PLASMA TV
SERVICE MANUAL

CHASSIS : PD92A
MODEL : 42PQ1100

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

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

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.
**SPECIFICATIONS**

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

1. **Application Range**
   This spec is applied to the 42/50” PLASMA TV used PD92A Chassis.

<table>
<thead>
<tr>
<th>Chassis</th>
<th>Market</th>
<th>Brand</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD92A</td>
<td>Albania, Austria, Belgium, Bosnia, Bulgaria, Croatia, Czech, Denmark, Estonia, Finland France, Germany, Greece, Hungarym Ireland, Italy, Kazekhstan, Latvia, Lithuania, Luxembourg, Morocco,Netherlands, Norway, Poland, Portugal Romania, Russia, Sebia, Slovakia, Lovenia, Spain, Sweden, Switzerland, Turkey, UK, Ukraine</td>
<td>LG</td>
<td></td>
</tr>
</tbody>
</table>

2. **Specification**

   Each part is tested as below without special appointment.
   1) Temperature : 25±5°C (77±9°F), CST : 40±5
   2) Relative Humidity: 65±10%
   3) Power Voltage: Standard Input voltage (100-240V~, 50/60Hz)
   * 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 SBOM.
   5) The receiver must be operated for about 20 minutes prior to the adjustment.

3. **Test Method**

   1) Performance : LGE TV test method followed.
   2) Demanded other specification
      - Safety : CE, IEC specification
      - EMC : CE, IEC

<table>
<thead>
<tr>
<th>Market</th>
<th>Appliance</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania, Austria, Belgium, Bosnia, Bulgaria, Croatia, Czech, Denmark, Estonia, Finland France, Germany, Greece, Hungarym Ireland, Italy, Kazekhstan, Latvia, Lithuania, Luxembourg, Morocco,Netherlands, Norway, Poland, Portugal Romania, Russia, Sebia, Slovakia, Lovenia, Spain, Sweden, Switzerland, Turkey, UK, Ukraine</td>
<td>Safety : IEC60065</td>
<td>TEST</td>
</tr>
<tr>
<td></td>
<td>EMC : EN55013</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EN55022</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EN55020</td>
<td></td>
</tr>
<tr>
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<td>EN55024</td>
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</table>
### 4. Module Specification

#### (1) 50"

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>Specification</th>
<th>Remark</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Display Screen Device</td>
<td>50 inch Wide Color Display Module</td>
<td>PDP</td>
</tr>
<tr>
<td>2</td>
<td>Aspect Ratio</td>
<td>16:9</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>PDP Module</td>
<td>PDP50XG2####, RGB Closed Type</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Operating Environment</td>
<td>1) Temp. : 0 ~ 40deg</td>
<td>LGE SPEC.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) Humidity : 20 ~ 80%</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Storage Environment</td>
<td>3) Temp. : -20 ~ 60deg</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4) Humidity : 10 ~ 90%</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Input Voltage</td>
<td>AC100-240V~, 50/60Hz</td>
<td>Maker LG</td>
</tr>
</tbody>
</table>

#### (2) 42"

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>Specification</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Display Screen Device</td>
<td>42 inch Wide Color Display Module</td>
<td>PDP</td>
</tr>
<tr>
<td>2</td>
<td>Aspect Ratio</td>
<td>16:9</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>PDP Module</td>
<td>PDP42XG2####, RGB Closed Type</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Operating Environment</td>
<td>1) Temp. : 0 ~ 40deg</td>
<td>LGE SPEC.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) Humidity : 20 ~ 80%</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Storage Environment</td>
<td>3) Temp. : -20 ~ 60deg</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4) Humidity : 10 ~ 90%</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Input Voltage</td>
<td>AC100-240V~, 50/60Hz</td>
<td>Maker LG</td>
</tr>
</tbody>
</table>
5. Model General Specification

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>Specification</th>
<th>Remark</th>
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<tbody>
<tr>
<td>1</td>
<td>Market</td>
<td>Albania, Austria, Belgium, Bosnia, Bulgaria, Croatia, Czech, Denmark, Estonia, Finland France, Germany, Greece, Hungary, Ireland, Ukraine, Italy, Kazakhstan, Latvia, Lithuania, Luxembourg, Morocco, Netherlands, Norway, Poland, Portugal, Romania, Russia, Sebia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, UK, Ukraine</td>
<td>Analog Only</td>
</tr>
<tr>
<td>2</td>
<td>Broadcasting system</td>
<td>1) PAL-BG</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) PAL-DK</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3) PAL-I,I'</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4) DVB-T (ID TV)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5) SECAM- L/L'</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Receiving system</td>
<td>Analog : Upper Heterodyne</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Digital : COFDM</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Scart Jack(2EA)</td>
<td>PAL, SECAM</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Video Input (1EA)</td>
<td>PAL, SECAM, NTSC</td>
<td>4 System : PAL, SECAM, NTSC, PAL60</td>
</tr>
<tr>
<td>6</td>
<td>S-Video Input (1EA)</td>
<td>PAL, SECAM, NTSC</td>
<td>4 System : PAL, SECAM, NTSC, PAL60</td>
</tr>
<tr>
<td>7</td>
<td>Component Input (1EA)</td>
<td>Y/Cb/Cr, Y/Pb/Pr</td>
<td></td>
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<tr>
<td>8</td>
<td>RGB Input(1EA)</td>
<td>RGB-PC</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>HDMI Input(3EA)</td>
<td>HDMI- DTV &amp;SOUND</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Audio Input (5EA)</td>
<td>PC Audio, Component(1EA), AV(3EA)</td>
<td>L/R Input(PC 1EA, SCART 2EA, SIDE AV 1EA, Component 1EA)</td>
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<tr>
<td>11</td>
<td>Audio Out(1EA)</td>
<td>SPDIF(1EA)</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>USB(1EA)</td>
<td>Divx, MP3, JPEG</td>
<td>MP3, JPEG: 42/50PQ3000-ZA DIVX, MP3, JPEG: 42/50PQ6000-ZA</td>
</tr>
</tbody>
</table>
### 6. Chroma & Brightness

