PLASMA TV
SERVICE MANUAL

CHASSIS : PD83A
MODEL : 50PG3000

CAUTION
BEFORE SERVICING THE CHASSIS,
READ THE SAFETY PRECAUTIONS IN THIS MANUAL.
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</tbody>
</table>
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 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

![Leakage Current Hot Check circuit](image-url)
SPECIFICATIONS

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

**Application Range**
This spec is applied to the 50" PLASMA TV used PD83A 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>PD83A</td>
<td>50PG3000</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>

**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.

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

<table>
<thead>
<tr>
<th>Model</th>
<th>Market</th>
<th>Appliance</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>50PG3000-ZA</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>Safety: IEC/EN60065</td>
<td>EMI: EN55013</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EMI: EN55020</td>
<td>EMS: EN55020</td>
</tr>
</tbody>
</table>

**General Specification1 (50” Module)**

<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>50” 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>PDP50XG, RGB Closed Type, Film Filter</td>
<td></td>
</tr>
</tbody>
</table>
| 4  | Operating Environment | 1) Temp. : 0~40deg  
                          | 2) Humidity : 20~80%                             | LGE SPEC.      |
| 5  | Storage Environment | 3) Temp. : -20~60deg 
                          | 4) Humidity : 10~90%                             |                |
| 6  | Input Voltage       | 100-240V~, 50/60Hz                                | Maker: LG      |
## Module Specification

<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>Analog Only</td>
</tr>
<tr>
<td>2</td>
<td>Broadcasting system</td>
<td>1) PAL-BG&lt;br&gt;2) PAL-DK&lt;br&gt;3) PAL I, I'&lt;br&gt;4) DVB T(I/D TV)&lt;br&gt;5) SECAM L/L'</td>
<td>EU(PAL Marker)</td>
</tr>
<tr>
<td>3</td>
<td>Receiving system</td>
<td>Analog: Upper Heterodyne&lt;br&gt;Digital: COFDM</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Scart Jack(2EA)</td>
<td>PAL, SECAM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Video Input (1EA)</td>
<td>PAL, SECAM, NTSC</td>
<td>4 System: PAL, SECAM, NTSC, PAL60</td>
</tr>
<tr>
<td></td>
<td>S-Video Input (1EA)</td>
<td>PAL, SECAM, NTSC</td>
<td>4 System: PAL, SECAM, NTSC, PAL60</td>
</tr>
<tr>
<td></td>
<td>Component Input (1EA)</td>
<td>Y/Cb/Cr, Y/Pb/Pr</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>RGB Input</td>
<td>RGB-PC</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>HDMI Input (3EA)</td>
<td>HDMI-DTV &amp; SOUND</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Audio Input (3EA)</td>
<td>PC Audio, Component, AV</td>
<td></td>
</tr>
</tbody>
</table>
1. Application Object
These instructions are applied all of the 50" PLASMA TV, PD83A 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.
In case of keeping module is in the circumstance of 0°C, it should be placed in the circumstance of above 15°C for 2hours.
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 3hours.

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.
* 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.

3. ADC Calibration
* Using ‘power on’ button off the control R/C, power on TV.

<table>
<thead>
<tr>
<th>Auto adjustment Map(RS-232C)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NO</strong></td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>7</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>ADC</th>
<th>Component</th>
<th>RGB-PC</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSPG925FS</td>
<td>Model : 209(480i 60Hz)</td>
<td>Model : 60</td>
</tr>
<tr>
<td>223(1080i 60Hz)</td>
<td>Pattern : 65</td>
<td>(1024*768 60Hz)</td>
</tr>
</tbody>
</table>

4. ADC adjustment

5. Adjustment of RGB

5-1. Auto RGB Gain / Offset Adjustment
(1) Convert to PC in Input-source(refer to I2C command at page 10)
(2) Signal equipment displays
Output Voltage : 700 mVp-p
Impress Resolution XGA(1024x768@60Hz)
Model : 60 in pattern Generator
Pattern : 65 in pattern Generator(MSPG-925 Series)
[gray pattern that left & right is black and center is white signal(Refer below picture)].

5-2. Confirmation
(1) We confirm whether “0xAA(RGB)” address of EEPROM “0xA2” is “0xAA” or not.
(2) If “0xAA(RGB)” address of EEPROM “0xA2” isn’t “0xAA”, we adjust once more.
(3) We can confirm the ADC values from “0xA4~0xA9(RGB)” address in a page “0xA2”.

