PLASMA TV
SERVICE MANUAL
CHASSIS : PU11A
MODEL : 42PW340 42PW340-UB
        42PW350 42PW350-UA/UE
        42PW350U 42PW350U-UC

CAUTION
BEFORE SERVICING THE CHASSIS,
READ THE SAFETY PRECAUTIONS IN THIS MANUAL.

Internal Use Only

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SAFETY PRECAUTIONS

IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by A in the Schematic Diagram and Exploded View.

It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent X-RADIATION, Shock, Fire, or other Hazards.

Do not modify the original design without permission of manufacturer.

General Guidance

An isolation Transformer should always be used during the servicing of a receiver whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks.

It will also protect the receiver and its components from being damaged by accidental shorts of the circuitry that may be inadvertently introduced during the service operation.

If any fuse (or Fusible Resistor) in this monitor is blown, replace it with the specified.

When replacing a high wattage resistor (Oxide Metal Film Resistor, over 1W), keep the resistor 10mm away from PCB.

Keep wires away from high voltage or high temperature parts.

Due to high vacuum and large surface area of picture tube, extreme care should be used in handling the Picture Tube. Do not lift the Picture tube by it's Neck.

Leakage Current Cold Check(Antenna Cold Check)

With the instrument AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs. Place the AC switch in the on position, connect one lead of ohm-meter to the AC plug prongs tied together and touch other ohm-meter lead in turn to each exposed metallic parts such as antenna terminals, phone jacks, etc.

If the exposed metallic part has a return path to the chassis, the measured resistance should be between 1MΩ and 5.2MΩ.

When the exposed metal has no return path to the chassis the reading must be infinite.

An other abnormality exists that must be corrected before the receiver is returned to the customer.

Leakage Current Hot Check (See below Figure)

Plug the AC cord directly into the AC outlet. Do not use a line Isolation Transformer during this check.

Connect 1.5K/10watt resistor in parallel with a 0.15uF capacitor between a known good earth ground (Water Pipe, Conduit, etc.) and the exposed metallic parts.

Measure the AC voltage across the resistor using AC voltmeter with 1000 ohms/volt or more sensitivity.

Reverse plug the AC cord into the AC outlet and repeat AC voltage measurements for each exposed metallic part. Any voltage measured must not exceed 0.75 volt RMS which is corresponds to 0.5mA.

In case any measurement is out of the limits specified, there is possibility of shock hazard and the set must be checked and repaired before it is returned to the customer.

Leakage Current Hot Check circuit

---

To Instrument's exposed METALLIC PARTS

AC Volt-meter

0.15uF

1.5 Kohm/10W

Good Earth Ground such as WATER PIPE, CONDUIT etc.
SPECIFICATION

NOTE: Specifications and others are subject to change without notice for improvement.

1. Application Range
   (1) This spec sheet is applied all of PDP TV with PU11A chassis.

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Market</th>
<th>Brand</th>
</tr>
</thead>
<tbody>
<tr>
<td>42PW340-UB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>42PW350-UA/UE</td>
<td>North America / Canada / Mexico</td>
<td>LG</td>
</tr>
<tr>
<td>42PW350U-UC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Specification
   Each part is tested as below without special appointment.
   (1) Temperature: 25 °C ± 5 °C (77 °F ± 9 °F), CST: 40 °C ± 5 °C
   (2) Relative Humidity: 65 % ± 10 %
   (3) Power Voltage: Standard input voltage (100 V - 240 V ~ 50 / 60 Hz)
       * Standard Voltage of each product is marked by models
   (4) Specification and performance of each parts are followed each drawing and specification by part number in accordance with BOM.
   (5) The receiver must be operated for about 5 minutes prior to the adjustment.

3. Test Method
   (1) Performance: LGE TV test method followed.
   (2) Demanded other specification
       Safety: UL, CSA, IEC specification, CE
       EMC: FCC, ICES, IEC specification, CE

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Market</th>
<th>Appliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>42PW340-UB</td>
<td></td>
<td>Safety: UL1492, USA C22.2 No. 1</td>
</tr>
<tr>
<td>42PW350-UA/UE</td>
<td>North America / Canada / Mexico</td>
<td>EMC: FCC Class B, IC Class B</td>
</tr>
<tr>
<td>42PW350U-UC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# 4. General Specification

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>Specification</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Receiving System</td>
<td>1) ATSC / NTSC-M</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Available Channel</td>
<td>1) VHF : 02–13</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) UHF : 14–69</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3) DTV : 02-69</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4) CATV : 01–135</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5) CADTV : 01–135</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Input Voltage</td>
<td>1) AC 100 – 240V 50/60Hz</td>
<td>N.America Mark : 110V, 60Hz</td>
</tr>
<tr>
<td>4.</td>
<td>Market</td>
<td>NORTH AMERICA, KOREA</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Screen Size</td>
<td>42 inch Wide(1024 × 768)</td>
<td>42PW340-UA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 inch Wide(1024 × 768)</td>
<td>50PW340-UA / 50PW350-UB</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 inch Wide(1920 × 1080)</td>
<td>50PZ250-UA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>60 inch Wide(1920 × 1080)</td>
<td>60PZ250-UA</td>
</tr>
<tr>
<td>6.</td>
<td>Aspect Ratio</td>
<td>16:9</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Tuning System</td>
<td>FS</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Module</td>
<td>PDP42T3#### (1024 × 768)</td>
<td>42PW340-UA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PDP50T3#### (1024 × 768)</td>
<td>50PW340-UA / 50PW350-UB</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PDP50R303## (1920 × 1080)</td>
<td>50PZ250-UA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PDP60R103## (1920 × 1080)</td>
<td>60PZ250-UA</td>
</tr>
<tr>
<td>9.</td>
<td>Operating Environment</td>
<td>1) Temp : 0 – 40 deg</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) Humidity : ~ 80 %</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Storage Environment</td>
<td>1) Temp : -20 – 60 deg</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) Humidity : ~ 85 %</td>
<td></td>
</tr>
</tbody>
</table>
ADJUSTMENT INSTRUCTION

1. Application Range
This spec. sheet applies to PU11A Chassis applied PDP TV all models manufactured in TV factory.

2. Specification
(1) Because this is not a hot chassis, it is not necessary to use an isolation transformer. However, the use of isolation transformer will help protect test instrument.
(2) Adjustment must be done in the correct order. But it is flexible when its factory local problem occurs.
(3) The adjustment must be performed in the circumstance of 25°C ± 5°C of temperature and 65% ± 10% of relative humidity if there is no specific designation.
(4) The input voltage of the receiver must keep 100 V - 240 V, 50 / 60 Hz.
(5) Before adjustment, execute Heat-Run for 5 minutes.
   ■ After Receive 100% Full white pattern (06CH) then process Heat-run (or "8. Test pattern" condition of Ez-Adjust status)
   ■ How to make set white pattern
     1) Press Power ON button of Service Remocon
     2) Press ADJ button of Service remocon. Select "10. Test pattern" and, after select "White" using navigation button, and then you can see 100% Full White pattern.
     * In this status you can maintain Heat-Run useless any pattern generator
     * Notice: if you maintain one picture over 20 minutes (Especially sharp distinction black with white pattern – 13Ch, or Cross hatch pattern – 09Ch) then it can appear image stick near black level.