#### 6.1 WXGA module (42G2, 42G2A module, SET With 38% Glass Filter)

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>42G2</th>
<th>42G2A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>White peak brightness</td>
<td>315</td>
<td>362</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>170</td>
<td>189</td>
</tr>
<tr>
<td></td>
<td></td>
<td>161</td>
<td>183</td>
</tr>
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<table>
<thead>
<tr>
<th>Unit</th>
<th></th>
<th></th>
<th>42G2A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*) Peak Brightness Mode

- 1/100 white Window pattern
  (Typically 1% Window size)
- 100IRE (255 Gray)
- Picture: Vivid (Medium)

- Input: HDMI, PC (1920*1080 60 Hz)

*Peak Brightness Condition may Slightly different between sets.

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>White average brightness</td>
<td>47</td>
<td>54</td>
<td>73</td>
<td>cd/m²</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>170</td>
<td>189</td>
<td>161</td>
<td>183</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Unit</th>
<th></th>
<th></th>
<th>42G2A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- 100% Window White Pattern
- 100IRE(255Gray)
- Picture: Vivid (Medium)

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>-10</th>
<th>0</th>
<th>+10</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>Brightness uniformity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* - 85IRE(216Gray) 100% Window White Pattern
- Picture: Vivid (Medium)

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>X</th>
<th>Y</th>
<th>X</th>
<th>Y</th>
<th>X</th>
<th>Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>Color Coordinate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>0.270</td>
<td>0.285</td>
<td>0.300</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.278</td>
<td>0.293</td>
<td>0.308</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Red</td>
<td>0.635</td>
<td>0.640</td>
<td></td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.318</td>
<td>0.330</td>
<td>0.340</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Green</td>
<td>0.242</td>
<td>0.300</td>
<td>0.305</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.595</td>
<td>0.600</td>
<td></td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Blue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
<td>0.150</td>
<td>0.158</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
<td>0.060</td>
<td>0.070</td>
<td></td>
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</tr>
</tbody>
</table>

* - White : 85IRE(216Gray)
- 100% Window White Pattern
- R/G/B : 100IRE(255Gray)
- Picture: Vivid (Medium)

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>-0.1</th>
<th>Average</th>
<th>+0.01</th>
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<tbody>
<tr>
<td>5.</td>
<td>Color coordinate uniformity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* - 85IRE 100% Window White Pattern
- Picture: Vivid (Medium)

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>42G2</th>
<th>42G2A</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>Contrast ratio at dark room</td>
<td>100k:1</td>
<td>1000k:1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* -1/100 white window pattern (Peak mode)
- 100IRE(255Gray)
- Picture: Vivid (Medium)
- Input: HDMI, PC (1920*1080 60 Hz)

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>Cool</th>
<th>Medium</th>
<th>Warm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* - 85IRE 100% Window White Pattern
- APC : Vivid (Medium)

- Color Temperature
- Cool
- Medium
- Warm
ADJUSTMENT INSTRUCTION

1. Application Range
This spec sheet is applied all of the PDP TV, PD92A chassis.

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.
(3) The adjustment must be performed in the circumstance of 25±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 100~240V, 50/60Hz.
(5) The receiver must be operated for about 5 minutes prior to the adjustment when module is in the circumstance of over 15°C.
   - In case of keeping module is in the circumstance of 0°C, it should be placed in the circumstance of above 15°C for 2 hours.
   - In case of keeping module is in the circumstance of below -20°C, it should be placed in the circumstance of above 15°C for 3 hours.
   • After RGB Full White in HEAT-RUN Mode, the receiver must be operated prior to the adjustment.
   • Enter into HEAT-RUN MODE
     (1) Press the POWER ON KEY on R/C for adjustment.
     (2) OSD display and screen display PATTERN MODE.

   * Set is activated HEAT run without signal generator in this mode.
   * Single color pattern (WHITE) of HEAT RUN MODE uses to check panel.

Caution: If you turn on a still screen more than 20 minutes (Especially digital pattern, cross hatch pattern), an after image may be occur in the black level part of the screen.

3. PCB assembly adjustment method
Caution: Using ‘power on’ button of the control R/C, power on TV.

• Auto-control adjustment protocol(RS-232C)

4. Insert Tool OPTION and Model Name Download
(1) Press IN_START key on R/C to insert Tool OPTION
(2) On the “Tool Option 1”, Insert Tool Option by a number key

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Model Option Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>50PG3000-ZA</td>
<td>4717</td>
</tr>
<tr>
<td>42PQ3000-ZA</td>
<td>4461</td>
</tr>
<tr>
<td>50PG6000-ZA</td>
<td>8814</td>
</tr>
<tr>
<td>42PQ6000-ZA</td>
<td>8558</td>
</tr>
<tr>
<td>50PQ2000-ZA</td>
<td>2669</td>
</tr>
<tr>
<td>42PQ2000-ZA</td>
<td>2413</td>
</tr>
<tr>
<td>50PS3000-ZB</td>
<td>4781</td>
</tr>
<tr>
<td>50PS6000-ZC</td>
<td>8878</td>
</tr>
<tr>
<td>42PQ1000-ZD</td>
<td>260</td>
</tr>
<tr>
<td>42PQ1100-ZE</td>
<td>10500</td>
</tr>
<tr>
<td>42PQ1000-ZA</td>
<td>12548</td>
</tr>
<tr>
<td>60PS4000-ZA</td>
<td>7085</td>
</tr>
<tr>
<td>50PQ1000-ZD</td>
<td>580</td>
</tr>
<tr>
<td>50PQ1100-ZE</td>
<td>10820</td>
</tr>
<tr>
<td>50PQ1000-ZA</td>
<td>12868</td>
</tr>
</tbody>
</table>

