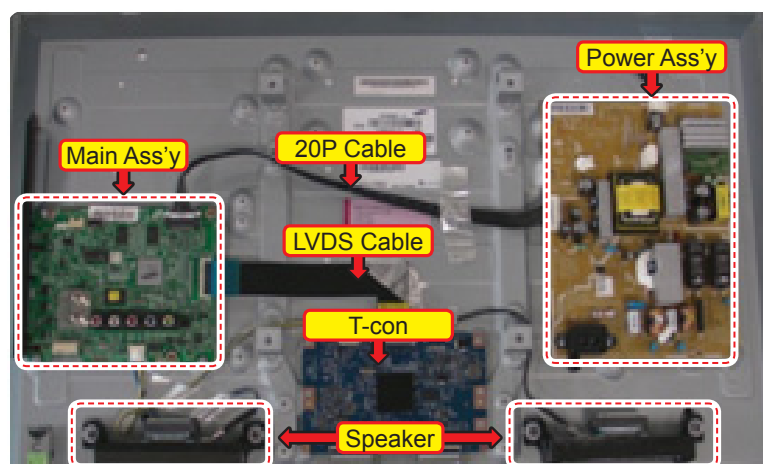


## 4. Troubleshooting

### 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

| Novatek | Picture | Problem                              |
|---------|---------|--------------------------------------|
| OK      | NG      | Main Board or Signal Source          |
| NG      | NG      | Main Board                           |
| NG      | NG      | Main 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. Factory mode. (info → menu → mute → Power on when TV is in 'stand-by mode')
2. Move to SVC menu.
3. Move to Test Pattern.
4. Check inner patterns.

## 4-2. How to Check Fault Symptom

### 4-2-1. NO Power

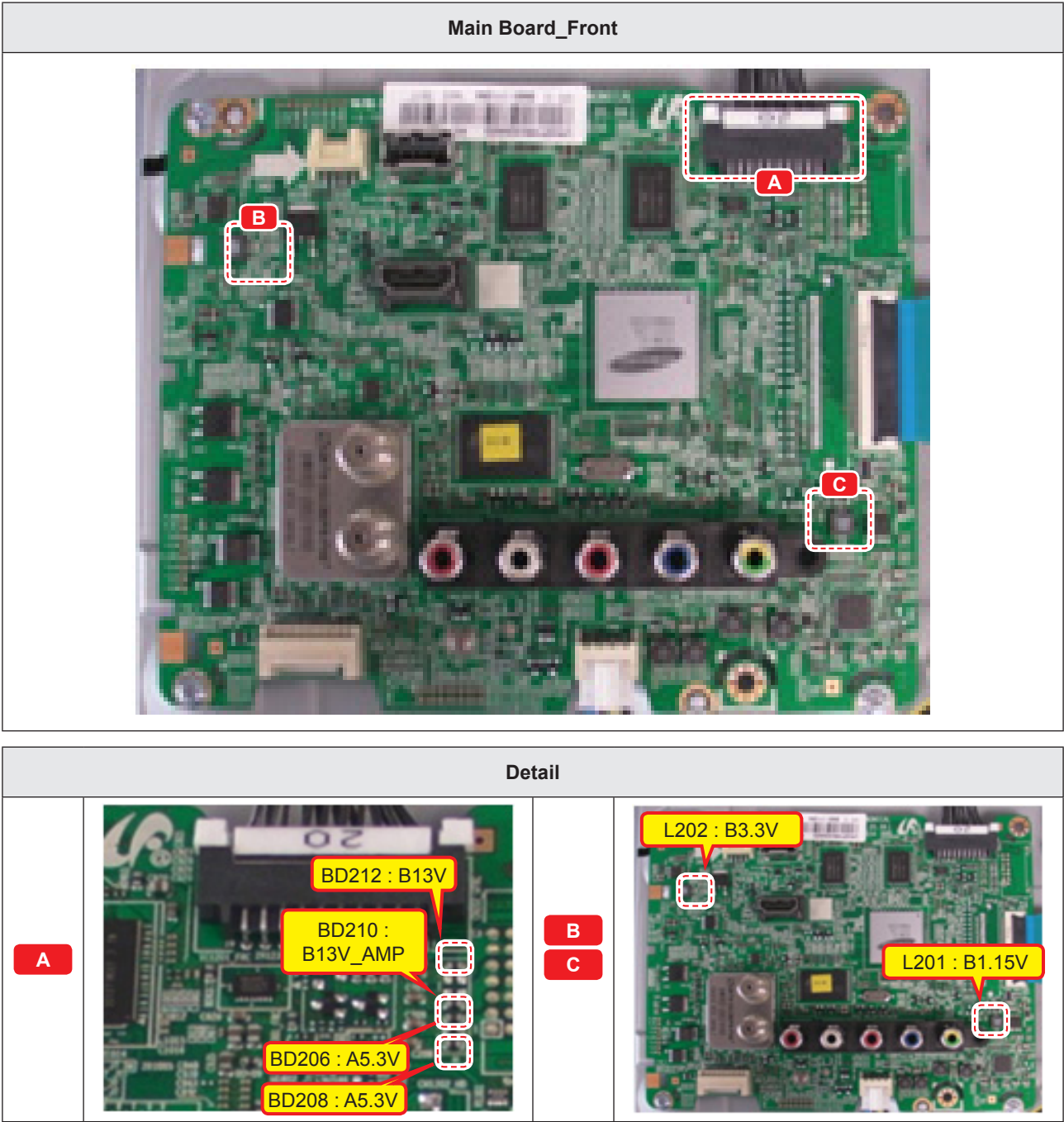

**Note**

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

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Symptom</b>           | <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 relay does not work when connecting The power cord.</li> <li>The units appears to be dead.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Major checkpoints</b> | <p>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:</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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Diagnostics</b>       | <pre> graph TD     Q1[Power indicator LED is on?] -- No --&gt; A1[Check the power cord connection.]     Q1 -- Yes --&gt; Q2[Check the backlight on, when 20 PIN cable unconnected ?]     Q2 -- No --&gt; B1[Change 20p cable.<br/>Change Main Power Ass'y.]     Q2 -- Yes --&gt; Q3[Check 'Stand-By 5.3V' ?<br/>- BD208 : A5.3V]     Q3 -- No --&gt; B1     Q3 -- Yes --&gt; Q4[Check 'Power input of Main Ass'y' ?<br/>DC B13V, B5.3V appear at CN201<br/>#11,12,13(B13V) CN201 #1,3 (B5.3V)?<br/>0V to 13V (CN201 #11,12,13)0V to 5.3V<br/>(CN201 #1,3)]     Q4 -- No --&gt; B1     Q4 -- Yes --&gt; Q5[Check 'Power IC output of Main Ass'y' ?<br/>- L201 : B1.15V / L202 : B3.3V]     Q5 -- No --&gt; A2[Change the Main Ass'y.]     Q5 -- Yes --&gt; Q6[Check Input power of 'T CON Board' ?<br/>- F1(T CON) : B13V]     Q6 -- No --&gt; A3[Reconnect or Change.<br/>the LVDS cable.]     Q6 -- Yes --&gt; Q7[Check Power of 'T CON Board'.<br/>- L9(T-CON) : VCC12<br/>- TP_VCC33 : VCC33]     Q7 -- No --&gt; A4[Change the T CON Board.]           </pre> |

|                    |                                                                                                                             |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>Diagnostics</b> | <div data-bbox="598 224 646 291">↓<br/>Yes<br/>↓</div> <div data-bbox="392 293 857 356">Please, Contact tech support.</div> |
| <b>Caution</b>     | Make sure to disconnect the power before working on the IP Board.                                                           |