* Manual ADC process using Service Remocon. After enter Service Mode by pushing “ADJ” key, execute “ADC Adjust” by pushing “g” key at “ADC CALIBRATION : RGB-C”.

(Fig.1)
6. Component input ADC

6-1. Component Gain/Offset Adjustment
(1) Convert to PC in Input-source (refer to I2C command at page 10)
(2) Signal equipment displays
   1) Impress Resolution 480i
      Model : 209 in pattern Generator (480i Mode)
      Pattern : 65 in pattern Generator (MSPG-925 Series)
   2) Impress Resolution 1080i
      Model : 223 in pattern Generator (1080i Mode)
      Pattern : 65 in pattern Generator (MSPG-925 Series)

6-2. Confirmation
(1) We confirm whether “0xB3(480i)/0xBC(1080i)” address of EEPROM “0xA2” is “0xAA” or not.
(2) If “0xB3(480i)/0xBC(1080i)” address of EEPROM “0xA2” isn’t “0xAA”, we adjust once more.
(3) We can confirm the ADC values from “0xAD~0xB2(480i)/0xB6~BB(1080i)” address in a page “0xA2”.

6-3. 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) Input signal : RF noise signal.
   2) Connect + terminal of D.M.M to Vs pin of P811, connect – terminal to GND pin of P811.
   3) After turning VR951, voltage of D.M.M adjustment as same as Vs voltage which on label of panel right/top.
      (Deviation; ±0.5V)

* Manual ADC process using Service Remocon. After enter Service Mode by pushing “ADJ” key, execute “ADC Adjust” by pushing “G” key at “ADC CALIBRATION : RGB-C”.

7. POWER PCB Assy Voltage Adjustments (Va, Vs Voltage adjustments)

7-1. Test Equipment : D.M.M. 1EA
7-2. Connection Diagram for Measuring : refer to Fig.3
7-3. 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) Input signal : RF noise signal.
      2) Connect + terminal of D.M.M to Vs pin of P811, connect – terminal to GND pin of P811.
      3) After turning VR951, voltage of D.M.M adjustment as same as Vs voltage which on label of panel right/top.
         (Deviation; ±0.5V)
8. **EDID** (The Extended Display Identification Data) / **DDC** (Display Data Channel) **download**

8-1. **Required Test Equipment**
1) Adjusting PC with S/W for writing EDID Data.
   (S/W : EDID TESTER Ver.2.5)
2) A Jig for EDID Download.
3) Cable : Serial(9Pin or USB) to D-sub 15Pin cable, D-sub 15Pin cable, DVI to HDMI cable.

8-2. **Required Test Equipment**

8-3. **Preparation for Adjustment**
1) Connect the Set, EDID Download Jig, PC & Cable.
2) Turn on the PC & EDID Download Jig. Set up the S/W option.
3) Power on the Set.

8-4. **Sequence of Adjustment**
1) EDID Download
   1) Init the data.
   2) Load the EDID data.(Open File).
      [ Analog file ] (for RGB)  
      [ Digital file ] (for HDMI)  
   3) Set the S/W as below.
   4) Push the "Write Data & Verify"button. And confirm "Yes".
   5) If the writing is finished, you will see the “OK” message.
   6) If TV has three HDMI INPUT, Please separate each INPUT(Each EDID DATA is different).

8-5. **EDID DATA**
1) Analog-RGB.

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Product ID</th>
<th>EDID table</th>
</tr>
</thead>
<tbody>
<tr>
<td>50PG3000</td>
<td>50075</td>
<td>C39B</td>
</tr>
<tr>
<td>50PG3000</td>
<td>00 00 00 FC 00 35 30 50 47 33 30 30 0A 20 20 20</td>
<td></td>
</tr>
</tbody>
</table>

2. [2]-Serial No : Controlled on production line.
3. [3]-Month, Year : Controlled on production line.
   ex) Monthly: '03' => '03'
   Year : '2006' => '10'
4. [4]-Model Name : model name.
5. [5]-Checksum -> Changeable by total EDID data.

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Model Name(Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50PG3000</td>
<td>00 00 00 FC 00 35 30 50 47 33 30 30 0A 20 20 20</td>
</tr>
</tbody>
</table>

1) **HDMI_1**.

