

# Service Service Service

## SDI PDP Repair Manual

S37SD-YD02 (37-inch SD v4)

S42SD-YD05, YD06, YD07 (42-inch SD v2, v3, v4)

S42AX-XD02, YD01 (42-inch HD v3, v4)

S50HW-XD03, XD04 (50-inch HD v3, v4)

# Service Manual

| Contents                                                       | Page |
|----------------------------------------------------------------|------|
| 1. Technical Specifications, Connections, and Chassis Overview | 2    |
| 2. Safety Instructions, Warnings, and Notes                    | 15   |
| 3. Directions For Use                                          | 16   |
| 4. Mechanical Instructions                                     | 17   |
| 5. Service Modes, Error Codes, and Fault Finding               | 25   |
| 6. Block Diagrams, Test Point Overview, and Waveforms          | 40   |
| 7. Circuit Diagrams and PWB Layouts                            | 51   |
| 8. Alignments                                                  | 52   |
| 9. Circuit Descriptions, Abbreviation List, and IC Data Sheets | 71   |
| 10. Spare Parts List                                           | 72   |
| 11. Revision List                                              | 77   |

©Copyright 2006 Philips Consumer Electronics B.V. Eindhoven, The Netherlands.  
All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise without the prior permission of Philips.



# 1. Technical Specifications, Connections, and Chassis Overview

## Index of this chapter:

- 1.1 PDP Overview
- 1.2 Serial Numbers
- 1.3 Chassis Overview

## Notes:

- Figures can deviate due to the different model executions.
- Specifications are indicative (subject to change).

## 1.1 PDP Overview

Table 1-1 PDP overview

|   | PDP Type/Version | Model Name | H x V Pixel |
|---|------------------|------------|-------------|
| 1 | 37" SD v4        | S37SD-YD02 | 852 x 480   |
| 2 | 42" SD v2        | S42SD-YD06 | 852 x 480   |
| 3 | 42" SD v3        | S42SD-YD05 | 852 x 480   |
| 4 | 42" SD v4        | S42SD-YD07 | 852 x 480   |
| 5 | 42" HD v3        | S42AX-XD02 | 1024 x 768  |
| 6 | 42" HD v4        | S42AX-YD01 | 1024 x 768  |
| 7 | 50" HD v3        | S50HW-XD03 | 1366 x 768  |
| 8 | 50" HD v4        | S50HW-XD04 | 1366 x 768  |

Table 1-2 PDP vs Chassis overview

| Display type | Model #               | Chassis    | Chassis Manual # |
|--------------|-----------------------|------------|------------------|
| 37" SD v4    | 37PF9936/37           | LC4.7U     | 3122 785 14742   |
| 37" SD v4    | 37PF9946/12           | LC4.7E     | 3122 785 14722   |
| 37" SD v4    | 37PF9946/69           | LC4.7A     | 3122 785 14761   |
| 42" SD v2    | 420P20/00             | FM242      | 3122 785 14130   |
| 42" SD v2    | 42FD9925/01           | FM242      | 3122 785 14130   |
| 42" SD v2    | 42FD9935/17           | FM242      | 3122 785 14130   |
| 42" SD v2    | 42FD9935/93S          | FM242      | 3122 785 14130   |
| 42" SD v2    | 42FD9945/01           | FM242      | 3122 785 14130   |
| 42" SD v2    | 42FD9953/17, /69, /93 | FM242      | 3122 785 14130   |
| 42" SD v2    | 42HF9953/12Z          | FM24_AB    | 3122 785 13890   |
| 42" SD v2    | 42PF9936/37           | FTP1.1U    | 3122 785 14381   |
| 42" SD v2    | 42PF9945/12           | FTP1.1E    | 3122 785 14370   |
| 42" SD v2    | 42PF9945/69, /79, /98 | FTP1.1U    | 3122 785 14381   |
| 42" SD v2    | 42PF9955/12           | F21RE      | 3122 785 13890   |
| 42" SD v3    | 42PF9936D/37          | LC4.7U     | 3122 785 14742   |
| 42" SD v3    | 42PF9946/12           | LC4.7E     | 3122 785 14722   |
| 42" SD v3    | 42PF9946/79, /93, /98 | LC4.7A     | 3122 785 14761   |
| 42" SD v3    | 42PF9956/12           | FTP2.2E    | 3122 785 14651   |
| 42" SD v3    | 42PF9956/93           | FTP2.2A    | 3122 785 14680   |
| 42" SD v4    | 42PF7320/10           | LC4.9E     | 3122 785 15431   |
| 42" SD v4    | 42PF7320/79, /98      | LC4.9A     | 3122 785 15450   |
| 42" HD v3    | 42PF9966/37           | FTP2.2U    | 3122 785 14662   |
| 42" HD v3    | 42PF9966/79, /93, /98 | FTP2.2A    | 3122 785 14680   |
| 42" HD v3    | 42PF9976/37           | FTP2.2U    | 3122 785 14662   |
| 42" HD v4    | 42HF7543/37           | BP2.3HU    | 3122 785 15900   |
| 42" HD v4    | 42PF7320A/37          | BP2.3U     | 3122 785 15541   |
| 42" HD v4    | 42PF7520D/10          | LC4.9E_AB  | 3122 785 15670   |
| 42" HD v4    | 42PF9630/78           | FTP2.4L    | 3122 785 15470   |
| 42" HD v4    | 42PF9630A/37          | BP2.2U     | 3122 785 15541   |
| 42" HD v4    | 42PF9630A/96          | BP2.2U     | 3122 785 15541   |
| 42" HD v4    | 42PF9966/79, /98      | FTP2.4A    | 3122 785 15470   |
| 50" HD v3    | 50PF9956/37           | FTP2.2U    | 3122 785 14662   |
| 50" HD v3    | 50PF9966/12           | FTP2.2E    | 3122 785 14651   |
| 50" HD v3    | 50PF9966/37           | FTP2.2U    | 3122 785 14662   |
| 50" HD v3    | 50PF9966/69, /93      | FTP2.2A    | 3122 785 14680   |
| 50" HD v4    | 50HF7543/37           | BP2.3HU    | 3122 785 15900   |
| 50" HD v4    | 50PF7320/10           | LC4.9E     | 3122 785 15431   |
| 50" HD v4    | 50PF7320/79, /93, /98 | LC4.9A     | 3122 785 15450   |
| 50" HD v4    | 50PF9630/78           | LC4.9L     | 3122 785 15450   |
| 50" HD v4    | 50PF9630A/96          | BP2.2U     | 3122 785 15541   |
| 50" HD v4    | 50PF9830A/37          | BP2.1U     | 3122 785 15541   |
| 50" HD v4    | 50PF9966/79           | FTP2.4A    | 3122 785 15470   |
| 50" HD v4    | 50PF9967D/10          | FTP2.4E_AB | 3122 785 15740   |

In above table the link is given between the SDI Plasma Display Panel and the Philips TV chassis (incl. chassis manual no.).

### 1.1.1 37" SD v4

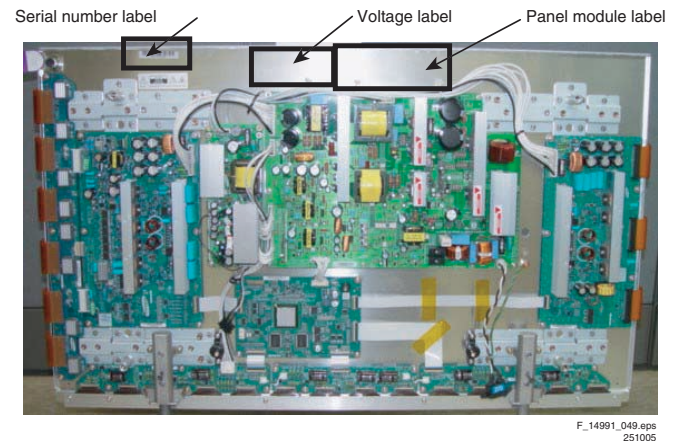


Figure 1-1 External view (37" SD v4)

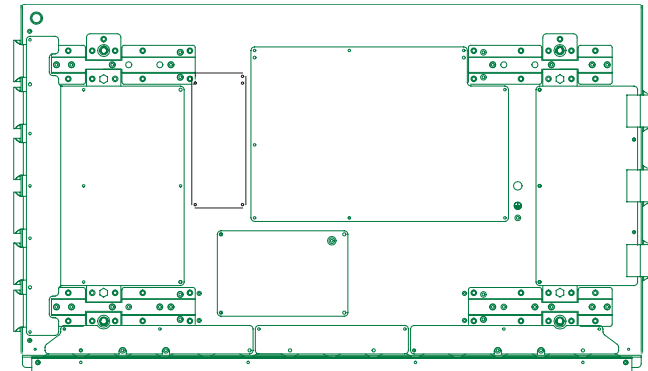


Figure 1-2 Points of screw mount (37" SD v4)

| No | Item                                                             | Specification 37" SD v4                                                          |                              |
|----|------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------|
| 1  | Pixel                                                            | 852 (H) x 480 (V) pixels<br>(1 pixel = 1 R,G,B cells)                            |                              |
| 2  | Number of Cells                                                  | 2556 (H) x 480 (V)                                                               |                              |
| 3  | Pixel Pitch                                                      | 0.960 mm (H) x 0.960 mm (V)                                                      |                              |
| 4  | Cell Pitch                                                       | R                                                                                | 0.320 (H) mm<br>0.960 (V) mm |
|    |                                                                  | G                                                                                | 0.320 (H) mm<br>0.960 (V) mm |
|    |                                                                  | B                                                                                | 0.320 (H) mm<br>0.960 (V) mm |
| 5  | Display size                                                     | 817.92 (H) x 460.80 mm (V)                                                       |                              |
| 6  | Screen size                                                      | Diagonal 37" Colour Plasma Display Module                                        |                              |
| 7  | Screen aspect                                                    | 16:9                                                                             |                              |
| 8  | Display colour                                                   | 16.77 million colours                                                            |                              |
| 9  | Viewing angle                                                    | Over 160 deg (angle with 50% and greater brightness perpendicular to PDP module) |                              |
| 10 | Dimensions                                                       | 982 (W) x 582 (H) x 52.9 (D) mm                                                  |                              |
| 11 | Weight                                                           | Module 1                                                                         | About 15.5 kg                |
| 12 | Broadc. reception<br>Vertical frequency<br>Video/Logic Interface | 60/50 Hz, LVDS                                                                   |                              |

### 1.1.2 42" SD v2

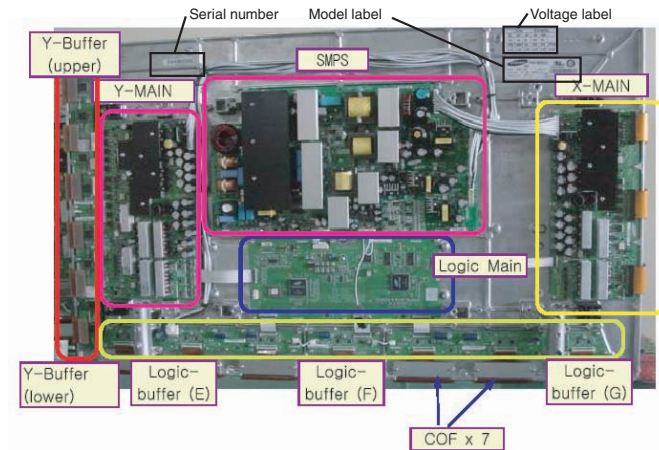


Figure 1-3 External view (42" SD v2)

