PLASMA TV
SERVICE MANUAL

CHASSIS : PD81A
MODEL : 42PG6000 42PG6000-ZA

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 it’s 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 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 a 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 an 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 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 circuit
SPECIFICATIONS

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

v Application Range
This spec is applied to the 42" PLASMA TV used PD81A Chassis.

<table>
<thead>
<tr>
<th>Chassis</th>
<th>Model Name</th>
<th>Market</th>
<th>Brand</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD81A</td>
<td>42PG6000</td>
<td>Austria,Belgium,Bulgaria,Croatia,Czech,Denmark,Finland, France,Germany,Greece,Hungary,Italy,Luxembourg, Netherlands,Norway,Poland,Portugal,Rumania,Russia,Serbia,Slovenia,Spain,Sweden,Switzerland,UK</td>
<td>LG</td>
<td></td>
</tr>
</tbody>
</table>

v 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 SB OM.
5) The receiver must be operated for about 20 minutes prior to the adjustment.

v Test Method
1) Performance : LGE TV test method followed.
2) Demanded other specification
   Safety : CB specification
   EMC : CISPR 13 specification

v General Specification ( 42” XGA )

<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’ Wide Color Display Module</td>
<td>Plasma Display Panel</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>PDP42G1, RGB Closed(Well) Type Glass Filter(38%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pixel Format : 1366horiz. By 768 vertical</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>100-240V~, 50/60Hz</td>
<td>Maker : LG</td>
</tr>
</tbody>
</table>
### Module Specification2

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>Specification</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Market</td>
<td>Austria, Belgium, Bulgaria, Croatia, Czech, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Rumania, Russia, Serbia, Slovenia, Spain, Sweden, Switzerland, UK</td>
<td>25 Country</td>
</tr>
<tr>
<td>2</td>
<td>Broadcasting system</td>
<td>1) PAL/SECAM BG</td>
<td>EU(PAL Marker)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) PAL/SECAM DK</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3) PAL I / II</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4) SECAM L/L'</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5) DVB T</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>Scart OUT (Full scart and support)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RF-OUT (Analoge)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Scart OUT (Half scart and support)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MNT-OUT</td>
</tr>
<tr>
<td>5</td>
<td>Video Input (1EA)</td>
<td>PAL, SECAM, NTSC</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>S-Video Input (1EA)</td>
<td>PAL, SECAM, NTSC</td>
<td>Analog(D-Sub 15Pin)</td>
</tr>
<tr>
<td>7</td>
<td>Component Input (1EA)</td>
<td>Y/Cb/Cr, Y/Pb/Pr</td>
<td>HDMI1/DVI, HDMI2, HDMI3, HDMI4</td>
</tr>
<tr>
<td>8</td>
<td>RGB Input</td>
<td>RGB-PC</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>HDMI Input(4EA)</td>
<td>HDMI-PC</td>
<td>L/R Input</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HDMI-DTV</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Audio Input (3EA)</td>
<td>RGB/DVI Audio, Component, AV</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>SPDIF Out(1EA)</td>
<td>SPDIF OUT</td>
<td>Side(X-Studio Only PG60 Series)</td>
</tr>
<tr>
<td>12</td>
<td>USB</td>
<td>For SVC, S/W Download, X-Studio</td>
<td></td>
</tr>
</tbody>
</table>
ADJUSTMENT INSTRUCTION

1. Application Object
These instructions are applied all of the 42” PLASMA TV, PD81A Chassis.

2. Note
(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 15 minutes prior to the adjustment.

o After RGB Full white HEAT-RUN Mode, the receiver must be operated prior to adjustment.
o Enter into HEAT-RUN MODE
1) Press the POWER ON KEY on R/C for adjustment.
2) OSD display and screen display PATTERN MODE.
   - Select “3. Test Pattern” by using D/E(CH+/-) and press ENTER(v)
   - Select “White” by using (F/G VOL+/-) and press ENTER(v)

* Set is activated HEAT-RUN without signal generator in this mode.
* Single color pattern(RED/BLUE/GREEN) of HEAT-RUN mode uses to check PANEL.