3. Adjustment items
3-1. PCB Assembly adjustment
(1) Adjust 480i Comp1
(2) Adjust 1080p Comp1/RGB
   - If it is necessary, it can adjustment at Manufacture Line
   - You can see set adjustment status at “9. ADJUST CHECK” of the “In-start menu”

3-2. Set Assembly Adjustment
(1) EDID (The Extended Display Identification Data )
(2) Color Temperature (White Balance) Adjustment
(3) Make sure RS-232C control
(4) Selection Factory output option

4. PCB Assembly Adjustment
4-1. Using RS-232C
- Adjust 3 items at 3-1 PCB assembly adjustments
  " (3) Adjustment sequence" one after the order.

(1) Adjustment protocol

<table>
<thead>
<tr>
<th>Order</th>
<th>Command</th>
<th>Set response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inter the Adjustment mode</td>
<td>aa 00 00</td>
<td>a 00 OK00x</td>
</tr>
</tbody>
</table>
| 2. Change the Source | XB 00 40, XB 00 60 | b 00 OK40x (Adjust 480i Comp1) (Adjust 1080p Comp1)
| 3. Start Adjustment | ad 00 10 | b 00 OK60x (Adjust 1080p RGB) |
| 4. Return the Response | OKx (Success condition) |
| 5. Read data Adjustment data | (main) ad 00 20 (main) ad 00 30 | (main : component1 480i, RGB 1080p) 00000000000000000000000000000007c007b006dx (main : component1 480i, RGB 1080p) 00000000700000000000000000000007c007b006dx |
| 6. Confirm Adjustment | ad 00 99 | NG 03 00x (Failed condition) NG 03 01x (Failed condition) NG 03 02x (Failed condition) OK 03 03x (Success condition) |
| 7. End of Adjustment | ad 00 90 | d 00 OK90x |

< See ADC Adjustment RS232C Protocol_Ver1.0 >

(2) Necessary items before Adjustment items
   ● Pattern Generator : (MSPG-925FA)
   ● Adjust 480i Comp1 (MSPG-925FA:model :209, pattern :65) – Comp1 Mode
   ● Adjust 1080p Comp1 (MSPG-925FA:model :225 , pattern :65) – Comp1 Mode

* If you want more information then see the below Adjustment method (Factory Adjustment)

(3) Adjustment sequence
   ● aa 00 00: Enter the ADC Adjustment mode.
   ● xb 00 40: Change the mode to Component1 (No actions)
   ● ad 00 10: Adjust 480i Comp
   ● ad 00 10: Adjust 1080p comp
   ● xb 00 60: Change to RGB-PC mode(No action)
   ● ad 00 10: Adjust 1080p RGB
   ● xb 00 90: End of Adjustment
5. Factory Adjustment

PU11A : USE INTERNAL ADC(S7R) : using internal pattern.

5-1. Auto Adjust Component
480i/1080p RGB 1080p

(1) Summary : Adjustment component 480i/1080i and RGB 1080p is Gain and Black level setting at Analog to Digital converter, and compensate the RGB deviation

(2) Using instrument
1) Adjustment remocon, 801GF(802B, 802F, 802R) or MSPG925FA pattern generator
   (It can output 480i/1080i horizontal 100 % color bar pattern signal, and its output level must setting 0.7 V ± 0.1 V p-p correctly)

* You must make it sure its resolution and pattern cause every instrument can have different setting

2) Adjustment method 480i Comp1, Adjust 1080p Comp1/RGB (Factory adjustment)
   - ADC 480i Component1 adjustment -
     - Check connection of Component1
     - MSPG-925FA É Model: 209, Pattern 65
   - Set Component 480i mode and 100% Horizontal Color Bar Pattern(HozTV31Bar), then set TV set to Component1 mode and its screen to "NORMAL"
   - ADC 1080p Component1 / RGB adjustment
     - Check connection both of Component1 and RGB
     - MSPG-925FA É Model: 225, Pattern 65
   - Set Component 1080p mode and 100% Horizontal Color Bar Pattern(HozTV31Bar), then set TV set to Component1 mode and its screen to "NORMAL"
   - After get each the signal, wait more a second and enter the "IN-START" with press IN-START key of Service remocon. After then select "7. External ADC" with navigator button and press "Enter".
   - After Then Press key of Service remocon “Right Arrow(VOL+)”
   - You can see “ADC Component1 Success”
   - Component1 1080p, RGB 1080p Adjust is same method.
   - Component 1080p Adjustment in Component1 input mode
   - RGB 1080p adjustment in RGB input mode
   - If you success RGB 1080p Adjust. You can see “ADC RGB-DTV Success”

Caution : Set Volume 0 after adjustment

5-2. Use Internal ADC(S7R)
- ADJ(EZ ADJUST) -> 6.ADC Calibration -> ADC Calibration(START)

5-3. EDID(The Extended Display Identification Data) / DDC(Display Data Channel) download

(1) Summary
   1) It is established in VESA, for communication between PC and Monitor without order from user for building user condition. It helps to make easily use realize “Plug and Play” function.
   2) For EDID data write, we use DDC2B protocol.

5-4. Auto Download

(1) After enter Service Mode by pushing “ADJ” key,
(2) Enter EDID D/L mode.
(3) Enter “START” by pushing “OK” key.

Caution
- Never connect HDMI & D-sub Cable when the user downloading .
- Use the proper cables below for EDID Writing.
● It only needs to PCM EDID D/L for North America Product.
(42PW350-UA)

* Edid data and Model option download(RS232)

<table>
<thead>
<tr>
<th>NO</th>
<th>Item</th>
<th>CMD 1</th>
<th>CMD 2</th>
<th>Data 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Download Mode In</td>
<td>A</td>
<td>E</td>
<td>0</td>
</tr>
</tbody>
</table>

When transfer the "Mode In" carry the command.

- Edid data and Model option download

- Automatic download (The use of internal Data).

- Adjustment Confirmation

- To check Download on Assembly line.

5-5. Manual Download
(1) Write HDMI EDID data

1) Using instruments
   - Jig. (PC Serial to D-Sub connection) for PC, DDC adjustment.
   - S/W for DDC recording (EDID data write and read)
   - D-sub jack
   - Additional HDMI cable connection Jig.

2) Preparing and setting.
   - Set instruments and Jig. Like pic.5), then turn on PC and Jig.
   - Operate DDC write S/W (EDID write & read)
   - It will operate in the DOS mode.