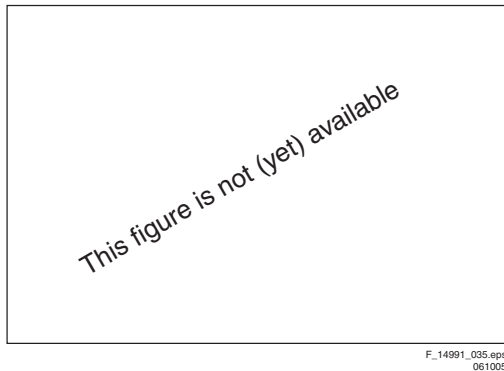


Figure 1-4 Points of screw mount (42" SD v2)

| No | Item                                                             | Specification 42" SD v2                                                          |                              |
|----|------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------|
| 1  | Pixel                                                            | 852 (H) x 480 (V) pixels<br>(1 pixel = 1 R,G,B cells)                            |                              |
| 2  | Number of Cells                                                  | 2556 (H) x 480 (V)                                                               |                              |
| 3  | Pixel Pitch                                                      | 1.095 mm (H) x 1.110 mm (V)                                                      |                              |
| 4  | Cell Pitch                                                       | R                                                                                | 0.324 (H) mm<br>1.110 (V) mm |
|    |                                                                  | G                                                                                | 0.365 (H) mm<br>1.110 (V) mm |
|    |                                                                  | B                                                                                | 0.406 (H) mm<br>1.110 (V) mm |
| 5  | Display size                                                     | 932.940 (H) x 532.800(V) mm                                                      |                              |
| 6  | Screen size                                                      | Diagonal 42" Colour Plasma Display Module                                        |                              |
| 7  | Screen aspect                                                    | 16:9                                                                             |                              |
| 8  | Display colour                                                   | 16.77 million colours                                                            |                              |
| 9  | Viewing angle                                                    | Over 160 deg (angle with 50% and greater brightness perpendicular to PDP module) |                              |
| 10 | Dimensions                                                       | 982 (W) x 582 (H) x 52.9 (D) mm                                                  |                              |
| 11 | Weight                                                           | Module 1                                                                         | About 16.6 kg                |
| 12 | Broadc. reception<br>Vertical frequency<br>Video/Logic Interface | 60/50 Hz, LVDS                                                                   |                              |

### 1.1.3 42" SD v3

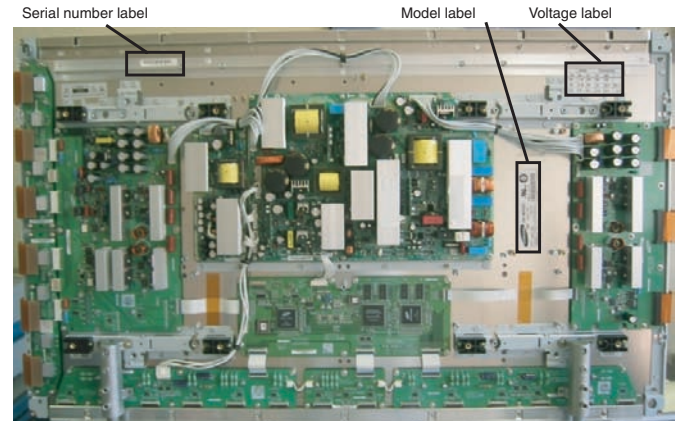


Figure 1-5 External view (42" SD v3)

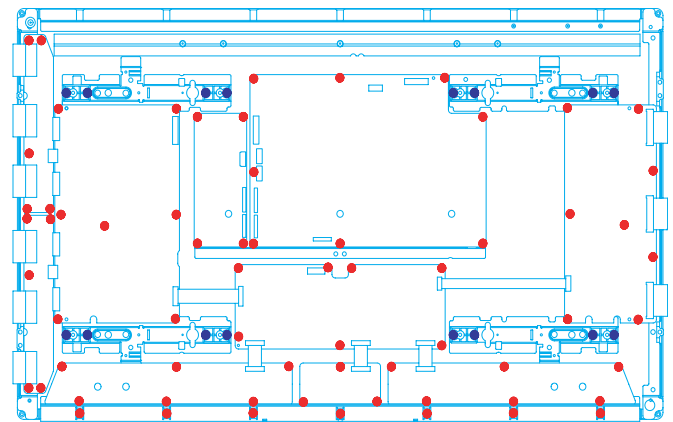


Figure 1-6 Points of screw mount (42" SD v3)

| No | Item                                                             | Specification 42" SD v3                                                          |                              |
|----|------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------|
| 1  | Pixel                                                            | 852 (H) x 480 (V) pixels<br>(1 pixel = 1 R,G,B cells)                            |                              |
| 2  | Number of Cells                                                  | 2556 (H) x 480 (V)                                                               |                              |
| 3  | Pixel Pitch                                                      | 1.095 mm (H) x 1.110 mm (V)                                                      |                              |
| 4  | Cell Pitch                                                       | R                                                                                | 0.365 (H) mm<br>1.110 (V) mm |
|    |                                                                  | G                                                                                | 0.365 (H) mm<br>1.110 (V) mm |
|    |                                                                  | B                                                                                | 0.365 (H) mm<br>1.110 (V) mm |
| 5  | Display size                                                     | 932.940 (H) x 532.800(V) mm                                                      |                              |
| 6  | Screen size                                                      | Diagonal 42" Colour Plasma Display Module                                        |                              |
| 7  | Screen aspect                                                    | 16:9                                                                             |                              |
| 8  | Display colour                                                   | 16.77 million colours                                                            |                              |
| 9  | Viewing angle                                                    | Over 160 deg (angle with 50% and greater brightness perpendicular to PDP module) |                              |
| 10 | Dimensions                                                       | 982 (W) x 582 (H) x 52.9 (D) mm                                                  |                              |
| 11 | Weight                                                           | Module 1                                                                         | About 16.6 kg                |
| 12 | Broadc. reception<br>Vertical frequency<br>Video/Logic Interface | 60/50 Hz, LVDS                                                                   |                              |

## 1.1.4 42" SD v4

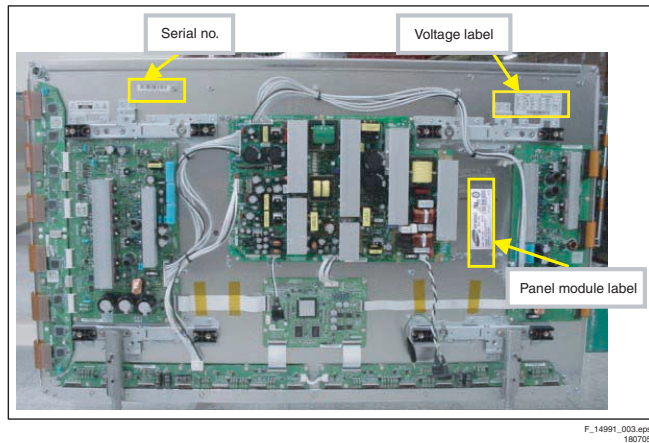


Figure 1-7 External view (42" SD v4)

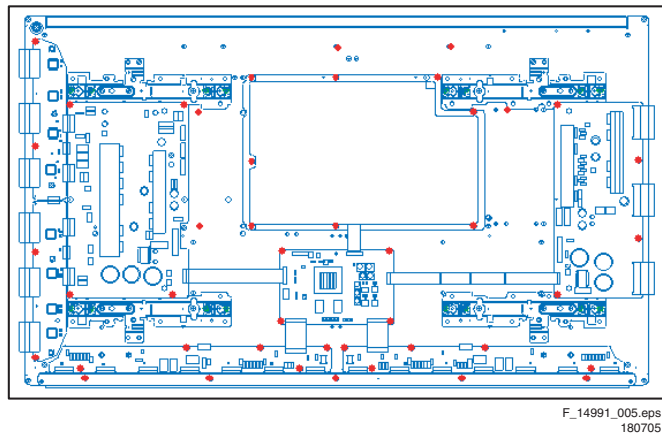


Figure 1-8 Points of screw mount (42" SD v4)

| No | Item                                                             | Specification 42" SD v4                                                          |                                |
|----|------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------|
| 1  | Pixel                                                            | 852 (H) x 480 (V) pixels<br>(1 pixel = 1 R,G,B cells)                            |                                |
| 2  | Number of Cells                                                  | 2556 (H) x 480 (V)                                                               |                                |
| 3  | Pixel Pitch                                                      | 1.095 (H) mm x 1.110 (V) mm                                                      |                                |
| 4  | Cell Pitch                                                       | R                                                                                | 0.365 (H) mm x<br>1.110 (V) mm |
|    |                                                                  | G                                                                                | 0.365 (H) mm x<br>1.110 (V) mm |
|    |                                                                  | B                                                                                | 0.365 (H) mm x<br>1.110 (V) mm |
| 5  | Display size                                                     | 932.940 (H) x 532.800(V) mm                                                      |                                |
| 6  | Screen size                                                      | Diagonal 42" Colour Plasma Display Module                                        |                                |
| 7  | Screen aspect                                                    | 16:9                                                                             |                                |
| 8  | Display colour                                                   | 16.77 million colours                                                            |                                |
| 9  | Viewing angle                                                    | Over 160 deg (angle with 50% and greater brightness perpendicular to PDP module) |                                |
| 10 | Dimensions                                                       | 982 (W) x 582 (H) x 54 (D) mm                                                    |                                |
| 11 | Weight                                                           | Module 1                                                                         | About 15.4 kg                  |
| 14 | Broadc. reception<br>Vertical frequency<br>Video/Logic Interface | 60 Hz/ 50 Hz, LVDS                                                               |                                |

## 1.1.5 42" HD v3

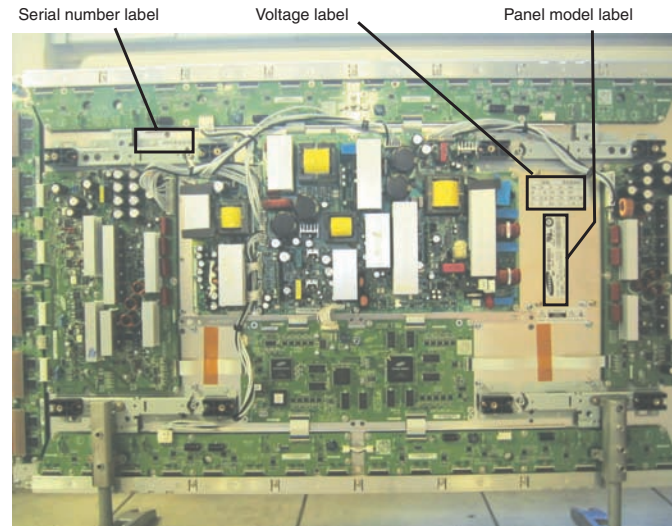


Figure 1-9 External view (42" HD v3)