■ Location of Parts



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

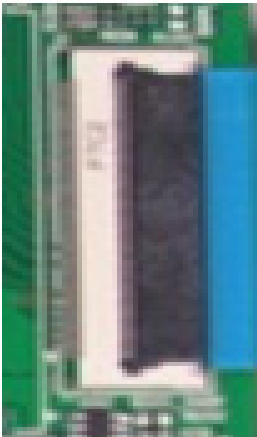


### Note

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

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Symptom</b>           | <ul style="list-style-type: none"> <li>Audio is normal but no picture is displayed on the screen.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Major checkpoints</b> | <ul style="list-style-type: none"> <li>Check the HDMI source.</li> <li>Check the HDMI switch.</li> <li>This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Diagnostics</b>       | <div> <div> Power indicator LED is off.<br/>Lamp(Backlight) on, no video ? </div> <div> No → Check a set in the 'Stand-by mode'. </div> <div> Yes ↓ </div> <div> Check the HDMI source and check the connection of HDMI cable ? </div> <div> No → Input the HDMI signal properly. </div> <div> Yes ↓ </div> <div> <b>①</b> Check the HDMI source and check the connection of HDMI cable ? </div> <div> No → Check CN502_H1.<br/>Check HDMI cable.<br/>Change the Main Ass'y </div> <div> Yes ↓ </div> <div> <b>②</b> Check the LVDS clk signal at output of Main Board. (TX) <ul style="list-style-type: none"> <li>– ODD_TXCLK- / ODD_TXCLK+</li> <li>– EVEN_TXCLK- / EVEN_TXCLK+</li> </ul> </div> <div> No → Check IC901(NT72569).<br/>Change the Main Ass'y. </div> <div> Yes ↓ </div> <div> Check the LVDS cable?<br/>Replace the T CON / LCD panel? </div> <div> No → Please, Contact tech support. </div> </div> |
| <b>Caution</b>           | Make sure to disconnect the power before working on the IP Board.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

■ Location of Parts

| Main Board_Front                                                                    |                                                                                     |  |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--|
|  |                                                                                     |  |
| Detail                                                                              |                                                                                     |  |
| A                                                                                   |  |  |

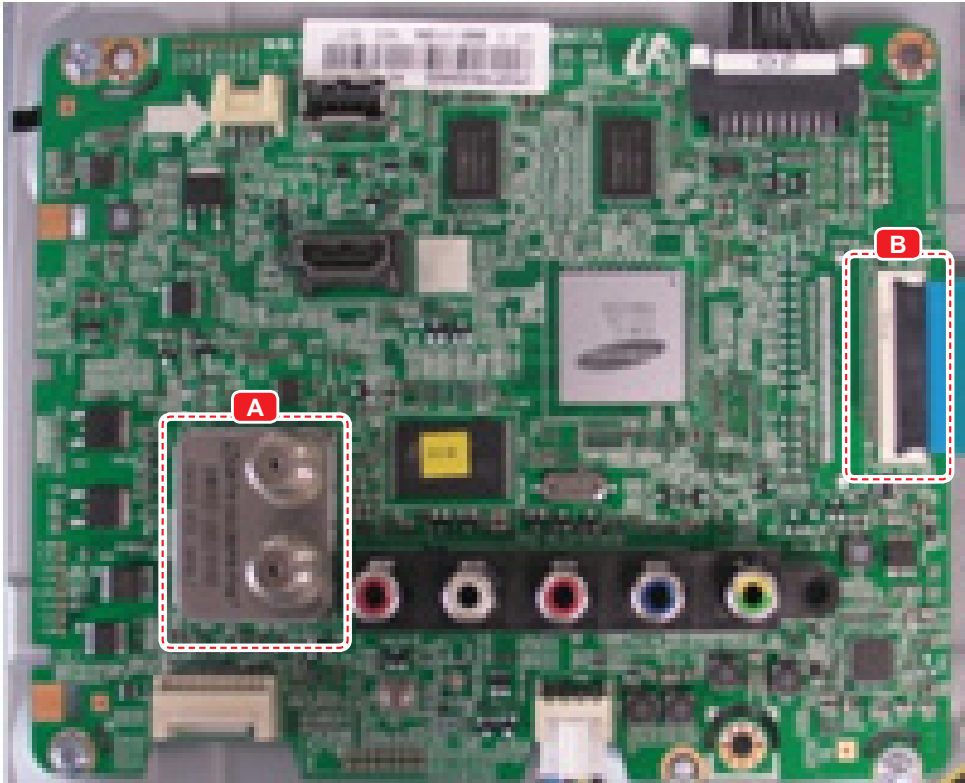
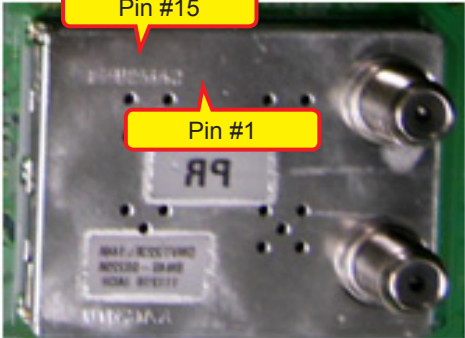
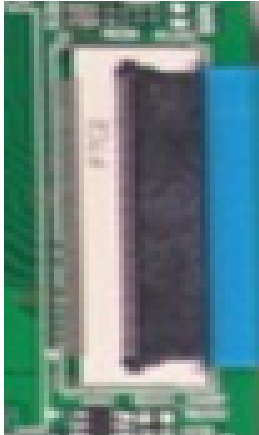
### 4-2-3. No Video (Tuner\_CVBS)


**Note**

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

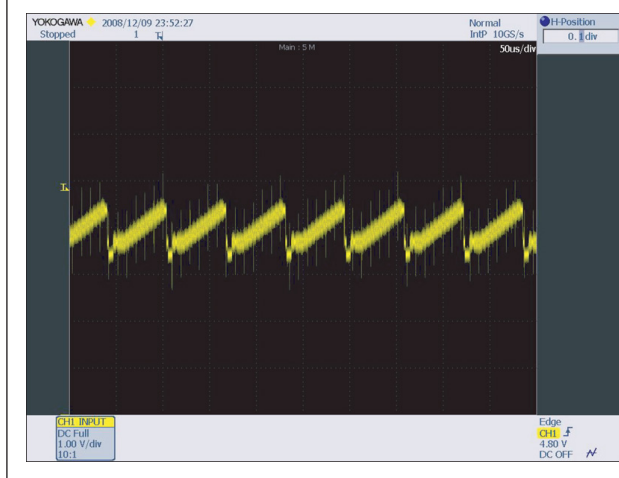
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Symptom</b>           | <ul style="list-style-type: none"> <li>Audio is normal but no picture is displayed on the screen.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Major checkpoints</b> | <ul style="list-style-type: none"> <li>Check the Tuner CVBS source.</li> <li>Check the Tuner.</li> <li>This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Diagnostics</b>       | <pre> graph TD     Q1[Power indicator LED is off.<br/>Lamp(Backlight) on, no video ?] -- No --&gt; A1[Check a set in the 'Stand-by mode'.]     Q1 -- Yes --&gt; Q2[Check the RF source and check the<br/>connection of RF cable.]     Q2 -- No --&gt; A2[Input the RF source properly.]     Q2 -- Yes --&gt; Q3[Check the Power of Tuner ?<br/>- Pin #5 of Tuner : B3.3V_Tuner<br/>- Pin #3 of Tuner : B1.8V_Tuner]     Q3 -- No --&gt; A3[Change the Main Ass'y.]     Q3 -- Yes --&gt; Q4[Check the CVBS data out of IC901 ?<br/>C917 : Tuner CVBS]     Q4 -- No --&gt; A4[Check IC901(NT72569).<br/>Change the Main Ass'y.]     Q4 -- Yes --&gt; Q5[Check the LVDS clk signal at output of<br/>Main board. (TX)<br/>- ODD_TXCLK- / ODD_TXCLK+<br/>- EVEN_TXCLK- / EVEN_TXCLK+]     Q5 -- No --&gt; A5[Check IC901(NT72569).<br/>Change the Main Ass'y.]     Q5 -- Yes --&gt; Q6[Check the LVDS cable?<br/>Replace the T CON / LCD panel?]     Q6 -- No --&gt; A6[Please, Contact tech support.]           </pre> |
| <b>Caution</b>           | Make sure to disconnect the power before working on the IP Board.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