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Product ID</th>
<th>EDID table</th>
</tr>
</thead>
<tbody>
<tr>
<td>50PG3000</td>
<td>50076</td>
<td>C39C</td>
</tr>
<tr>
<td>50PG3000</td>
<td>00 00 00 FC 00 35 30 50 47 33 30 30 0A 20 20 20</td>
<td></td>
</tr>
</tbody>
</table>

2. [2]-Serial No : Controlled on production line.
3. [3]-Month, Year : Controlled on production line.
   ex) Monthly: '03' => '03'
   Year : '2006' => '10'
4. [4]-Model Name : model name.
5. [5]-Checksum -> Changeable by total EDID data.

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Model Name(Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50PG3000</td>
<td>00 00 00 FC 00 35 30 50 47 33 30 30 0A 20 20 20</td>
</tr>
</tbody>
</table>
9. Adjustment of White Balance

9-1. Required Equipment
(1) Remote control for adjustment.
(2) Color Analyzer : CS-1000, CA-100,100+, CA210 or same product., CH 10
   * Please adjust CA-210+, CA-100+ by before measuring.
(3) Auto W/B adjustment instrument.(only for Auto adjustment)
(4) AV Pattern Generator.
(5) 15Pin D-Sub Jack(RGB) is connected to the AUTO W/B EQUIPMENT.

9-2. AUTO White Balance Process
- Adjust Process will start by execute I2C Command(Inner pattern (0xF3, 0xFF)).

   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>

- CS-1000/CA-100+/CA-210(CH 10) White balance adjustment coordinate and color temperature.

<table>
<thead>
<tr>
<th>CSM</th>
<th>Color Coordinate</th>
<th>Temp</th>
<th>(\Delta uv)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COOL</td>
<td>(x = 0.276) (y = 0.283)</td>
<td>11,000K</td>
<td>0.002</td>
</tr>
<tr>
<td>MEDIUM</td>
<td>(x = 0.285) (y = 0.293)</td>
<td>9,300K</td>
<td>0.002</td>
</tr>
<tr>
<td>WARM</td>
<td>(x = 0.313) (y = 0.329)</td>
<td>6,500K</td>
<td>0.002</td>
</tr>
</tbody>
</table>

(using adjusts Remote control)
* Please Adjust in AV 1mode
(1) Enter ‘PICTURE RESET’ on Picture Mode, then 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 “G” key at “3. W/B ADJUST”.
(5) Adjust W/B DATA, for all CSM, choose ‘COPY All’.

* Before adjusting White-balance, the AV ADC should be done. If ADC status were “NG”, Need to ADC adjustment.
9-4. 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.

Auto adjustment Map(I2C)
- I2C(100K BPS)

10. Communication START

| START | 6E | A | STOP | 50Ms |

* Until ACK BIT goes LOW, Repeat it.

11. Command form

- Command form use DDC2AB standard communication protocol.

<table>
<thead>
<tr>
<th>CMD</th>
<th>LENGTH</th>
<th>ADH</th>
<th>ADL</th>
<th>DATA_1</th>
<th>...</th>
<th>DATA_n</th>
<th>CS</th>
<th>DELAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMD LENGTH ADH ADL DATA_1 ... DATA_n CS DELAY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. EEPROM DATA READ

12-1. Single TABLE

START 6E A 50 A LEN A 255 A CMD A 00 A VAL A CS A STOP

12-2. Command Set

<table>
<thead>
<tr>
<th>No.</th>
<th>Adjustment contents</th>
<th>CMD (hex)</th>
<th>ADH (hex)</th>
<th>ADL (hex)</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>EEPROM READ</td>
<td>E7</td>
<td>A0</td>
<td>0</td>
<td>0-page 0-7F Read</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>80 0-page 80-7F Read</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>A2</td>
<td>0</td>
<td>1-page 0-7F Read</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>80 1-page 80-7F Read</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>A4</td>
<td>0</td>
<td>2-page 0-7F Read</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>80 2-page 80-7F Read</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>A6</td>
<td>0</td>
<td>3-page 0-7F Read</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>80 3-page 80-7F Read</td>
</tr>
</tbody>
</table>