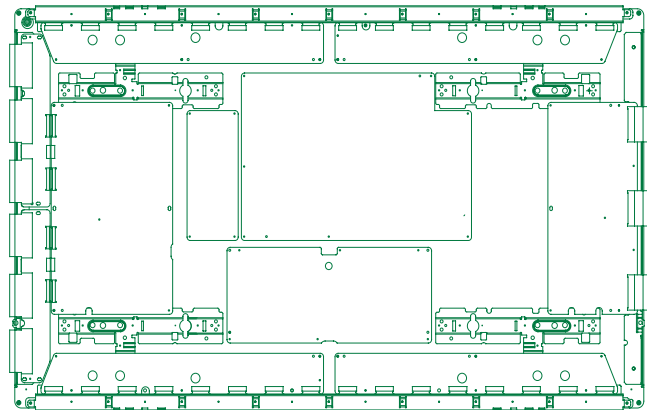


Figure 1-10 Points of screw mount (42" HD v3)

| No | Item                                                             | Specification 42" HD v3                                                          |                                          |
|----|------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------|
| 1  | Pixel                                                            | 1.024 (H) x 768 (V) pixels<br>(1 pixel = 1 R,G,B cells)                          |                                          |
| 2  | Number of Cells                                                  | 3072 (H) x 768 (V)                                                               |                                          |
| 3  | Pixel Pitch                                                      | 0.912mm (H) x 0.693mm (V)                                                        |                                          |
| 4  | Cell Pitch                                                       | R                                                                                | Horizontal 0.304 mm<br>Vertical 0.693 mm |
|    |                                                                  | G                                                                                | Horizontal 0.304 mm<br>Vertical 0.693 mm |
|    |                                                                  | B                                                                                | Horizontal 0.304 mm<br>Vertical 0.693 mm |
| 5  | Display size                                                     | 932.940 (H) x 532.800(V) mm                                                      |                                          |
| 6  | Screen size                                                      | Diagonal 42" Colour Plasma Display Module                                        |                                          |
| 7  | Screen aspect                                                    | 16:9                                                                             |                                          |
| 8  | Display colour                                                   | 16.77 million colours                                                            |                                          |
| 9  | Viewing angle                                                    | Over 160 deg (angle with 50% and greater brightness perpendicular to PDP module) |                                          |
| 10 | Dimensions                                                       | 982 (W) x 582 (H) x 52.9 (D) mm                                                  |                                          |
| 11 | Weight                                                           | Module 1                                                                         | About 18.0 kg                            |
| 12 | Broadc. reception<br>Vertical frequency<br>Video/Logic Interface | 60/50 Hz, LVDS                                                                   |                                          |



### 1.1.6 42" HD v4

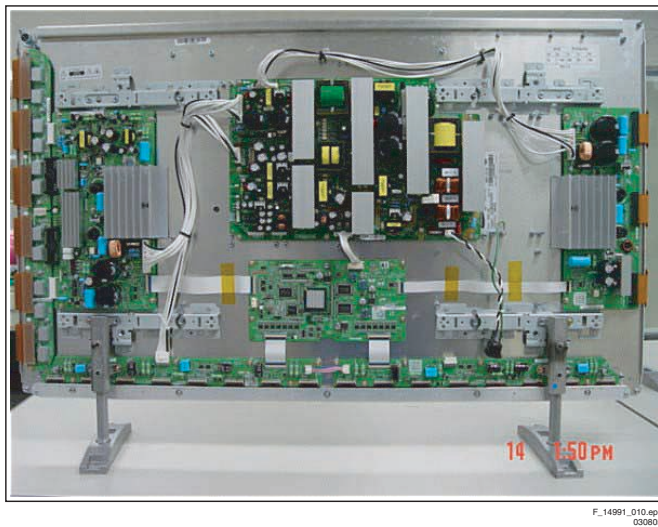


Figure 1-11 External view (42" HD v4)

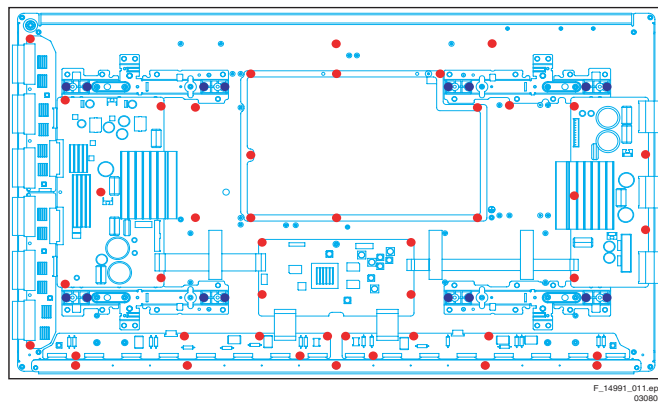


Figure 1-12 Points of screw mount (42" HD v4)

| No | Item                                                             | Specification 42" HD v4                                                          |                                          |
|----|------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------|
| 1  | Pixel                                                            | 1.024 (H) x 768 (V) pixels<br>(1 pixel = 1 R,G,B cells)                          |                                          |
| 2  | Number of Cells                                                  | 3072 (H) x 768 (V)                                                               |                                          |
| 3  | Pixel Pitch                                                      | 0.912mm (H) x 1.110mm (V)                                                        |                                          |
| 4  | Cell Pitch                                                       | R                                                                                | Horizontal 0.304 mm<br>Vertical 0.693 mm |
|    |                                                                  | G                                                                                | Horizontal 0.304 mm<br>Vertical 0.693 mm |
|    |                                                                  | B                                                                                | Horizontal 0.304 mm<br>Vertical 0.693 mm |
| 5  | Display size                                                     | 933.98 (H) x 532.220(V) mm                                                       |                                          |
| 6  | Screen size                                                      | Diagonal 42" Colour Plasma Display Module                                        |                                          |
| 7  | Screen aspect                                                    | 16:9                                                                             |                                          |
| 8  | Display colour                                                   | 16.77 million colours (8-bit)                                                    |                                          |
| 9  | Viewing angle                                                    | Over 160 deg (angle with 50% and greater brightness perpendicular to PDP module) |                                          |
| 10 | Dimensions                                                       | 1000 (W) x 598 (H) x 64.4 (D) mm                                                 |                                          |
| 11 | Weight                                                           | Module 1                                                                         | About 20.0 kg                            |
| 12 | Broadc. reception<br>Vertical frequency<br>Video/Logic Interface | 60/50 Hz, LVDS                                                                   |                                          |

### 1.1.7 50" HD v3

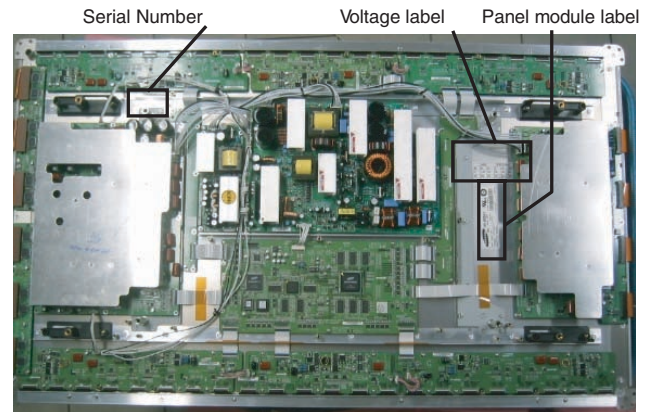


Figure 1-13 External view (50" HD v3)

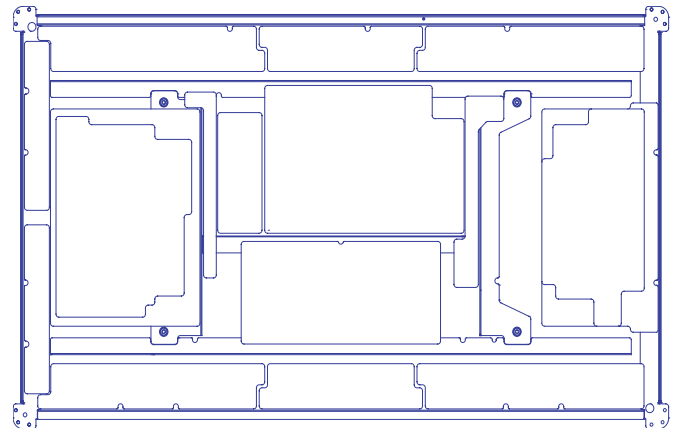


Figure 1-14 Points of screw mount (50" HD v3)

| No | Item                                                             | Specification 50" HD v3                                                          |                                        |
|----|------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------|
| 1  | Pixel                                                            | 1366 (H) x 768 (V) pixels<br>(1 pixel = 1 R,G,B cells)                           |                                        |
| 2  | Number of Cells                                                  | 4,098 (H) x 768 (V) cells                                                        |                                        |
| 3  | Pixel Pitch                                                      | 0.810mm (H) mm x 0.810 mm (V)                                                    |                                        |
| 4  | Cell Pitch                                                       | R                                                                                | Horizontal 0.270mm<br>Vertical 0.810mm |
|    |                                                                  | G                                                                                | Horizontal 0.270mm<br>Vertical 0.810mm |
|    |                                                                  | B                                                                                | Horizontal 0.270mm<br>Vertical 0.810mm |
| 5  | Display size                                                     | 1106.46 mm (H) x 622.08 mm (H)                                                   |                                        |
| 6  | Screen size                                                      | Diagonal 50" Colour Plasma Display Module                                        |                                        |
| 7  | Screen aspect                                                    | 16:9                                                                             |                                        |
| 8  | Display colour                                                   | 16.77 million colours                                                            |                                        |
| 9  | Viewing angle                                                    | Over 160 deg (angle with 50% and greater brightness perpendicular to PDP module) |                                        |
| 10 | Dimensions                                                       | 1184 (W) x 700 (H) x 60.1 (D) mm                                                 |                                        |
| 11 | Weight                                                           | Module 1                                                                         | About 18.0 kg                          |
| 12 | Broadc. reception<br>Vertical frequency<br>Video/Logic Interface | 60/50 Hz, LVDS                                                                   |                                        |

## 1.1.8 50" HD v4

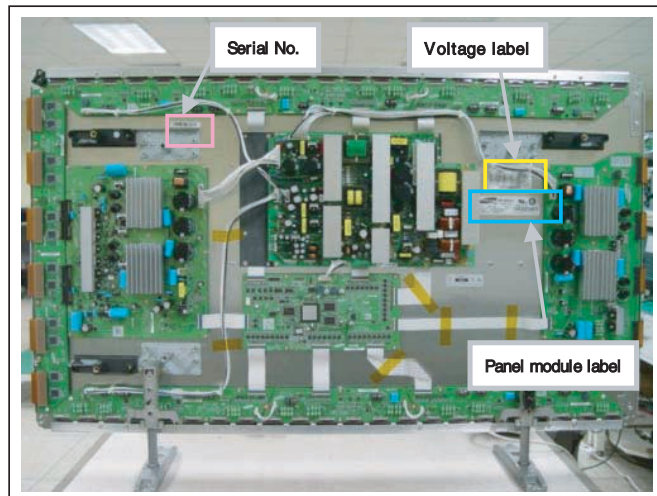
F\_14991\_012.eps  
030805

Figure 1-15 External view (50" HD v4)