■ Location of Parts

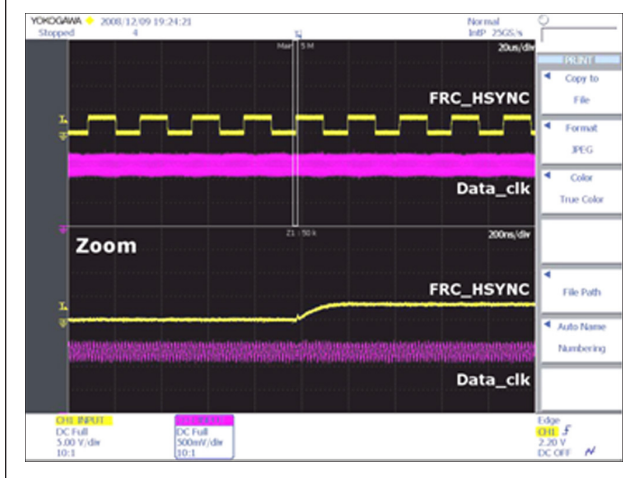
| Main Board_Front                                                                    |                                                                                     |   |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---|---------------------------------------------------------------------------------------|
|  |                                                                                     |   |                                                                                       |
| Detail                                                                              |                                                                                     |   |                                                                                       |
| A                                                                                   |  | B |  |
|                                                                                     |                                                                                     |   |                                                                                       |

## ■ Waveforms

### ① CVBS OUT (Grey Bar)



### ② LVDS output



## 4-2-4. No Sound (Speaker)



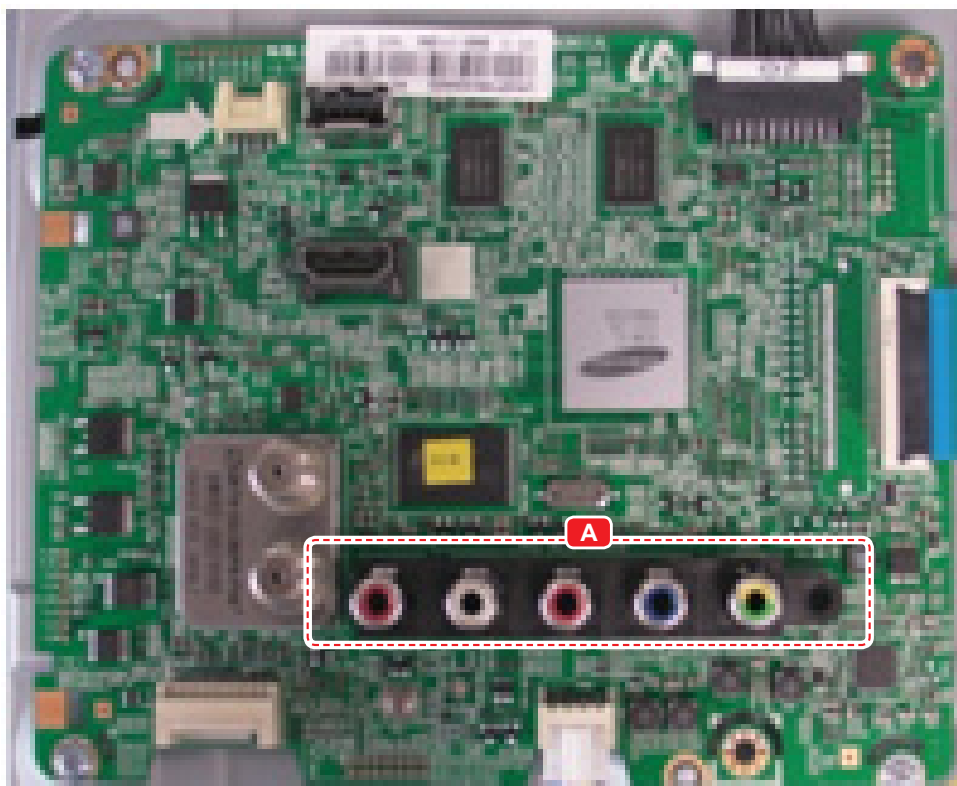
### Note

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

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Symptom</b>           | <ul style="list-style-type: none"> <li>Video is normal but there is no sound.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Major checkpoints</b> | <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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Diagnostics</b>       | <div> <div>Check the source and check the connection of sound cable ?</div> <div>No → Input the sound source properly.</div> <div>Yes ↓</div> <div>Check the signal at input of Main Board?<br/>AV, COMP R : R426 / L : R427</div> <div>No → Check CN302, CN401.<br/>Change the Main Ass'y.</div> <div>Yes ↓</div> <div> <b>①</b> Check the DATA between the Audio IC's ?           <ul style="list-style-type: none"> <li>- Pin #4 of IC303 : LRclk</li> <li>- Pin #3 of IC303 : I2C_DATA</li> </ul> </div> <div>No → Check IC303.<br/>Change the Main Ass'y.</div> <div>Yes ↓</div> <div> <b>②</b> 1. Check the Speaker sound data at ?<br/>           - CN302<br/>           2. Check the Monitor out sound data at ?<br/>           - CN302         </div> <div>No → Check IC303.<br/>Change the Main Ass'y.</div> <div>Yes ↓</div> <div>Replace speaker ?</div> <div>No → Please, Contact Tech support.</div> </div> |
| <b>Caution</b>           | Make sure to disconnect the power before working on the IP Board.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