< For write EDID data, setting Jig and another instruments >

EDID DATA (Model name = LG TV)
- HDMI1 EDID table(3D HD) US(PCM)
- HDMI2 EDID table(3D HD) US(PCM)
- HDMI3 EDID table(3D HD) US(PCM)
- RGB EDID table(3D HD) US (PCM)

- HDMI2 EDID table(3D HD) US(PCM)

- RGB EDID table(3D HD) US (PCM)

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5-6. Adjustment Color Temperature
(White balance)

(1) Using Instruments
1) Color Analyzer CA-210 (CH 9)
   - Using LCD color temperature, Color Analyzer (CA-210) must use CH 9, which Matrix compensated (White, Red, Green, Blue compensation) with CS-2100. See the Coordination bellowed one.
2) Auto-adjustment Equipment (It needs when Auto-adjustment – It is availed communicate with RS-232C : Baud rate: 115200)
3) Video Signal Generator MSPG-925F 720p, 216Gray (Model: 217, Pattern 78)

(2) Connection Diagram (Auto Adjustment)
1) Using Inner Pattern
   ![Connection Diagram for Adjustment White balance]

* See Working Guide if you want more information about EDID communication.
(3) White Balance Adjustment
- If you can’t adjust with inner pattern, then you can adjust it using HDMI pattern. You can select option at “Ez-Adjust Menu – 7. White Balance” there items “NONE, INNER, HDMI”. It is normally setting at inner basically. If you can’t adjust using inner pattern you can select HDMI item, and you can adjust.


- Connect all cables and equipments like Pic.5)
- Set Baud Rate of RS-232C to 115200. It may set 115200 originally.
- Connect RS-232C cable to set
- Connect HDMI cable to set

RS-232C COMMAND

- Start Auto-adjustment of white balance.
- “wb 00 00”: Start Auto-adjustment of white balance.
- “wb 00 10”: Start Gain Adjustment (Inner white pattern)
- “jb 00 cd”:
- “wb 00 1f”: End of Adjustment
- “wb 00 00 20-start, wb 00 00 2f-end”

(4) White Balance Adjustment (Manual adjustment)

1) Test Equipment: CA-210
- Using PDP color temperature, Color Analyzer (CA-210) must use CH 10, which Matrix compensated (White, Red, Green, Blue compensation) with CS-2100. See the Coordination bellowed one.

2) Manual adjustment sequence is like bellowed one.
- Turn to “Ez-Adjust” mode with press ADJ button of service remocon.
- Let CA-210 to zero calibration and must has gap more 10cm from center of PDP module when adjustment.
- Press “ADJ” button of service remocon and select “7.White-Balance” in “Ez-Adjust” then press “G” button of navigation key. (When press “G” button then set will go to full white mode)
- Adjust at three mode (Cool, Medium, Warm)
- If “cool” mode
  - Let B-Gain to 192 and R, G, B-Cut to 64 and then control R, G gain adjustment High Light adjustment.
- If “Medium” and “Warm” mode Let R-Gain to 192 and R, G, B-Cut to 64 and then control G, B gain adjustment High Light adjustment.
- All of the three mode
  - Let R-Gain to 192 and R, G, B-Cut to 64 and then control G, B gain adjustment High Light adjustment.

- With volume button (+/-) you can adjust.
- After all adjustment finished, with Enter (key) turn to Ez-Adjust mode. Then with ADJ button, exit from adjustment mode
* Attachment: White Balance adjustment coordination and color temperature.

- Using CS-1000 Equipment.
  - COOL : T=11000K, \( u'v' = 0.000 \), \( x=0.276 \ y=0.283 \)
  - MEDIUM : T=9300K, \( u'v' = 0.000 \), \( x=0.285 \ y=0.293 \)
  - WARM : T=6500K, \( u'v' = 0.000 \), \( x=0.313 \ y=0.329 \)

- Using CA-210 Equipment. (10 CH)
  - Contras value : 216 Gray
  - Brighness spec.

<table>
<thead>
<tr>
<th>Color Temperature</th>
<th>Test Equipment</th>
<th>Color Coordination</th>
</tr>
</thead>
<tbody>
<tr>
<td>COOL</td>
<td>CA-210</td>
<td>( 0.276 \pm 0.002 ) ( x=0.283 \ y=0.002 )</td>
</tr>
<tr>
<td>MEDIUM</td>
<td>CA-210</td>
<td>( 0.285 \pm 0.002 ) ( x=0.293 \ y=0.002 )</td>
</tr>
<tr>
<td>WARM</td>
<td>CA-210</td>
<td>( 0.313 \pm 0.002 ) ( x=0.329 \ y=0.002 )</td>
</tr>
</tbody>
</table>

8. GND and ESD Testing

8-1. Prepare GND and ESD Testing.
- Check the connection between set and power cord

8-2. Operate GND and ESD auto-test.
(1) Fully connected (Between set and power cord) set enter the Auto-test sequence.
(2) Connect D-Jack AV jack test equipment.
(3) Turn on Auto-controller(GWS103-4)
(4) Start Auto GND test.
(5) If its result is NG, then notice with buzzer.
(6) If its result is OK, then automatically it turns to ESD Test.
(7) Operate ESD test
(8) If its result is NG, then notice with buzzer.
(9) If its result is OK, then process next steps. Notice it with Good lamp and STOPER Down.

8-3. Check Items.
(1) Test Voltage
  - GND: 1.5KV/min at 100mA
  - Signal: 3KV/min at 100mA
(2) Test time: just 1 second.
(3) Test point
  - GND test: Test between Power cord GND and Signal cable metal GND.
  - ESD test: Test between Power cord GND and Live and neutral.
(4) Leakage current: Set to 0.5mA(rms)

9. POWER PCB Ass'y Voltage Adjustment
(Va/Vs Voltage Adjustment)

(1) Test equipment : D.M.M 1EA
(2) Connection Diagram for Measuring : refer to fig.1

Caution : Don’t push The INSTOP KEY after completing the function inspection
Caution : Inspection only PAL M / NTSC
9-1. Adjustment method

(1) Vs adjustment (refer fig.1)
1) Connect + terminal of D.M.M. to Vs pin of P811, connect -terminal to GND pin of P811
2) After turning VR901, voltage of D.M.M. adjustment as same as Vs voltage which on label of panel left/top (deviation ; ±0.5V)

(2) Va adjustment (refer fig.1)
1) After receiving 100% Full White Pattern, HEAT RUN.
2) Connect + terminal of D.M.M. to Va pin of P811, connect -terminal to GND pin of P811.
3) After turning VR502, voltage of D.M.M. adjustment as same as Va voltage which on label of panel left/top (deviation; ±0.5V)