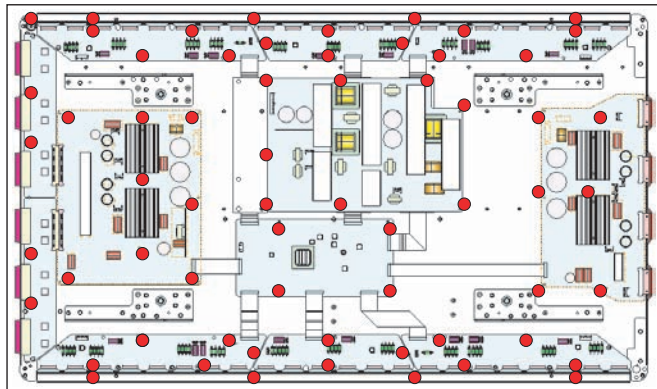
F\_14991\_013.eps  
030805

Figure 1-16 Points of screw mount (50" HD v4)

| No | Item                                                             | Specification 50" HD v4                                                                |                                        |
|----|------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------|
| 1  | Pixel                                                            | 1366 (H) x 768 (V) pixels<br>(1 pixel = 1 R,G,B cells)                                 |                                        |
| 2  | Number of Cells                                                  | 4,098 (H) x 768 (V) cells                                                              |                                        |
| 3  | Pixel Pitch                                                      | 0.810mm (H) mm x 0.810 mm (V)                                                          |                                        |
| 4  | Cell Pitch                                                       | R                                                                                      | Horizontal 0.270mm<br>Vertical 0.810mm |
|    |                                                                  | G                                                                                      | Horizontal 0.270mm<br>Vertical 0.810mm |
|    |                                                                  | B                                                                                      | Horizontal 0.270mm<br>Vertical 0.810mm |
| 5  | Display size                                                     | 1106.46 mm (H) x 622.08 mm (H)                                                         |                                        |
| 6  | Screen size                                                      | Diagonal 50" Colour Plasma<br>Display Module                                           |                                        |
| 7  | Screen aspect                                                    | 16:9                                                                                   |                                        |
| 8  | Display colour                                                   | 16.77 million colours                                                                  |                                        |
| 9  | Viewing angle                                                    | Over 160 deg (angle with 50% and<br>greater brightness perpendicular<br>to PDP module) |                                        |
| 10 | Dimensions                                                       | 1175 (W) x 682 (H) x 65.5 (D) mm                                                       |                                        |
| 11 | Weight                                                           | Module 1                                                                               | About 25.4 kg                          |
| 12 | Broadc. reception<br>Vertical frequency<br>Video/Logic Interface | 60/50 Hz, LVDS                                                                         |                                        |

## 1.2 Serial Numbers

| Class         | 14 digits                                                                                                                                                                                                                                                            |       |                |      |       |      |                 |      |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------|------|-------|------|-----------------|------|
| ID Type       | C                                                                                                                                                                                                                                                                    | 001   | A              | 4    | 9     | 03   | A               | 0001 |
|               | Area                                                                                                                                                                                                                                                                 | Model | Module<br>Line | Year | Month | Date | Worker<br>Group | S/N  |
| ID<br>Meaning | ① Area (C: Cheonan, S : Shenzhen)<br>② Model : 3 digit<br>③ Module Line : A ~ Z<br>④ Year : 1 Digit ⇒ Rotate every decades<br>⑤ Month (Hex: 1 Digit ⇒ Oct - A, Nov - B, Dec - C)<br>⑥ Date : 1 ~ 31<br>⑦ Worker Goup : A Part(Day), B Part(Afternoon), C Part(Night) |       |                |      |       |      |                 |      |

F\_14991\_004.eps  
180705

Figure 1-17 Module serial number

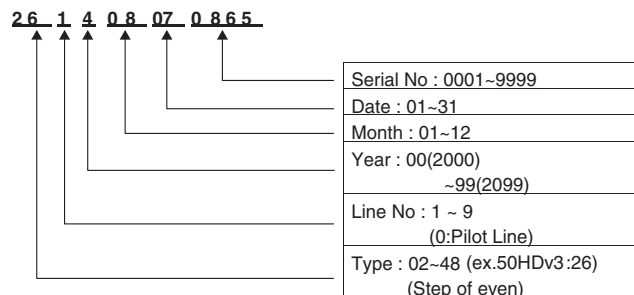
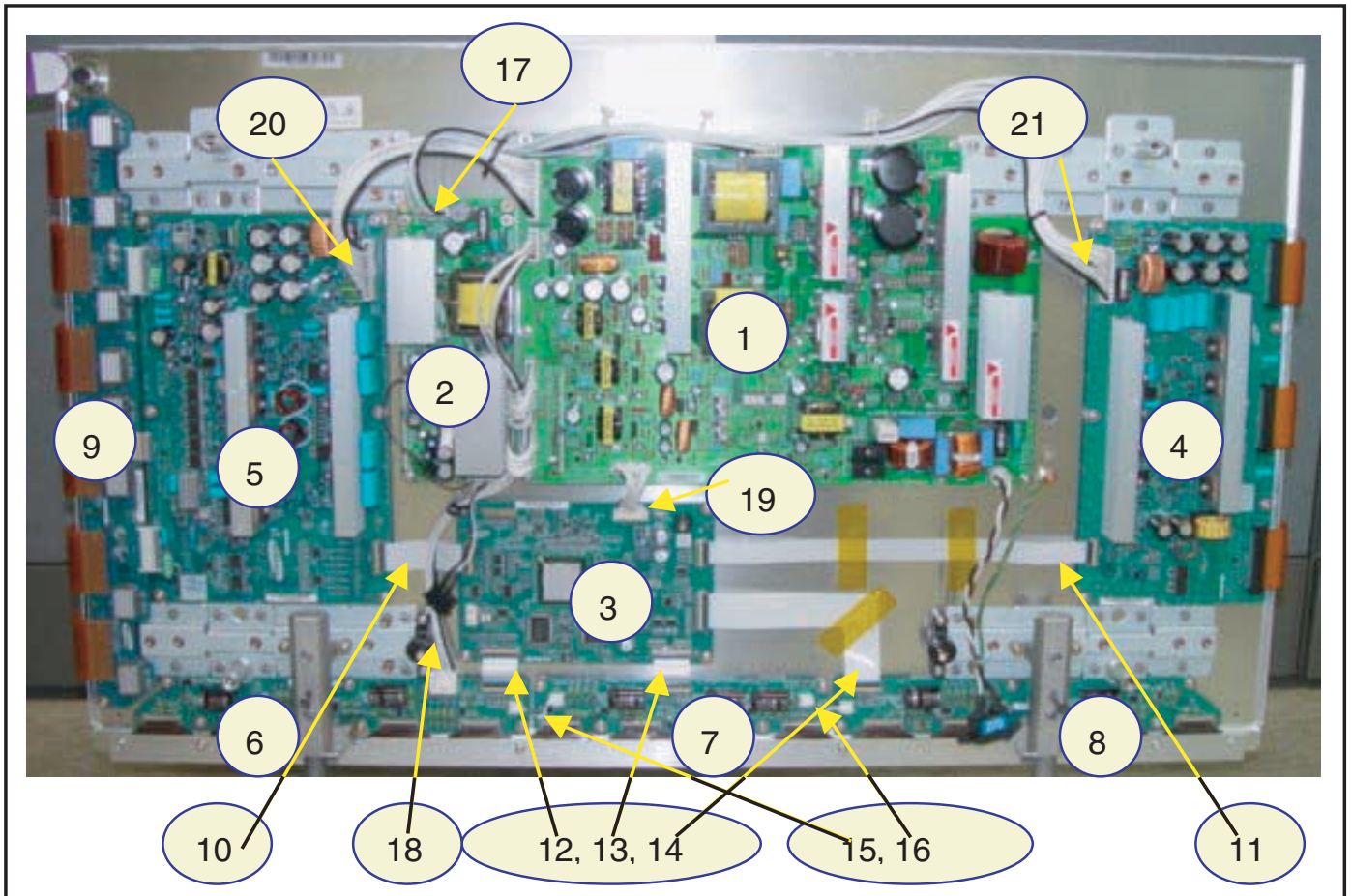


Figure 1-18 Panel serial number

### 1.3 Chassis Overview

#### 1.3.1 37" SD v4



F\_14991\_027.eps  
030805

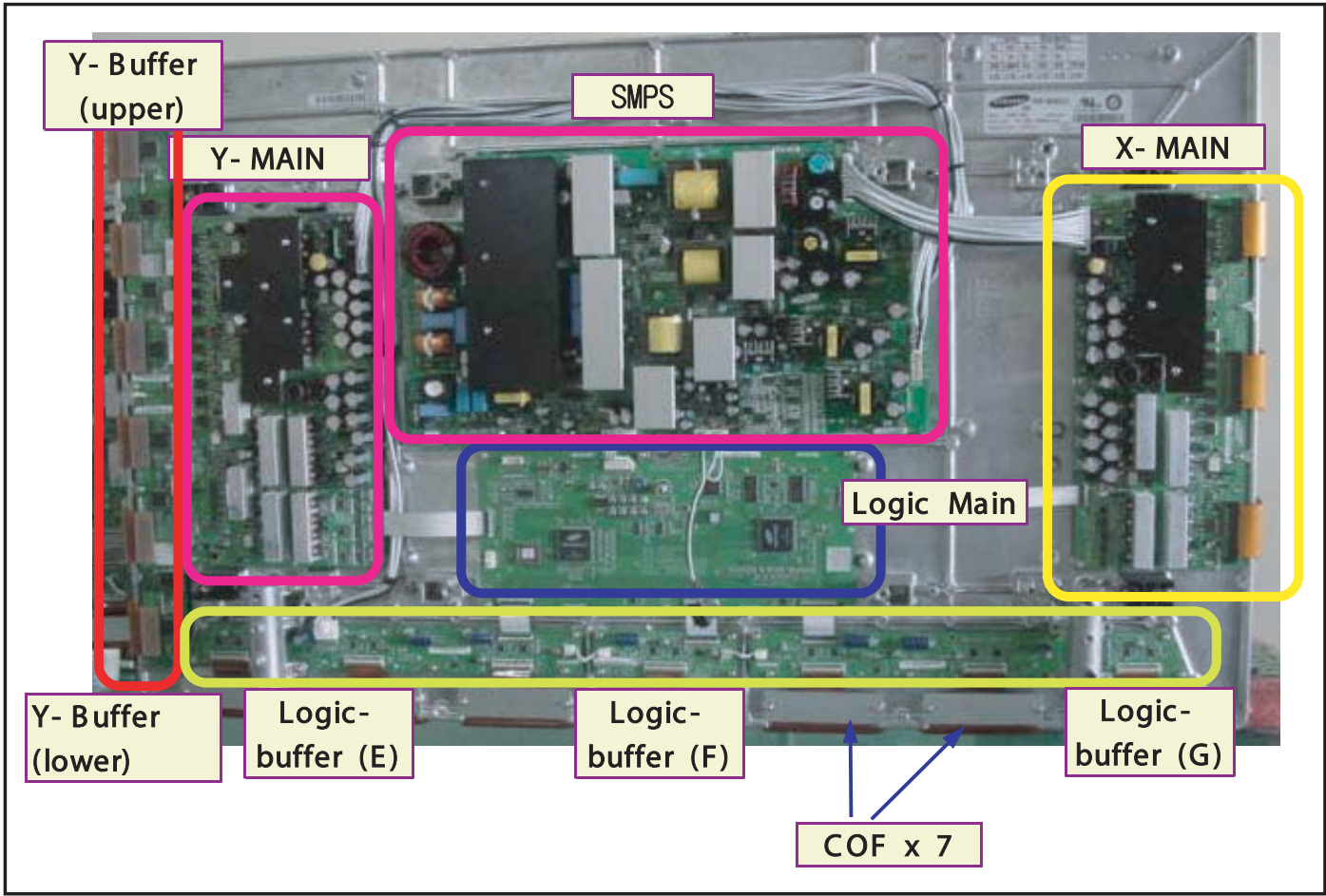
Figure 1-19 PWB location (37" SD v4)