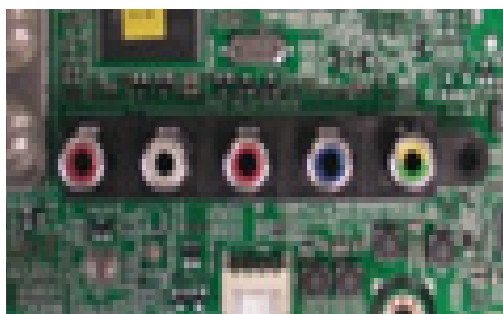
## ■ Location of Parts

Main Board\_Front

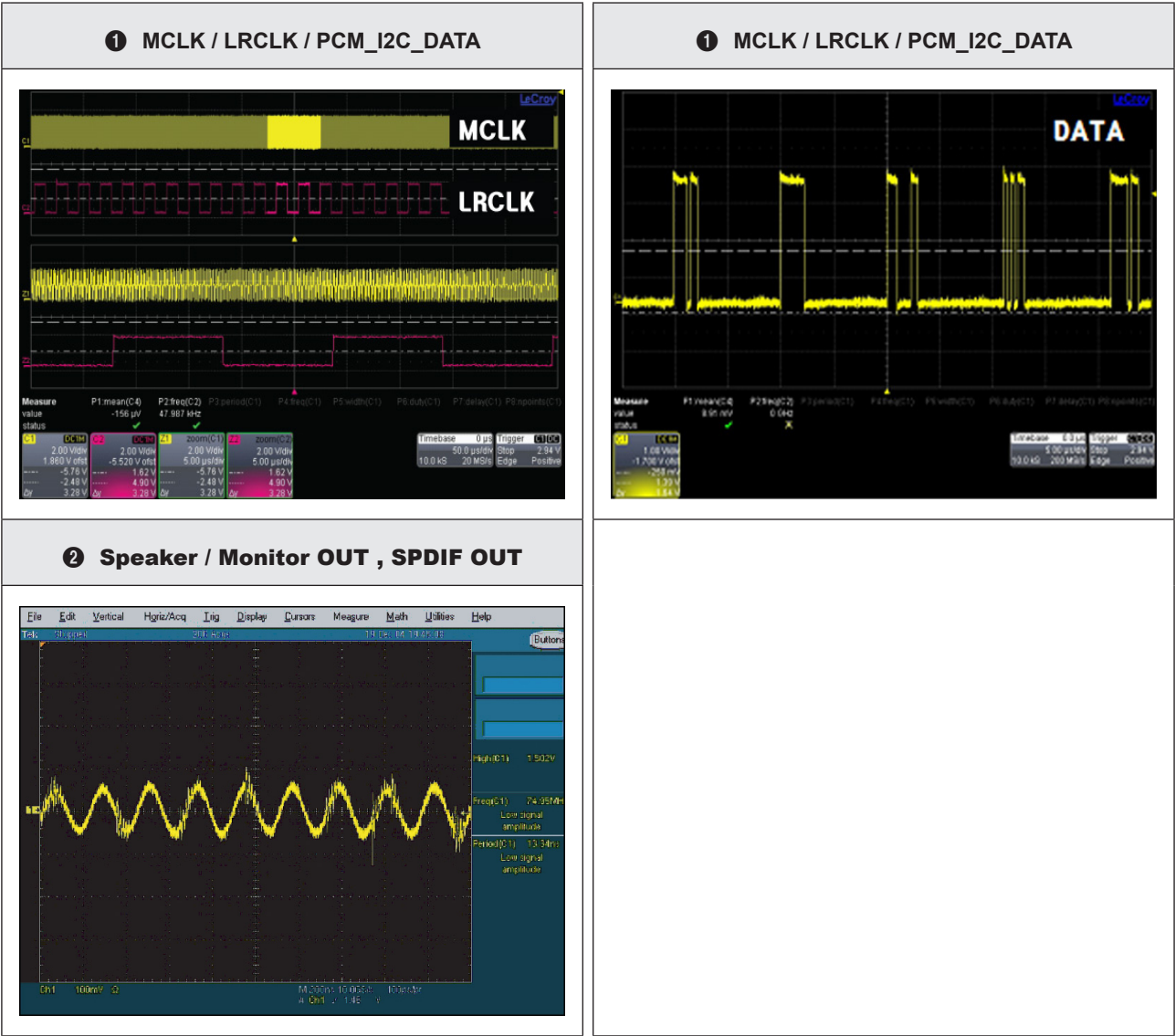


Detail

A



Waveforms



## 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**".

#### ■ UN32FH4205GXZD

| Inches     |               | 32"            |
|------------|---------------|----------------|
| PANEL      | Vendor        | SDC            |
|            | Code          | BN95-01212A    |
|            | Spec.         | CY-DF320AGLV1G |
| SMPS BOARD | Vendor        | DYREL          |
|            | Code          | BN44-00664A    |
|            | Spec.         | L32G0_DDY      |
| MAIN BOARD | Chassis Ass'y | BN91-11968H    |
|            | PBA Ass'y     | BN94-07162H    |
| Byte       | Item          |                |
| 0          | Factory Reset | -              |
| 1          | Type          | 32A6AH2D       |
| 2          | Local set     | BRA_DTV        |
| 3          | Basic Model   | UF4205         |
| 4          | SVC Model     | 4205           |
| 5          | Tuner         | SI_ISDB        |
| 6          | Ch table      | -              |
| 7          | Front Color   | U-S-BK         |

### 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.

|          |                                 |
|----------|---------------------------------|
| Option   | T-NT13IBRC-****.*               |
| Control  | T-NVTFAUSS-****                 |
| Debug    | E-Manual : NVISDBBRF2-****      |
| SVC      | EDID : SUCCESS                  |
| ADC/WB   | CALIB : AV / COMP / PC / HDMI / |
| Advanced | OPTION:**                       |
|          | USB RS232C                      |
|          | RFS : NT13 ****                 |
|          | Onboot : ***                    |
|          | TCON version                    |

### 4-3-3. Factory Data

#### ■ Option

| Factory Menu Name | Data                             | Range                                                          | Remark              | info+ factory |
|-------------------|----------------------------------|----------------------------------------------------------------|---------------------|---------------|
| Factory Reset     | -                                |                                                                |                     |               |
| Type              | 32A6AH2D                         | -                                                              | use to change panel |               |
|                   | 39L6AF0D                         |                                                                |                     |               |
|                   | 40A6AF1D                         |                                                                |                     |               |
|                   | 46A6AF1D                         |                                                                |                     |               |
| Model             | UF4005/UF5005                    |                                                                |                     |               |
| SVC Model         | 4005/5005                        |                                                                |                     |               |
| Local Set         | BRA_DTV/SELA/<br>COLOMBIA/MEXICO |                                                                |                     | info+ factory |
| TUNER             | SI_ISDB                          |                                                                | do not change       |               |
| Ch Table          | -                                |                                                                |                     |               |
| Front Color       | U-S-C-5K                         | NONE/S-C-BLK/S-<br>R-BLK/S-BLK/T-R-<br>BLK/T-C-BLK/S-<br>B-BLK |                     |               |

#### ■ Control

| Factory Menu Name | Data | Range            | Remark                | info+ factory |
|-------------------|------|------------------|-----------------------|---------------|
| EDID              |      |                  |                       |               |
| EDID ON/OFF       | Off  | On/Off           |                       |               |
| EDID WRITE ALL    |      | Success/Failure  | use to write the EDID |               |
| EDID WRITE PC     |      | Success/Failure  |                       |               |
| EDID WRITE DVI    |      | Success/Failure  |                       |               |
| EDID WRITE HDMI1  |      | Success/Failure  |                       |               |
| EDID WRITE HDMI2  |      | Success/Failure  |                       |               |
| EDID WRITE HDMI3  |      | Success/Failure  |                       |               |
| EDID WRITE HDMI4  |      | Success/Failure  |                       |               |
| EDID VERSION      |      | HDMI 1.3/HDMI1/2 |                       |               |
| Sub Option        |      |                  |                       |               |
| Mute Time(VIDEO)  | 4    | 0~10             |                       | info+ factory |
| ready             | Off  | On/Off           |                       | info+ factory |
| HotPlug           | On   |                  |                       | info+ factory |
| Hotplugcontrol    | On   |                  |                       | info+ factory |
| Spread Spectrum   |      |                  |                       | info+ factory |
| Spread Spectrum   | On   | On/Off           |                       | info+ factory |