10. Default Service option.

10-1. ADC-Set
- R-Gain adjustment Value (default 128)
- G-Gain adjustment Value (default 128)
- B-Gain adjustment Value (default 128)
- R-Offset adjustment Value (default 128)
- G-Offset adjustment Value (default 128)
- B-Offset adjustment Value (default 128)


<table>
<thead>
<tr>
<th>CENTER (DEFAULT)</th>
<th>Cool</th>
<th>Mid</th>
<th>Warm</th>
</tr>
</thead>
<tbody>
<tr>
<td>R Gain</td>
<td>192</td>
<td>192</td>
<td>192</td>
</tr>
<tr>
<td>G Gain</td>
<td>192</td>
<td>192</td>
<td>192</td>
</tr>
<tr>
<td>B Gain</td>
<td>192</td>
<td>192</td>
<td>192</td>
</tr>
<tr>
<td>R Cut</td>
<td>64</td>
<td>64</td>
<td>64</td>
</tr>
<tr>
<td>G Cut</td>
<td>64</td>
<td>64</td>
<td>64</td>
</tr>
<tr>
<td>B Cut</td>
<td>64</td>
<td>64</td>
<td>64</td>
</tr>
</tbody>
</table>

10-3. Temperature Threshold
- Threshold Down Low 20
- Threshold Up Low 23
- Threshold Down High 70
- Threshold Up High 75

11. USB DOWNLOAD
(*.epk file download)

- Put the USB Stick to the USB socket
- Press Menu key, and move OPTION

Press “FAV” Press 7 times.

Select download file (epk file)

- After download is finished, remove the USB stick.
- Press “IN-START” key of ADJ remote control, check the S/W version.

CAUTION
- Do not remove USB MEMORY CARD FROM USB PORT WHEN YOU FIND BELOW DESCRIPTION
- " Do not remove the memory card from the port! "

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GP2–R Training manual

Contents

- Block Diagram
- System Design
- Trouble Shooting Guide
1. Power-Up Boot Fail Trouble Shooting

(Front-end)

Demodulator
MN884433

(Cable)

ISDB-T/PAL/NTSC

SIF1

IF

CVBS_LIVE

TP1

(System + Scalar)

Serial_Flash

1MB

NAND Flash

256MB

DDR3

256MB(128*2)

LVDS

FHD

SPDIF

I2S_S7R

Rear(0)

Side(1)

EXT_IN

HDMI_D

HDMI_C

USB2.0

(Side HDMI_PORT)

UI_HW_PORT1

(Rear USB( SVC only ))

Side USB

(UI_HW_PORT1)

(HDMI_Side (C port))

(HDMI_Side (B port))

(AV1)

AV1_LR

AV2

AV2_LR

COMP1_LR

COMP2_LR

RGB_LR

EXT_IN

(Comp1/2, RGB)

(AV1)

(AV1_LR)

(AV2)

(AV2_LR)

(COMP1_LR)

(COMP2_LR)

(RGB_LR)

(External Input)

(AV2)

(COMP1_LR)

(COMP2_LR)

(RGB_LR)

EXT_IN

(Comp1/2, RGB)

(Audio Out)

I2S_S7R

STA368

(USB)

Rear USB

Side USB

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**S7R Power Sequence**

**Power Up Sequence**

Note:
- 3.3V standby power (AVDD_DMPLL, AVDD_ALIVE, AVDD_DVI, AVDD_CVBS33)
- 1.25V (VDDC)
- 2.5V (AVDD_ADC25, AVDD_AU25, AVDD_REF25, AVDD_MOD25, AVDD_PGA25)
- 1.5V (AVDD_DDR)
- Other Powers (AVDD_AU33, AVDD_LPLL, AVDD_MEMPLL, VDDP, VDD33_DDR)

<table>
<thead>
<tr>
<th>time</th>
<th>Description</th>
<th>Min</th>
<th>Typ.</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>t0</td>
<td>XTAL stable to Reset falling</td>
<td>5</td>
<td>—</td>
<td>—</td>
<td>ms</td>
</tr>
<tr>
<td>t1</td>
<td>Reset pulse width</td>
<td>5</td>
<td>—</td>
<td>—</td>
<td>ms</td>
</tr>
<tr>
<td>t2</td>
<td>1.26V to Reset falling</td>
<td>5</td>
<td>—</td>
<td>—</td>
<td>ms</td>
</tr>
<tr>
<td>t3</td>
<td>2.5V to Reset falling</td>
<td>5</td>
<td>—</td>
<td>—</td>
<td>ms</td>
</tr>
<tr>
<td>t4</td>
<td>AVDD_DMPLL/AVDD_ALIVE to Reset rising</td>
<td>0*</td>
<td>—</td>
<td>—</td>
<td>ms</td>
</tr>
</tbody>
</table>

*Note: 3.3V power ready (≥ 3.14V) must lead Reset rising edge.*
## Power Up Timing Requirements

<table>
<thead>
<tr>
<th>Time</th>
<th>Description</th>
<th>Min</th>
<th>Typ.</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>t₁</td>
<td>XTAL stable to Reset falling</td>
<td>5</td>
<td>—</td>
<td>—</td>
<td>ms</td>
</tr>
<tr>
<td>t₂</td>
<td>Reset pulse width</td>
<td>5</td>
<td>—</td>
<td>—</td>
<td>ms</td>
</tr>
<tr>
<td>t₃</td>
<td>1.26V to Reset falling</td>
<td>5</td>
<td>—</td>
<td>—</td>
<td>ms</td>
</tr>
<tr>
<td>t₄</td>
<td>3.3VDDP to Reset falling</td>
<td>5</td>
<td>—</td>
<td>—</td>
<td>ms</td>
</tr>
</tbody>
</table>
S7R Power Sequence

# t2 : Reset Pulse Width : 40ms → OK
S7R Power Sequence

a) AC On

1 : X-tal
2 : 3.3V
3 : 1.26V
4 : Reset

# t1 : Reset Pulse Width : 400ms  → OK
# t3 : Reset Pulse Width : 400ms  → OK
# t4 : Reset Pulse Width : 400ms  → OK

b) DC (Remocon) On

1 : X-tal
2 : 3.3V
3 : 1.26V
4 : Reset

# t1 : Reset Pulse Width : 120ms  → OK
# t3 : Reset Pulse Width : 120ms  → OK
# t4 : Reset Pulse Width : 120ms  → OK
LG8300 Power Sequence

Digital/Analog I/O
Power 3.3V
Core Power 1.0V
DDR2 I/O Power 1.8V
CLK_XIN(from 25MHz)
PORST_N

Power sequence(Recommendation)

Power sequence(Possibility)