* Using ‘power on’ button off the control R/C, power on TV.
All adjustment process is executed one time through RS-232C. Do not connect external input calbe.

3. S/W auto download using the USB Memory stick
* Using ‘power on’ button of the control R/C, power on TV.
USB file(EPK) version must be bigger than downloaded version of main B/D.
(1) Insert the USB memory stick the PCB ASSEMBLY.
(2) Using ‘power on’ button of the control R/C, power on TV.
(3) S/W download process is executed automatically.

4. Auto-control adjustment process
v All adjustment process is executed one time through RS-232C.
v Command send -> ADC Calibration -> Model name download -> EDID download.

<table>
<thead>
<tr>
<th>NO</th>
<th>Item</th>
<th>CMD1</th>
<th>CMD2</th>
<th>Data 0</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ready</td>
<td>a</td>
<td>d</td>
<td>0</td>
<td>0 Ready</td>
</tr>
<tr>
<td>2</td>
<td>ADC</td>
<td>a</td>
<td>d</td>
<td>1</td>
<td>0 ADC start</td>
</tr>
<tr>
<td>3</td>
<td>ADC</td>
<td>a</td>
<td>d</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>4</td>
<td>ADC</td>
<td>a</td>
<td>d</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>Download</td>
<td>a</td>
<td>e</td>
<td>0</td>
<td>0 Transmitting adjustment mode in instruction, operate adjustment command.</td>
</tr>
<tr>
<td>6</td>
<td>EDID</td>
<td>a</td>
<td>e</td>
<td>1</td>
<td>0~4, 9 All=0 ; HDMI1,2,3,4=1,2,3,4 ; RGB=9</td>
</tr>
<tr>
<td>7</td>
<td>Check EDID</td>
<td>a</td>
<td>e</td>
<td>2</td>
<td>0~4, 9 All=0 ; HDMI1,2,3,4=1,2,3,4 ; RGB=9</td>
</tr>
<tr>
<td>8</td>
<td>Define model name</td>
<td>a</td>
<td>e</td>
<td>5</td>
<td>1~7 Model define index(Data0) are listed at next table.</td>
</tr>
<tr>
<td>9</td>
<td>Adjustment Confirmation</td>
<td>a</td>
<td>e</td>
<td>9</td>
<td>9 EDID data existence check in SET assembly</td>
</tr>
<tr>
<td>10</td>
<td>Download</td>
<td>a</td>
<td>e</td>
<td>9</td>
<td>0</td>
</tr>
</tbody>
</table>

* Adjustment process protocol(RS-232C)

<table>
<thead>
<tr>
<th>CMD1</th>
<th>CMD2</th>
<th>Data 0</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>e</td>
<td>5</td>
<td>3 42PG6000-ZA</td>
</tr>
</tbody>
</table>

5. Manual model name download
(1) Press ADJ KEY on R/C for model name D/L.
(2) Select “0.Model Option” and press ENTER(v).
(3) Select model name by using D/E(CH+/-) and press ENTER(v).

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Model Option Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>42PG6000-ZA</td>
<td>56000000</td>
</tr>
</tbody>
</table>

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6. Manual ADC Adjustment

<table>
<thead>
<tr>
<th>RF Input</th>
<th>AV / Component / RGB input</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO SIGNAL or White noise</td>
<td>NO SIGNAL</td>
</tr>
</tbody>
</table>

- Adjustment is done using internal ADC, so input signal is not necessary.
- Do not connect external input cable.

6-1. Required Equipment

(1) Press ADJ KEY on R/C and enter EZ ADJUST.
(2) Select “1.EDID D/L” by using D/E (CH+/-) and press ENTER(v).
(3) Select “Start” by using F/G (VOL+/-) and press ENTER(v).
(4) ADC Adjustment is executed automatically.

7. EDID Download

7-1. Required Equipment

*Do not connect HDMI and RGB cable.

(1) Press ADJ KEY on R/C and enter EZ ADJUST.
(2) Select “5.EDID D/L” by using D/E (CH+/-) and press ENTER(v).
(3) Select “Start” and press ENTER(v).
(4) EDID download is executed automatically.
(5) Press EXIT key on R/C.