* To read the appointment Address of E²PROM by 128(80h)-byte

13. EEPROM Data Write(Serial No D/L)

13-1. Signal TABLE

<table>
<thead>
<tr>
<th>CMD</th>
<th>LENGTH</th>
<th>ADH</th>
<th>ADL</th>
<th>DATA_1</th>
<th>...</th>
<th>DATA_n</th>
<th>CS</th>
<th>DELAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMD</td>
<td>LENGTH</td>
<td>ADH</td>
<td>ADL</td>
<td>DATA_1</td>
<td>...</td>
<td>DATA_n</td>
<td>CS</td>
<td>DELAY</td>
</tr>
</tbody>
</table>

13-2. Command Set

<table>
<thead>
<tr>
<th>No.</th>
<th>Adjust mode</th>
<th>CMD(hex)</th>
<th>LENGTH(hex)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>EEPROM WRITE</td>
<td>E8</td>
<td>94</td>
<td>16-Byte Write</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>84+n</td>
<td>n-Byte Write</td>
<td></td>
</tr>
</tbody>
</table>

* Description

- FOS Default write : <7mode data> write
- Vtotal, V_Frequency, Sync_Polarity, Htotal, Hstart, Vstart, 0, Phase
- Data write : Model Name and Serial Number write in EEPROM,.

13-3. Method & Notice

(1) Serial number D/L is using of scan equipment.
(2) Setting of scan equipment operated by Manufacturing Technology Group.
(3) Serial number D/L must be conformed when it is produced in production line, because serial number D/L is mandatory by D-book 4.0.
### 14. Adjustment Command (LENGTH=84)

<table>
<thead>
<tr>
<th>No</th>
<th>Adjustment Contents</th>
<th>CMD(hex)</th>
<th>ADR</th>
<th>VAL[HEX]</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FACTORY ON</td>
<td>E0</td>
<td>00</td>
<td>00</td>
<td>Factory mode on</td>
</tr>
<tr>
<td>2</td>
<td>FACTORY OFF</td>
<td>E2</td>
<td>00</td>
<td>00</td>
<td>Factory mode off</td>
</tr>
<tr>
<td>3</td>
<td>EEPROM ALL INIT.</td>
<td>E4</td>
<td>00</td>
<td>00</td>
<td>EEPROM All clear</td>
</tr>
<tr>
<td>4</td>
<td>EEPROM Read</td>
<td>E7</td>
<td>00</td>
<td>00</td>
<td>EEPROM Read</td>
</tr>
<tr>
<td>5</td>
<td>EEPROM Write</td>
<td>E8 00</td>
<td>Data</td>
<td></td>
<td>EEPROM Write by some values</td>
</tr>
<tr>
<td>6</td>
<td>COLOR SAVE</td>
<td>EB 00</td>
<td>00</td>
<td>00</td>
<td>Color Save</td>
</tr>
<tr>
<td>7</td>
<td>H POSITION</td>
<td>20 00</td>
<td>00</td>
<td>00 - 64</td>
<td>They have different range each mode,</td>
</tr>
<tr>
<td>8</td>
<td>V POSITION</td>
<td>30 00</td>
<td>00</td>
<td>00 - 64</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>CLOCK</td>
<td>90 00</td>
<td>00</td>
<td>00 - 64</td>
<td>FOS Adjustment</td>
</tr>
<tr>
<td>10</td>
<td>PHASE</td>
<td>92 00</td>
<td>00</td>
<td>00 - 64</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>R DRIVE</td>
<td>16 18 1A</td>
<td>00</td>
<td>cool 01: medium 02: warm</td>
<td>00 - 80</td>
</tr>
<tr>
<td>12</td>
<td>G DRIVE</td>
<td>80 82 84</td>
<td>00</td>
<td>cool 01: medium 02: warm</td>
<td>00 - 80</td>
</tr>
<tr>
<td>13</td>
<td>B DRIVE</td>
<td>10 12 F1</td>
<td>00</td>
<td>cool 01: medium 02: warm</td>
<td>00 - 80</td>
</tr>
<tr>
<td>14</td>
<td>R CUTOFF</td>
<td>F2 00</td>
<td>00</td>
<td>00 - 7F</td>
<td>Offset adjustment</td>
</tr>
<tr>
<td>15</td>
<td>G CUTOFF</td>
<td>F3 00</td>
<td>00</td>
<td>00 - 7F</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>B CUTOFF</td>
<td>F4 00</td>
<td>00</td>
<td>00 - 7F</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>BRIGHT</td>
<td>00 00</td>
<td>00</td>
<td>00 - 3F</td>
<td>Bright adjustment</td>
</tr>
<tr>
<td>18</td>
<td>CONTRAST</td>
<td>00 00</td>
<td>00</td>
<td>00 - 64</td>
<td>Luminance adjustment</td>
</tr>
<tr>
<td>19</td>
<td>AUTO_COLOR_ADJUST</td>
<td>00 02</td>
<td></td>
<td></td>
<td>Auto COLOR Adjustment</td>
</tr>
<tr>
<td>20</td>
<td>CHANGE_COLOR_TEMP</td>
<td>00 00</td>
<td>00</td>
<td>0,1,2,3</td>
<td>0 : Cool 1 : Medium 2 : Warm 3 : User</td>
</tr>
<tr>
<td>21</td>
<td>White Pattern</td>
<td></td>
<td>00,FF</td>
<td></td>
<td>00: White pattern off FF: White pattern on</td>
</tr>
<tr>
<td>22</td>
<td>AUTO_INPUT CHANGE</td>
<td>0,10,20,30, 40,60,90</td>
<td>0 : TV 10 : DTV 20 : SCART1 30 : SCART2 40 : Component 60 : RGB 90 : HDMI</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
15. Set Information (Serial No & Model name)