(3) Press the ENTER(■)
(4) Press ENTER(■) again.
(5) Select “OK to Download” by using ◀►(VOL +/-) and press ►(VOL +)

<table>
<thead>
<tr>
<th>Tool Option</th>
<th>4782</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model Name</td>
<td>50PS1000-ZD</td>
</tr>
<tr>
<td>INCH</td>
<td>50</td>
</tr>
<tr>
<td>Tool</td>
<td>PS60</td>
</tr>
<tr>
<td>EYE</td>
<td>1</td>
</tr>
<tr>
<td>Media Player</td>
<td>EMF-PMM</td>
</tr>
<tr>
<td>HDMI Type</td>
<td>3-HDMI</td>
</tr>
<tr>
<td>XD Plazma</td>
<td>0</td>
</tr>
<tr>
<td>OK to Download</td>
<td>0</td>
</tr>
<tr>
<td>DOWNLOAD</td>
<td>OK</td>
</tr>
</tbody>
</table>

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5. EDID(The Extended Display Identification Data) Download

(1) Press the ADJ KEY on R/C and enter EZ ADJUST.
(2) Select "5.EDID D/L" by using ▲▼(CH +/-) and press ENTER(■).
(3) Select "Start" and press navigation key(▶).
(4) EDID download is executed automatically.
(5) Press EXIT key on R/C

5.1. EDID DATA
1) Analog RGB

**Detail EDID Options are below (˃, ˄, ˅, ˆ, ˇ)**

- **Product ID**
- **Week, Year** => Controlled on production line:
  - ex) Week: '03' -> '03'
  - Year: '2009' -> '13'

<table>
<thead>
<tr>
<th>MODEL NAME</th>
<th>Product ID</th>
<th>HEX</th>
<th>EDID Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>42PQ3000</td>
<td>40433</td>
<td>9DF1</td>
<td>F19D</td>
</tr>
<tr>
<td>42PQ6000</td>
<td>40431</td>
<td>9DEF</td>
<td>EF9D</td>
</tr>
<tr>
<td>50PQ3000</td>
<td>50250</td>
<td>C44A</td>
<td>4AC4</td>
</tr>
<tr>
<td>50PQ6000</td>
<td>50248</td>
<td>C448</td>
<td>48C4</td>
</tr>
<tr>
<td>42PQ2000</td>
<td>40467</td>
<td>9E13</td>
<td>139E</td>
</tr>
<tr>
<td>50PQ2000</td>
<td>50276</td>
<td>C464</td>
<td>64C4</td>
</tr>
<tr>
<td>50PS3000</td>
<td>50278</td>
<td>C466</td>
<td>66C4</td>
</tr>
<tr>
<td>50PS6000</td>
<td>50280</td>
<td>C468</td>
<td>68C4</td>
</tr>
<tr>
<td>60PS4000</td>
<td>50290</td>
<td>C472</td>
<td>72C4</td>
</tr>
<tr>
<td>42PQ1000</td>
<td>40473</td>
<td>9E19</td>
<td>199E</td>
</tr>
<tr>
<td>42PQ1100</td>
<td>40475</td>
<td>9E1B</td>
<td>189E</td>
</tr>
<tr>
<td>50PQ1000</td>
<td>50296</td>
<td>C478</td>
<td>78C4</td>
</tr>
</tbody>
</table>

2) HDMI

**Detail EDID Options are below (˃, ˄, ˅, ˆ, ˇ)**

- **Product ID**
- **Week, Year** => Controlled on production line:
  - ex) Week: '03' -> '03'
  - Year: '2009' -> '13'

<table>
<thead>
<tr>
<th>MODEL NAME</th>
<th>Product ID</th>
<th>HEX</th>
<th>EDID Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>42PQ3000</td>
<td>40433</td>
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<td>F19D</td>
</tr>
<tr>
<td>42PQ6000</td>
<td>40431</td>
<td>9DEF</td>
<td>EF9D</td>
</tr>
<tr>
<td>50PQ3000</td>
<td>50250</td>
<td>C44A</td>
<td>4AC4</td>
</tr>
<tr>
<td>50PQ6000</td>
<td>50248</td>
<td>C448</td>
<td>48C4</td>
</tr>
<tr>
<td>42PQ2000</td>
<td>40467</td>
<td>9E13</td>
<td>139E</td>
</tr>
<tr>
<td>50PQ2000</td>
<td>50276</td>
<td>C464</td>
<td>64C4</td>
</tr>
<tr>
<td>50PS3000</td>
<td>50278</td>
<td>C466</td>
<td>66C4</td>
</tr>
<tr>
<td>50PS6000</td>
<td>50280</td>
<td>C468</td>
<td>68C4</td>
</tr>
<tr>
<td>60PS4000</td>
<td>50290</td>
<td>C472</td>
<td>72C4</td>
</tr>
<tr>
<td>42PQ1000</td>
<td>40473</td>
<td>9E19</td>
<td>199E</td>
</tr>
<tr>
<td>42PQ1100</td>
<td>40475</td>
<td>9E1B</td>
<td>189E</td>
</tr>
<tr>
<td>50PQ1000</td>
<td>50296</td>
<td>C478</td>
<td>78C4</td>
</tr>
</tbody>
</table>

- **Model Name(HEX)**

<table>
<thead>
<tr>
<th>MODEL NAME</th>
<th>Model Name(HEX)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LG TV</td>
<td>000000FC004C472054560A202020202020</td>
</tr>
</tbody>
</table>

- **Checksum:** Changeable by total EDID data.

