This Service Manual must be returned with the defective parts/back-up suitcase!
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Survey of modules, Plasma Display Panel (PDP)

- C1: Data Drive (Upper left)
- C2: Data Drive (Upper center)
- C3: Data Drive (Upper right)
- C4: Data Drive (Lower right)
- C5: Data Drive (Lower center)
- C6: Data Drive (Lower left)
- D: Digital Signal Processor
- DN: Digital Signal Processor/Micom
- DS: Slot Interface & SYNC processor
- HDD: DVI Input Terminal
- HX: PC Type Input Terminal
- H3: Speaker Terminal
- P: Power Supply (SUS + MULTI)
- PB: Fan Control
- SC: Scan Out
- SD: Scan Connection (Lower)
- SS: Sustain Out
- SU: Scan Connection (Upper)
- S1: Power switch
- V1: Remote receiver
- V2: Key switch
1.2 How to service

How to service

Servicing

The PDP must be serviced by qualified technical personal only.

If it is not possible to determine the location of the fault or if replacing spare parts does not clear the fault, please contact your national Service Center for technical support.

Handling

The PDP must always be placed vertically to avoid damaging itself.
There is a major risk of damaging the PDP if it is placed in a horizontal position.
Whenever possible place the PDP on the service stand.

Clean the product

Never use alcohol or other solvents to clean any part of the product!

Use white gloves to avoid smudging the contrast screen.

Wipe dust off the surfaces using a dry, soft cloth or a micro fibre cloth. Remove grease stains or persistent dirt with a soft, lint-free, firmly wrung cloth, dipped in a solution of water containing only a few drops of mild detergent, such as washing-up liquid.

To retain the optimum performance of the screen, make sure that no streaks or traces of the cleaning fluid are left on the screen.

Burn-in

Burn-in on the PDP might occur when displaying a non-moving picture for more than app. 30 minutes.

Warning

Static electricity

Static electricity may damage the product.

Static-protective field service kit.
A static-protective field service kit must always be used when the product is disassembled or modules are being handled.
Follow the instructions in the guide and use the ESD-mat for both old and new modules.

Please note:
When mains voltage on the television is required, remove the connection between the PDP and the ESD-mat.

The chassis or modules must always be connected to the static-protective field service kit or placed in an ESD-proof bag.

Symbol of safety components

When replacing components with this symbol, the same type has to be used, also the same values for ohm and watt.
The new component is to be mounted in the same way as the replaced one.
Troubleshooting

Before troubleshooting is started

Please ask the customer to demonstrate or explain the fault.

Check that

The product is set for the correct option.
All leads are connected correctly.
Mains voltage is applied.
All external sources are connected correctly and the product setup is correct.

Set up for test

Connect the following products to establish the setup for test, the BeoVision 4, a BeoSystem and a DVD player.

Default settings when using the Fault flow chart

- Press TV on Beo4.
- Select a TV channel with picture and sound.
- It is also an option to use a laptop with the program Plasmactrl.exe to make sure that there is no failure in the BeoSystem.
Plasmactrl.exe

This program can be found in BeoWise in the Bang & Olufsens Retail system, together with a Power point presentation with some test patterns (see product related software). 
Note: To activate input select (toggle) write IMS and click Send ‘Command’.

Trouble shooting

Actions before dismantling the PDP

Check the PDP for burn-in and pixel errors!
This check is very important when the PDP must be transported to a workshop.
Refer to PDP pixel test, page 2.1.

Before dismantling the PDP - disconnect the mains supply and wait at least 1 minute for the electrolytic capacitors to discharge.

Connect ESD-mat.
PDP pixel test

The pixel test checks the status of the PDP, with regard to the number of defective pixels

The test must be used:
- Before transporting the product to the PDP workshop
- Before and after service on the PDP

The scope of this test is to determine if there are any defective pixels in the PDP. Refer to “Panel Defect Standards” to see if a defective pixel gives occasion to replace the PDP.

When the PDP is fitted with an aluminium front frame, point the NN remote control at the hole in the left-hand front bottom side of the PDP. See ➔2.

- Refer to the illustrations for:
  - Placement of buttons on NN remote control. See ➔1.
- Enter Service mode.
  Press the Standby button on the NN remote control to switch on the PDP.
  Use a thin tool or a pen to press in the holes FD and then FE on the NN remote control. CAT Panel menu (service mode) appears.
- Select IIC mode.
  Move cursor with the up/down arrows on the NN remote control and select with “OK”.
- Select ‘Aging’.
  Use up/down arrows to find “Aging” Select with “OK”.
- Change test picture.
  To change the test picture press “OK”.
- PDP pixel test.
  Use the RED, GREEN and BLUE test picture for checking the pixels.

- How to exit the service mode.
  - Press “R” twice to return to the CAT Panel menu.
  - Access the ID mode and switch off the mains. Switch on the PDP again and choose PDP language and press OK. If this is not done the PDP will start up with the OSD language select menu next time the PDP is switched on.
Panel defect standards

Crosstalk

Definition: Crosstalk is interference between pixels during the display of the primary RGB colours or 2 or more mixed colours causing pixels to illuminate when they are not supposed to.

Luminous spot

Definition: When a cell illuminates brightly while the screen is displaying all black.

Non-lighting cell

Definition: When display discharge does not occur in the cells. However, it is only a non-lighting cell if it fails to illuminate 50% or more.

Standards

<table>
<thead>
<tr>
<th>Area</th>
<th>Cross talk</th>
<th>Luminous spot</th>
<th>Non-lighting cells</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total number</td>
<td>Total number</td>
<td>Total number</td>
</tr>
<tr>
<td>A</td>
<td>G</td>
<td>0</td>
<td>0</td>
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<tr>
<td></td>
<td>R</td>
<td>0</td>
<td>0</td>
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<tr>
<td>B</td>
<td>G</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>0</td>
<td>14</td>
</tr>
</tbody>
</table>

Pair defect: Adjacent two pixels are both defective.
Defects distance: Distance between nearest two defect pixels.
PDP self-check

The self-check checks the status of the circuits connected to the IIC bus.
When the PDP is fitted with an aluminium front frame, point the NN remote control at the hole in the left-hand front bottom side of the PDP. See ➤3.

- Refer to illustration for:
  - Placement of buttons on the NN remote control.
  - Press the Standby button on the NN remote control to switch on the PDP.
Use at thin tool or a pen to press in the hole FF on the NN remote control. The result of the self-check will appear in the display. See ➤4.
  - “OK” = No fault
  - “- - -” = Fault
For other operations point the NN remote control in the same direction.

- Replacement of the faulty PCB.
Change PCB D if D panel is faulty. Change PCB DN if any of the following ICs are faulty: IC4703, IC5402, IC5101, IC5201, IC5301, IC4501, IC4001, IC5405, IC5103, IC5104, IC5501. Change PCB DS if any of the following ICs are faulty: IC8181, IC3001, IC3003, IC3004, IC3005, IC2303.

How to exit the service mode.
Press “R” twice to return to the CAT Panel menu.

- Access the ID mode and switch off the main power. Switch on the PDP again and choose PDP language and press OK. If this is not done the PDP will start up with the OSD language select menu next time the PDP is switched on.
OSD menu on the PDP

When the PDP is fitted with an aluminium front frame, point the NN remote control at the hole in the left-hand front bottom side of the PDP. See ➤7.