15-1. Check the serial number & Model name

(1) Push the menu button in DTV mode.
   - Select the STATION-> Diagnostics -> To set.

(2) Check the Serial Number.

16. 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 (DTV&amp;ATV)</th>
<th>Condition</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Power</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Volume Level</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Main Picture Input</td>
<td>Antenna</td>
<td>DTV&amp;ATV</td>
</tr>
<tr>
<td>4</td>
<td>Main Last Channel</td>
<td>N.A.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Mute</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>ARC</td>
<td>16:9</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>SETUP</td>
<td>Auto Tuning</td>
<td></td>
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<td>Manual Tuning</td>
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<td></td>
<td>Programme Set</td>
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<td></td>
<td></td>
<td>Booster</td>
<td>ON</td>
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<tr>
<td></td>
<td></td>
<td>Software Update</td>
<td>OFF</td>
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<td></td>
<td>Diagnostics</td>
<td>Engineering Diagnostics</td>
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<tr>
<td>8</td>
<td>PICTURE</td>
<td>Aspect Ratio</td>
<td>16:9</td>
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<td></td>
<td></td>
<td>Picture Mode</td>
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<td></td>
<td>Vivid</td>
<td>100</td>
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<td>Contrast</td>
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<td>Brightness</td>
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<td>Color</td>
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<td></td>
<td></td>
<td>Sharpness</td>
<td>0</td>
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<td></td>
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<td>Tint</td>
<td>Color Temp. Medium</td>
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<td></td>
<td>Advanced Control</td>
<td>Fresh Con. On</td>
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<td></td>
<td></td>
<td></td>
<td>Fresh col. On</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>Noise On</td>
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<td>Reduction</td>
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<td></td>
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<td>Film (3:2) Off</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>Black level</td>
</tr>
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<td>9</td>
<td>AUDIO</td>
<td>Auto Volume</td>
<td>Off</td>
</tr>
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<td></td>
<td></td>
<td>Balance</td>
<td>0</td>
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<td></td>
<td>Sound Mode</td>
<td>Standard</td>
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<td></td>
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<td>200Hz 50</td>
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<td></td>
<td>500Hz 50</td>
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<td></td>
<td></td>
<td>1.2Khz 50</td>
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<td></td>
<td>3Khz 50</td>
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<td>5.7Khz 50</td>
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<td></td>
<td>12Khz 50</td>
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<td>Time</td>
<td>Clock</td>
<td>-- : --</td>
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<td></td>
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<td>Off time</td>
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<td></td>
<td></td>
<td>On time</td>
<td>Off</td>
</tr>
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<td></td>
<td></td>
<td>Sleep Timer</td>
<td>Off</td>
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<td></td>
<td></td>
<td>Auto Sleep</td>
<td>Off</td>
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<td></td>
<td></td>
<td>Time zone</td>
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<td>11</td>
<td>OPTION</td>
<td>Menu Language</td>
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<td></td>
<td></td>
<td>Audio Language</td>
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<td></td>
<td></td>
<td>Subtitle Language</td>
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</tr>
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<td></td>
<td></td>
<td>Hard of hearing</td>
<td>Off</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Country</td>
<td></td>
</tr>
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<td></td>
<td></td>
<td>Input label</td>
<td></td>
</tr>
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<td></td>
<td></td>
<td>KeyLock</td>
<td>Off</td>
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<td></td>
<td></td>
<td>Set ID</td>
<td>1</td>
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<tr>
<td></td>
<td></td>
<td>Factory Reset</td>
<td>Off</td>
</tr>
<tr>
<td>12</td>
<td>LOCK</td>
<td>Lock System</td>
<td>Off</td>
</tr>
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<td></td>
<td></td>
<td>Set Password</td>
<td>New</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Confirm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Block Program</td>
<td>TV/DTV/Radio</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parental Guidance</td>
<td>Off</td>
</tr>
</tbody>
</table>
17. SW DOWNLOAD By D-SUB