7-2. EDID DATA

(1) HDMI1(256bytes)

-> Detail EDID Options are below (ʼ , ʼ , ʼ , ʼ , ʼ )

<table>
<thead>
<tr>
<th>Product ID</th>
<th>Serial No</th>
<th>Model Name(Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40240(9D30)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. PCMCIA CARD Checking Method

: You must adjust DTV29 Channel and insert PCMCIA CARD to socket.

1) If PCMCIA CARD works normally, normal signals display on screen. But it works abnormally, “No CA module” words display on screen.

* Set up “RF mode” before launching products.
9. POWER PCB Assy Voltage Adjustments (Va, Vs Voltage adjustments)

9-1. Test Equipment : D.M.M. 1EA

9-2. Connection Diagram for Measuring : refer to Fig.1

9-3. Adjustment Method

(1) Va Adjustment
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 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)

10. Adjustment of White Balance

10-1. Required Equipment

(1) Color Analyzer : CS-100, CA-100+(CH.10), CA-210(CH.10)
   * Please adjust CA-100+/CA-210 by CS-1000 before measuring.
   -> You should use Channel 10 which is Matrix compensated.

N 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>Normal</td>
<td>9300K</td>
<td></td>
</tr>
<tr>
<td>Warm</td>
<td>6500K</td>
<td></td>
</tr>
</tbody>
</table>

N Change target luminance and range of the Auto adjustment W/B equipment.

<table>
<thead>
<tr>
<th>Target luminance</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>65</td>
<td>20</td>
</tr>
</tbody>
</table>

N White balance adjustment coordinate and color temperature.

<table>
<thead>
<tr>
<th></th>
<th>Cool</th>
<th>Medium</th>
<th>Warm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CS-1000</td>
<td>CA-100+(CH.10)</td>
<td>CA-210(CH.10)</td>
</tr>
<tr>
<td>X</td>
<td>0.276</td>
<td>0.285</td>
<td>0.313</td>
</tr>
<tr>
<td>y</td>
<td>0.283</td>
<td>0.293</td>
<td>0.329</td>
</tr>
<tr>
<td>uv</td>
<td>0.000</td>
<td>0.000</td>
<td>0.003</td>
</tr>
</tbody>
</table>
10-2. Connection Picture of the Measuring Instrument (On Automatic control)

(1) Inside PATTERN is used when W/B is controlled. Connect to auto controller or push control R/C IN-START -> Enter the mode of White-Balance, the pattern will come out.

10-3. Auto-control interface and directions

(1) Adjust in the place where the influx of light like floodlight 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 15 minutes.
   - Keep white pattern using inside pattern.

11. Adjustment of White Balance

(1) Press ADJ KEY on R/C and enter EZ ADJUST.
   Select “3. Test Pattern” by using D/E (CH+/−) and press ENTER(V)
   Select “White” by using F/G (VOL+/−) and press ENTER(V) and heat run over 15 minutes.
(2) Zero Calibrate CA-100+/CA-210, and when controlling, stick the sensor to the center of PDP module.
(3) Press ADJ KEY on R/C and enter EZ ADJUST.
(4) Control is carried out on three color temperatures, COOL, MEDIUM, WARM.
   (Control is carried out thress times)
   <Temperature : COOL>
   - R-Cut / G-Cut / B-Cut is set to 64/
   - Control R-Gain and G-Gain.
   - Each Gain is limited to 192.
   <Temperature : MEDIUM>
   - R-Cut / G-Cut / B-Cut is set to 64/
   - Control R-Gain and G-Gain.
   - Each Gain is limited to 192.
   <Temperature : WARM>
   - R-Cut / G-Cut / B-Cut is set to 64/
   - Control G-Gain and B-Gain.
   - Each Gain is limited to 192.

12. Input the Shipping Option Data

1) Push the IN-START key in an Adjust Remocon.
2) Input the Option Number that was specified in the BOM, into the Shipping area.
3) The work is finished, Push V Key.