#### 4. Troubleshooting

| Factory Menu Name  | Data     | Range                      | Remark                       | info+ factory |
|--------------------|----------|----------------------------|------------------------------|---------------|
| Period             | 60K      | 40K/50K/60K                |                              | info+ factory |
| Amplitude          | 2        | 0/0.5/1/1.5/2              |                              | info+ factory |
| DDR Spread         | 2%       | Off/1%/2%                  |                              | info+ factory |
| Auto Power         | On       |                            |                              |               |
| Mirror             | ON       | ON/ OFF                    |                              |               |
| HDMI EQ1           | Middle   | Low/Middle/High/<br>Strong | use to solve HDMI<br>Noise   | info+ factory |
| HDMI EQ2           | Middle   | Low/Middle/High/<br>Strong |                              | info+ factory |
| HDMI EQ3           | Middle   | Low/Middle/High/<br>Strong |                              | info+ factory |
| HDMI EQ4           | Middle   | Low/Middle/High/<br>Strong |                              | info+ factory |
| EER Count          | -        |                            |                              | info+ factory |
| WM Calib           |          |                            |                              | info+ factory |
| Panel Enter Key    |          |                            |                              | info+ factory |
| Panel Display Time | 9Hr      |                            |                              |               |
| Checksum           | XXXX     |                            |                              | info+ factory |
| View Log           |          |                            |                              | info+ factory |
| Font Data Viewer   |          |                            |                              | info+ factory |
| Dimm Type          | EXT      |                            |                              | info+ factory |
| Carrier Mute       | Off      |                            |                              | info+ factory |
| Anynet+            | Off      |                            |                              | info+ factory |
| HPD Polarity       |          |                            |                              | info+ factory |
| High Devi          | Off      | On/Off                     |                              | info+ factory |
| HotPlug Delay      | 12       | 0~63                       |                              |               |
| HP Ident           | High     | High/Low                   |                              |               |
| PC Ident           | On       | On/Off                     |                              |               |
| Watchdog           | On       | On/Off                     |                              |               |
| LVDS Format        | JEIDA    | JEIDA / VESA               |                              |               |
| OSD Resolution     | 1366*768 |                            |                              | info+ factory |
| Bus Stop           |          |                            |                              | info+ factory |
| OTA Code           |          |                            |                              | info+ factory |
| OTA Duration Test  |          |                            |                              | info+ factory |
| Alternate Del      |          |                            |                              | info+ factory |
| Ignore VCT Version | On       | On/Off                     |                              | info+ factory |
| HDMI Sync          | DE       | DE/HV                      | use to solve HDMI<br>problem | info+ factory |

| Factory Menu Name     | Data     | Range                 | Remark        | info+ factory |
|-----------------------|----------|-----------------------|---------------|---------------|
| Watch Dog Count       | 0        | -                     |               | info+ factory |
| PDP Option            |          |                       |               |               |
| Hotel Option          |          |                       |               |               |
| Shop Option           |          |                       |               |               |
| Shop Mode             | OFF      | ON/OFF                |               |               |
| USB DEMO ON(SEC)      |          |                       |               |               |
| USB DEMO OFF(SEC)     |          |                       |               |               |
| Exhibition Mode       | OFF      | ON/OFF                |               |               |
| Sound                 |          |                       |               |               |
| Audio Amp             | NTP7412s | NTP7412s/<br>NTP7411s | do not change | info+ factory |
| Volume Curve          | NT       | NT/EU/EA              | do not change | info+ factory |
| A2K Prescale          | 20       | 0~40                  |               | info+ factory |
| BTSC Mono Prescale    | 25       | 0~40                  |               | info+ factory |
| BTSC stereo Prescale  | 47       | 0~40                  |               | info+ factory |
| SAP Prescale          | 43       | 0~40                  |               | info+ factory |
| BTSC M2S Threshold    | 0x20     | 0xA0~0x9F             |               | info+ factory |
| BTSC S2M Threshold    | 0x15     | 0xA0~0x9F             |               | info+ factory |
| BTSC Stereo On Thr    | 0x20     | 0xA0~0x9F             |               | info+ factory |
| BTSC Stereo Off Thr   | 0x26     | 0xA0~0x9F             |               | info+ factory |
| SAP Amp On Thr        | 0x56     | 0xA0~0x9F             |               | info+ factory |
| SAP Amp Off Thr       | 0x48     | 0xA0~0x9F             |               | info+ factory |
| SAP NSR On Thr        | 0x35     | 0xA0~0x9F             |               | info+ factory |
| SAP NSR Off Thr       | 0x7F     | 0xA0~0x9F             |               | info+ factory |
| Carrier NSR On Thr    | 0x20     | 0xA0~0x9F             |               | info+ factory |
| Carrier NSR Off Thr   | 0x29     | 0xA0~0x9F             |               | info+ factory |
| MP3 Level             | -6dB     | -12dB~0dB             |               | info+ factory |
| Audio Delay           | 20ms     | 0~150ms               |               |               |
| Main Amp Master Vol   | 199      |                       |               | info+ factory |
| Center Amp Master Vol |          |                       |               | info+ factory |
| Main Amp PWM Mod      | 142      |                       |               | info+ factory |
| Center Amp PWM Mod    | 103      |                       |               | info+ factory |
| Woofer Amp PWM Mod    | 103      |                       |               | info+ factory |
| Woofer Type           |          |                       |               | info+ factory |
| Main Speaker EQ       | On       |                       |               |               |
| Center Speaker EQ     |          |                       |               |               |

#### 4. Troubleshooting

| Factory Menu Name   | Data | Range                                | Remark | info+ factory |
|---------------------|------|--------------------------------------|--------|---------------|
| Main EQ CheckSum    | -    |                                      |        | info+ factory |
| Center EQ CheckSum  | -    |                                      |        | info+ factory |
| Woofer EQ CheckSum  | -    |                                      |        | info+ factory |
| Config Option       |      |                                      |        | info+ factory |
| Num of AV           | 1    | 0~3                                  |        | info+ factory |
| Num of SVIDEO       | 0    | 1~3                                  |        | info+ factory |
| Num of Comp         | 1    | 1~3                                  |        | info+ factory |
| Num of HDMI         | 2    | 0~4                                  |        | info+ factory |
| Num of SCART        | 0    |                                      |        | info+ factory |
| DVI Sound           | 0    | 0~1                                  |        | info+ factory |
| Number of HeadPhone | 0    | 0~1                                  |        | info+ factory |
| Num of USB Port     |      |                                      |        | info+ factory |
| Num of SPDIF OUT    | 1    | 0~1                                  |        | info+ factory |
| LNA SUPPORT         | Off  | On/Off                               |        | info+ factory |
| Navigation Key Func | 0    | 0 : New function(Navigation jog) Key |        | info+ factory |
|                     |      | 1 : Old function (Touch) Key         |        | info+ factory |
|                     |      | 2 : don't work function              |        | info+ factory |
| Eco Sensor Support  | On   | On/OFF                               |        | info+ factory |
| MFT OFFSET          |      |                                      |        |               |

#### ■ SVC

| Factory Menu Name  | Data | Range | Remark | info+ factory |
|--------------------|------|-------|--------|---------------|
| Test pattern       |      |       |        | info+ factory |
| T-CON Usb Download |      |       |        | info+ factory |