<table>
<thead>
<tr>
<th>Vender ID</th>
<th>HEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDMI 1</td>
<td>10</td>
</tr>
<tr>
<td>HDMI 2</td>
<td>20</td>
</tr>
<tr>
<td>HDMI 3</td>
<td>30</td>
</tr>
</tbody>
</table>

* In case of 42/50PQ1000, 1100, HDMI 1 is ONLY applied.
5.2 Confirmation
1) Press ‘InStart’ Key on Factory SVC Remote Controller, It is possible to check ADC & EDID ADJ

8. Download Serial Number (RS-232C)
(1) Press “Power on” key of service R/C.(Baud rate : 115200 bps)
(2) Connect RS232 Signal Cable to RS-232 Jack.
(3) Write Serial number by use RS-232.
(4) Must check the serial number at the Diagnostics of SET UP menu.
(Refer to below ‘6.SET INFORMATION’).

6. SET assembly adjustment method
Caution : Each PCB assembly must be checked by check JIG set. (Because power PCB Assembly damages to PDP Module, especially be careful)

7. POWER PCB Assembly Voltage Adjustment (Va, Vs voltage Adjustment)

7.1. Test Equipment: D.M.M 1EA

7.2. Connection Diagram for Measuring:
Refer to fig.1

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

(2) Vs adjustment
1) Connect + terminal of D. M.M. to Vs pin of P811, connect -terminal to GND pin of P811.
2) After turning VR951, voltage of D.M.M adjustment as same as Vs voltage which on label of panel right/top (deviation ; ±0.5V)

9. Adjustment of White Balance
9.1. Required Equipment
(1) Remote controller for adjustment
(2) Color Analyzer (CS-1000, CA-100,100+, CA-210 or same product) : CH 10 (PDP)
   * Please adjust CA-210, CA-210+ by CS-1000 before measuring
(3) Auto W/B adjustment instrument(only for Auto adjustment)
(4) 9 Pin D-Sub Jack(RS232C) is connected to the AUTO W/B EQUIPMENT.

9.2. AUTO White Balance Process
Before Adjust of White Balance, Please press POWER ONLY key
Adjust Process will start by execute RS232C Command

● Color temperature standards according to CSM and Module

<table>
<thead>
<tr>
<th>CSM</th>
<th>PLASMA</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cool</td>
<td>11000K</td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>9300K</td>
<td></td>
</tr>
<tr>
<td>Warm</td>
<td>6500K</td>
<td></td>
</tr>
</tbody>
</table>

PLASMA Remark
11000K
9300K
6500K

Cool
Medium
Warm

CSM Temp ±Color Coordinate

<table>
<thead>
<tr>
<th>CSM</th>
<th>Color Coordinate</th>
<th>Temp</th>
<th>±Color Coordinate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cool</td>
<td>0.276 0.283</td>
<td>11,000K</td>
<td>0.002</td>
</tr>
<tr>
<td>Medium</td>
<td>0.285 0.293</td>
<td>9,300K</td>
<td>0.002</td>
</tr>
<tr>
<td>Warm</td>
<td>0.313 0.329</td>
<td>6,500K</td>
<td>0.002</td>
</tr>
</tbody>
</table>
Please Adjust in AV 1 MODE, Turn off Energy Saving Mode.

(1) Enter “PICTURE RESET” on Picture Mode, then turn off Fresh Contrast and Fresh colour in Advanced Control
(2) After enter Service Mode by pushing “ADJ” key,
(3) Enter White Pattern off of service mode, and change off -> on.
(4) Enter “W/B ADJUST” by pushing “►” key at “3. W/B ADJUST”.
(5) Adjust W/B DATA, for all CSM, choose ‘COPY ALL’

* Gain Max Value is 192. So, Never make any Gain Value over 192 and please fix one Value on 192, between R, G and B.

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Tpy</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-GAIN</td>
<td>0</td>
<td>192</td>
<td>192</td>
</tr>
<tr>
<td>G-GAIN</td>
<td>0</td>
<td>192</td>
<td>192</td>
</tr>
<tr>
<td>B-GAIN</td>
<td>0</td>
<td>192</td>
<td>192</td>
</tr>
</tbody>
</table>

9.4. Auto-control Interface and Directions
(1) Adjust in the place where the influx of light like floolight around is blocked.
(Illumination is less than 10ux).
(2) Measure and adjust after sticking the Color Analyzer (CA-100+, CA210 ) to the side of the module.
(3) Aging time
After aging start, keep the Power on (no suspension of power supply) and heat-run over 5 minutes

9.5. Auto Adjustment Map(RS232C)

<table>
<thead>
<tr>
<th>No</th>
<th>Index</th>
<th>CMD1</th>
<th>CMD2</th>
<th>Set ID</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Start</td>
<td>w</td>
<td>b</td>
<td>0</td>
<td>00</td>
</tr>
<tr>
<td>2</td>
<td>Gain Start</td>
<td>w</td>
<td>b</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>Gain End</td>
<td>w</td>
<td>b</td>
<td>0</td>
<td>1F</td>
</tr>
<tr>
<td>4</td>
<td>Offset Start</td>
<td>w</td>
<td>b</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td>5</td>
<td>Offset End</td>
<td>w</td>
<td>b</td>
<td>0</td>
<td>2F</td>
</tr>
<tr>
<td>6</td>
<td>End</td>
<td>w</td>
<td>b</td>
<td>0</td>
<td>FF</td>
</tr>
<tr>
<td>7</td>
<td>Medium R</td>
<td>j</td>
<td>a</td>
<td>0</td>
<td>00–FF</td>
</tr>
<tr>
<td>8</td>
<td>Medium G</td>
<td>j</td>
<td>b</td>
<td>0</td>
<td>00–FF</td>
</tr>
<tr>
<td>9</td>
<td>Medium B</td>
<td>j</td>
<td>c</td>
<td>0</td>
<td>00–FF</td>
</tr>
<tr>
<td>10</td>
<td>Warm R</td>
<td>j</td>
<td>d</td>
<td>0</td>
<td>00–FF</td>
</tr>
<tr>
<td>11</td>
<td>Warm G</td>
<td>j</td>
<td>e</td>
<td>0</td>
<td>00–FF</td>
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<tr>
<td>12</td>
<td>Warm B</td>
<td>j</td>
<td>f</td>
<td>0</td>
<td>00–FF</td>
</tr>
<tr>
<td>13</td>
<td>Cool R</td>
<td>j</td>
<td>g</td>
<td>0</td>
<td>00–FF</td>
</tr>
<tr>
<td>14</td>
<td>Cool G</td>
<td>j</td>
<td>h</td>
<td>0</td>
<td>00–FF</td>
</tr>
<tr>
<td>15</td>
<td>Cool B</td>
<td>j</td>
<td>i</td>
<td>0</td>
<td>00–FF</td>
</tr>
</tbody>
</table>