13. Set Information
   (Serial No & Model name)

13-1. Check the serial number & Model Name

(1) Push the menu button in DTV mode.
(2) Select the SETUP -> Diagnostics -> To set.
(3) Check the Serial Number.
### 14. SET factoring condition

(1) This adjustment is setting factory shipment mode.
(2) Push the IN-STOP key of adjustment remote controller before the factory shipment.

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Condition</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Input Mode</td>
<td>Antenna</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Volume Level</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Mute</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Aspect Ratio</td>
<td>16:9</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>SET ID</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Picture PSM</td>
<td>Vivid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Color Temp.</td>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advanced Black level</td>
<td>Auto</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Sound SSM</td>
<td>Standard</td>
<td></td>
</tr>
<tr>
<td></td>
<td>AVL</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Balance</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TV Speaker</td>
<td>On</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Time Auto Clock</td>
<td>On</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manual Clock</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Off Timer / On Timer</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sleep Timer / Auto Off</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Option SIMPLINK</td>
<td>On</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Key Lock</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ISM Method</td>
<td>Normal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Power Saving</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Channel Memory</td>
<td>Analog</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Digital</td>
<td></td>
</tr>
</tbody>
</table>

### 15. Flash Memory Download

#### 15-1. Configuration Environment

(1) To installation the ‘LG Term’, extract ‘lgterm.zip’ to a folder.
(2) Execute ‘lgterm.exe’.

(3) Before downloading epk file, change the baud-rate value.
   1) Press the ‘IN-START’ button.
   2) Select the ‘System’ menu.
   3) Enter ‘115200bps’ on the ‘Baudrate’.
   4) Exit the menu.

#### 15-2. Download epk file using ‘LG Term’

(1) Execute ‘lgterm.exe’
(2) Select a serial port and change a baud-rate value.
   1) Select a serial port which is connected through a RS-232 cable on ‘Setup’ Menu.
   * If the selected port is not connected, a warning message will appear.
   2) Change the baud-rate from a default value to ‘115200bps’ on ‘Setup’ Menu.

(3) Press the OK button.
(4) Turn on the TV set and press the ‘Enter’ key at the same time.
(5) Douglas prompt will appear.
(6) Insert ‘swuhz’ and enter.
(7) Change the baud-rate to ‘460800bps’ on ‘Setup’ Menu.
(9) Select the epk file.

(10) It will take 4~5 minutes.
(11) To apply last epk file, TV set should be restarted.
TROUBLE SHOOTING GUIDE

1. Power Board

1-1. The whole flowchart which it follows in voltage output state

Start check
- Doesn't the screen whole come out?
  - Yes
    - Is it identical with Power Off condition?
      - Yes
        - 1. Check the Power Off condition.
      - No
        - 2. Check the Interface signal condition.
  - No
- Doesn't the low pressure output come out?
  - Yes
    - Doesn't the St-by 5V signal come out?
      - Yes
        - 3. Check the St-by 5V signal circuit.
      - No
        - 4. Check the 5V Monitor signal circuit.
  - No
- Doesn't the high tension output come out?
  - Yes
    - Doesn't the VSC signal Vs-ON come out?
      - Yes
        - 7. Check the VSC Vs-ON signal
      - No
        - 8. Check the Vs, Va voltage output circuit.
  - No
- Does high tension output voltage Drop occur?
  - Yes
    - When the Y, Z B/D Module input connector is remove, does Power Board high tension output voltage Drop occur?
      - Yes
        - 9. Check the Power Board Output high tension circuit
      - No
        - 10. Check the Z B/D Module output circuit
  - No
- Doesn't the VSC signal RL-ON come out?
  - Yes
    - 5. Check the VSC RL-ON signal
  - No
- Doesn't the VSC low pressure output come out?
  - Yes
    - 6. Check the VSC low pressure output
  - No

Manufacture enterprise meaning of a passage

When the Z B/D Module input connector is removed, does output voltage Drop occur?
  - Yes
  - No

When the Y B/D Module input connector is remove, does Power Board high tension output voltage Drop occur?
  - Yes
  - No
1-2. Power Board Structure

(1) Pin Layout

![Power Board Diagram]