1. Press PICTURE, SOUND or SET UP on NN remote control.

➤6

➤7
Fault flow chart

No picture and no light in PDP stby. LED .................................................. 3.3
No picture and green light in stby. LED .................................................. 3.3
PDP can not be switched on with use of RS232, stby. LED = red ............ 3.4
Unable to remote control PDP ................................................................. 3.4
Vertical/horizontal line in picture ............................................................ 3.5
No picture, no OSD, stby. LED = green, NN remote control no function, no operation on front buttons ........................................... 3.6
Noise in picture, PDP OSD menu ............................................................. 3.6
Dark picture ............................................................................................. 3.8
No colour (all sources DVI / VGA) ............................................................ 3.8
PDP stby. light blinking 1 time: ................................................................. 3.10
PDP stby. light blinking 2 times, 15 V SOS .............................................. 3.10
PDP stby. light blinking 3 times, 3.3 V SOS ............................................. 3.11
PDP stby. light blinking 4 times, (Power SOS VSUS / 5 V issue) ......... 3.12
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PDP stby. light blinking 6 times, driver SOS1 ......................................... 3.17
PDP stby. light blinking 7 times, driver SOS2 ......................................... 3.25
PDP stby. light blinking 8 times driver SOS3 ......................................... 3.26
PDP stby. light blinking 9 times, Panel config SOS ................................. 3.30
PDP stby. light blinking 10 times, Terminal board SOS ......................... 3.30
PDP stby. light blinking 11 times, FAN SOS ........................................... 3.30
Introduction

Fault flow chart

Before disconnecting or re-connecting connectors or flexible cables, always disconnect mains and allow the PDP electrolytic capacitors to discharge (WAIT at least 5 minutes).

Measurements

DC voltage measurements is performed with a digital multimeter, if nothing else is described, GND is chassis. Oscilloscope measurements shown in the fault flow chart are performed with a 200 MHz PC oscilloscope (PicoScope 3206). The settings can be seen on the oscillograms, if nothing else is described a 10:1 probe is used (do not use 1:1 probe!). A test signal (e.g. colour bar) can be applied to obtain good measurements.

Graphic conventions

These symbols appear in numerous places throughout the FFC to emphasize points that you must keep in mind to avoid problems or injury:

- **TIPS:** highlight time saving short cuts and helpful guidelines.

- **NOTES:** emphasize text with unusual importance or special significance. They also provide supplemental information.

- **CAUTIONS:** alert users that a given or omitted action can degrade performance or cause a malfunction.

- **WARNINGS:** appear when a given action or omitted action can result in damage to the equipment, or possible non-fatal injury to the user.

- **DANGER:** appears when a given action can cause severe injury or death.
Fault symptom: No picture and green light in stby. LED
Possible causes:
Defective 5V supply
Fuse on PCB, P defective
PCB, P MULTI
PCB, D5
PCB, DN

Check picture
PC input (analog)
OK?

Fault symptom: No picture and no light in PDP stby. LED
Possible causes:
Defective 5V supply
Fuse on PCB, P SUS
ΜULTI
F1601, F201, F1701,
F1702, F1703, F301,
F501, F502

Fuses on PCB, P SUS
MULTI
F1601, F201, F1701,
F1702, F1703, F301,
F501, F502

Replace defective fuse (F1601, F1703,
F501, F502)

Replace PCB, P MULTI

In addition disconnect D3.
Check for short-circuit between pin 12
and GND. Short-circuit?

In addition disconnect DNZ.
Check for short-circuit between pin 12
and GND. Short-circuit?

No light in LED SC:
Replace PCB, SC

No light in LED SS:
Replace PCB, SS

Check picture
DVI-D input (digital)
OK?

Replace PCB, D

Replace PCB, P MULTI

In addition disconnect D3.
Check for short-circuit between pin 2
and GND. Short-circuit?

In addition disconnect DN2.
Check for short-circuit between pin 2
and GND. Short-circuit?

Replace PCB, DN

Confirm voltage on PCB, D STB 5V
D3 pin 12
5V ±0.3V

Replace PCB, D

Check PDP OSD
OK?

Confirm voltage on
PCB, P MULTI STBSV
P25 pin 10
5V ±0.3V

Disconnect P25.
Check for short-circuit between pin 10
and GND. Short-circuit?

Short-circuit?

Replace defective fuse (F60, F703,
F50, F502)

Confirm voltage on
PCB, P MULTI STB 5V
D3 pin 12
5V ±0.3V

No light in LED SC:
Replace PCB, SC

No light in LED SS:
Replace PCB, SS

Confirm light in
LEDs on PCB, SC
and PCB, SS

No light in LED SC:
Replace PCB, SC

No light in LED SS:
Replace PCB, SS

No picture on PDP
with use of digital (DVI-D) and analog
(PC/VGA) input.
Replace PCB, DN
Fault symptom:
PDP cannot be switched on with use of RS232, stby. LED = red
Possible cause:
Defective RS232 driver

Check function of RS232 with use of program Plasma CTL (Can be downloaded from Bang & Olufsen Retail system)
Replace PCB, DS

Fault symptom:
Unable to remote control PDP
Possible causes:
PCB, V1
Cable to V1

Disconnect RS232 cable from the PDP

Switch PDP on with the first button from the left on the PDP. LED turns green?
Check cable to PCB, V1

Press the second button from the left on the PDP. A menu appears on the screen
Replace PCB, V1
IR Circuit defective
Fault symptom:
Vertical/horizontal line in picture
Possible cause:
Fault in PCB, D, DN, C1-C6, SD, SU, SC, or SS

Refer to “Local Screen Failure”

Local Screen Failure

Thin vertical line or one block
Defective driver = Panel defective

A number of blocks

PCB, SU
PCB, SC
PCB, SS
PCB, D
PCB, DN

One Line
One Block

Driver
Driver
Driver
Driver

PCB, C

Buffer RGB signal

PCB, D

Driver
Driver
Driver
Driver

PCB, C

Buffer RGB signal

PCB, D

Yes
No
Fault symptom: Noise in picture, PDP OSD menu
Possible causes:
- Noise in PDP power or digital processing
- Adjusted voltage, outside of specification
- Defective PCB, P, SC or SS

Confir / Adjust
1. Vsus*
2. Vda
3. Vad
4. Ve*
*->See the panel label and page 4.2

Vsus or Vda failure
Replace PCB, P SUS

Vad failure
Replace PCB, SC

Ve failure
Replace PCB, SS

Check part A of the Scan drive waveform test point TPS1. See next page OK?
Replace PCB, D or DN

Check Scan control pulse from PCB, D D20 pin 8, 9 and 13. See page 3.6 OK?
Replace PCB, D

Replace defective fuses or PCB, P

Fault symptom: No picture, no OSD, stby. LED = green, NN remote control no function, no operation on front buttons
Possible causes:
- PCB, DS
- PCB, P MULTI

Check fuses F1701, F1702, F1703, F201, F502, F501, F301, on PCB, P MULTI OK?
Replace PCB, DS

Replace defective fuses or PCB, P

Replace defective fuses or PCB, P MULTI

Replace PCB, DS

Replace PCB, SC

Replace PCB, D or DN

Replace PCB, SC
Test point TPSC1
Use 1:100 Probe
5 ms/div
100 V/div
DC

Scan Drive TPSC1 1 Field

A:

1 Sub field
Fault symptom: Dark picture
Possible causes: PCB, P MULTI, SS, DN or D
Check part A of the Sustain drive waveform test point TPSS1. See next page OK?
Replace PCB, D or DN
Check voltage on PCB, SS test point TP_15V 15 Vdc OK?
Replace PCB, P MULTI
Replace PCB, D

Fault symptom: No colour (all sources DVI / VGA)
Possible causes: PCB, D or DN
Enter PDP service menu and make a self check. Check for PANEL = OK
Replace PCB, D or DN
Replace PCB, D
Replace PCB, SS
Replace PCB, D
Test point TPSS1
Use 1:100 Probe
2 ms/div
100 V/div
DC
### Fault Flow Chart

**Fault symptom:**
PDP stby. light blinking, shuts down

**Possible causes:**
- Blinking time: No particular check point
- 2 times: 5 V SOS
- 3 times: 3.3 V SOS
- 4 times: Power SOS
- 5 times: 5 V SOS
- 6 times: Driver SOS1
- 7 times: Driver SOS2
- 8 times: Driver SOS3
- 9 times: Panel Config SOS
- 10 times: Terminal Board SOS
- 11 times: Fan SOS

---

**How to count up blinks of the LED on the front panel**

1. 2. 3. 1...

3 sec.  
No light  
Light

**Count when the LED goes dark**

---

1. **PDP stby. light blinking 1 time:**
   - No particular check point
   - Disconnect P25 and check for short-circuit between pin 2 and GND (P25)
   - Confirm voltage 15V on PCB, P P25 pin 1 before shut down?
   - Replace PCB, P MULTI
   - Replace PCB, D

2. **PDP stby. light blinking 2 times, 5 V SOS**
   - Possible causes: PCB, P MULTI or D
   - Replace PCB, D
   - Disconnect P25 and check for short-circuit between pin 1 or 2 and GND? (P25)
   - Replace PCB, P MULTI

3. **Additionally disconnect P23.**
   - Check for short-circuit between pin 1 or 2 and GND? (P25)
   - Replace PCB, SC
   - Replace PCB, DS

4. **Additionally disconnect P5 and check for short-circuit between pin 1 or 2 and GND? (P25)**
   - Replace PCB, SS
PDP stby. light blinking 3 times, 3.3 V SOS
Possible cause: PCB, D or DN

Confirm voltage +15 V on PCB, D D25 pin 1

Confirm voltage +15 V on PCB, P MULTI P25 pin 1

Check cable connection between PCB, D D25 pin 1 and PCB, P MULTI P25 pin 1

Replace PCB, DN

Replace PCB, D

Confirm voltage on PCB, DN
1.5 V across C313
1.8 V across C345
2.5 V across C332
3.3 V across C338
All OK?

Replace PCB, DN

Replace PCB, D

Measuring points
3.2 Fault flow chart

Fault symptom: PDP stby. light blinking 4 times, (Power SOS VSUS / 5 V issue)

Possible causes: PCB, P SUS, SS, D, SU, SD, SC-6 or Panel

Check voltage VSUS (approx. 80 Vdc) on PCB, P SUS P2 between pin 1 and 2 before shut down OK?

Disconnect SC2 and SS11 (*2). Check voltage VSUS (approx. 180 Vdc) on PCB, P P2 between pin 1 and 2 before shut down. VSUS OK?

Re-connect SC2 and leave SS11 (*2) disconnected. Check voltage VSUS (approx. 180 Vdc) on PCB, P P2 between pin 1 and 2 before shut down. VSUS OK?

Disconnect PCB, SU and SD from PCB, SC (*2). Switch on the PDP. Does the power supply run? (PDP does not shut down)

Re-connect PCB, SU to SC, leave PCB, SD disconnected. Switch on the PDP. Does the power supply run? (PDP does not shut down)

Replace PCB, SC

WARNING
Before connecting SC2 or SS11 after these have been disconnected, discharge is necessary to prevent potential shock from VSUS

Check voltage 5 Vdc on PCB, P MULTI P25 between pin 7 and GND before shut down OK?

Re-connect SC2 and leave SS23 disconnected. Check voltage VSUS (approx. 180 Vdc) on PCB, P P2 between pin 1 and 2 before shut down. VSUS OK?

Disconnect SC20 and SS23. Switch on the PDP. Does the power supply run? (PDP does not shut down)

Connect SC20 and disconnect SS44. Switch on the PDP. Does the power supply run? (PDP does not shut down)

Replace PCB, SC MULTI

Replace PCB, P SUS

Replace PCB, P MULTI

Replace PCB, SS

Replace PCB, SU

Replace PCB, SD

Replace PCB, SS MULTI

Replace PCB, SC MULTI

No

Yes

Go to next page
Disconnect D3, 32, 33, 34, 35, 36 and SC20 (to prevent shut down).
Switch on the PDP. Does the power supply run? (PDP does not shut down)

Disconnect P25 and check for short-circuit between pin 7 and GND (P25)
Replace PCB, P MULTI

Replace PCB, D

Disconnect SC20. Connect D3, 32, 33 (disconnect 34, 35, 36)
Switch on the PDP. Does the power supply run? (PDP does not shut down)

In addition, disconnect C0 (or D3). Switch on the PDP. Does the power supply run? (PDP does not shut down)
Re-connect C0 and disconnect all flexible cables from panel to PCB, C (CA, CA2, CA3, CA4, CA5). Switch on the PDP. Does the power supply run? (PDP does not shut down)
Replace PCB, C

Panel defective

In addition, disconnect C10 (or D31). Switch on the PDP. Does the power supply run? (PDP does not shut down)
Re-connect C10 and disconnect all flexible cables from panel to PCB, C1 (CA1, CA2, CA3, CA4, CA5). Switch on the PDP. Does the power supply run? (PDP does not shut down)
Replace PCB, C1

Panel defective

Replace PCB, C3

Panel defective

Replace PCB, C2

Panel defective
Check one of the following IC pin 20 on IC (*1\(\Delta\)) and GND (PCB, C4):
- IC on PCB, C4: IC740, IC7402, IC7403, IC7404, IC7405, IC7406
- IC on PCB, C5: IC750, IC7502, IC7503, IC7504, IC7505, IC7506, IC7507
- IC on PCB, C6: IC760, IC7602, IC7603, IC7604, IC7605, IC7606, IC7607

*1

Check one of the following IC pin 20:
- IC on PCB, C4: IC740, IC7402, IC7403, IC7404, IC7405, IC7406
- IC on PCB, C5: IC750, IC7502, IC7503, IC7504, IC7505, IC7506, IC7507
- IC on PCB, C6: IC760, IC7602, IC7603, IC7604, IC7605, IC7606, IC7607
Fault symptom: PDP stby. light blinking 5 times, 5 V SOS
Possible causes: PCB, D, F, P, C, SC or SS

Fault flow chart

1: Disconnect all D31, D32, D33, D34, D35, D36.
2: Disconnect SC20 or D20 (the reason of disconnecting SC20 is to prevent 6 times SOS caused by disconnecting D31-D36)
Does the power supply start up?

Disconnect SC20 and SS44.
Does the power supply start up?

Disconnect all D31, D32, D33, D34, D35, D36.
Does the power supply start up?

Disconnect SC20 and disconnect SS44.
Does the power supply start up?