10. Checking the EYE-Q Operation
(1) Press the EYE Key on the adjustment remote controller.
(2) Check the Sensor DATA (It must be under 10) and keep the data longer than 1.5s
(3) Check ‘OK’

<table>
<thead>
<tr>
<th>Green Eye-Check(Factory Mode)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor Data</td>
</tr>
</tbody>
</table>

(Sensor DATA 0 ~ 4095, Power Saving Mode 0 ~ 12)
* IF you press IN-STAP Button, change Green Eye-check OSD.

11. Set Information (Serial No & Model name)
11.1. Check the Serial Number & Model Name
(1) Push the menu button in DTV mode.
(2) Check the Serial Number
Select the STATION => Diagnostics => To set

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12. SW Download Guide.

* Put a *.bin to USB Stick and Turn on TV

1. Put the USB Stick to the USB socket
2. Automatically detecting update file in USB Stick
   * If your downloaded program version in USB Stick is Low, it didn’t work.
   But your downloaded version is High, USB data is automatically detecting.
3. Show the message “Copying files from memory”

4. Updating is staring.

5. Updating Completed, The TV will restart automatically.
   After turn on TV, Please press ‘IN-STOP’ button on ADJ Remote-control.
   * IF you don’t have ADJ R/C, enter ‘Factory Reset’ in OPTION MENU.
6. When TV turn on, check the Updated version on Diagnostics MENU.
HW Power On Sequence (LGE2872A)

1. HWRESET: Chip Reset, High Reset (Level)
   This pin is suggested to connect to AVDD_MPLL as in Figure-1.
   The VIH is 2V (Typ) +/-10% (2.2V-1.8V); the VIL is 1.2V (Typ) +/-10% (1.08V-1.32V).
   The power sequence is as shown in Figure-2.

   ![Figure-1: Reset Application Circuit](image)

2. External 3.3V LDO + external 1.2V LDO, the timing is as Figure-2.
3. The RST waveform must satisfy Figure-2 with parameter as Table1.

   ![Figure-2: Correct Power Sequence for External 3.3V LDO + External 1.2V LDO](image)
Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by $\Delta$ 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.
Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by △ 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.
100uF

THE CRITICAL COMPONENTS IN THE SYMBOL MARK OF THE SCHEMETIC ESSENTIAL THAT ONLY MANUFACTURES SPECFIED PARTS BE USED FOR SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION.

THE SYMBOL MARK OF THIS SCHEMETIC DIAGRAM INCORPORATES

SCART JACK is changed because of SCART DETECTION signal.
PIN 22 is added. 08.07.10
SCART JACK is changed because of SCART DETECTION signal.

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SECRET
LG Electronics

MODEL EAX5766204 DATE 2009.04.15
BLOCK SCART SHEET 6/11

SCART PIN 8

[SCART PIN 8]
THE SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION. FIRE AND ELECTRICAL SHOCK HAZARDS, WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFACTURES SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SYMBOL MARK OF THE SCHEMATIC.
THE SYMBOL MARK OF THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION.

FILE AND ELECTRICAL SHOCK HAZARDS, WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFACTURES SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SYMBOL MARK OF THE SCHEMATIC.
# PDP TV Repair Process Index

- Trouble shooting by worst symptom

<table>
<thead>
<tr>
<th>No.</th>
<th>Symptom (L)</th>
<th>Symptom (M)</th>
<th>Page</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No Picture/Sound OK</td>
<td>No Picture/No sound</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>No Picture/No sound</td>
<td>No Picture/No sound</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Mal-discharge/Noise/dark picture</td>
<td>Mal-discharge/Noise/dark picture</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Picture broken/Freezing</td>
<td>Picture broken/Freezing</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Vertical bar/ Horizontal Bar</td>
<td>Vertical bar/ Horizontal Bar</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>A. Picture Problem</td>
<td>No Power (Not turn on)</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>B. Power Problem</td>
<td>Turn off (Instant, under watching)</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>C. Sound Problem</td>
<td>No sound/ Sound distortion</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>E. General function Problem</td>
<td>Remote control &amp; Local switch checking</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

First of all, Check whether there is SVC Bulletin in GCSC System for these model.
## A. Picture Problem

### No Picture/Sound OK

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Making</th>
<th>Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Picture/Sound OK</td>
<td>2009.2.1</td>
<td>1/9</td>
</tr>
</tbody>
</table>

### PDP TV

First of all, Check whether all of cable between board was inserted properly or not. (Main B/D ↔ Power B/D, Power B/D ↔ Y-sus B/D, Y-Sus B/D ↔ Z-Sus B/D, LVDS Cable, Speaker Cable, IR B/D Cable, ..)