<table>
<thead>
<tr>
<th>Description</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>tON_IOC Core power on time after I/O power on</td>
<td>200us</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>tON_CDDR DDR power on time after core power on</td>
<td>1 us</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>tON_IODDR DDR power on time after I/O power on</td>
<td>201us</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>tON_IOC I/O power on time after Core power on</td>
<td>200us</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>tON_CDDR DDR power on time after I/O power on</td>
<td>1 us</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>tON_IODDR DDR power on time after Core power on</td>
<td>201us</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Please check system, after power Off/On one time

1. Power-Up Boot Fail Trouble Shooting
2. No OSD Trouble Shooting
3. Digital TV Video Trouble Shooting
4. Analog TV Video Trouble Shooting
5. Component Video Trouble Shooting
6. RGB Video Trouble Shooting
7. AV Video Trouble Shooting
8. HDMI Video Trouble Shooting
9. All Source Audio Trouble Shooting
10. Digital TV Audio Trouble Shooting
11. Analog TV Audio Trouble Shooting
12. Component / RGB / AV Audio Trouble Shooting
13. HDMI Audio Trouble Shooting
14. USB Trouble Shooting
15. 3D Trouble Shooting
1. Power-Up Boot Fail Trouble Shooting

(Front-end)

Cable → ISDB-T/PAL/NTSC → Demodulator MN884433 → CVBS_LIVE SIF1 → TP1

(System + Scalar)

(SIF_LIVE) → TP1 → IF → S7 → EXT_IN → HDMI_D → HDMI_C → USB2.0 → ISP1

(External Input)

AV1, AV1_LR, AV2, AV2_LR, COMP1_LR, COMP2_LR, RGB_LR → EXT_IN (Comp1/2, RGB)

(Audio Out)

I2S_S7R → STA368

(Micom)

Serial_Flash 1MB → NANDFlash 256MB → Demodulator MN884433 → HDMI_Rear (D port) → HDMI_Side (C port)

(USB)

USB → Rear USB (SVC only) → Side USB
1. Power-Up Boot Fail Trouble Shooting

- Check P501 All Voltage Level (17V, 5V, 3.5/5V_ST)
  - Y → Check Power connector
  - N → Replace Power board

  - Y → Check All Voltage Level at Bead, RL_ON, IC101 output
    - Y → Replace one of Bead, IC101 & Recheck
    - N → If IC504 Output is normal, Replace of the IC504 & Recheck

- Check Voltage Level 3.3V at IC504, L508
  - Y → Replace one of IC504 & Recheck
  - N → Check R506 voltage level (3.3V RL_ON)
    - Replace one of IC101 & Recheck

- Check Voltage Level 1.26V at L503
  - Y → Check R503 voltage level (ON/OFF Control)
    - Replace one of IC101 & Recheck
  - N → Check All Voltage Level at Bead, RL_ON, IC101 output

- Check Voltage Level 1.5V At L502
  - Y → Replace one of IC101 and application circuit & Recheck
  - N → Check X200 Clock24MHz
    - Y → Replace X200
    - N → Check S7R Main chip and Soc_Reset Signal from PM GPIO

- Check Voltage Level 2.5V at L510
  - Y → Replace one of Bead, IC101 & Recheck
  - N → Maybe Serial Flash Memory problem

- Check signal transition at IC103
  - Y → Maybe NAND Flash Memory or S7R have troubles
  - N → Check DDR Memory /Replace one
2. No OSD Trouble Shooting

(Front-end)

(Cable)

ISDB-T/PAL/NTSC

SIF_LIVE

Demodulator

MN884433

IF

CVBS_LIVE

TP1

(System + Scalar)

Serial_Flash

1MB

NANDFlash

256MB

DDR3

256MB(128*2)

DDR3

256MB(128*2)

S7R

LVDS

SIDE HDMI_PORT

HDMI_C

HDMI_D

EXT_IN

TP1

SIF_LIVE

I2S_S7R

USB2.0

Rear(0)

Side(1)

(IF)

I2S

S7R

Demodulator

MN884433

TP1

I2S_S7R

STA368

(External Input)

AV1

AV1_LR

AV2

AV2_LR

COMP1_LR

COMP2_LR

RGB_LR

EXT_IN

(Comp1/2, RGB)

(Side(0))

USB

Rear USB (SVC only)

Side USB

(Audio Out)

(USB)

2. No OSD Trouble Shooting
2. No OSD Trouble Shooting

- Check P501 5V_ON
  - Y: Check 5V Voltage Level at P501
    - Y: Check 5V Voltage Level at L507, L501
      - Y: Check P1401/P1402 (TXAC-), (TXAC+), (TXBC-), (TXBC+), Display Enable
        - N: Maybe S7R(IC101) has troubles
          - Y: Check LVDS Cable
            - N: Replace one of L507, L501 & Recheck
          - N: Check PDP Module
            - N: Check 5V Voltage Level at L507, L501
              - N: Replace one of L507, L501 & Recheck
              - Y: Recheck P501 5V_ON
              - Y: Check PDP Module
                - N: Check 5V Voltage Level at P501
                  - N: Check GPIO Path of PM
                    - N: Check P501 5V_ON
  - N: Check 5V Voltage Level at P501

- Check 5V Voltage Level at P501
  - N: Check Power connector
    - Y: Replace Power board

- Check Power connector
  - Y: Replace one of L507, L501 & Recheck

- Replace one of L507, L501 & Recheck

- Check LVDS Cable
  - N: Replace Cable

- Replace Cable

- Check PDP Module
  - N: Check 3D ASIC
    - N: 3D Trouble Shooting

- Check 3D ASIC
  - 3D Trouble Shooting

Check CAS
- Electrical Specifications
- Power Supply Sequence
- Input Signal Timing Specification
- Control Signal Register
- Pixel Clock on CAS.
### No OSD Trouble Shooting (Module Power Sequence)

**Diagram:**
- **Vcc (5V)**: Time intervals and definitions around power on/off conditions.
- **Va**:
  - $T_{VaR}$: Rising Time of Va (10% to 90%) with min. 10 msec, max. 300 msec.
  - $T_{VaF}$: Falling Time of Va (90% to 10%) with min. 50 msec, max. 500 msec.
- **Vs**:
  - $T_{VsR}$: Rising Time of Vs (10% to 90%) with min. 100 msec, max. 400 msec.
  - $T_{VsF}$: Falling Time of Vs (90% to 10%) with min. 90 msec, max. 500 msec.
- **DISPEN**:
  - $T_{d_{on}}$: Time interval between 90% of Vs and DISPEN rising edge with min. 3100 msec, max. -
  - $T_{d_{off}}$: Time interval between DISPEN falling edge and 90% of Vs with min. 1500 msec, max. 6000 msec. Recommended 2sec.