Replace PCB, SC

Replace PCB, SS

Re-connect SC20 and disconnect SS44.
Does the power supply start up?

1: Re-connect D31, D32, D33, (disconnect D34, D35, D36)
2: Keep SC20 Disconnected
Does the power supply start up?

Panel defective

In addition, disconnect all flexible cables from Panel to PCB, C4 (CB1, CB2, CB3, CB4, CB5).
Check for short-circuit between pin 20 on IC (*1Δ) and GND (PCB, C4)

Panel defective

In addition, disconnect all flexible cables from Panel to PCB, C6 (CB6, CB7, CB8, CB9, CB10).
Check for short-circuit between pin 20 on IC (*1Δ) and GND (PCB, C6)

Panel defective

In addition, disconnect all flexible cables from Panel to PCB, C5 (CB6, CB7, CB8, CB9, CB10).
Check for short-circuit between pin 20 on IC (*1Δ) and GND (PCB, C5)

Panel defective

Check one of the following IC pin 20
IC on PCB, C4: IC7401, IC7402, IC7403, IC7404, IC7405, IC7406
IC on PCB, C5: IC7501, IC7502, IC7503, IC7504, IC7505, IC7506, IC7507
IC on PCB, C6: IC7601, IC7602, IC7603, IC7604, IC7605, IC7606, IC7607
3.6 Fault flow chart

Disconnect P25 and check for short-circuit between pin 7, 9 P25 and GND

Short-circuit?

Replace PCB, P MULTI

Disconnect P25 and check for short-circuit between pin 7, 9 D25 and GND

Short-circuit?

Replace PCB, D

In addition, disconnect C10 (or C20)

Does the power supply start up?

In addition, disconnect all flexible cables from Panel to PCB, C1 (CA1, CA2, CA3, CA4, CA5).

Does the power supply start up?

Panel defective

In addition, disconnect C21 (or C33)

Does the power supply start up?

In addition, disconnect all flexible cables from Panel to PCB, C2 (CA7, CA8, CA9, CA10).

Does the power supply start up?

Panel defective

In addition, disconnect all flexible cables from Panel to PCB, C3 (CA11, CA12, CA13, CA14, CA15).

Does the power supply start up?

Panel defective

From previous page A

No

From previous page B

Yes

PCB, C2

PCB, C1

PCB, C3

Panel defective

ABO-CENTER v/HENRIKSENS ELEKTRONIK
Fault flow chart

Fault symptom:
PDP stby. light blinking 6 times, driver SOS!

Possible causes:
PCB, SC, SU, SC, SS, D or P

Check voltage VSUS (approx. 80 Vdc) on PCB, P SUS P2 between pin 1 and 2 before shut down OK?

Disconnect PCB, SU and SD from PCB, SC (*2A).
Switch on the PDP. Does the power come up (power supply runs)?

Go to next page

Disconnect PCB, SU and SD from PCB, SC (*2A).
Connect on PCB, SU and SD to PCB, SC. Switch on the PDP, while measuring the voltage on test point TP15V on PCB, SC. Confirm 15 Vdc before shut down. OK?

Switch on the PDP, while measuring the voltage on test point TPVSCN and TPVAD on PCB, SC.
Test point output:
TPVSCN = 30 - 40 V
TPVAD = approx. -90 V
OK before shut down?

Disconnect SC20 (in this way the power comes up) and check outputs on D20 pin 1, 4, 6 OK?
pin 1 = 5 Vdc pin 4 and 6 = See illustrations on page 3.19 - 3.20 OK?

Disconnect SC2 (*2A) and check voltage VSUS (approx. 180 Vdc) on PCB, P P2 between pin 1 and 2 before shut down. VSUS OK?

Disconnect SC2 and SS11 (*2A). Check voltage VSUS (approx. 180 Vdc) on PCB, P P2 between pin 1 and 2 before shut down. VSUS OK?

Disconnect P23 (or SC23). Switch on the PDP and check DC voltage at P23 pin 1 before the PDP shut down. 15 Vdc OK?

Replace PCB, P SUS

Replace PCB, SC

Replace PCB, SS

Replace PCB, SC

Replace PCB, SC

Replace PCB, P MULTI

Replace PCB, D

Replace PCB, SC

Replace PCB, SC

Replace PCB, SC

Replace PCB, D

Replace PCB, SC

Replace PCB, SC

Replace PCB, SC

*2

DANGER
Before connecting SC2 or SS11 after these have been disconnected, discharge is necessary to prevent potential shock from VSUS

*3

Caution
Be careful that disconnected SU, SD PCB’s do not touch PCB, SC.
3.8 Fault flow chart

From previous page

Connect PCB, SU to PCB, SC and disconnect PCB, SD from PCB, SC (*3)

Does the power come up (power supply does not shut down)?

Replace PCB, SU

Connect PCB, SD to PCB, SC and disconnect PCB, SU from PCB, SC (*3)

Does the power come up (power supply does not shut down)?

Replace PCB, SD

Connect PCB, SD and PCB, SU to PCB, SC and disconnect SC20

(The reason of disconnecting SC20 is to prevent the PDP from shutting down)

Confirm these signals:
- pin 1 = 5 Vdc
- pin 17 = Signal CSL
- pin 18 = Signal CSH
- pin 19 = Signal CML
- pin 20 = Signal CHM

You need an oscilloscope to measure these SC driver signals. See the next pages

All signals OK?

Replace PCB, D

Replace PCB, SC

*3 Caution
Be careful that disconnected SU, SD PCB’s do not touch PCB, SC.

Yes

No
D20 pin 2 signal CL

D20 pin 3 signal SLK

D20 pin 4 signal SIO
3.20 Fault flow chart

D20 pin 6 signal SID

D20 pin 7 signal SCSU

D20 pin 8 signal CEL2
D20 pin 9 signal CPH

D20 pin 13 signal CEL

D20 pin 14 signal CEH
D20 pin 17 signal CSL

D20 pin 18 signal CSH

D20 pin 19 signal CML
PCB, SC Explanation

The PCB, SC consists of buffers and drivers to generate the scan signals to the panel. The buffers provide insulation between the PCB, D and the drivers. Connector SC20 provides the driver voltage and trigger signals to switch the FET transistors. The signals from PCB, D switches the FETs on and off to create the distinctive scan signal. Each trigger signal switches on a driver FET creating a portion of the waveform. For example, applying the CHP signal creates the peak portion of the waveform. See illustration.

After the scan waveform is developed on PCB, SC, it is applied to PCB, SU and SD. On the PCB, SU/SD the scan signals are de-multiplexed in a series of shift registers (driver IC) and then applied to the scan electrodes.

Measurement of SC versus driver signals

On the next page there are two examples of measurements of the SC drive signal compared with the SCAN PULS (TPSC1).
Measurement CML vs. TPSC1

Set up:

A: Probe 1:10, test point SC20 pin 19 CML
B: Probe 1:100 test point TPSC1

Trigger: On channel B (SC pulse)

Time base: 200 µsec./div.

CMH vs. TPSC1

Set up:

A: Probe 1:10, test point SC20 pin 20 CMH
B: Probe 1:100 test point TPSC1

Trigger: On channel B (SC pulse)

Time base: 200 µsec./div.
Fault symptom:
PDP stby. light blinking 7 times, driver SOS2
Possible causes:
PCB, SC, SU, SD, SS, D or P

Disconnect PCB, SU and SD from PCB, SC (*1). Switch on the PDP. Does the power supply start up (no shut down)?