#### ■ ADC/WB

| Factory Menu Name | Data    | Range             | Remark | info+ factory |
|-------------------|---------|-------------------|--------|---------------|
| ADC               |         |                   |        |               |
| AV Calibration    | Success | Success / Failure |        |               |
| Comp Calibration  | Success | Success / Failure |        |               |
| PC Calibration    | Success | Success / Failure |        |               |
| HDMI Calibration  | Success | Success / Failure |        |               |
| ADC Target        |         |                   |        |               |
| 1st_AV_Low        | 18      | 0~255             |        |               |

| Factory Menu Name  | Data | Range | Remark | info+ factory |
|--------------------|------|-------|--------|---------------|
| 1st_AV_High        | 220  | 0~255 |        |               |
| 1st_AV_Delta       | 1    | 0~255 |        |               |
| 1st_COMP_Low       | 16   | 0~255 |        |               |
| 1st_COMP_High      | 235  | 0~255 |        |               |
| 1st_COMP_Delta     | 1    | 0~255 |        |               |
| 1st_PC_Low         | 2    | 0~255 |        |               |
| 1st_PC_High        | 235  | 0~255 |        |               |
| 1st_PC_Delta       | 1    | 0~255 |        |               |
| 2nd_Low            | 1    | 0~255 |        |               |
| 2nd_High           | 235  | 0~255 |        |               |
| 2nd_Delta          | 1    | 0~255 |        |               |
| ADC Result         |      |       |        |               |
| 1st_AV_Gain        | 121  |       |        |               |
| 1st_AV_Offset      | 141  |       |        |               |
| 1st_Comp_Gain      | 70   |       |        |               |
| 1st_Comp_Gain_Cb   | 70   |       |        |               |
| 1st_Comp_Gain_cr   | 70   |       |        |               |
| 1st_Comp_Offset    | 127  |       |        |               |
| 1st_Comp_Offset_Cb | 127  |       |        |               |
| 1st_Comp_Offset_Cr | 127  |       |        |               |
| 1st_PC_R_Gain      | 94   |       |        |               |
| 1st_PC_G_Gain      | 93   |       |        |               |
| 1st_PC_B_Gatin     | 94   |       |        |               |
| 1st_PC_R_Offset    | 127  |       |        |               |
| 1st_PC_G_Offset    | 127  |       |        |               |
| 1st_PC_B_Offset    | 127  |       |        |               |
| 2nd_R_Offset       | 113  | 0~255 |        |               |
| 2nd_G_Offset       | 113  | 0~255 |        |               |
| 2nd_B_Offset       | 113  | 0~255 |        |               |
| 2nd_R_Gain         | 144  | 0~255 |        |               |
| 2nd_G_Gain         | 144  | 0~255 |        |               |
| 2nd_B_Gain         | 144  | 0~255 |        |               |
| WB                 |      |       |        |               |
| Sub Brightness     | 128  | 0~255 |        |               |
| R_Offset           | 128  | 0~255 |        |               |
| G_Offset           | 128  | 0~255 |        |               |
| B_Offset           | 128  | 0~255 |        |               |

#### 4. Troubleshooting

| Factory Menu Name | Data | Range | Remark | info+ factory |
|-------------------|------|-------|--------|---------------|
| Sub Contrast      | 128  | 0~255 |        |               |
| R_Gain            | 128  | 0~255 |        |               |
| G_Gain            | 128  | 0~255 |        |               |
| B_Gain            | 128  | 0~255 |        |               |
| Movie R Offset    | 133  | 0~255 |        |               |
| Movie B Offset    | 129  | 0~255 |        |               |
| Movie R Gain      | 131  | 0~255 |        |               |
| Movie B Gain      | 64   | 0~255 |        |               |

#### ■ Advanced

| Factory Menu Name | Data  | Range  | Remark | info+ factory |
|-------------------|-------|--------|--------|---------------|
| PBE               |       |        |        | info+ factory |
| WM Movie          |       |        |        | info+ factory |
| Mode              | Off   | On/Off |        | info+ factory |
| Color Mode        | Movie |        |        | info+ factory |
| Color Tone        | Cool  |        |        | info+ factory |
| Msub Brigh        | 128   |        |        | info+ factory |
| Msub Contr        | 128   |        |        | info+ factory |
| W1_RGAIN          | 138   |        |        | info+ factory |
| W1_BGAIN          | 104   |        |        | info+ factory |
| W1_ROFFS          | 130   |        |        | info+ factory |
| W1_BOFFS          | 127   |        |        | info+ factory |
| W2_RGAIN          | 131   |        |        | info+ factory |
| W2_BGAIN          | 64    |        |        | info+ factory |
| W2_ROFFS          | 133   |        |        | info+ factory |
| W2_BOFFS          | 129   |        |        | info+ factory |
| W3_RGAIN          | 128   |        |        | info+ factory |
| W3_BGAIN          | 128   |        |        | info+ factory |
| W3_ROFFS          | 128   |        |        | info+ factory |
| W3_BOFFS          | 128   |        |        | info+ factory |
| N_RGAIN           | 131   |        |        | info+ factory |
| N_BGAIN           | 122   |        |        | info+ factory |
| N_ROFFS           | 128   |        |        | info+ factory |
| N_BOFFS           | 129   |        |        | info+ factory |
| Movie Countr      | 100   |        |        | info+ factory |
| Movie Brigh       | 45    |        |        | info+ factory |
| Movie Color       | 55    |        |        | info+ factory |

| Factory Menu Name  | Data      | Range                                     | Remark | info+ factory |
|--------------------|-----------|-------------------------------------------|--------|---------------|
| Movie Sharp        | 55        |                                           |        | info+ factory |
| Movie Tint         | 50        |                                           |        | info+ factory |
| Movie BkLight      | 10        |                                           |        | info+ factory |
| M.Gamma            | Off       |                                           |        | info+ factory |
| M_Sub Gamma        | 0         |                                           |        | info+ factory |
| EPA Standard       |           |                                           |        | info+ factory |
| Std Contr          | 100       | 0~100                                     |        | info+ factory |
| Std Bright         | 45        | 0~100                                     |        | info+ factory |
| Std Sharp          | 50        | 0~100                                     |        | info+ factory |
| Std Color          | 50        | 0~100                                     |        | info+ factory |
| Std Tint           | 50        | 0~100                                     |        | info+ factory |
| Std Backlight      | 8         | 0~10                                      |        | info+ factory |
| ADJUST             |           |                                           |        | info+ factory |
| Dynamic Dimming    | Off       | On/Off                                    |        | info+ factory |
| Power Key Protects | Off       | On/Off                                    |        | info+ factory |
| UART Select        | Auto Wall | Auto Wall/Debug/<br>MDC/On1/On2           |        | info+ factory |
| Debug Mode         | Debug Off | Debug Off/Debug<br>Smart/Debug<br>RunTime |        | info+ factory |
| Back End Mute      |           |                                           |        | info+ factory |
| PDP FRC            |           |                                           |        | info+ factory |
| VisualTEST Plus    | Disable   |                                           |        | info+ factory |
| Standby Mode Time  | 45 Min    | 2 Min/45 Min                              |        | info+ factory |
| Delete alt.ver     | 1 Flash   |                                           |        | info+ factory |
| OTA confirm Time   | 90 Min    | 3 Min/90 Min                              |        | info+ factory |
| OTA limit Time     | 3 Hour    | 3 Min/3Hour                               |        | info+ factory |
| Dynamic CE         | Off       | On/Off                                    |        | info+ factory |
| FWC                | Off       | On/Off                                    |        | info+ factory |
| 1080p 48Hz         | On        | On/Off                                    |        | info+ factory |
| PWM Max            | 100       | 1~100                                     |        | info+ factory |
| PWM Max2           | 95        | 1~100                                     |        | info+ factory |
| PWM Mid            | 10        | 0~10                                      |        | info+ factory |
| PWM Min            | 0         | 0~10                                      |        | info+ factory |
| COMP PHASW         | 110       |                                           |        | info+ factory |
| Quick Start        |           |                                           |        | info+ factory |
| DTV LNA            | Auto      | On/Off                                    |        | info+ factory |
| HDCP Download      | Off       | On/Off                                    | HDCP   | info+ factory |
| USB Download       | Off       | On/Off                                    |        | info+ factory |