**Table:**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Min.</th>
<th>Max.</th>
<th>unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$T_{On}$</td>
<td>Time interval between 90% of Vcc and 10% of Vs when Power On</td>
<td>750</td>
<td>1250</td>
<td>msec</td>
</tr>
<tr>
<td>$T_{Off}$</td>
<td>Time interval between 10% of Vs and 90% of Vcc when Power Off</td>
<td>20</td>
<td>-</td>
<td>msec</td>
</tr>
<tr>
<td>$T_{OnR}$</td>
<td>Time interval between 10% of Vcc and 90% of Vs when Power Off</td>
<td>2000</td>
<td>-</td>
<td>msec</td>
</tr>
<tr>
<td>$T_{VaR}$</td>
<td>Rising Time of Va (10% to 90%)</td>
<td>10</td>
<td>300</td>
<td>msec</td>
</tr>
<tr>
<td>$T_{VaF}$</td>
<td>Falling Time of Va (90% to 10%)</td>
<td>50</td>
<td>500</td>
<td>msec</td>
</tr>
<tr>
<td>$T_{VsR}$</td>
<td>Rising Time of Vs (10% to 90%)</td>
<td>100</td>
<td>400</td>
<td>msec</td>
</tr>
<tr>
<td>$T_{VsF}$</td>
<td>Falling Time of Vs (90% to 10%)</td>
<td>90</td>
<td>500</td>
<td>msec</td>
</tr>
<tr>
<td>$T_{d_{on}}$</td>
<td>Time interval between 90% of Vs and DISPEN rising edge when Power On</td>
<td>3100</td>
<td>-</td>
<td>msec</td>
</tr>
<tr>
<td>$T_{d_{off}}$</td>
<td>Time interval between DISPEN falling edge and 90% of Vs when Power Off</td>
<td>1500</td>
<td>6000</td>
<td>msec</td>
</tr>
</tbody>
</table>
Module Control Trouble Shooting

"TILT" on Adjust Remocon : PDP internal pattern displays?

PDP Module Power is OK?

Check SMPS & cable

Replace PDP Module

PDP Module is OK.
Check SCL,SDA line

Check Signal output

Replace Control Board

< Sample Signal >

Master : Image Board
Slave : PDP Module
3. Digital TV Video Trouble Shooting

(Front-end)

(System + Scalar)

(External Input)

(Audio Out)

(USB)
3. Digital TV Video Trouble Shooting

Check RF Cable

Y  →  Check Tuner(TU1300) Power (5.0V, 3.3V, 1.2V)

Y  →  Check IF Signal pin #17, 18

Y  →  Check Demodulator Power (*Brazil Model only) (3.3V, 1.2V) L609, IC600

Y  →  Check Demodulator X-TAL (X602)

N →  Replace one of Bead & Recheck

N →  Maybe Tuner has problems

N →  Replace L609 / IC600

N →  Replace X-TAL

N →  Maybe Demodulator has problems

N →  Maybe MstarS7R(IC101) has problems
4. Analog TV Video Trouble Shooting

(Front-end)

Demodulator
MN884433

(System + Scalar)

(System + Scalar)

(Side HDMI_PORT)

(UI_HW_PORT1)

(Audio Out)

I2S_S7R

STA388

(USB)

Rear USB (SVC only)

Side USB

(Cable)

ISDB-T/ PAL/NTSC

(Serialization)

FHD

LVDs

SPIIF

USB2.0

Serial_Flash

1MB

NANDFlash

256MB

ODR3

256MB (128+2)

I2S_S7R

Rear(0)

Side(1)

(Audio Out)

(USB)

Rear USB (SVC only)

Side USB

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4. Analog TV Video Trouble Shooting

- **Check RF Cable**
  - **Y**
  - **Check Tuner Power** (5.0V, 3.3V, 1.2V)
    - **N**
    - Replace one of L506/L509/IC600 & Recheck
  - **Y**
    - **Check CVBS Signal** TU1300 #11 Pin
      - **N**
      - Maybe Tuner(TU1300) has problems
    - **Y**
      - **Check CVBS Signal** R1334
        - **N**
        - Replace one of R1330/Q1305/R154/C213 & Recheck
        - **Y**
          - Maybe Mstar S7R(IC101) has problems
5. Component Video Trouble Shooting

(Front-end)

Cable

ISDB-T/ PAL/NTSC

Demodulator MN884433

IF

TP1

CVBS_LIVE SIF1

(System + Scalar)

Serial_Flash 1MB

NANDFlash 256MB

DDR3 256MB(128×2)

LVDS

FHD

IF

S7

I2S_S7R

EXT_IN

HDMI_D

HDMI_C

Rear(0) Side(1)

(External Input)

AV1

AV1_LR

AV2

AV2_LR

COMP1_LR

COMP2_LR

RGB_LR

EXT_IN

(Comp1/2, RGB)

(External Input)

HDMI_Rear(D port)

UI_HW_PORT1

HDMI_Side (C port)

(Audio Out)

I2S_S7R

STA368

(USB)

Rear USB (SVC only)

Side USB
5. Component Video Trouble Shooting

Check Signal Format
Is it supported signal?

Y
Check Component Cable

Y
Check Component Jack JK1000

N
Replace Jack

Y
Check Component Signal R1074/R1073/R1076 R1001/R1004/R1067

Y
Replace one of R1074/R1073/R1076 R1001/R1004/R1067 & Recheck

N
Replace it

Y
Check Component Signal R173/R175/R177 R180/R182/R184

N
Maybe Mstar S7R(IC101) has problems
6. RGB Video Troubleshooting

(Front-end)

(Cable)
ISDB-T/PAL/NTSC

IF

Demodulator
MN884433

TP1

CVBS_LIVE
SIF1

(System + Scalar)

Serial_Flash
1MB

NANDFlash
256MB

DDR3
256MB(128*2)

CVBS_LIVE
TP1

SIF_LIVE

EXT_IN

HDMI_D

HDMI_C

S7

I2S_S7R

Rear(0)

Side(1)

I2S_S7R

STA368

(External Input)

AV1

AV1_LR

AV2

AV2_LR

COMP1_LR

COMP2_LR

RGB_LR

(Comp1/2, RGB)

EXT_IN

SID HDMI_PORT

UI_HW_PORT1

HDMI_Rear(D port)

HDMI_Side (C port)

(Audio Out)

(USB)

Rear USB( SVC only )

Side USB
6. RGB Video Trouble Shooting

Check Signal Format
Is it supported signal?