Re-connect PCB, SU and SD to PCB, SC (*1). Switch on the PDP, while measuring the voltage on the test point TP15V on PCB, SC: TP15V = 15 Vdc (before shut down)?

Disconnect P23 on PCB, P MULTI. Switch on the PDP while measuring the voltage on P23 pin 1 on PCB, P MULTI. Confirm 15 Vdc before shut down. OK?

Replace PCB, P MULTI

Replace PCB, SC

Switch on the PDP, while measuring the voltage on test point TPVSCN and TPVAD on PCB, SC.

Test point output: TPVSCN = 30 - 40 V
TPVAD = approx. -90 V
OK before shut down?

Replace PCB, SC

Disconnect SC20 (in this way the power comes up) and check outputs on D20 pin 1, 4, 6 pin 1 = 5 V DC pin 4 and 6 = measure with an oscilloscope. See illustrations on page 2.25.

OK?

Replace PCB, D

Replace PCB, SC

Replace PCB, SU

Replace PCB, SU

Replace PCB, SU

WARNING
Be careful that disconnected SU, SD PCB's do not touch PCB, SC.
Fault symptom:
PDP stby. light blinking 8 times driver SOS3
Possible causes:
PCB, SS, SC, SS, D or P

Switch on the PDP while measuring VSUS on PCB, P SUS.
P11 pin 1 and 3 = approx. 180 V
VSUS OK before shut down?

Disconnect SS11 (*1). Switch on the PDP while measuring VSUS on PCB, P SUS.
P11 pin 1 and 3 = approx. 180 V
VSUS OK before shut down?

Disconnect SS44 or C44 (the reason of disconnecting SS44 is to prevent the PDP from shutting down)
Confirm these signals:
pin 1 = 5 Vdc
pin 5 = Signal USL
pin 6 = Signal USH
pin 7 = Signal UML
pin 8 = Signal UMH

You need an oscilloscope to measure these SS driver signals. See the next pages
All signals OK?

Disconnect SC2 (*1). Switch on the PDP while measuring VSUS on PCB, P SUS.
P11 pin 1 and 3 = approx. 180 V
VSUS OK before shut down?

Disconnect SC2

Replace PCB, SC

Switch on the PDP while measuring VSUS on PCB, P SUS.
P11 pin 1 and 3 = approx. 80 V
VSUS OK before shut down?

Disconnect SS

Switch on the PDP while measuring VSUS on PCB, P SUS.
P11 pin 1 and 3 = approx. 80 V
VSUS OK before shut down?

Disconnect SC

Replace PCB, SC

Replace PCB, SS

You need an oscilloscope to measure these SS driver signals. See the next pages
All signals OK?

Disconnect SC

Replace PCB, D

Replace PCB, SS

1

DANGER
Before connecting SC2 or SS11 after these have been disconnected, discharge is necessary to prevent potential shock from VSUS

No

Yes
SS44 pin 3 signal UEL

SS44 pin 4 signal UEH

SS44 pin 5 signal USL
3.28 Fault flow chart

SS44 pin 6 signal USH

SS44 pin 7 signal UML

SS44 pin 8 signal UMH
Sustain pulse TP SS1

Use 1:100 Probe

PCB, SS Explanation

After the video signal is processed on the PCB, D, the sustain and erase drive pulses are supplied to the PCB, SS. The erase pulse is supplied at the beginning of each scan period (applied to PCB, SS). The erase pulse is applied to remove the previous charge for the upper and lower sections of the panel.

The sustain drive pulses are also developed on the PCB, D and are applied after the scan period.

The SUSTAIN PULSE is developed using similar circuit as the SCAN PULSE. A series of specifically timed pulses are applied to FET drivers creating the distinctive SUSTAIN PULSE.

The basic waveform remains constant but the exact number of sustain pulses is determined by the amount of luminance required.

Sustain drive

2 ms/div 40 V/div AC

ABO-CENTER v/HENRIKSENS ELEKTRONIK
3.30 Fault flow chart

PDP stby. light blinking 9 times, Panel config SOS
Replace PCB, D

PDP stby. light blinking 10 times, Terminal board SOS
Replace PCB, DS
Replace PCB, P MULTI

PDP stby. light blinking 11 times, FAN SOS
While PDP starts up confirm that all Fans are turning
Replace defective Fans. If no fans are turning PCB, PB may be defective. Check voltage on PCB, PB
PB30 pin 1 = 15 V
PB30 pin 5 = 4.9 V
If OK replace PCB, PB

While PDP starts up confirm 0V on PCB, PB PB31, 32, 33, 34, 35, and 38 pin 3. (each measurement has to be carried out one at the time)
Replace defective Fans (See Survey of Fans)

Survey of Fans

FAN A  FAN B  FAN C  FAN D  FAN E  FAN F
BP35 BP34 BP33 BP31 BP32 BP38

PCB, BP

Abo-Center v/HenrikSENS Elektronik

Bang & Olufsen
Placement of measuring points

- Use a non conductive tool for adjustment.

![Diagram of Placement of Measuring Points]

- VR251 (Vsus)
- VR401
- Panel label
- VR602 (T2)
- VR6600 (Vad)
- VR301
- VR000 (Ve)

Panel label

- VR251 (Vsus)
- VR401
- Panel label
- VR602 (T2)
- VR6600 (Vad)
- VR301
- VR000 (Ve)

Panel label

- VR251 (Vsus)
- VR401
- Panel label
- VR602 (T2)
- VR6600 (Vad)
- VR301
- VR000 (Ve)
Test and adjustment after replacement of module(s)

Preparations before adjustment
- Do not connect ESD-mat to PDP.
- Set the PDP to receive a picture, e.g. generate internal picture. Refer to PDP pixel test, page 2.1.

<table>
<thead>
<tr>
<th>PCB board</th>
<th>Name</th>
<th>Test point</th>
<th>Voltage</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>P board</td>
<td>Vsus</td>
<td>TPVSUS (SS)</td>
<td>Vsus* ±2V</td>
<td>VR251 (P) *</td>
</tr>
<tr>
<td>SC board</td>
<td>Vad</td>
<td>TPVAD (SC)</td>
<td>-90V ±1V</td>
<td>VR6600 (SC)</td>
</tr>
<tr>
<td></td>
<td>Vsct</td>
<td>TPVSCN (SC)</td>
<td>Vad+ 140V ±4V</td>
<td>Fixed</td>
</tr>
<tr>
<td></td>
<td>Vset</td>
<td>TPVSET (SC)</td>
<td>240V ±7V</td>
<td>Fixed</td>
</tr>
<tr>
<td>SS board</td>
<td>Ve</td>
<td>TPVE (SS)</td>
<td>Ve* ±1V</td>
<td>VR6000 (SS) *</td>
</tr>
<tr>
<td></td>
<td>Vda</td>
<td>TPVDA (SS)</td>
<td>72V ±1V -3V</td>
<td>Fixed</td>
</tr>
<tr>
<td>D, DS board</td>
<td>Japan: see Japan power adjustment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DN board</td>
<td>Set market select number to correct destination by MS mode (24)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*See the panel label.