(2) Pin Spec

<table>
<thead>
<tr>
<th>NO</th>
<th>AC INLET</th>
<th>PDP MODULE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CN1</td>
<td>P11</td>
</tr>
<tr>
<td>1</td>
<td>AC</td>
<td>Vs</td>
</tr>
<tr>
<td>2</td>
<td>NC</td>
<td>Vs</td>
</tr>
<tr>
<td>3</td>
<td>AC</td>
<td>NC</td>
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<tr>
<td>4</td>
<td></td>
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<td></td>
<td>GND</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Va</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Va</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>GND</td>
</tr>
<tr>
<td>9</td>
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<td>M5V</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>M5V</td>
</tr>
<tr>
<td></td>
<td>Wafer P/N</td>
<td>YH396-03P</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>VSC BOARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO</td>
</tr>
<tr>
<td>1/2</td>
</tr>
<tr>
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</tr>
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<td>5/6</td>
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<td>19/20</td>
</tr>
<tr>
<td>21/22</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

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2. No Power

(1) Symptom
1) Doesn’t minute discharge at module.
2) Non does not come in into the front LED.

(2) Check following

A Power cord is plugged with TV set? No Plug in power cord.
Yes

Is the AC-INLET connected with the power board? No Connect the AC-INLET
Yes

Is the Fuse(F101,F801) on Power Board normal? No Replace the Fuses.
Yes

Is the Power Board with VSC Board though Cable connected? No Connect the Cable.
Yes

Measure output voltages(16V,12V,5V) on the power board. If the measured values is not normal, replace power board.
3. Protect Mode

(1) Symptom
1) After once shining, it does not discharge minutely from module.
2) The Rely falls. (The sound is audible “click”)
3) It is converted with the color where the front LED is red from green.

(2) Check following

- Is the Power Board normal? No Replace Power Board.
  - Is output the normality Low/High voltage except Stand-by 5V?
    - Yes
  - Is the each connector normal? No Replace the connector.
    - After connecting well each connector, the normality it operates?
    - Yes
  - Is the Y-Board normal? No Replace Y-Board.
    - Is the Fuse (FS201) on Y-B/D normal? (In case of open is replace)
      - Yes
  - Is the Z-Board normal? No Replace Z-Board.
    - Is the Fuse (FS1) on Z-B/D normal? (In case of open is replace)
      - Yes
  - Is the X-Board normal? No Replace X-Board.
    - Is the output voltage normal after remove P242 connector of X-B/D?
      - Yes
  - Is the Ctrl Board normal? No Replace the Ctrl Board.
    - Is the output voltage normal after remove P163 connector of Ctrl-B/D?
      - Yes
  - Is the VSC Board normal? No Replace VSC Board.
    - Is the output voltage normal after remove P1001 of VSC Board?
      - Yes
  - After crisis COF of each board, check the normality operates. If in case normality operates, correspondence COF Fail is replace the module.
4. No Raster

(1) Symptom
1) No OSD and image occur at screen.
2) It maintains the condition where the front LED is green.

(2) Check following

Does minute discharge At Module? No

Is the VAVS on? NO

Is output the normality Low/High voltage except stand-by 5V? NO

Replace the Power board

Check the PDP Module

Reconnect the LVDS cable in P501

Is the LVDS cable connect well from Ctrl Board to VSC Borad? Yes

Is the VSC Board normal? No

Operating FLI106X0H(IC100)? Yes

Replace the VSC B/D.

1. Check the Monitor OUT by SCART2 : Connect the another TV set
2. Check the LVDS clock(R537,R538) on the VSC Borad by Oscilloscope?

Replace FLI106X0H IC(IC100)
5. In case of occurring strange screen into specific mode

5-1. In case the OSD does not displayed

(1) Symptom
1) LED is green.
2) The minute discharged continuously becomes Accomplished from module.

(2) Check following

1. Is damage in the LVDS cable?
2. Isn't the LVDS cable connect well from Ctrl Board to VSC Board?

Yes

1. Replace cable
2. LVDS Cable connect well from Ctrl Board to VSC Board

No

Is the VSC Board normal?

No

Operates FLI106X0H(IC100)?

1. Check the Monitor OUT by SCART2 : Connect the another TV set
2. Check the LVDS clock(R240,R243) on the VSC Borad by Oscilloscope?