17-1. Installation of MSTV

(1) Extract to folder ISP_Tool.ZIP

(2) Install ISP_TOOL
You can find the ICON.

17-2. Download bin file

(1) Prepare a Binary File(*.bin)
Connect RGB cable and turn on the power.

(2) Execute ISP Program
Click the Icon.

(3) Click "Connect" Button, and check the below message.
(If display "Can’t", Check connect computer, jig, and set.)
(4) Click “Read” tab, and then load download file(XXXX.bin) by clicking “Read”

(5) Click “Auto” Button, select the check box, and then Click “Run” Button.

(6) After downloading, check “OK” message.

(7) 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.

(8) When TV turn on, check the Updated version on Diagnostics MENU.

2. USB DOWNLOAD

- 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.
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: Check the Power Off condition.
    - No: Is the Interface signal operated?
      - Yes: Check the Interface signal condition.
      - No: Check the St-by 5V signal circuit.

- No: Check the Interface signal condition.

- Doesn't the low pressure output come out?
  - Yes: Does the St-by 5V signal come out?
    - Yes: Check the St-by 5V signal circuit.
    - No: Check the 5V Monitor signal circuit.

- No: Check the St-by 5V signal circuit.

- Doesn't the high tension output come out?
  - Yes: VSC signal Vs-ON come out?
    - Yes: Check the VSC Vs-ON signal.
    - No: Check the Vs, Va voltage output circuit.

- No: Check the Vs, Va voltage output circuit.

- Doesn't the high tension output voltage Drop occur?
  - Yes: When the Y, Z B/D Module input connector is removed, does Power Board high tension output voltage Drop occur?
    - Yes: Check the Power Board Output high tension circuit.
    - No: Check the Z B/D Module output circuit.

- No: Check the Y B/D Module output circuit.

Manufacture enterprise meaning of a passage
1-2. 50” Power Board Structure

<table>
<thead>
<tr>
<th>PIN No</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>P811</td>
<td>V-S</td>
<td>V-S</td>
<td>NC</td>
<td>OND</td>
<td>OND</td>
<td>V-A</td>
<td>V-A</td>
<td>OND</td>
<td>M5V</td>
<td>M5V</td>
</tr>
<tr>
<td>P812</td>
<td>V-S</td>
<td>V-S</td>
<td>NC</td>
<td>OND</td>
<td>OND</td>
<td>V-A</td>
<td>V-A</td>
<td>OND</td>
<td>M5V</td>
<td>M5V</td>
</tr>
</tbody>
</table>
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

- Is plug in power cord? [Yes/No]
  - Yes: Plug in power cord.
  - No: Connect the Cable.

- Is the Line Filter and Power Board Cable connected? [Yes/No]
  - Yes: Is the Fuse(F801) on Power Board normal? [Yes/No]
    - Yes: Is the Power Board and 22P of VSC Board Cable connected? [Yes/No]
      - Yes: After the cable connect is removed to Power Board, authorized the AC voltage marking on manual. When ST-BY 5V is not operated, replace Power Board.
      - No: Connect the Cable.
    - No: Replace the Fuse.
  - No: Connect the Cable.

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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?
  - Yes
  - No

- Is the output the normality Low/High voltage except Stand-by 5V?
  - Yes
  - No
  - Replace Power Board.