Caution
1. First perform Vsus voltage adjustment.
2. Confirmation of Vscn voltage should be preformed after confirmation of Vad voltage adjustments. When Vad = -90V, Voltage of Vscn is 50V ±4V
Absolutely do not reduce Vsus below Ve not to do damage to the PCB.

Panel label information

Serial No. 
Ve: [ ], Vsus: [ ]
Made in Japan TQF

Adjustment voltage
Japan power adjustment

This adjustment is only necessary for the Japanese market!
If PCB, D or the PDP have been replaced, it is important to make this adjustment.
Because of the mains voltage on the Japanese marked, the power consumption has to be reduced to obtain warranty.
A label is placed on the backside of the PDP. On the label there is two digits/letters ‘Before’ and ‘After’. To reduce the power consumption the ‘After’ digit/letter has to be entered in the PDP service menu.

Adjustment procedure

Access the PDP Service Menu by means of the NN remote control (press FD and then F).
The CAT Menu appears on the screen:

Select IIC and press OK

Use the up and down buttons to find the menu ‘PWRCLT’. Use the button VOL+ - to change the power control setting e.g. to D3.
The left digit/letters shows the current setting and the right shows the new setting. The adjustment is automatically saved.
Exit the service mode as described on page 2.1.
Insulation test

Each set must be insulation tested after having been dismantled. Make the test when the set has been reassembled and is ready to be returned to the customer. Flashovers must not occur during the testing procedure!

Make the insulation test as follows:
Short-circuit the two pins of the mains plug and connect them to one of the terminals of the insulation tester. Connect the other terminal to ground on the PC Input terminal.

NOTE!
To avoid damaging the set it is essential that both terminals of the insulation tester have good contact.

Slowly turn the voltage control of the insulation tester until a voltage of 2.5 kV ac and max. 10mA is obtained. Maintain that voltage for one second, then slowly turn it down to 0 V ac again.

Final check after repair

Before reinstalling the PDP in the product, run the PDP self-check, page 2.3.
## Modules that can be replaced

<table>
<thead>
<tr>
<th>Module Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDP in service position</td>
<td>5.2</td>
</tr>
<tr>
<td>Replace contrast screen and plasma frame</td>
<td>5.4</td>
</tr>
<tr>
<td>Replace PCB C1, Data Drive (Upper left)</td>
<td>5.6</td>
</tr>
<tr>
<td>Replace PCB C2, Data Drive (Upper center)</td>
<td>5.7</td>
</tr>
<tr>
<td>Replace PCB C3, Data Drive (Upper right)</td>
<td>5.8</td>
</tr>
<tr>
<td>Replace PCB C4, Data Drive (Lower right)</td>
<td>5.9</td>
</tr>
<tr>
<td>Replace PCB C5, Data Drive (Lower center)</td>
<td>5.11</td>
</tr>
<tr>
<td>Replace PCB C6, Data Drive (Lower left)</td>
<td>5.13</td>
</tr>
<tr>
<td>Replace PCB D, Digital Signal Processor</td>
<td>5.15</td>
</tr>
<tr>
<td>Replace PCB DN, Digital Signal Processor/Micom</td>
<td>5.17</td>
</tr>
<tr>
<td>Replace PCB DS, Slot Interface &amp; SYNC processor</td>
<td>5.18</td>
</tr>
<tr>
<td>Replace PCB HX, PC Type Input Terminal</td>
<td>5.19</td>
</tr>
<tr>
<td>Replace PCB HDD, DVI Input Terminal</td>
<td>5.20</td>
</tr>
<tr>
<td>Replace PCB P, Power Supply</td>
<td>5.21</td>
</tr>
<tr>
<td>Replace PCB PB, Fan Control</td>
<td>5.22</td>
</tr>
<tr>
<td>Replace PCB SC, Scan Out</td>
<td>5.23</td>
</tr>
<tr>
<td>Replace PCB SD, Scan Connection (Lower)</td>
<td>5.24</td>
</tr>
<tr>
<td>Replace PCB SS, Sustain Out</td>
<td>5.25</td>
</tr>
<tr>
<td>Replace PCB SU, Scan Connection (Upper)</td>
<td>5.26</td>
</tr>
</tbody>
</table>

## Actions before dismantling the PDP

Before dismantling the PDP, disconnect the mains supply and wait minimum 1 minute for the electrolytic capacitors to discharge.

Connect ESD-mat.

After replacing module(s) in the PDP follow the test and adjustment procedure as described in “Test and adjustment after replacement of module(s)” on page 4.2.

## Note

Internal cables in the PDP.
Please show precaution when disconnecting cables from sockets.
5.2 PDP in service position

- Remove all cables
- Assemble service stands
- Put PDP on service stands
- Remove screws holding the aluminium frame
- Remove screws holding the iron frame

- Remove screws holding the backcover
5.4 Remove contrast screen and plasma frame

5.2 PDP in service position
- Remove PCB S1, Power switch as shown

- Remove screws

- Remove cables

- Remove screws

Gently pull off contrast screen

- Remove screws
- Remove screws

- Pull out contrast screen

- Remove screws for S1, Power switch & V1, Remote receiver
5.2 PDP in service position
- Remove screws for Fan and pull off Fan

- Remove plugs C10 and open plugs CA1-5

- Remove screws at cable holders and remove cables

- Remove screws at PCB C1
5.2 PDP in service position

- Remove cables

Placement of PCB C2

- Remove cables C21, C22, C23, C24
- Open plugs CA6 to CA10

- Remove screws at cable holders and remove cables

- Remove screws at PCB C2
5.2 PDP in service position
- Remove screws for Fans and pull off Fans

- Remove plugs C32 and C33
- and open plugs CA11-15

- Remove screws at cableholders and remove cables

- Remove screws at PCB C3
- Remove screws at bracket
- Pull PDP off Service foot and bracket
- Open plugs
- Remove screws at cableholders and remove cables

- Remove screws at PCB C4
5.2 PDP in service position
- Remove plugs on PCB D5

- Remove screws at input housing and remove it

- Open plugs

Placement of PCB C5

Replace PCB C5, Data Drive (Lower center)

- Remove cables on PCB C5

- Remove plugs on PCB DS

ABO-CENTER V/HENRIKSENS ELEKTRONIK
- Remove screws at cableholders and remove cables

- Remove screws at PCB C5
5.2 PDP in service position
- Remove screw and remove PCB H3

Placement of PCB C6

- Remove plugs on PCB DS
- Remove screws at input housing and remove it
- Remove plug and remove screws at bracket
- Pull PDP off Service foot and bracket

- Open plugs

- Remove screws at cableholders and remove cables

- Remove screws at PCB C6
5.2 PDP in service position

5.22 Remove PCB PB

- Remove plugs on PCB DS

Placement of PCB D

- Remove plugs on PCB D

- Remove screws on PCB DN bracket

- Remove screws
- Remove screws
5.2 PDP in service position
- Remove cables

Placement of PCB DN

- Remove screws
5.2 PDP in service position
5.20 Remove PCB HDD

- Remove plugs on PCB DS
- Remove plug connecting PCB HX
- Remove screws holding shield

- Remove screws on PCB DS
- Pull off shield and PCB DS
5.2 PDP in service position
5.20 Remove PCB HDD
- Remove cable on PCB HX