Yes

Replace the VSC B/D.

No

Replace FLI106X0H IC(IC100)

Yes

Is the Ctrl Board of Module normal?

1. Check the LED on the Ctrl Board
2. Check the 5V_ON on the Power Board by the DMM.

No

Replace the Ctrl B/D

Yes
5-2. In case of does’nt display the screen into specific mode

(1) Symptom
1) The screen does not become the display from specific input mode (RF, AV, Component, RGB, DVI).

(2) Check following
1) Check all input mode should become normality display.

(3) In case of becomes unusual display from RF mode

- Is the Tuner normal?
  - Yes
  - No

  - Is the RF Cable connected well?
    - Yes
    - No

  - Cable inserts well or Change the RF Cable

- Is normal the Input voltage, IIC Communication?
  - Yes
  - No

  - 1. Check the another TV set.
  - 2. Check the Analog/Digital IIC(A:R334,R335 D:R342, R343)

- Replace the Tuner (TU301)

- Operates the FLI106X0H IC(IC100)?
  - Yes
  - No

  - Replace the FLI106X0H (IC100)

- Is the Monitor OUT by SCART2 : Connect another TV SET
- Check the LVDS clock (R537, R538) on the VSC Board by Oscilloscope?
- Check the each Input Source. ATV(TV_CVBS : R302), DTV(TU301 Pin23), S/AV Mode(SIDE_CVBS_IN : R1160), Component/RGB
  - COMP_Y, V/HSYNC : R1122, R1174, R1180
  - HDMI(SDA/SCL : IC201 Pin29, Pin30), SCART(SC1/2_CVBS_IN : R977, R521)
  - on the VSC Board by Oscilloscope.

(4) In the case of becomes unusual display from side S-video/AV mode

- Is Video input of the AV Jack (JK700, 707) normal?
  - Yes
  - No

  - Check the input source of Equipment

- Same as Block A
(5) In the case of becomes unusual display from Component, RGB mode

Is R,G,B input and H,V Sync of the JK701, 703 normal?

1. Check the RGB signal/H(V)SYNC in the RGB Cable
   Yes
   Same as Block A

   No
   Check the input source of Equipment

(6) In the case of becomes unusual display from HDMI mode

Is the HDMI(IC201) normal?

Yes
   Same as Block A

No
   Is the TMDS waveform between the IC and HDMI jacks normal?
      No
         Replace the IC201.
      Yes

(7) In the case of becomes unusual display from SCART mode

Is Video input of A/V jack normal?

Yes
   Same as Block A

No
   Check the input source.
6. In case of no sound

(1) Symptom
1) LED is Green.
2) Screen display but sound is not output.

(2) Check following

All input(mode) is no sound? Yes
No

Only HDMI is No Sound? Yes
Download the EDID data
No

Is the speaker On it menu? Yes
1. Menu > Audio > TV Speaker ON/OFF
Set on speaker in menu. (TV Speaker OFF ? ON)
No

Is the speaker Cable normal? Yes
1. Isn’t damage in the Speaker Cable?
2. Is the Speaker cable connect well form VSC B/D to Speaker.
No
Change or Reconnect the Speaker Cable.

Only RF is no sound? Yes
Check the Tuner IN/OUT TV_L/R_OUT (R356)
No

IC601 (Audio AMP) operates Normal? Yes
1. Check 1.8V, 3.3V, 16V input Voltage (L607, IC601 Pin8, IC601 Pin32)
2. Check the IIC communication (SDA/SCL : R645, R643)
3. Check the Audio Signal is normal. (SPK_L/R : L603, L604, L606, L610)
No
Replace the Audio AMP IC (IC601).

Replace the VSC Board

Check the Input Sound IN/OUT
AV1(SC1_LIN : R1140, SC1_RIN : R1134)
AV1(SC2_LIN : R1146, SC2_RIN : R1145)
AV3(SIDE_LIN : R1306, SIDE_RIN : R1307)
PC(PC_LIN : R631, PC_RIN : R630)
Component (COMP_LIN : R1178, COMP_RIN : R1179)
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.