#### 4. Troubleshooting

| Factory Menu Name | Data | Range  | Remark | info+ factory |
|-------------------|------|--------|--------|---------------|
| LED Peak OnOFF    |      |        |        | info+ factory |
| COLOR MAPPING     |      |        |        | info+ factory |
| WCE               |      |        |        | info+ factory |
| SHARPNESS         |      |        |        | info+ factory |
| ENHANCE           |      |        |        | info+ factory |
| LNA_Plus          |      |        |        | info+ factory |
| FCC               |      |        |        | info+ factory |
| PC_Picture        |      |        |        | info+ factory |
| FRC               |      |        |        | info+ factory |
| PQ OTHERS         |      |        |        | info+ factory |
| 7.5 IRE NTSC      | OFF  | ON/OFF |        | info+ factory |
| 7.5 IRE OFFSET    | 16   | 0~60   |        | info+ factory |
| PQ Others         |      |        |        | info+ factory |
| YC_Delay          |      |        |        | info+ factory |
| PAL BG            | 1    | 0~3    |        | info+ factory |
| PAL DK            | 1    | 0~3    |        | info+ factory |
| PAL I             | 1    | 0~3    |        | info+ factory |
| SECAM BG          | 4    | 0~3    |        | info+ factory |
| SECAM DK          | 4    | 0~3    |        | info+ factory |
| SECAML            | 4    | 0~3    |        | info+ factory |
| NTSC 358          | 1    | 0~3    |        | info+ factory |
| NTSC 443          | 0    | 0~3    |        | info+ factory |
| AV PAL            | 1    | 0~3    |        | info+ factory |
| AV SECAM          | 4    | 0~3    |        | info+ factory |
| AV NT358          | 1    | 0~3    |        | info+ factory |
| AV NT443          | 1    | 0~3    |        | info+ factory |
| AV PAL60          | 1    | 0~3    |        | info+ factory |
| EEPROM RESET      |      |        |        | info+ factory |
| EEPROM RESET      | OFF  | ON/OFF |        | info+ factory |
| NVR ALL CLEAR     | OFF  | ON/OFF |        |               |

## 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         | PC Calibration   |
| SVC           | HDMI Calibration |
| <b>ADC/WB</b> |                  |
| Advanced      |                  |

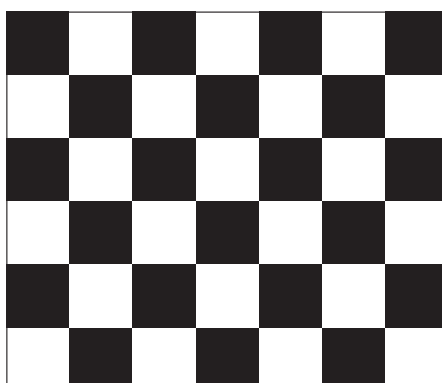
### 4-4-2. Service Adjustment

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 |
| 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)**

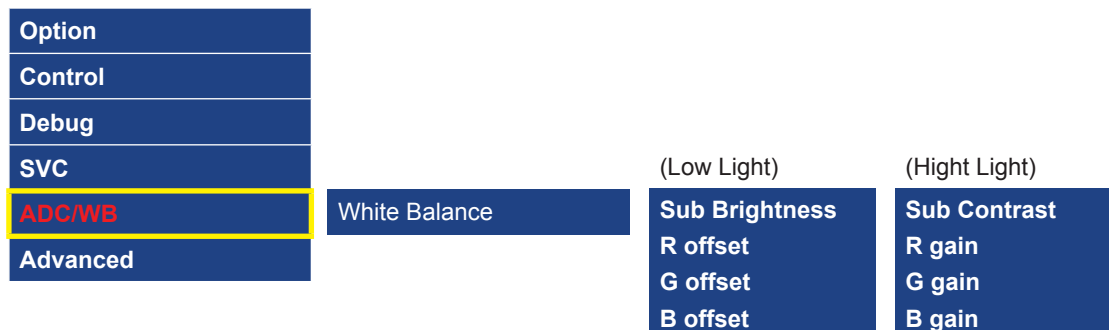
1. Apply the VESA XGA Lattice (N0. 21) pattern signal to the PC IN port.
2. Press the Source key to switch to "PC" mode.
3. Enter Service mode.
4. Select the "ADC" menu.
5. Select the "PC Calibration" menu.
6. In "PC Calibration Off" status, press the "▶" key to perform Calibration.
7. When Calibration 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 **ADC/WB** menu.
3. Select **White Balance** 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.

## 4-6. RS-232C

\*RS-232C : For S/W Debug cable

### 1. RS232C Control

- Port : COM#(Serial)
- Bit rate : 38400
- Data Bit : 8 bit
- Parity : None
- Stop Bits : 1
- Flow Control : None

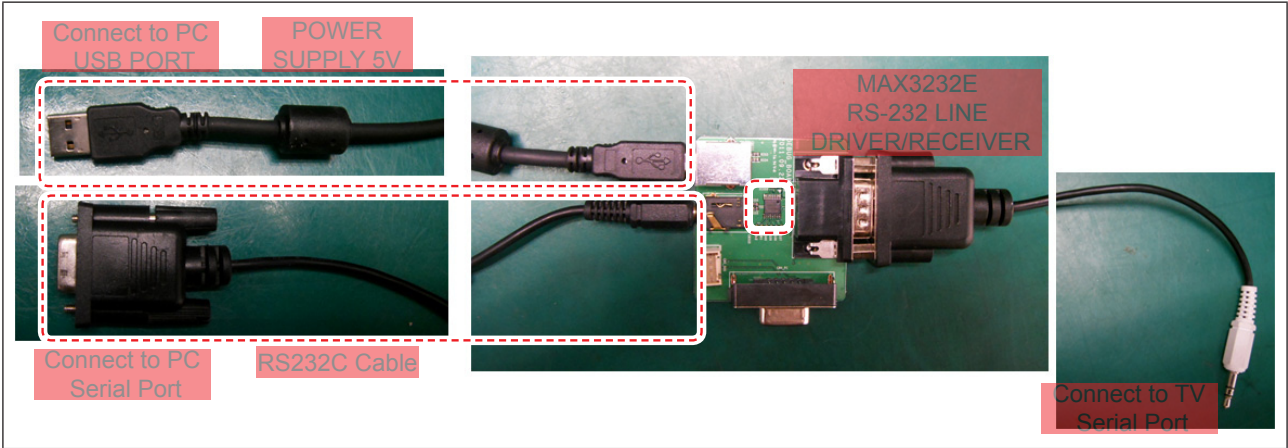
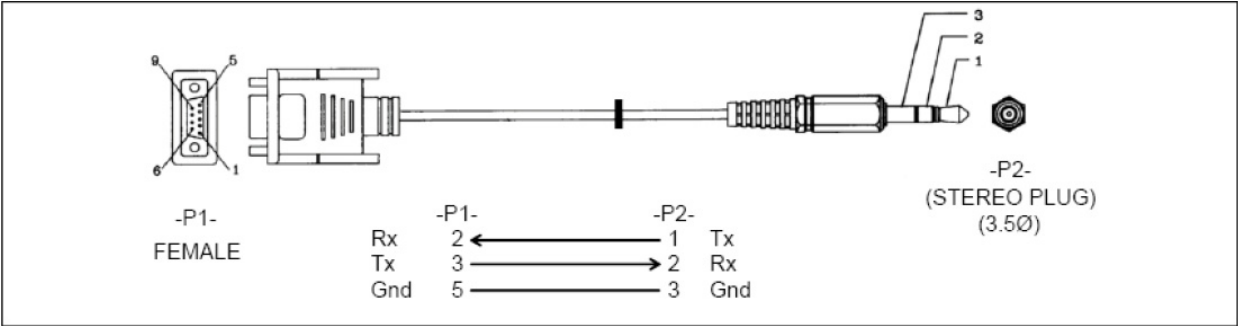
### 2. How to connect to TV set

If TV set do not have MAX3232E circuit, you need Jig board and cables.