Y --> Check RGB Cable

Y --> Check RGB Jack P900

N --> Replace Jack

Y --> Check RGB Signal R166,R168,R170

N --> Replace It & Recheck

Y --> Check Sync Signal

N --> Replace one of R163/R164 & Recheck

Y --> Check EEPROM (IC901)

N --> Replace it or re-burn & Recheck

Y --> Maybe Mstar S7R(IC101) has problems
7. AV Video Trouble Shooting

(Front-end)

Cable

ISDB-T/ PAL/NTSC

Demodulator
MN884433

CVBS_LIVE
SIF1

IF

TP1

(System + Scalar)

Serial_Flash
1MB

NANDFlash
256MB

DDR3
256MB(128*2)

FHD
LVDS

I2S_S7R

S7

EXT_IN

HDMI_D

HDMI_C

CVBS_LIVE

TP1

SIF_LIVE

EXT_IN

I2S_S7R

I2S_S7R

Rear(0)
Side(1)

(External Input)

AV1

AV1_LR

AV2

AV2_LR

COMP1_LR

COMP2_LR

RGB_LR

EXT_IN

(Comp1/2, RGB)

SIDE HDMI_PORT

UI_HW_PORT1

HDMI_Rear(D port)

HDMI_Side (C port)

(Audio Out)

I2S_S7R

STA368

(USB)

Rear USB (SVC only)

Side USB
7. AV Video Trouble Shooting

- Check Signal Format
  - Is it supported signal?
    - Y: Check AV Cable
      - Y: Check Jack JK1000/JK1002
        - N: Replace Jack
        - Y: Replace one of R1003/R1044 & Recheck
    - N: Check CVBS Signal
      - N: Replace one of R1003/R1044 & Recheck
      - Y: Check CVBS Signal
        - Y: Replace one of R187/R188/C226/C227 & Recheck
        - N: Check CVBS Signal
          - N: Replace one of R187/R188/C226/C227 & Recheck
          - Y: Maybe Mstar S7R(IC101) has problems
8. HDMI Video Trouble Shooting

(Front-end)

Demodulator
MN884433

(ISDB-T/ PAL/NTSC
CVBS_LIVE
SIF1
TP1

(IF
CVBS_LIVE
SIF1
TP1

(Demodulator
MN884433

(System + Scalar)

Serial_Flash
1MB
NANDFlash
256MB
DDR3
256MB(128*2)

(LVDS
FHD

(CVBS_LIVE
TP1
SIF_LIVE
EXT_IN

(D2S_S7R
Rear(0)
Side(1)

(S7

(HDMI_D
HDMI_C

(Extenal Input)

AV1
AV1_LR
AV2
AV2_LR
COMP1_LR
COMP2_LR
RGB_LR
EXT_IN
(Comp1/2, RGB)

(Audio Out)

I2S_S7R
STA368

(USB)

Rear USB (SVC only )
Side USB
8. HDMI Video Trouble Shooting

Check Signal Format
Is it supported signal?

Y → Check HDMI Cable

Y → Check HDMI Jack
JK801, JK803, JK804

N → Replace Jack

Y → Check I2C Signal
R829/R830
/R848/R849/R862/R863

N → Replace It & Recheck

Y → Maybe Mstar S7R(IC101) has problems

R829/R830/R848/R849/R862/R863
9. All Source Audio Trouble Shooting

(Front-end)

ISDB-T/ PAL/NTSC

SIF1

CVBS_LIVE

Demodulator

MN884433

IF

TP1

External Input

AV1

AV1_LR

AV2

AV2_LR

COMP1_LR

COMP2_LR

RGB_LR

EXT_IN

(Comp1/2, RGB)

External Input

SIDE HDMI_PORT

HDMI_Rear(D port)

UI_HW_PORT1

HDMI_Side (C port)

Audio Out

I2S_S7R

STA368

Audio Out

USB

Rear USB( SVC only )

USB

Side USB

System + Scalar

Serial_Flash

NANDFlash

DDR3

LVDS

FHD

SDPIF

SIF_LIVE

EXT_IN

HDMI_D

HDMI_C

System + Scalar

USB2.0

Rear(0)

Side(1)

System + Scalar

USB

Rear(0)

Side(1)
9. All Source Audio Trouble Shooting

Make sure you can't hear any audio

- Y
  - Check Speaker
    - Y
      - Check Connector P700
        - Y
          - Check Signal L700, L701, L702, L703
            - Y
              - Check Mstar S7R I2S Output R711, R712, R713, R714
                - Y
                  - Maybe Mstar S7R(IC101) has problems
                    - N
                      - Replace Speaker
                        - N
                          - Replace Speaker
                            - N
                              - Replace Connector
                                - N
                                  - Replace one of Capacitor, Register & Recheck
                                    - N
                                      - Maybe STA368 has problems. Replace It
                                        - N
                                          - Replace It & Recheck
                                            - N
                                              - Replace It & Recheck
                                                - N
                                                  - Replace It & Recheck
                                                    - N
                                                      - Replace It
                                                        - N
                                                          - Replace It
                                                            - N
                                                              - Replace It
10. Digital TV Audio Trouble Shooting

(Front-end)

Cable

ISDB-T/PAL/NTSC

Demodulator
MN884433

(System + Scalar)

Serial_Flash
1MB
NANDFlash
256MB
DDR3
256MB(128x2)

CVBS_LIVE

TP1

SIF_LIVE

EXT_IN

HDMI_D

HDMI_C

USB2.0

Rear(0)

Side(1)

(Side)

HDMI_Rear(D port)

HDMI_Side (C port)

(External Input)

EXT_IN

CVBS_LIVE

SIF_LIVE

(TP1)

I2S_S7R

(Audio Out)

AV1

AV1_LR

AV2

AV2_LR

COMP1_LR

COMP2_LR

RGB_LR

EXT_IN (Comp1/2, RGB)

Serial_Flash
1MB

Serial_Flash
1MB

(Comp1/2, RGB)

(AV1_LR)

(AV2_LR)

(COMP1_LR)

(COMP2_LR)

(USB)

Rear USB (SVC only)

Side USB

UI_HW_PORT1

HDMI_Side (C port)

HDMI_Rear(D port)
10. Digital TV Audio Trouble Shooting

- Check video output
  - Y: Follow procedure digital TV video trouble shooting
  - N: Follow procedure All source audio trouble shooting

- Follow procedure All source audio trouble shooting
  - N: Maybe Mster S7R internal audio DSP has problems. Replace It
11. Analog TV Audio Trouble Shooting

(Front-end)

Cable

ISDB-T/ PAL/NTSC

Demodulator

MN884433

TP1

CVBS_LIVE

SIF1

(System + Scalar)

CVBS_LIVE

SIF_LIVE

EXT_IN

HDMI_D

HDMI_C

USB2.0

Rear(0)

Side(1)

(Side HDMI PORT)

UI_HW_PORT1

HDMI_Rear(D port)

HDMI_Side (C port)

(External Input)

AV1

AV1_LR

AV2

AV2_LR

COMP1_LR

COMP2_LR

RGB_LR

EXT_IN

(Comp1/2, RGB)

(Audio Out)

i2S_S7R

STA368

(USB)

Rear USB( SVC only )

Side USB

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Follow procedure analog TV video trouble shooting

Check video output

Y

Follow procedure analog TV video trouble shooting

N

Check Tuner Power (5.0V, 3.3V, 1.2V)