- Is the each connector normal?
  - Yes
  - No

- After connecting well each connector, the normality it operates?
  - Yes
  - No
  - Replace the connector.

- Is the Y-Board normal?
  - Yes
  - No

- Is the Fuse(FS202) on Y-B/D normal? (In case of open is replace)
  - Yes
  - No
  - Replace Y-Board.

- Is the Z-Board normal?
  - Yes
  - No

- Is the output voltage after remove P801 connect of Z-B/D normal?
  - Yes
  - No
  - Replace Z-Board.

- Is the Ctrl Board normal?
  - Yes
  - No

- Is the output voltage normal after remove P161, P162 connector of Ctrl-B/D?
  - Yes
  - No

- Is the YSC Board normal?
  - Yes
  - No

- Is the output voltage normal after remove P801?
  - Yes
  - No
  - After remove P801 normal operation: Replace VSC Board

- After crisis COF of each board, check the normality operates.
  - If in case normality operates, correspondence COF Fail is replace the module.

---

After remove P211 output voltage normality: Replace Right X-B/D
After remove P211 output voltage normality: Replace Left X-B/D
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?**
  - Yes
    - **Check the PDP Module**
  - No
    - **Is the VAVS on?**
      - Yes
      - **Is output the normality Low/High voltage except stand-by 5V?**
        - Yes
        - **Replace the Power board**
        - NO
      - NO
      - **Reconnect the LVDS cable in P400**
  - NO

- **Is the LVDC cable normal?**
  - Yes
  - **Replace the VSC.**
  - No
    - **Is the IC100(LGE7383C) Output normal?**
      - Yes
      - **Replace the Power board**
      - NO
    - NO

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

```
Is the LVDS cable normal?  No        Is the LVDS cable connected?  Yes
                           No       Replace the cable.
                           Yes      Re-insert the Cable inserts.

Is the VSC Board normal?  No        Does the IC100 Operates?(LGE7383C)  Yes
                           No      Replace the VSC B/D
                          Yes      Replace IC100 (LGE7383C)

Is the Ctrl Board of Module normal?  No  Replace Ctrl B/D.
```

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5-2. In case of does’t 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 the all input mode should become normality display.

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

Is the Tuner normal? Yes → Is the Tuner Cable connected? Yes → Is the Input voltage, IIC Communication and CVBS output normal? Yes → Re-insert the Cable. No → Replace the Tuner.

Yes → Is the IC100(LGE7383C) normal? No → Is normal the Input voltage, IIC Communication? No → Replace the IC.

Block A

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

Is the Video input of the AV Jack(JK700, 707) normal? Yes → Same as Block A

No → Check the input source and Cable

(5) In the case of becomes unusual display from Component, RGB mode

Is the R,G,B input and H,V Sync of the JK701,703 normal? Yes → Same as Block A

No → Check the input source
(6) In the case of becomes unusual display from HDMI mode

Is the Video input of the HDMI Jack normal?  
No: Check the input source
Yes:  
Is the TDMS(IC902) normal?  
No: Is the Input and Output signal, IIC Communication normal?  
No: Replace the IC.
Yes: Same as Block A

(7) In the case of becomes unusual display from SCART1 mode

Is the Video input of A/V Jack(JK601) normal?  
No: Check the input source
Yes: Same as Block A

(8) In the case of becomes unusual display from SCART2 mode

Is the Video input of A/V Jack(JK600) normal?  
No: Check the input source
Yes: Same as Block A
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
    - Download the EDID data
    - YES
    - No
    - Is the speaker Cable normal?
      - Yes
        - Check the Speaker Cable.
      - No
        - Check the Tuner IN/OUT

- Only HDMI is No Sound?
  - Yes
    - Download the EDID data
  - No
    - Is the speaker Cable normal?
      - Yes
        - Check the Speaker Cable.
      - No
        - Check the Tuner IN/OUT

- Only RF is no sound?
  - Yes
    - Check the Tuner IN/OUT
  - No
    - Is the speaker Cable normal?
      - Yes
        - Check the Speaker Cable.
      - No
        - Check the Speaker Cable.

- Only AV/component/PC input is no sound?
  - Yes
    - Check the Sound IN/OUT
  - No
    - IC1000 operates normal?
      - Yes
        - Replace the VSC B/D
      - No
        - Replace the IC1000 (NTP3000A)
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.