Refer to below picture and description.

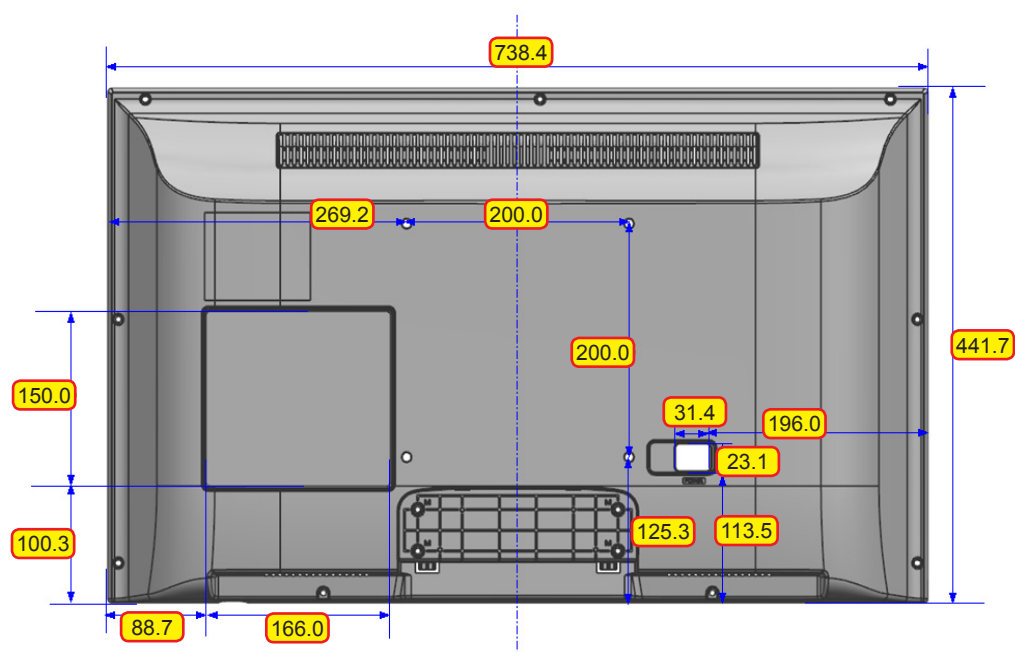
|                                                       |                                                                                      |  |
|-------------------------------------------------------|--------------------------------------------------------------------------------------|--|
| <b>1</b> Gender to connect with JIG Board and TV SET. |    |  |
| <b>2</b> Power supply Cable (5V).                     |   |  |
| <b>3</b> RS232C Cable.                                |  |  |

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

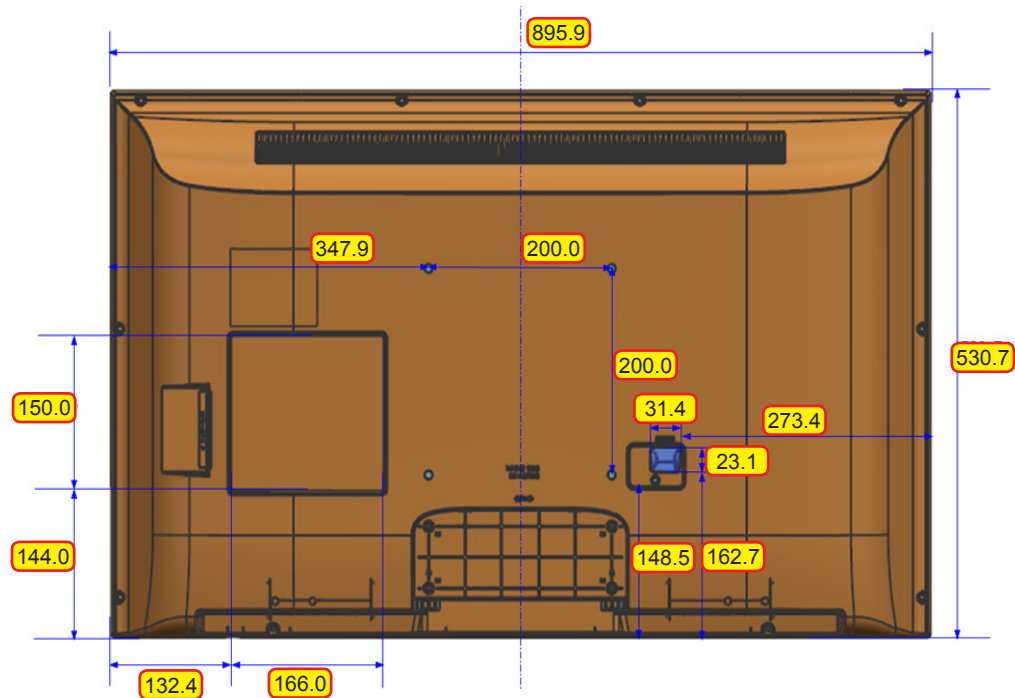


## 4-7. Rear Cover Dimension

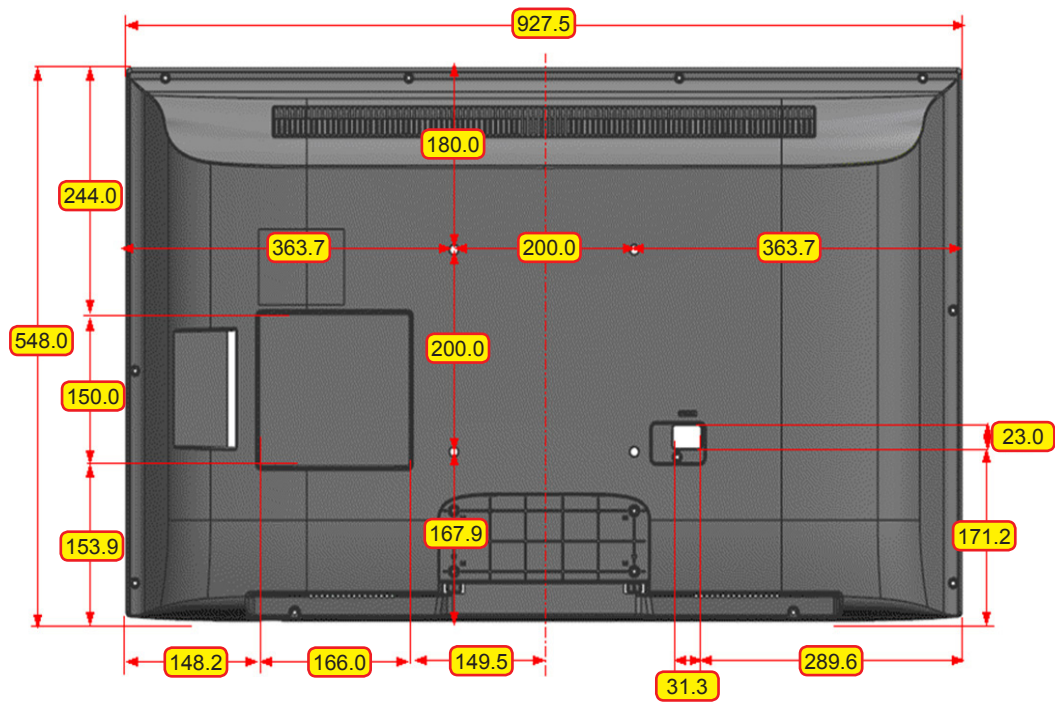
### ■ UN32FH4\*05



### ■ UN39FH5\*05



■ UN40FH5\*05



■ UN46FH5\*05