Table 1-3 PWB overview (37" SD v4)

| No. | Location                   | Name                |
|-----|----------------------------|---------------------|
| 1   | Main PSU                   | Assy PWB PSU        |
| 2   | SUB-PSU                    | Assy PWB SUB-PSU    |
| 3   | LOGIC-MAIN Board           | Assy PWB LOGIC Main |
| 4   | X-MAIN Driving Board       | Assy PWB X Main     |
| 5   | Y-MAIN Driving Board       | Assy PWB Y Main     |
| 6   | LOGIC E BUFFER Board       | Assy PWB Buffer     |
| 7   | LOGIC F BUFFER Board       | Assy PWB Buffer     |
| 8   | LOGIC G BUFFER Board       | Assy PWB Buffer     |
| 9   | Y-BUFFER Board             | Assy PWB Buffer     |
| 10  | LOGIC + Y-MAIN             | FFC Cable-flat      |
| 11  | LOGIC + X-MAIN             | FFC Cable-flat      |
| 12  | LOGIC + LOGIC BUF(E)       | FFC Cable-flat      |
| 13  | LOGIC + LOGIC BUF(F)       | FFC Cable-flat      |
| 14  | LOGIC + LOGIC BUF(G)       | FFC Cable-flat      |
| 15  | LOGIC BUF(E) + LOG. BUF(F) | Lead connector      |
| 16  | LOGIC BUF(F) + LOG. BUF(G) | Lead connector      |
| 17  | PSU + SUB PSU              | Lead connector      |
| 18  | PSU + LOGIC BUF(E)         | Lead connector      |
| 19  | PSU + LOGIC MAIN           | Lead connector      |
| 20  | PSU + Y-MAIN               | Lead connector      |



1.3.2 42" SD v2



F\_14991\_033.eps  
061005

Figure 1-20 PWB location (42" SD v2)

Table 1-4 PWB overview (42" SD v2)

| No. | Location           | Name |
|-----|--------------------|------|
| 1   | info not available |      |
| 2   |                    |      |
| 3   |                    |      |
| 4   |                    |      |
| 5   |                    |      |
| 6   |                    |      |
| 7   |                    |      |
| 8   |                    |      |
| 9   |                    |      |
| 10  |                    |      |
| 11  |                    |      |
| 12  |                    |      |
| 13  |                    |      |
| 14  |                    |      |
| 15  |                    |      |
| 16  |                    |      |
| 17  |                    |      |
| 18  |                    |      |
| 19  |                    |      |
| 20  |                    |      |
| 21  |                    |      |
| 22  |                    |      |
| 23  |                    |      |



## 1.3.3 42" SD v3

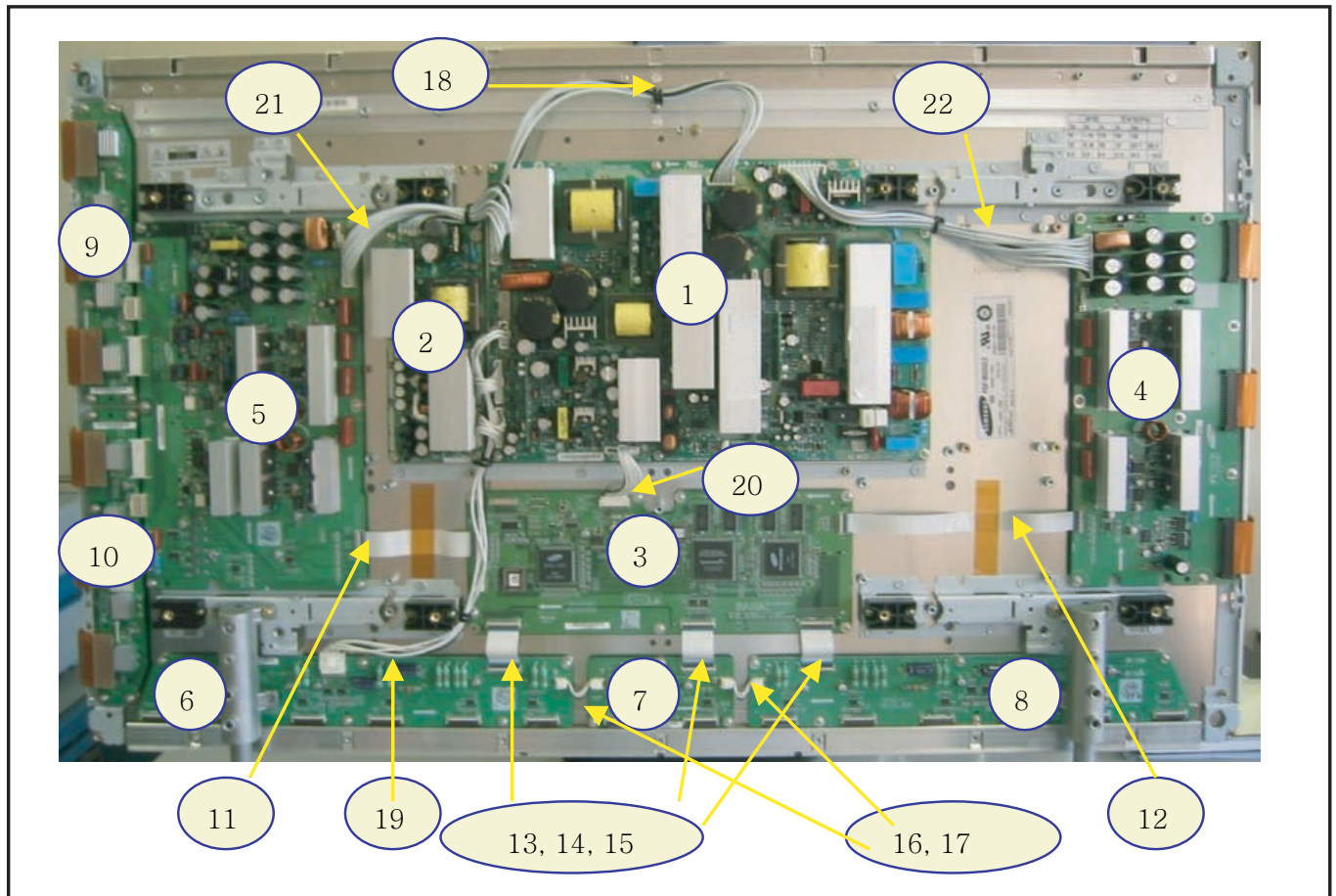
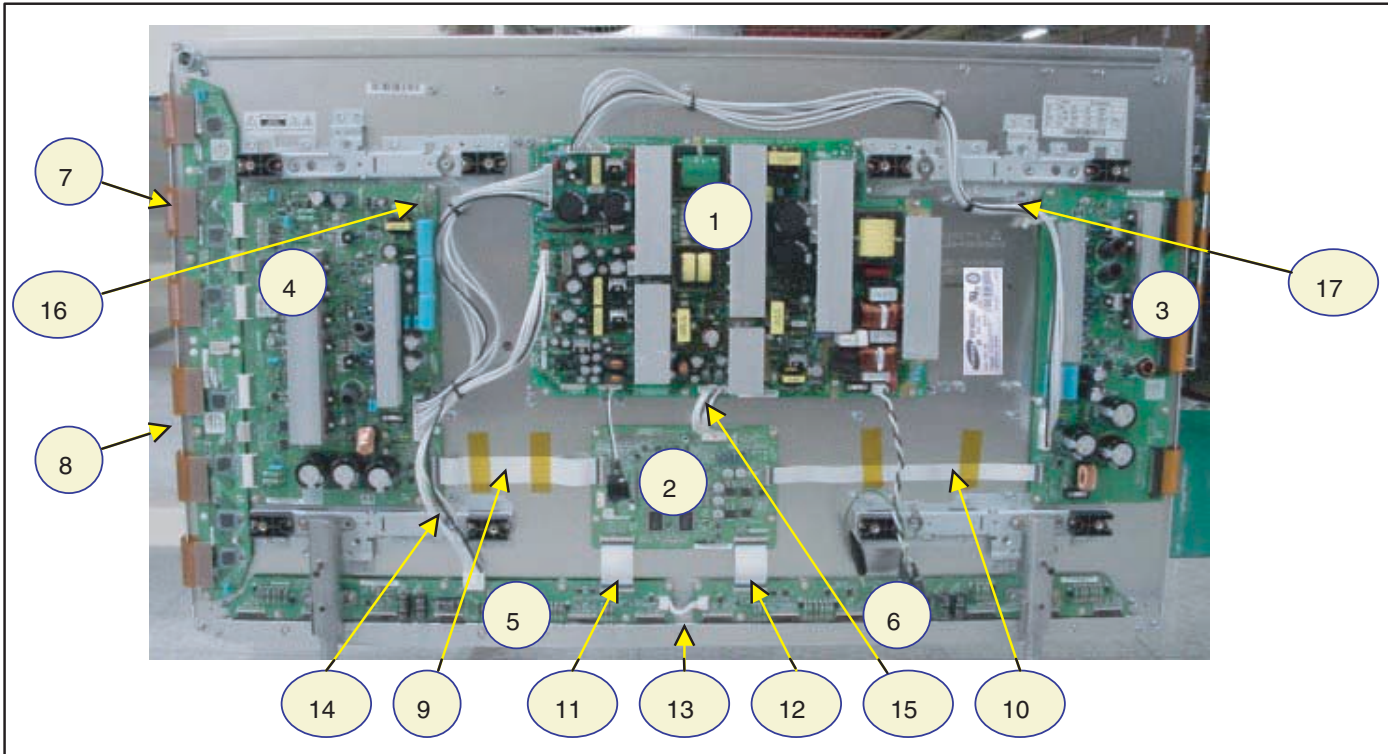
F\_14991\_034.eps  
061005

Figure 1-21 PWB location (42" SD v3)

Table 1-5 PWB overview (42" SD v3)

| No. | Location                   | Name                |
|-----|----------------------------|---------------------|
| 1   | Main PSU                   | Assy PWB PSU        |
| 2   | SUB-PSU                    | Assy PWB SUB-PSU    |
| 3   | LOGIC-MAIN Board           | Assy PWB LOGIC Main |
| 4   | X-MAIN Driving Board       | Assy PWB X Main     |
| 5   | Y-MAIN Driving Board       | Assy PWB Y Main     |
| 6   | LOGIC E BUFFER Board       | Assy PWB Buffer     |
| 7   | LOGIC F BUFFER Board       | Assy PWB Buffer     |
| 8   | LOGIC G BUFFER Board       | Assy PWB Buffer     |
| 9   | Y-BUFFER (UPPER) Board     | Assy PWB Buffer     |
| 10  | Y-BUFFER (DOWN) Board      | Assy PWB Buffer     |
| 11  | LOGIC + Y-MAIN             | FFC Cable-flat      |
| 12  | LOGIC + X-MAIN             | FFC Cable-flat      |
| 13  | LOGIC + LOGIC BUF(E)       | FFC Cable-flat      |
| 14  | LOGIC + LOGIC BUF(F)       | FFC Cable-flat      |
| 15  | LOGIC + LOGIC BUF(G)       | FFC Cable-flat      |
| 16  | LOGIC BUF(E) + LOG. BUF(F) | Lead connector      |
| 17  | LOGIC BUF(F) + LOG. BUF(G) | Lead connector      |
| 18  | PSU + SUB PSU              | Lead connector      |
| 19  | PSU + LOGIC BUF(E)         | Lead connector      |
| 20  | PSU + LOGIC MAIN           | Lead connector      |
| 21  | PSU + Y-MAIN               | Lead connector      |
| 22  | PSU + X-MAIN               | Lead connector      |

1.3.4 42" SD v4



F\_14991\_001.eps  
180705

Figure 1-22 PWB location (42" SD v4)