Placement of PCB HX

- Remove screws at input housing
- Pull off input housing

- Remove “screws” on the bottom

- Remove screws on PCB HX
5.20 Replace PCB HDD, DVI Input Terminal

5.2 PDP in service position
- Assemble service stand

Placement of PCB HDD

- Put PDP on service stands

- Remove screws from slot

- Pull out DVI PCB
5.2 PDP in service position
- Remove plugs on PCB P

Placement of PCB P

- Remove cables from holders
- Remove screws
5.2 PDP in service position
- Remove plugs on PCB PB
- Remove screws
Replace PCB SC, Scan Out

5.2 PDP in service position
- Remove PCB SU

Placement of PCB SC

- Remove PCB SD

- Remove plugs

- Remove screws
5.2 PDP in service position

- Remove PCB H3

Placement of PCB SD

- Remove PCB SD from PCB SC

- Remove cables from PCB SD
5.2 PDP in service position

- Remove cables

Placement of PCB SS

- Open plugs

- Remove screws

- Gently remove cables
5.2 PDP in service position
- Remove PCB SU from PCB SC

Placement of PCB SU
- Remove cables from PCB SU
### Specification guidelines for service use

**Plasma Display Panel – 50FHD, Type D9**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mains voltage</strong></td>
<td>230 V (198 V – 264 V), 120 V (90 V – 132 V) 60 Hz / 50 Hz</td>
</tr>
<tr>
<td><strong>TYPE NR.</strong></td>
<td>9039 (TWN) Taiwan&lt;br&gt;9040 (DK) Denmark&lt;br&gt;9041(EU) Austria, Bahrain, Belgium, Croatia, Czech Republic, Egypt&lt;br&gt;Finland, France, Germany, Greece, Holland, Hungary, Indonesia&lt;br&gt;Israel, Kuwait, Luxembourg, Malaysia, Morocco, Norway&lt;br&gt;Oman, Poland, Portugal, Qatar, Russia, Saudi Arabia, Singapore&lt;br&gt;Slovak Republic, Slovenia, Spain, Sweden, Thailand, Turkey&lt;br&gt;United Arab Emirates&lt;br&gt;9042 (CH) Switzerland&lt;br&gt;9043 (GB) Hong Kong, South Africa, United Kingdom&lt;br&gt;9044 (ITA) Italy&lt;br&gt;9045 (AUS) Australia, New Zealand&lt;br&gt;9046 (CN) China&lt;br&gt;9047 (J) Japan&lt;br&gt;9048 (KOR) Korea&lt;br&gt;9049 (US) Argentina, Canada, Chile, Brazil, Mexico, Uruguay, USA</td>
</tr>
<tr>
<td><strong>Power consumption</strong></td>
<td>Typical: EU: 484 W, standby 1.3 W&lt;br&gt;US: 515 W, standby 1.1 W&lt;br&gt;Japan: 462, standby 1.3 W</td>
</tr>
<tr>
<td><strong>Dimensions without handles (W x H x D)</strong></td>
<td>1.210 mm x 724 mm x 95 mm – 47.6 in x 28.5 in x 3.74 in</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>74 kg – 92.6 Lb</td>
</tr>
<tr>
<td><strong>Plasma display panel</strong></td>
<td>AC type 16:9 aspect ratio</td>
</tr>
<tr>
<td><strong>Contrast ratio</strong></td>
<td>Continuous 3000:1 Peak 10.000:1</td>
</tr>
<tr>
<td><strong>Viewing angle</strong></td>
<td>Minimum 160° 1/3 brightness when viewed from above, or either side</td>
</tr>
<tr>
<td><strong>Screen size</strong></td>
<td>1,106 mm (W) x 622 mm (H) x 1289 mm (diagonal)&lt;br&gt;43.5 in (W) x 24.5 in (H) x 50 in (diagonal)</td>
</tr>
<tr>
<td><strong>Pixel count</strong></td>
<td>2,073,600 pixels (1920 x 1080 x R, G, B)</td>
</tr>
<tr>
<td><strong>Operations condition</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Temperature</strong></td>
<td>0°C - 40°C, 32°F - 104°F</td>
</tr>
<tr>
<td><strong>Humidity</strong></td>
<td>20% - 80%</td>
</tr>
<tr>
<td><strong>Minimum outside air pressure</strong></td>
<td>800 hPa or above</td>
</tr>
<tr>
<td><strong>Connections</strong></td>
<td></td>
</tr>
<tr>
<td><strong>PC Input</strong></td>
<td>HIGH-DENSITY Mini-D-SUB 15PIN&lt;br&gt;VGA, SVGA, XGA, SXGA, UXGA&lt;br&gt;R/G/B 0.7V-pp 75 ohm&lt;br&gt;Component&lt;br&gt;Y : ± 1.0 Vp-p (75-ohm : include sync)&lt;br&gt;P/Y : ± 0.7 Vp-p (75-ohm)&lt;br&gt;P/C : ± 0.7 Vp-p (75-ohm)</td>
</tr>
<tr>
<td><strong>HDVD</strong></td>
<td>1.0 – 5.0 V-pp high impedance</td>
</tr>
<tr>
<td><strong>Horizontal scanning frequency</strong></td>
<td>15 – 110 kHz</td>
</tr>
<tr>
<td><strong>Vertical scanning frequency</strong></td>
<td>48 – 120 Hz</td>
</tr>
</tbody>
</table>
6.2 Specification guidelines for service use

Pin Layout for PC Input Terminal

<table>
<thead>
<tr>
<th>Pin</th>
<th>Name</th>
<th>Pin 1 R (PR/CR)</th>
<th>Pin 2 G (Y)</th>
<th>Pin 3 B (PB/CB)</th>
<th>Pin 4 GND (ground)</th>
<th>Pin 5 GND (ground)</th>
<th>Pin 6 GND (ground)</th>
<th>Pin 7 GND (ground)</th>
<th>Pin 8 GND (ground)</th>
<th>Pin 9 NC (not connected)</th>
<th>Pin 10 GND (ground)</th>
<th>Pin 11 GND (ground)</th>
<th>Pin 12 SDA</th>
<th>Pin 13 HD/SYNC</th>
<th>Pin 14 VD</th>
<th>Pin 15 SCL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>625/60i</td>
<td>+525/60i @60Hz (480 lines)</td>
<td>5.73</td>
<td>59.94</td>
<td>yes</td>
<td>yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>+525/60p</td>
<td>+525/60p @60Hz (480 lines)</td>
<td>3.47</td>
<td>59.94</td>
<td>yes</td>
<td>yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>625/50i</td>
<td>+625/50i @50Hz (575 lines)</td>
<td>5.63</td>
<td>50.0</td>
<td>yes</td>
<td>yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>625/50p</td>
<td>+625/50p @50Hz (575 lines)</td>
<td>3.25</td>
<td>50.0</td>
<td>yes</td>
<td>yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>750/60p</td>
<td>+750/60p @60Hz (520 lines)</td>
<td>45.00</td>
<td>60.0</td>
<td>yes</td>
<td>yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>750/50p</td>
<td>+750/50p @50Hz (720 lines)</td>
<td>37.50</td>
<td>50.0</td>
<td>yes</td>
<td>yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td>33.75</td>
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*At 525P is inputted into PC(D-sub5P), it displays as VGA60Hz.