#### Check Module pattern by using “TILT” key on SVC R/C

<table>
<thead>
<tr>
<th>Check</th>
<th>Normal</th>
<th>Sound OK</th>
<th>Check</th>
<th>Y-Sus/ Z-Sus Board</th>
<th>Replace defective B/D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Normal</td>
<td>Sound</td>
<td>Voltage</td>
<td>Y-Sus/ Z-Sus Board</td>
<td>Replace defective B/D</td>
</tr>
<tr>
<td>No</td>
<td>Move</td>
<td>No Sound</td>
<td>Section</td>
<td>Y-Sus/ Z-Sus Board</td>
<td>Replace defective B/D</td>
</tr>
</tbody>
</table>

### Check B+ Voltage on Power Board / Control Board

- Normal: Y
- Check B+(5V)

1. Check Control Board
   - LED on
   - Crystal(X101)
   - 1.8V, 3V, 5V FET
   - Rom update
2. Replace Control B/D

### Move LVDS Cable

- Normal: Y
- Replace Main B/D

### Power problem Section

- Normal: Y
- Move Power problem Section
- 1. Check Y-Sus/ Z-Sus Board
- 2. Replace defective B/D

### Move Power problem Section

- Normal: Y
- Replace Control B/D

---

*Refer to the Module label for each voltage*

---

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A. Picture Problem

No Picture/No Sound

Check IR operation

Power LED ON?

OSD appear?

Latest S/W update from GCSC (Firmware Management)

Replace Main B/D

Check Input signal
- RF Cable connection
- SCART Cable connection
- HDMI Cable connection
- Component Cable ...

Check Module pattern by using “TILT” key on SVC R/C

Check Sound

Sound OK

LVDS Cable

Check LVDS Cable

Normal

Y

Sound OK

Close

N

Y

Check Sound

Normal

Y

Close

N

N

Move No Picture/ Sound Ok Section

Check Module pattern by using “TILT” key on SVC R/C

Normal

Y

Check Sound

Normal

Y

Close

N

N

Replace Main B/D

Check LVDS Cable
Repair Process

PDP TV | Symptom | A. Picture Problem | Making | Revision
--- | --- | --- | --- | ---
 | Mal-discharge/Noise/dark picture | | 2009. 2 . 1 | 3/9

### Mal-discharge

1. Check Picture problem Type
   - Dot type
     - Check CTRL ROM Ver. and Rom Upgrade
       - Normal Picture?
         - Y: Close
         - N: Replace Control board
       - Normal Picture?
         - Y: Replace Module
         - N: Proceed to next step
   - Mal-discharge
     - Dot type
       - Check voltage ~VY / Vsc (Y-Sus B/D)
       - Normal Picture?
         - Y: Close
         - N: Replace Y-Sus B/D
     - Scan Type
       - Check voltage ~VY / Vsc (Y-Sus B/D)
       - Normal Picture?
         - Y: Close
         - N: Proceed to next step
     - Picture problem
       - Check voltage ~VY / Vsc (Y-Sus B/D)
       - Normal Picture?
         - Y: Close
         - N: Proceed to next step

### Noise

1. Check RF Cable Connection
   - Normal Picture?
     - Y: Close
     - N: Check Tuner & Replace

### Dark Picture

1. Check Picture mode setting
   - Normal Picture?
     - Y: Close
     - N: 1. Check Z-Sus Board 2. Replace Board
   - Normal Picture?
     - Y: Replace Module
     - N: Proceed to next step

*Check Discharge resistance (10Ω 2~3ea) on Power B/D before replace Y Drive B/D
A. Picture Problem

**Picture broken/Freezing**

### Repair Process

#### Check RF Signal level

- By using Digital signal level meter
- By using Diagnostics menu on OSD
  - (Menu→Setup→Diagnostic)
  - Signal strength (Normal: over 50%)
  - Signal Quality (Normal: over 50%)

#### Normal Signal?

- **Y**
  - Check whether other equipments have problem or not.
    - (By connecting RF Cable at other equipment)
    - DVD Player, Set-Top-Box, Different maker TV etc

- **N**
  - Check RF Cable
    1. Reconnection
    2. Install Booster

#### Check RF Cable Connection

- **Y**
  - Normal Picture?
    - **Y** Close
    - **N**
      - Contact with signal distributor or broadcaster (Cable or Air)

- **N**
  - Normal Picture?
    - **Y** Close
    - **N**
      - Contact with signal distributor or broadcaster (Cable or Air)

#### Check S/W Version

- **Y**
  - Check S/W Version
  - SVC Bulletin?
    - **Y**
      - Booster menu On→Off: Check Off→On: Check
    - **N**
      - S/W Upgrade
        - **Y**
          - Normal Picture?
            - **Y** Close
            - **N**
              - Replace Main B/D
        - **N**
          - Normal Picture?
            - **Y** Close
            - **N**
              - Check Tuner soldering

- **N**
  - SVC Bulletin?
    - **Y**
      - Booster menu On→Off: Check Off→On: Check
    - **N**
      - S/W Upgrade
        - **Y**
          - Normal Picture?
            - **Y** Close
            - **N**
              - Replace Main B/D
        - **N**
          - Normal Picture?
            - **Y** Close
            - **N**
              - Check Tuner soldering

### Notes

- **‘09 years new model apply chip tuner so, chip tuner is soldered on main PCB [Chip Tuner: IC500(XC5000)]**
### Repair Process

