dimm Type / Panel Type**

Series	Area	Inch	1'st			2'nd		
			Panel	Panel type	Dimming Type	Panel	Panel type	Dimming Type
550	ASIA	52"	AMLCD 100Hz 72% SC	52AM_ SC100_00	EXT	TBD	TBD	TBD
		46"	AMLCD 100Hz 72% SC	46AM_ SC100_00	EXT	CMO 120Hz 72% SC	46CM_ SC100_00	TBD
		40"	AMLCD 100Hz 72% SC	40AM_ SC100_00	EXT	TBD	TBD	TBD
		32"	AMLCD 120Hz 72% SC	32AM_ SC100_00	INT	TBD	TBD	TBD
	Latin America	52"	AMLCD 120Hz 72% SC	52AM_ SC120_00	EXT	TBD	TBD	TBD
		46"	AMLCD 120Hz 72% SC	46AM_ SC120_00	EXT	CMO 120Hz 72% SC	46CM_ SC120_00	TBD
		40"	AMLCD 120Hz 72% SC	40AM_ SC120_00	EXT	TBD	TBD	TBD
		32"	AMLCD 120Hz 72% SC	32AM_ AG50_00	INT	TBD	TBD	TBD
	Taiwan	52"	AMLCD 120Hz 72% SC	52AM_ SC120_00	EXT	TBD	TBD	TBD
		46"	AMLCD 120Hz 72% SC	46AM_ SC120_00	EXT	CMO 120Hz 72% SC	46CM_ SC120_00	TBD
		40"	AMLCD 120Hz 72% SC	46AM_ SC120_00	EXT	TBD	TBD	TBD
		32"	AMLCD 120Hz 72% SC	32AM_ AG50_00	INT	TBD	TBD	TBD

#### 4. Troubleshooting

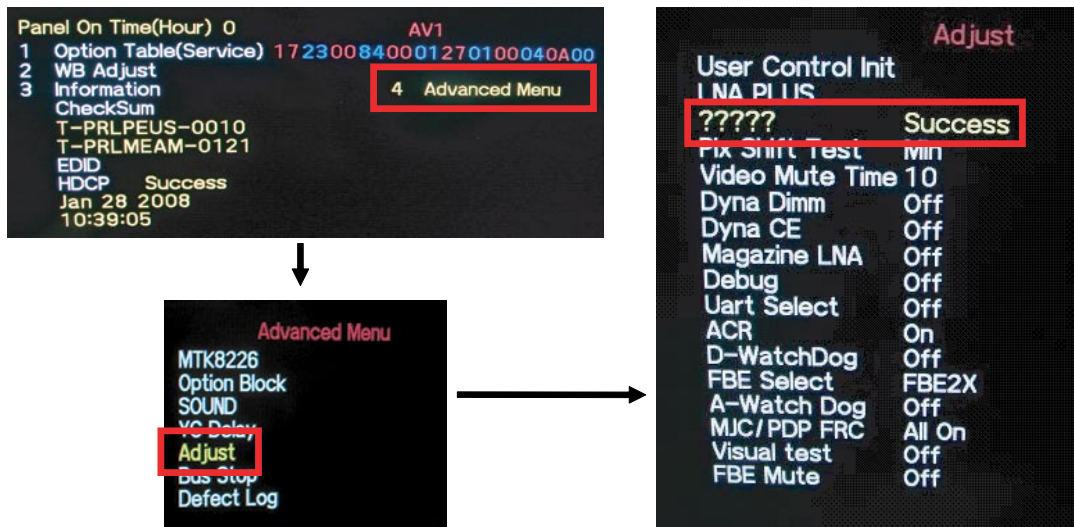
##### 3-2. Self EDID

1) Option Table -> control -> EDID Protect On -> EDID Protect off -> EDID WRITE

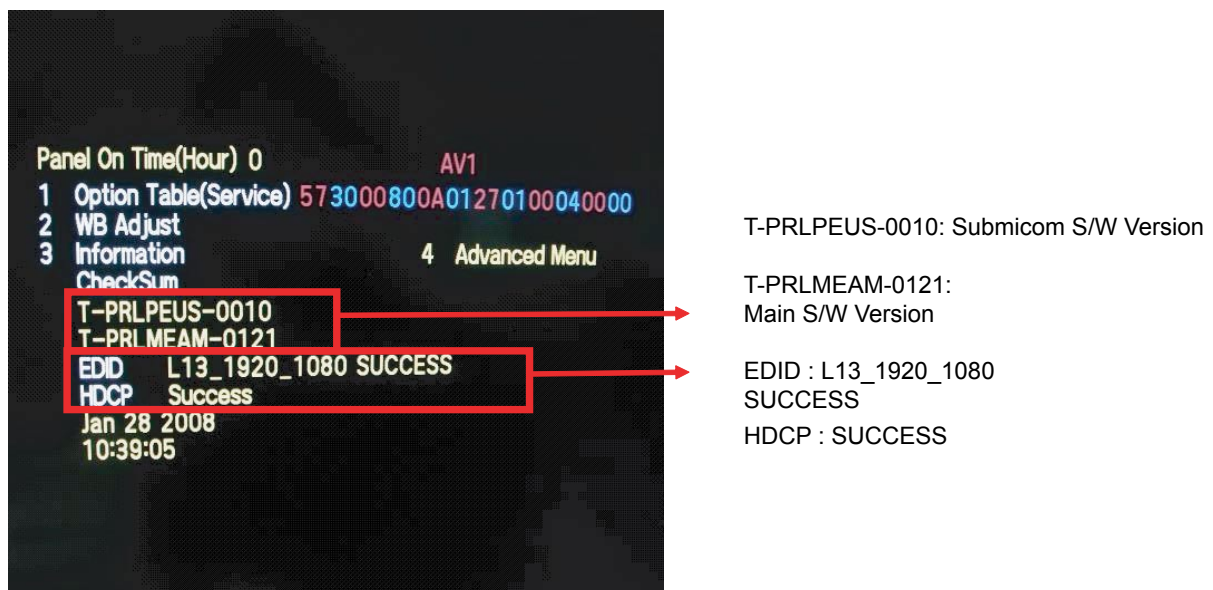


## 3-3. HDCP

- To enter "4. Advanced Menu", we have to press the Password. ( now, Password is "0000")
- Find the ????? and press the Enter button in the Remocon.
- Set the value " Success "



3-4. If Upgrade is all finished, check this screen.



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**Memo**