Applicable input signal name

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<thead>
<tr>
<th>Signal</th>
<th>fh (KHz)</th>
<th>fv (Hz)</th>
<th>reception</th>
<th>Pre-defined</th>
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<tbody>
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<td>15.73</td>
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<td>750/60p</td>
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<td>1125/24p</td>
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*Serial Input

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<th>fv (Hz)</th>
<th>reception</th>
<th>Pre-defined</th>
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<tr>
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<td>15.73</td>
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<td>yes</td>
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<td>1125/60i</td>
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<td>1125/50i</td>
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DVI-D Input

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<td>Data 2 -</td>
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<tr>
<td>2</td>
<td>Data 2 +</td>
</tr>
<tr>
<td>3</td>
<td>Data 2/4 shield</td>
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<tr>
<td>4</td>
<td>Data 4 -</td>
</tr>
<tr>
<td>5</td>
<td>Data 4 +</td>
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<tr>
<td>6</td>
<td>DDC Clock</td>
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<td>7</td>
<td>DDC Data</td>
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<td>8</td>
<td>Analog vert. sync</td>
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<tr>
<td>9</td>
<td>Data 1 -</td>
</tr>
<tr>
<td>10</td>
<td>Data 1 +</td>
</tr>
<tr>
<td>11</td>
<td>Data 1/3 shield</td>
</tr>
<tr>
<td>12</td>
<td>Data 3 -</td>
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<tr>
<td>13</td>
<td>Data 3 +</td>
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<tr>
<td>14</td>
<td>+5V</td>
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<td>15</td>
<td>GND</td>
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<td>Hot plug detect</td>
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<td>17</td>
<td>Data 0 -</td>
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<td>18</td>
<td>Data 0 +</td>
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<td>19</td>
<td>Data 0/5 shield</td>
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<td>20</td>
<td>Data 5 -</td>
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<tr>
<td>21</td>
<td>Data 5 +</td>
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<tr>
<td>22</td>
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<td>23</td>
<td>Clock +</td>
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<td>24</td>
<td>Clock -</td>
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Encryption
Support of HDCP
(High-bandwidth Digital Content Protection)

Applicable input signal name

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<th>Dot clock frequency (MHz)</th>
<th>Horizontal frequency (kHz)</th>
<th>Vertical frequency (Hz)</th>
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<tbody>
<tr>
<td>525(480)/60p</td>
<td>720 × 480</td>
<td>27.00</td>
<td>31.47</td>
<td>59.94</td>
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<td>625(576)/50p</td>
<td>720 × 576</td>
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<td>50.00</td>
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<tr>
<td>750(720)/60p</td>
<td>1,280 × 720</td>
<td>74.25</td>
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<td>60.00</td>
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<tr>
<td>750(720)/50p</td>
<td>1,280 × 720</td>
<td>74.25</td>
<td>37.50</td>
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<tr>
<td>1,125(1,080)/60i</td>
<td>1,920 × 1,080</td>
<td>74.25</td>
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<tr>
<td>1,125(1,080)/60p</td>
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<td>50.00</td>
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<tr>
<td>1,125(1,080)/50p</td>
<td>1,920 × 1,080</td>
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<td>1,024 × 768</td>
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<td>XGA50</td>
<td>1,024 × 768</td>
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<td>SXGA+</td>
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Subject to change without notice
Available parts 7.1

BeoVision 4 – 50

9003 315436 Iron frame

9004 8200019 Plasma screen, complete

9005 3320768 Aluminium frame, silver
    3320825 Aluminium frame, black
    3320826 Aluminium frame, dark grey
    3320901 Aluminium frame, red
    3320902 Aluminium frame, blue

9006 6100036 Mains cable, DK
    6100026 Mains cable, EU
    6100028 Mains cable, I
    6100029 Mains cable, CH
    6100035 Mains cable, UK
    6100033 Mains cable, AUS
    6100052 Mains cable, US
    6100117 Mains cable, JP
    6100119 Mains cable, KOR

9007 345508 Contrast screen

9008 3375289 Service stand, order 2 pcs.

9009 3321074 Rear cover

1 2054045 Screw 3.5 x 8mm
2 2625039 Washer
3 2576166 Spacer
Survey of modules - Plasma Display Panel

C1 8003674  Data Drive (Upper left)
C2 8003681  Data Drive (Upper center)
C3 8003682  Data Drive (Upper right)
C4 8003684  Data Drive (Lower left)
C5 8003686  Data Drive (Lower center)
C6 8003696  Data Drive (Lower right)
D  8003743  Digital Signal Processor
DS 8003673  Slot Interface & SYNC processor
HDD 8003733  DVI Input Terminal
HX 8003744  PC Type Input Terminal
H3 8003672  Speaker Terminal
P  8003775  Power Supply (SUS + MULTI)
PB 8003669  Fan Control
SC 8003776  Scan Out
SD 8003698  Scan Connection (Lower)
SS 8003721  Sustain Out
SU 8003697  Scan Connection (Upper)
S1 8003668  Power switch
V1 8003665  Remote receiver
V2 8003666  Key switch
F201 6600093  Fuse FSA 250V
F301 6600093  Fuse FSA 250V
F1701 6600092  Fuse T10A 250V
F1702 6600092  Fuse T10A 250V
FAN 8400044  Fan
### Packing

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<tr>
<th>Part Number</th>
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<tr>
<td>3393019</td>
<td>Packing, complete</td>
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### Accessories

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<td>Cable RS232, GENDER CHANGER</td>
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<tr>
<td>6277965</td>
<td>5 M cable External IR with autocontrast</td>
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<tr>
<td>6270624</td>
<td>15 M cable External IR with autocontrast</td>
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<td>6270503</td>
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<td>6270525</td>
<td>10 M cable EU input 1-3</td>
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<td>5 M cable RS232D sub-9</td>
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<td>5 M cable DVI-D/DVI-D</td>
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<td>5 M HDMI</td>
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<td>6270627</td>
<td>Cable adaptor DVI-D male - HDMI female</td>
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<td>6200182</td>
<td>Cable PL splitter for 7.2</td>
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<td>6270148</td>
<td>10 M VGA cable (for BeoMedia)</td>
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<tr>
<td>6270657</td>
<td>3 M VGA cable (for BeoMedia)</td>
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<tr>
<td>6200193</td>
<td>3 M sound/CVBS cable - Elbow (for BeoMedia)</td>
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<td>10 M sound/CVBS cable - Elbow (for BeoMedia)</td>
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<td>8 M DVI-D cable</td>
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### Back-up suitcase

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### Parts not shown

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<td>Special remote control</td>
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<td>3375706</td>
<td>Micro fiber cloth</td>
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<tr>
<td>3390436</td>
<td>Bag w/wall bracket f/IR sensor</td>
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<tr>
<td>3390519</td>
<td>Bag w/rear plate f/IR sensor</td>
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### Available documentation

See Retail System

### Wall bracket 1407866

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<td>Guide</td>
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<tr>
<td>3390050</td>
<td>Bag w/parts</td>
</tr>
<tr>
<td>3392404</td>
<td>Outer carton</td>
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<td>3396296</td>
<td>Foam</td>
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### Table stand 1407966

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<thead>
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<td>Guide</td>
</tr>
<tr>
<td>3375112</td>
<td>Screw 5 x 30mm</td>
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<tr>
<td>3392374</td>
<td>Outer carton</td>
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<tr>
<td>3396305</td>
<td>Foam corner</td>
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<tr>
<td>3396306</td>
<td>Foam block</td>
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