#### A. Picture Problem: Vertical bar/Horizontal Bar

- **Symptom:** Picture Problem

- **Process:**
  1. **Check defect type**
     - **Regular Vertical Line/Bar**
       - Check Module pattern by using “TILT” key on SVC R/C
       - Normal Pattern? Y → Replace Module
       - N → Normal Pattern?
         - Y → Replace Module
         - N → Check Main B/D
     - **Irregular Vertical Line/Bar**
       - Check connection of Connector (COF,TCP) on CTRL B/D, X B/D
       - Normal? Y → Replace Module
       - N → 1. Check CTRL B/D
         - 2. Replace Board
         - N → Replace Module
       - Normal Picture? Y → Close
       - N → Replace Module
   - **Half No picture**
     - 1. Check X B/D
     - 2. Replace Board
     - Normal Picture? Y → Close
     - N → Replace Module
     - Y → Close
   - **Horizontal Line/Bar**
     - Check connection of Connector (FPC) on Y Drive B/D
     - Normal? Y → 1. Check Y Drive B/D
       - 2. Replace Board
       - Normal Picture? Y → Close
       - N → Replace Module
       - Y → Close
       - N → Replace Module

- **Note:**
  - CTRL B/D: Control board
  - H-Line’s Cause is rare CTRL B/D

---

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B. Power Problem

No Power (Not turn on)

1. Power LED ON?
   Y: DC Power on by pressing Power Key
      On Remote control
   N: Check R/C IR Operation
      Y: Close
      N: Repair/Replace IR B/D

2. Check Power cord was inserted properly

3. Check & Repair Mechanical Power switch on Local control of TV
   Y: Normal
      Close
   N: Check ST-BY 5V on Power Board

4. Check ST-BY 5V on Power Board
   Y: Normal Voltage?
      N: Check AC DET Signal on Power B/D
      N: Replace Power B/D
      Y: Replace Power B/D

5. Check AC DET Signal on Power B/D
   N: Check Power B/D
      Replace Power B/D

6. Check Power B/D
    Replace Power B/D

7. Check RL_ON Signal on Power B/D
   N: Check Main B/D
      Replace Main B/D

8. Check Main B/D
   Replace Main B/D

※ '09 years new model apply mechanical power switch to reduce power consumption in stand-by status.
If mechanical power switch off
→ Doesn't turn on by remote control
→ Doesn't appear LED light
**B. Power Problem**

**Turn off (Instant, under watching)**

1. Instant
   - Turn off
   - Turn on after pull out connector between Power B/D & Y-Sus
   - Power LED Green?
     - Y: Check Power B/D, Replace Power B/D
     - N: Check Y-Sus/ Z-Sus Board (especially Short or Open), Replace defective B/D

2. Turn off Under watching
   - “Off Timer” Set?
     - Y: “Off timer” Function off
     - N: Check Power Off History
       - RCU Off
       - KEY Off
       - 2HOUR Off
       - NO Signal Off
         - Don’t appear
           - Power Off History
           - This is not problem
           - Normal operation
           - Move
             - No Power problem
             - Section

※ To check Power B/D Protection
### Repair Process

#### C. Sound Problem

**PDP TV**

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</table>

#### 1. No sound (If HDMI Input only have no sound, upload EDID data)

1. Check "Speaker ON/Off" setting in OSD Menu
   - **Normal Sound?**
     - **Y**: Close
     - **N**: Check Speaker jack connection & Speaker Cable open

2. **Normal Sound?**
   - **Y**: Close
   - **N**: SVC Bulletin?

3. **SVC Bulletin?**
   - **Y**: Apply SVC Bulletin (S/W Upgrade etc)
   - **N**: Check Power B/D
     - **Normal voltage?**
       - **Y**: Replace Power B/D
       - **N**: Check Audio IC Short

#### 2. Sound distortion & sound drop

1. Check Input signal → Cable connection → Cable open → RF & external (HDMI, SCART,..)
   - **Normal Sound?**
     - **Y**: Close
     - **N**: Check Input signal → Cable connection → Cable open → RF & external (HDMI, SCART,..)

2. **Normal Sound?**
   - **Y**: Explain customer that
     - Cause is RF Signal’s problem (Case 1)
     - Cause is Equipment’s problem (Case 2)
   - **N**: SVC Bulletin?

3. **SVC Bulletin?**
   - **Y**: Apply SVC Bulletin (S/W Upgrade etc)
   - **N**: Check Audio IC Short

---

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1. Remote controller (R/C) operating error

Check R/C itself Operation
- Normal operating?
  - Y: Check & Repair Cable connection Connector solder
  - N: Replace R/C
- Check R/C Operating
  - When turn off light in room
- Check & Replace Battery of R/C
  - Normal operating?
    - Y: Close
    - N: Replace R/C

If R/C operate, Explain the customer cause is interference from light in room.

Check B+ 5V On Main B/D
- Normal operating?
  - Y: Check IR Output signal
  - N: Check & Repair/Cable connection Connector solder

Check 5v on Power B/D
Replace Power B/D or Replace Main B/D (Power B/D don't have problem)

2. Local (Mechanical) switch operating error

Check R/C Operation
- Normal operating?
  - Y: Check & Repair Cable connection Connector solder
  - N: Move Power problem Section
- Check & Repair Assembly status (Key PCB + tool)
  - Normal operating?
    - Y: Check Key Output signal
    - N: Replace Main B/D

Check Key Output signal
- Normal signal?
  - Y: Repair/Replace Local switch B/D
  - N: Replace Main B/D
# PDP TV Repair Process Index

- **Trouble shooting by input block (Component level check)**

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Check P1100 All Voltage Level (17V, 5V)

Check Power connector OK?

Replace Power board

Check IC109 (pin29) Output Voltage Level (3.3V)

Replace IC109

Check L1103 Voltage Level 5V

Replace L1103

Check IC1105 (pin2) Voltage Level 3.3V

Replace IC1105
Check RF Cable

Y

Check 5V voltage on IC500, IC501 (Chip Tuner)

Y

Check color

Green

Y

Bad Tuner. Replace Tuner.