Table 1-6 PWB overview (42" SD v4)

| No. | Location               | Name                |
|-----|------------------------|---------------------|
| 1   | SMPS                   | SMPS                |
| 2   | LOGIC-MAIN Board       | Assy PWB Logic Main |
| 3   | X-MAIN Driving Board   | Assy PWB X Main     |
| 4   | Y-MAIN Driving Board   | Assy PWB Y Main     |
| 5   | LOGIC E BUFFER Board   | Assy PWB buffer     |
| 6   | LOGIC F BUFFER Board   | Assy PWB buffer     |
| 7   | Y-BUFFER (UPPER) Board | Assy PWB buffer     |
| 8   | Y-BUFFER (DOWN) Board  | Assy PWB buffer     |
| 9   | LOGIC + Y-MAIN         | FFC cable-flat      |
| 10  | LOGIC + X-MAIN         | FFC cable-flat      |
| 11  | LOGIC + LOGIC BUF (E)  | FFC cable-flat      |
| 12  | LOGIC + LOGIC BUF (F)  | FFC cable-flat      |
| 13  | LOGIC BUF (E) + (F)    | Lead connector      |
| 14  | SMPS + LOGIC BUF (E)   | Lead connector      |
| 15  | SMPS + LOGIC MAIN      | Lead connector      |
| 16  | SMPS + Y-MAIN          | Lead connector      |
| 17  | SMPS + X-MAIN          | Lead connector      |

## 1.3.5 42" HD v3

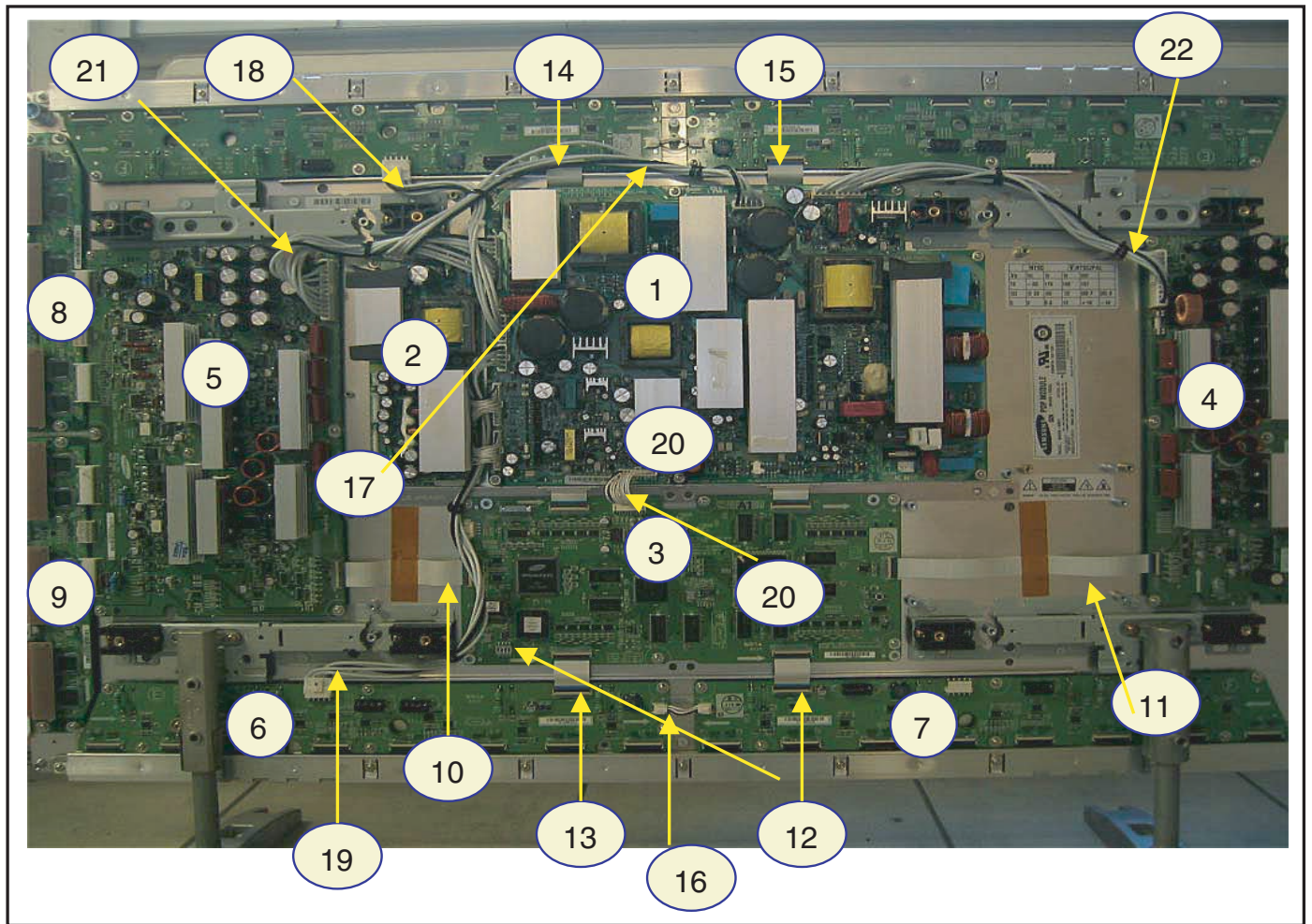
F\_14991\_014.eps  
030805

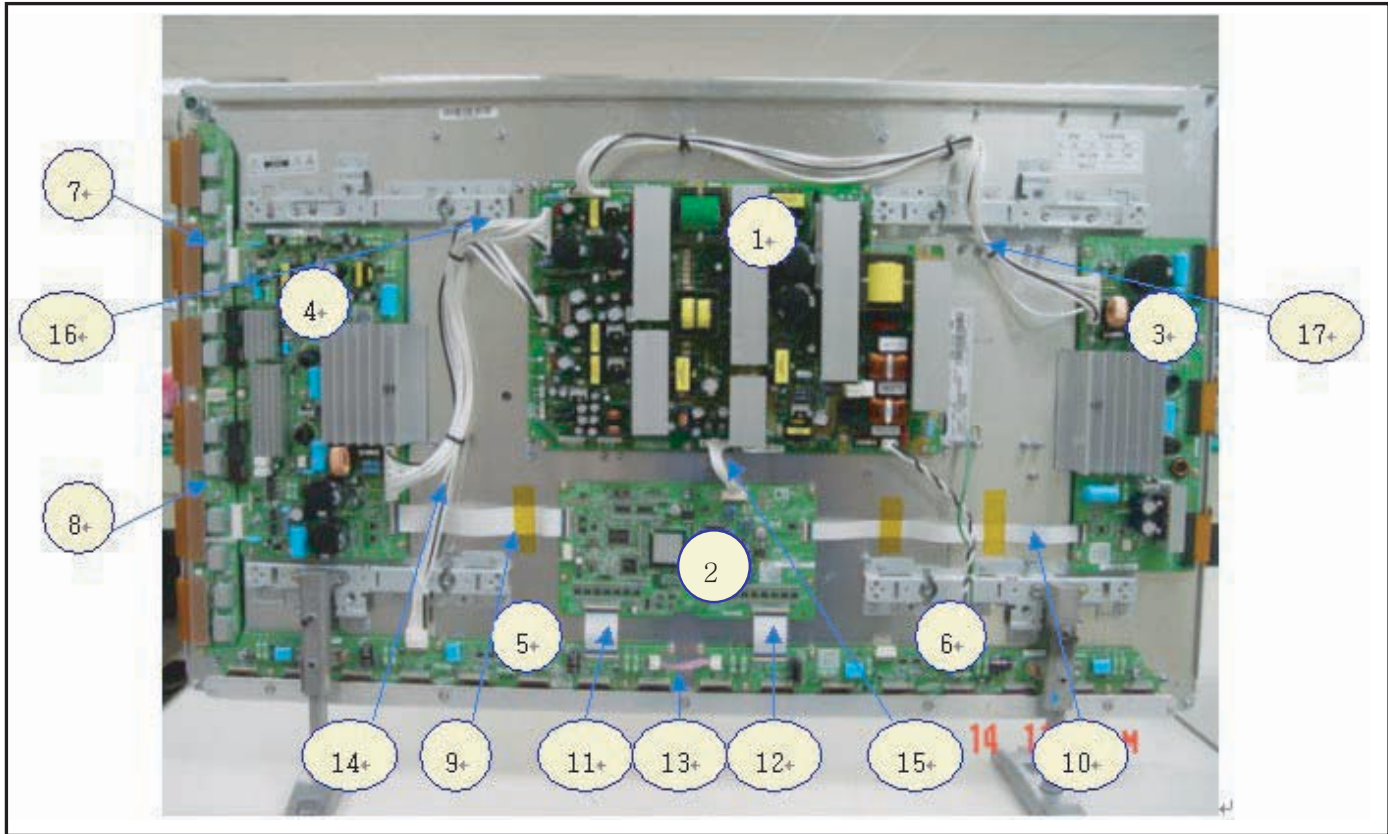
Figure 1-23 PWB location (42" HD v3)

Table 1-7 PWB overview (42" HD v3)

| No. | Location                   | Name                |
|-----|----------------------------|---------------------|
| 1   | Main PSU                   | Assy PWB PSU        |
| 2   | SUB-PSU                    | Assy PWB SUB-PSU    |
| 3   | LOGIC-MAIN Board           | Assy PWB LOGIC Main |
| 4   | X-MAIN Driving Board       | Assy PWB X Main     |
| 5   | Y-MAIN Driving Board       | Assy PWB Y Main     |
| 6   | LOGIC E BUFFER Board       | Assy PWB Buffer     |
| 7   | LOGIC F BUFFER Board       | Assy PWB Buffer     |
| 8   | Y-BUFFER (UPPER) Board     | Assy PWB BufferR    |
| 9   | Y-BUFFER (DOWN) Board      | Assy PWB Buffer     |
| 10  | LOGIC + Y-MAIN             | FFC Cable-flat      |
| 11  | LOGIC + X-MAIN             | FFC Cable-flat      |
| 12  | LOGIC + LOG. BUF(E) (Down) | FFC Cable-flat      |
| 13  | LOGIC + LOG. BUF(F) (Down) | FFC Cable-flat      |
| 14  | LOGIC + LOGIC BUF(E) (Up)  | FFC Cable-flat      |
| 15  | LOGIC + LOGIC BUF(E) (Up)  | FFC Cable-flat      |
| 16  | LOGIC BUF(E) + LOG. BUF(F) | Lead connector      |
| 17  | PSU + SUB PSU              | Lead connector      |
| 18  | PSU + LOGIC BUF(E) (UP)    | Lead connector      |
| 19  | PSU + LOGIC BUF(E) (Down)  | Lead connector      |
| 20  | PSU + LOGIC MAIN           | Lead connector      |
| 21  | PSU + Y-MAIN               | Lead connector      |
| 22  | PSU + X-MAIN               | Lead connector      |



1.3.6 42" HD v4



F\_14991\_015.eps  
030805

Figure 1-24 PWB location (42" HD v4)

Table 1-8 PWB overview (42" HD v4)

| No. | Location                   | Name               |
|-----|----------------------------|--------------------|
| 1   | SMPS                       | SMPS               |
| 2   | LOGIC-MAIN Board           | Assy PWBLOGIC Main |
| 3   | X-MAIN Driving Board       | Assy PWBX Main     |
| 4   | Y-MAIN Driving Board       | Assy PCBY Main     |
| 5   | LOGIC E BUFFER Board       | Assy PWB Buffer    |
| 6   | LOGIC F BUFFER Board       | Assy PWB Buffer    |
| 7   | Y-BUFFER (UPPER) Board     | Assy PWB Buffer    |
| 8   | Y-BUFFER (DOWN) Board      | Assy PWB Buffer    |
| 9   | LOGIC + Y-MAIN             | FFC Cable-flat     |
| 10  | LOGIC + X-MAIN             | FFC Cable-flat     |
| 11  | LOGIC + LOGIC BUF(E)       | FFC Cable-flat     |
| 12  | LOGIC + LOGIC BUF(F)       | FFC Cable-flat     |
| 13  | LOGIC BUF(E) + LOG. BUF(F) | Lead connector     |
| 14  | SMPS + LOGIC BUF(E)        | Lead connector     |
| 15  | SMPS + LOGIC MAIN          | Lead connector     |
| 16  | SMPS + Y-MAIN              | Lead connector     |
| 17  | SMPS + X-MAIN              | Lead connector     |