Y

Check SIF Signal TU1300 #9 Pin

N

Replace one of L506/L509/IC600 & Recheck

Y

Maybe Tuner(TU1300) has problems

N

Check SIF Signal

Y

Replace one of C252/R246/R1332/Q1304/R1325 IC600 & Recheck

N

Follow procedure All source audio trouble shooting

Y

Maybe Mstar S7R audio block has problems. Replace It

N

< SIF waveform – sample >

- Defend on the input signal.
12. Component / RGB / AV Audio Trouble Shooting

(Front-end)

(Cable)

ISDB-T/PAL/NTSC

Demodulator

MN884433

CVBS_LIVE

SIF1

IF

TP1

(System + Scalar)

Serial_Flash

1MB

NANDFlash

256MB

CGA3

256MB(128x2)

LVDS

FHD

SPDIF

I2S_S7R

S7

EXT_IN

(Side HDMI PORT)

HDMI_D

HDMI_C

USB2.0

Rear(0)

Side(1)

(External Input)

CVBS_LIVE

TP1

SIF_LIVE

EXT_IN

I2S_S7R

STA368

Audio Out

(AV1)

AV1_LR

AV2_LR

COMP1_LR

COMP2_LR

RGB_LR

EXT IN

(Comp1/2, RGB)

(Comp1/2, RGB)

(Serial_Flash)

1MB

Serial_Flash

1MB

(USB)

Rear USB (SVC only)

Side USB

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12. Component / RGB / AV Audio Trouble Shooting

- **Check Video Output**
  - **Y**: Follow procedure external input video trouble shooting
  - **N**: Check Jack JK1000/JK1002/P900

- **Check Jack JK1000/JK1002/P900**
  - **Y**: Replace Jack
  - **N**: Check Signal

- **Check Signal**
  - C206/C207/C208/C209/C210/C211
  - C212/C220/C221/C222/C223/C224
  - C225/C205/R166/R167/R168/R169
  - R170/R171/R127/C215/C216/C203
  - C217/C218/C219/C204/R187/R188
  - C226/C227
  - **Y**: Replace one of
  - C206/C207/C208/C209/C210/C211
  - C212/C220/C221/C222/C223/C224
  - C225/C205/R166/R167/R168/R169
  - R170/R171/R127/C215/C216/C203
  - C217/C218/C219/C204/R187/R188
  - C226/C227 & Recheck
  - **N**: Follow procedure All source audio trouble shooting

- **Follow procedure All source audio trouble shooting**
  - **Y**: Maybe Mstar S7R audio block has problems. Replace It
  - **N**: Follow procedure external input video trouble shooting
13. HDMI Audio Trouble Shooting

(Front-end)

Cable

ISDB-T/PAL/NTSC

Demodulator
MN884433

S7

FHD

LVDS

(External Input)

AV1
AV1_LLR
AV2
AV2_LLR
COMP1_LLR
COMP2_LLR
RGB_LR
EXT_IN
(Comp1/2, RGB)

SIDE HDMI_PORT
UD_HW_PORT1
HDML_Side (C port)

(Audio Out)

I2S_S7R
STA368

(USB)

Rear USB (SVC only)
Side USB

(System + Scalar)

Serial_Flash
1MB

NANDFlash
256MB

DDR3
256MB (LVDS)

S7

EXT_IN

HDMI_D

HDMI_C

HDMI_Rear (D port)
HDMI_Side (C port)

LVDS

SPDIF

USB2.0

Rear(0)
Side(1)

I2S_S7R

Audio Out

(NANDFlash)

256MB

(USB)

Rear(0)
Side(1)
13. HDMI Audio Trouble Shooting

- Check video output
  - Yes: Follow procedure HDMI video trouble shooting
  - No: Re-download EDID data

- Re-download EDID data
  - Yes: Maybe Mstar S7R audio block has problems. Replace it
  - No: Replace IC801, IC802, IC804

- Follow procedure All source audio trouble shooting
  - Yes: Maybe Mstar S7R audio block has problems. Replace it
  - No: Replace IC801, IC802, IC804
14. USB Trouble Shooting

(Front-end)

Cable

ISDB-T/PAL/NTSC

Demodulator

MN884433

CVBS_LIVE

SIF1

IF

TP1

(System + Scalar)

Serial_Flash

1MB

NANDFlash

256MB

DDR3

256MB(128*2)

LVDS

FHD

I2S_S7R

CVBS_LIVE

TP1

SIF_LIVE

EXT_IN

HDMI_D

HDMI_C

(External Input)

_AV1_

_AV1_LR_

_AV2_

_AV2_LR_

COMP1_LR

COMP2_LR

RGB_LR

EXT_IN

(Comp1/2, RGB)

(Audio Out)

I2S_S7R

STA368

(USB)

USB

Rear USB (SVC only)

Side USB

SIDE HDMI_PORT

HDMI_Rear(D port)

UI_HW_PORT1

HDMI_Side (C port)
14. USB Trouble Shooting

- Exception
  - USB power could be disabled by inrushing current
  - In this case, remove the device and try to reboot the TV (AC power off/on)
15. 3D Trouble Shooting

(Front-end)

Cable

ISDB-T/PAL/NTSC

Demodulator
MN884433

IF

CVBS_LIVE

SIF1

TP1

(System + Scalar)

Serial_Flash
1MB

NANDFlash
256MB

DDR3
256MB(128*2)

CVBS_LIVE

TP1

SIF_LIVE

EXT_IN

HDMI_D

HDMI_C

USB2.0

LVDS

SPDIF

I2S_S7R

HDMI_Rear(D port)

HDMI_Side (C port)

SIDE HDMI_PORT

UI_HW_PORT1

Rear(0)

Side(1)

Serial_Flash
2Mb

DDR2
256Mb(16*16)

Demodulator
MN884433

(IF)

Audio Out

I2S_S7R

STA368

(Comp1/2, RGB)

USB

Rear USB (SVC only)

Side USB

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15. 3D Trouble Shooting

Check P500 All Voltage Level (5V) → Y → Check Power connector → Y → Replace Power board

N → Check Voltage Level 3.3V at IC1406, L1404 → Y → N →

Check Voltage Level 1.0V at L1403 → Y →

Check Voltage Level 1.8V at IC1407 #2 pin → Y →

Check X1400 Clock25MHz → Y →

Check signal transition IC1402 → Y →

Check reset signal at R1464 → Y →

Check P1404 #5(High), #11(High), #12(60Hz) → Y →

Check RF emitter board or 3D glass

Y → Check LG8300 Redownload or replace

N → Check DDR Memory /Replace one → Y → N →

Maybe NAND Flash Memory or LG8300 have troubles

N → Check DDR Memory /Replace one → Y →

Check S7R Main chip and Soc_Reset

N →

Maybe LG8300(IC1400) has troubles