N

Maybe Tuner has problems: Replace Tuner

N

Replace IC500 or IC501

N

Check TP Clock, Data, Sync

N

Replace it X501

N

Check Demodulator Input Clock X501 (31.875MHz)

N

Check P400 or P403 #17(CKM), #18(CKP), #32(CKP), #33(CKM)

Y

Check PDP Module Control board Refer to Module CAS

N

Replace Mstar(IC100) has problems
Check RF Cable

- Y: Check 5V voltage on IC500, IC501 (Chip Tuner)
  - Y: Replace IC503 or IC505
  - N: Replace Tuner (IC500)

- N: Replace Mstar (IC100)

< CVBS waveform – sample >
- Defend on the input signal.
Check input signal format
Is it supported?

Y

Check Component Cable

Y

Check signal on C712,C713,C714

N

Check the damage of JK701 And Replace Connector

Y

Replace Mstar(IC100)

※ Measured signals depend on the input signal.
## RGB(D-Sub) Video Problem

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</table>

### Check input signal format
- **Is it supported?**
  - **Y**: Check RGB Cable conductors for damage
  - **N**: Replace R744, R745

### Check RGB Cable conductors for damage
- **Y**: Check JK703
  - **Y**: Replace connector (JK703)
  - **N**: Replace R744, R745
- **N**: Replace R747, R748, R749

### Check signal, Hsync, Vsync
- **R744, R745**
  - **Y**: Check signal
  - **N**: Replace R747, R748, R749
- **R747, R748, R749**
  - **Y**: Check Signal
  - **N**: Replace R753, R750, R751

### Check Signal
- **R753, R750, R751**
  - **Y**: Replace Mstar(IC100)

### Notes
- Measured signals depend on the input signal.
### PDP TV Input Block

#### AV Video Problem

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<td>Check input signal format. Is it supported?</td>
</tr>
<tr>
<td>Y</td>
<td>Check AV Cable / S-Video Cable for damage or open conductors</td>
</tr>
<tr>
<td>Y</td>
<td>Check AV port of JK600, JK601 (Rear) and JK700 (Side), JK705 (S)</td>
</tr>
<tr>
<td>N</td>
<td>Replace or reseat connector</td>
</tr>
<tr>
<td>Y</td>
<td>Check signal: R601, 602, 603, L604 (SCART1 AV), L611 (SCART2 AV), R713 (Side AV), R707 (S-Video)</td>
</tr>
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<td>N</td>
<td>Replace Resistor</td>
</tr>
<tr>
<td>Y</td>
<td>Replace Mstar (IC100)</td>
</tr>
</tbody>
</table>

※ Measured signals depend on the input signal.
Check input signal format
Is it supported?

Y

Check HDMI Cable for damage or open conductors

Y

Check JK901 / J902 / J903 for proper connection or damage

N
Replace connector

Y

Check EDID EEPROM (IC901,902,903)
    → Power(#8) & I2C Signal (#5, #6)

N
Replace IC901,902,903

Y

Check HDCP (IC102)
    → Power(#8) & I2C Signal (#5, #6)

N
Replace IC102

Y

Check Mstar(IC100)

N
Replace Mstar(IC100)
Make sure you can’t hear any audio

Check Mstar I2S Output
R143, R134, RR135, R136

Y

Check Mstar I2S Output
R143, R134, RR135, R136

Y

Check IC1000 Power
17V (C1023), 3.3V (L1002, L1003)

N

Check IC1000 Status
PDN (#19) / Reset (#25) is High?

N

Check IC1000 Status
PDN (#19) / Reset (#25) is High?

Y

Check SCL, SDA
R1008, R1009

N

Check Connector
P1000

N

Check speaker for damage.

N

Replace IC100.

N

Replace R1008, R1009

N

Replace P1000

N

Replace the Speaker
Digital TV / HDMI Audio Problem

**Digital TV**

- 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: Replace Mstar IC (IC100)

**HDMI**

- Check EDID EEPROM (IC901,902,903)
  - Power(#8) & I2C Signal (#5, #6)
    - Y: Follow procedure All source audio trouble shooting
    - N: Re-download EDID data or Replace IC
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<td><strong>Check SIF signal L501</strong></td>
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<td><strong>Check SIF line</strong></td>
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<td><strong>Follow procedure All source audio trouble shooting</strong></td>
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<td><strong>Replace Mstar IC (IC100)</strong></td>
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</table>

*< SIF waveform – sample > - Defend on the input signal.*
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</table>

- **Check Connector and cables**
  - JK701 (Component)
  - JK600, JK601 (SCART, Rear AV)
  - JK702 (RGB)
  - JK700 (Side AV)

- **Check signal**
  - R736 / R737 (Component1)
  - R738 / R739 (RGB)
  - R617 / R609, R654, / R652 (SCART, Rear AV)
  - R776 / R780 (AV Side)

- **Check IC100 signal**
  - C36, C37, C38, C39, C40, C41, C42, C43, C44, C45

- **Follow procedure**
  - All source audio trouble shooting

- **Replace connector or cable if found damaged**

- **Replace the Resistor**

- **Replace Capacitor**
<table>
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<tr>
<th>PDP TV</th>
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</tbody>
</table>

- **Check SPIDF signal (R137)**
  - N: Replace Mstar IC100
  - Y: Check Signal (JK1000 #3)
    - Y: Replace JK1000
    - N: Replace Mstar IC100

*SPDIF waveform – sample*
- Defend on the input signal.
PDP TV Input Block

USB Problem

- 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)

1. Check USB 2.0 Cable for damage or open conductors
   - Y 
   - N 
   | Y | Replace JK706 |
   | N | Replace L701 |

2. Check JK706
   - Y 
   - N 
   | Y | Replace JK706 |

3. Check L701 voltage level 5V
   - Y 
   - N 
   | Y | Replace L701 |
   | N | Replace IC400 |

4. Check IC400
   - Y 
   - N 
   | Y | Replace Mstar IC100 |

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It should satisfy the Pixel Clock on CAS.