## 1.3.7 50" HD v3

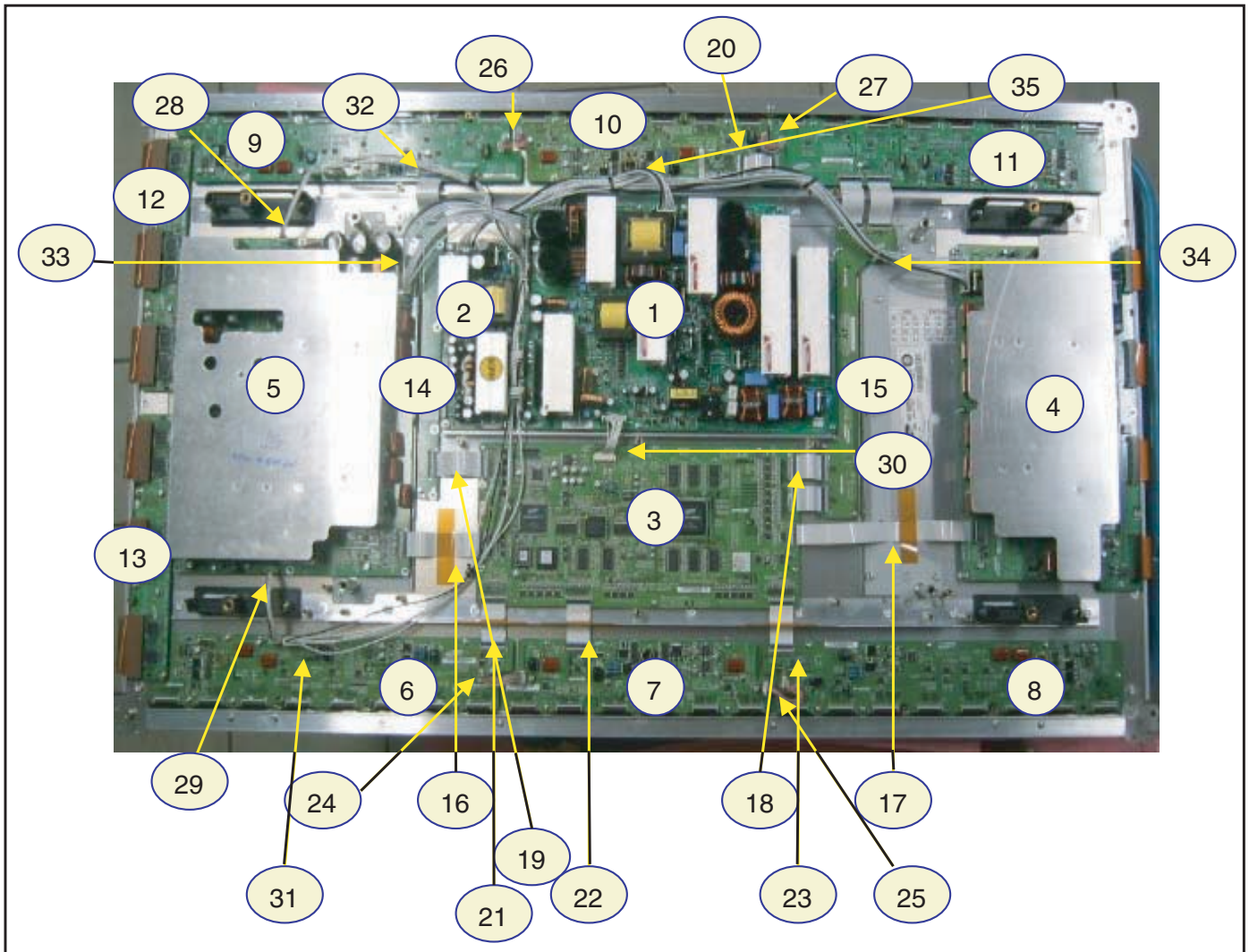
F\_14991\_016.eps  
030805

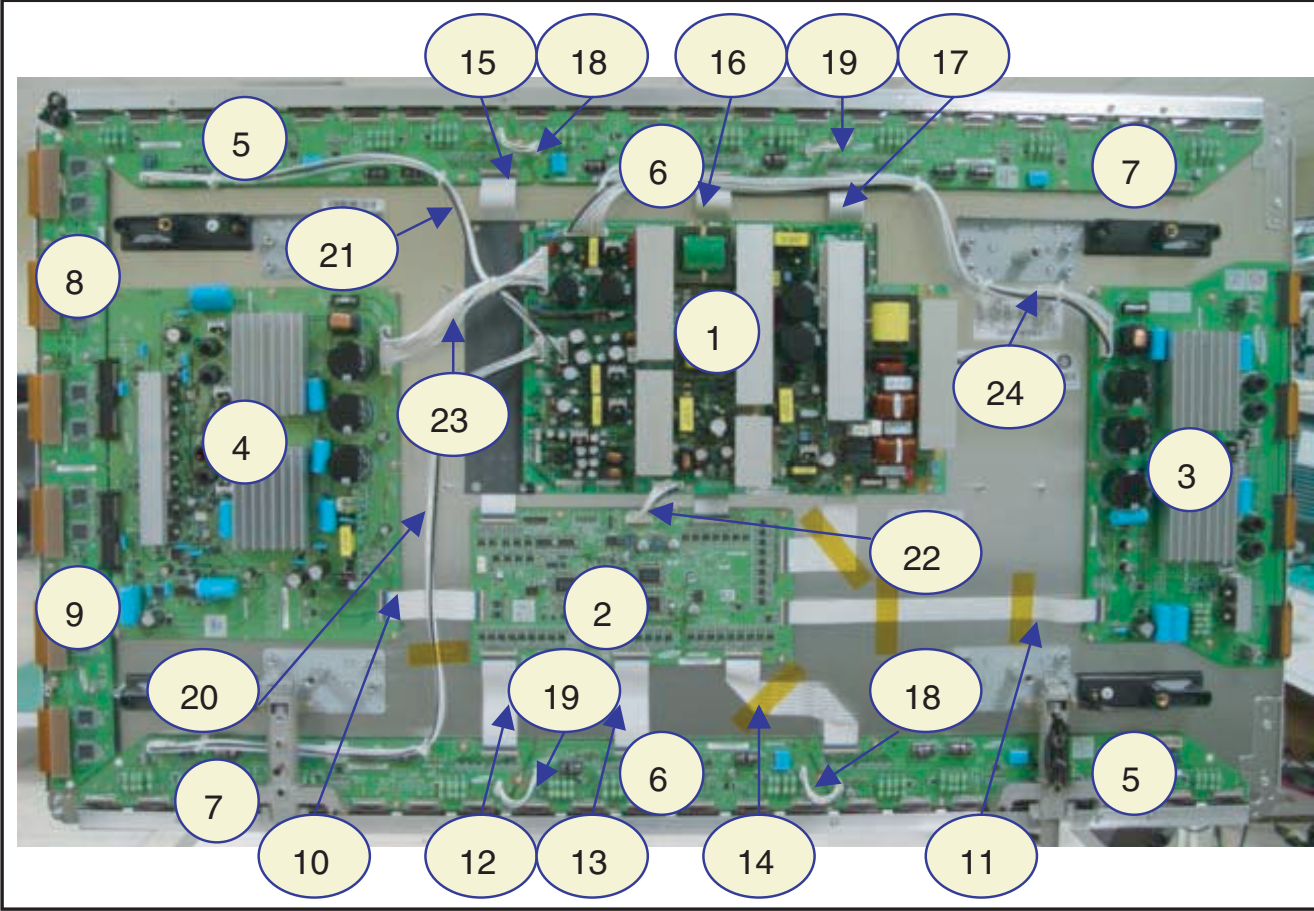
Figure 1-25 PWB location (50" HD v3)

Table 1-9 PWB overview (50" HD v3)

| No. | Location                     | Name                |
|-----|------------------------------|---------------------|
| 1   | Main PUS                     | Assy PWBPSU         |
| 2   | SUB-PSU                      | Assy PWB SUB-PSU    |
| 3   | LOGIC-MAIN Board             | Assy PWB LOGIC Main |
| 4   | X-MAIN Driving Board         | Assy PWB X-Main     |
| 5   | Y-MAIN Driving Board         | Assy PWB Y-Main     |
| 6   | LOGIC E BUFFER Board         | Assy PWB Buffer     |
| 7   | LOGIC F BUFFER Board         | Assy PWB Buffer     |
| 8   | LOGIC G BUFFER Board         | Assy PWB Buffer     |
| 9   | LOGIC H BUFFER Board         | Assy PWB Buffer     |
| 10  | LOGIC I BUFFER Board         | Assy PWB Buffer     |
| 11  | LOGIC J BUFFER Board         | Assy PWB Buffer     |
| 12  | Y-BUFFER (UPPER) Board       | Assy PWB Buffer     |
| 13  | Y-BUFFER (DOWN) Board        | Assy PWB Buffer     |
| 14  | SUB-R                        | Assy PWB Buffer     |
| 15  | SUB-L                        | Assy PWB Buffer     |
| 16  | LOGIC + Y-MAIN               | FFC Cable-flat      |
| 17  | LOGIC + X-MAIN               | FFC Cable-flat      |
| 18  | SUB R + LOGIC                | FFC Cable-flat      |
| 19  | SUB L + LOGIC                | FFC Cable-flat      |
| 20  | LOG.BUF(I) + LOG.BUF(J) (Up) | FFC Cable-flat      |
| 21  | LOGIC + LOG. BUF(E) (Down)   | FFC Cable-flat      |

| No. | Location                   | Name           |
|-----|----------------------------|----------------|
| 22  | LOGIC + LOG. BUF(F) (Down) | FFC Cable-flat |
| 23  | LOGIC + LOG. BUF(G) (Down) | FFC Cable-flat |
| 24  | LOGIC BUF(E) + LOG. BUF(F) | Lead connector |
| 25  | LOGIC BUF(F) + LOG. BUF(G) | Lead connector |
| 26  | LOGIC BUF(H) + LOG. BUF(I) | Lead connector |
| 27  | LOGIC BUF(I) + LOG. BUF(J) | Lead connector |
| 28  | Y-MAIN + LOGIC BUF(H)      | Lead connector |
| 29  | Y-MAIN + LOGIC BUF(E)      | Lead connector |
| 30  | PSU + LOGIC MAIN           | Lead connector |
| 31  | PSU + LOGIC BUF(E)         | Lead connector |
| 32  | PSU + LOGIC BUF(H)         | Lead connector |
| 33  | PSU + Y-MAIN               | Lead connector |
| 34  | PSU + X-MAIN               | Lead connector |
| 35  | PSU + SUB PSU              | Lead connector |

1.3.8 50" HD v4



F\_14991\_017.eps  
030805

Figure 1-26 PWB location (50" HD v4)

Table 1-10 PWB overview (50" HD v4)

| No. | Location                   | Name               |
|-----|----------------------------|--------------------|
| 1   | SMPS                       | SMPS               |
| 2   | LOGIC-MAIN Board           | Assy PWBLOGIC Main |
| 3   | X-MAIN Driving Board       | Assy PWBX Main     |
| 4   | Y-MAIN Driving Board       | Assy PCBY Main     |
| 5   | LOGIC E BUFFER Board       | Assy PWB Buffer    |
| 6   | LOGIC F BUFFER Board       | Assy PWB Buffer    |
| 7   | LOGIC G BUFFER Board       | Assy PWB Buffer    |
| 8   | Y-BUFFER (Upper) Board     | Assy PWB Buffer    |
| 9   | Y-BUFFER (Down) Board      | Assy PWB Buffer    |
| 10  | LOGIC + Y-MAIN             | FFC Cable-flat     |
| 11  | LOGIC + X-MAIN             | FFC Cable-flat     |
| 12  | LOGIC + LOG. BUF(G: Down)  | FFC Cable-flat     |
| 13  | LOGIC + LOG. BUF(F: Down)  | FFC Cable-flat     |
| 14  | LOGIC + LOG. BUF(E: Down)  | FFC Cable-flat     |
| 15  | LOGIC + LOG. BUF(E: Upper) | FFC Cable-flat     |
| 16  | LOGIC + LOG. BUF(F: Upper) | FFC Cable-flat     |
| 17  | LOGIC + LOG. BUF(G: Upper) | FFC Cable-flat     |
| 18  | LOGIC BUF(E) + LOG. BUF(F) | Lead connector     |
| 19  | LOGIC BUF(F) + LOG. BUF(G) | Lead connector     |
| 20  | SMPS + LOGIC BUF(G: Down)  | Lead connector     |
| 21  | SMPS + LOGIC BUF(E: Upper) | Lead connector     |
| 22  | SMPS + LOGIC MAIN          | Lead connector     |
| 23  | SMPS + Y-MAIN              | Lead connector     |
| 24  | SMPS + X-MAIN              | Lead connector     |



## 2. Safety Instructions, Warnings, and Notes

### Index of this chapter:

- 2.1 Handling Precautions
- 2.2 Safety Precautions
- 2.3 Notes

### Notes:

- Only authorised persons should perform servicing of this module.
- When using/handling this unit, pay special attention to the PDP Module: it should not be enforced into any other way than next rules, warnings, and/or cautions.
- **"Warning"** indicates a hazard that may lead to death or injury if the warning is ignored and the product is handled incorrectly.
- **"Caution"** indicates a hazard that can lead to injury or damage to property if the caution is ignored and the product is handled incorrectly.

### 2.1 Handling Precautions

- The PDP module use high voltage that is dangerous to humans. Before operating the PDP, always check for dust to prevent short circuits. Be careful touching the circuit device when power is "on".
- The PDP module is sensitive to dust and humidity. Therefore, assembling and disassembling must be done in no dust place.
- The PDP module has a lot of electric devices. The service engineer must wear equipment (for example, earth ring) to prevent electric shock and working clothes to prevent electrostatic.
- The PDP module use a fine pitch connector which is only working by exactly connecting with flat cable. The operator must pay attention to a complete connection when connector is reconnected after repairing.
- The capacitor's remaining voltage in the PDP module's circuit board temporarily remains after power is "off". Operator must wait for discharging of remaining voltage during at least 1 minute.

### 2.2 Safety Precautions

#### 2.2.1 Safety Precautions

- Before replacing a board, discharge forcibly.
- The remaining electricity from board.
- When connecting FFC and TCPs to the module, recheck that they are perfectly connected.
- To prevent electrical shock, be careful not to touch leads during circuit operations.
- To prevent the Logic circuit from being damaged due to wrong working, do not connect/disconnect signal cables during circuit operations.
- Do thoroughly adjustment of a voltage label and voltage-insulation.
- Before reinstalling the chassis and the chassis assembly, be sure to use all protective stuff including a nonmetal controlling handle and the covering of partitioning type.
- Caution for design change: Do not install any additional devices to the module, and do not change the electrical circuit design.
- For example: Do not insert a subsidiary audio or video connector. If you insert It, it cause danger on safety. And, if you change the design or insert, manufacturer guarantee will be not effect.
- If any parts of wire is overheats of damaged, replace it with a new specified one immediately, and identify the cause of the problem and remove the possible dangerous factors.
- Examine carefully the cable status if it is twisted or damaged or displaced. Do not change the space between

parts and circuit board. Check the cord of AC power preparing damage.

- Product Safety Mark: Some of electric or implement material have special characteristics invisible that was related on safety. In case of the parts are changed with new one, even though the Voltage and Watt is higher than before, the Safety and Protection function will be lost.
- The AC power always should be turned "off", before next repair.
- Check assembly condition of screw, parts and wire arrangement after repairing. Check whether the material around the parts get damaged.

#### 2.2.2 ESD Precautions

There are parts, which are easily damaged by electrostatics (for example Integrated Circuits, FETs, etc.) Electrostatic damage rate of product will be reduced by the following technics:

- Before handling semiconductor parts/assembly, must remove positive electric by ground connection, or must wear the antistatic wrist-belt and ring (it must be operated after removing dust on it. It comes under precaution of electric shock).
- After removing the assembly, lay it with the tracks on a conductive surface to prevent charging.
- Do not use chemical stuff containing Freon. It generates positive electric that can damage ESD sensitive devices.
- You must use a soldering device for ground-tip when soldering or de-soldering these devices.
- You must use anti-static solder removal device. Most removal devices do not have antistatic which can charge a enough positive electric enough for damaging these devices.
- Before removing the protective material from the lead of a new device, bring the protective material into contact with the chassis or assembly.
- When handing an unpacked device for replacement, do not move around too much. Moving (legs on the carpet, for example) generates enough electrostatic to damage the device.
- Do not take a new device from the protective case until the it is ready to be installed. Most devices have a lead, which is easily short-circuited by conductive materials (such as conductive foam and aluminium)

### 2.3 Notes

A glass plate is positioned before the plasma display. This glass plate can be cleaned with a slightly humid cloth. If due to circumstances there is some dirt between the glass plate and the plasma display panel, it is recommended to do some maintenance by a qualified service employee only.

#### 2.3.1 Safe PDP Handling

- The work procedures shown with the "Note" indication are important for ensuring the safety of the product and the servicing work. Be sure to follow these instructions.
- Before starting the work, secure a sufficient working space.
- At all times, other than when adjusting and checking the product, be sure to turn "off" the main POWER switch and disconnect the power cable from the power source of the display (jig or the display itself) during servicing.
- To prevent electric shock and breakage of PWBs, start the servicing work at least 30 seconds after the main power has been turned "off". Especially when installing and removing the Power Supply PWB and the SUS PWB in which high voltages are applied, start servicing at least 2 minutes after the main power has been turned "off".

- While the main power is “on”, do not touch any parts or circuits other than the ones specified. The high voltage Power Supply block within the PDP module has a floating ground. If any connection other than the one specified is made between the measuring equipment and the high voltage power supply block, it can result in electric shock or activation of the leakage-detection circuit breaker.
- When installing the PDP module in, and removing it from the packing carton, be sure to have at least two persons perform the work while being careful to ensure that the flexible printed-circuit cable of the PDP module does not get caught by the packing carton.
- When the surface of the panel comes into contact with the cushioning materials, be sure to confirm that there is no foreign matter on top of the cushioning materials before the surface of the panel comes into contact with the cushioning materials. Failure to observe this precaution may result in, the surface of the panel being scratched by foreign matter.
- When handling the circuit PWB, be sure to remove static electricity from your body before handling the circuit PWB.
- Be sure to handle the circuit PWB by holding the large parts as the heat sink or transformer. Failure to observe this

precaution may result in the occurrence of an abnormality in the soldered areas.

- Do not stack the circuit PWB. Failure to observe this precaution may result in problems resulting from scratches on the parts, the deformation of parts, and short-circuits due to residual electric charge.
- Routing of the wires and fixing them in position must be done in accordance with the original routing and fixing configuration when servicing is completed. All the wires are routed far away from the areas that become hot (such as the heat sink). These wires are fixed in position with the wire clamps so that the wires do not move, thereby ensuring that they are not damaged and their materials do not deteriorate over long periods of time. Therefore, route the cables and fix the cables to the original position and states using the wire clamps.
- Perform a safety check when servicing is completed. Verify that the peripherals of the serviced points have not undergone any deterioration during servicing. Also verify that the screws, parts and cables removed for servicing purposes have all been returned to their proper locations in accordance with the original

### 3. Directions For Use

Not applicable.

## 4. Mechanical Instructions

### Index of this chapter:

- 4.1 Dis-assembling / Re-assembling
  - 4.1.1 Flexible Printed Circuit of Y-Buffer (Upper and Lower)
  - 4.1.2 Flat Cable Connector of X-main Board
  - 4.1.3 FFC and TCP from Connector
  - 4.1.4 Exchange of LBE, LBF, LBG board
  - 4.1.5 Exchange YBU, YBL and YM board

### 4.1 Dis-assembling / Re-assembling

#### 4.1.1 Flexible Printed Circuit of Y-Buffer (Upper and Lower)

- Dis-assembly: Pull out the FPC from the connector by holding the lead of the FPC with both hands.
- Re-assembly: Push the lead of FPC with same force on both sides into the connector.

**Note:** Be careful do not to damage the connector pin during connecting.

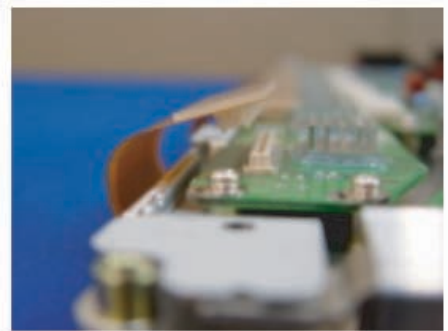
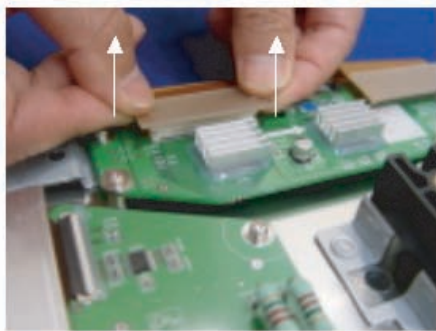


Figure 4-1 Dis-assembly FPC of Y-buffer

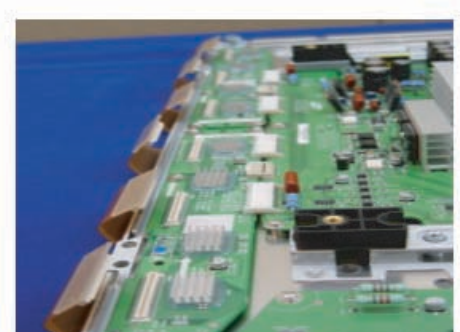
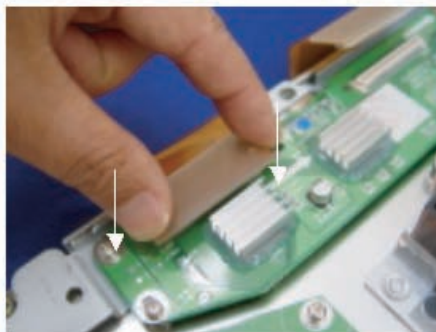


Figure 4-2 Re-assembly FPC of Y-buffer



#### 4.1.2 Flat Cable Connector of X-main Board

- Dis-assembly:
  1. Pull out the clamp of connector.
  2. Pull Flat cable out press down lightly.
  3. Turn the Flat Cable reversely.
- Re-assembly: Put the Flat Cable into the connector press down lightly until locking sound ("Click") comes out.

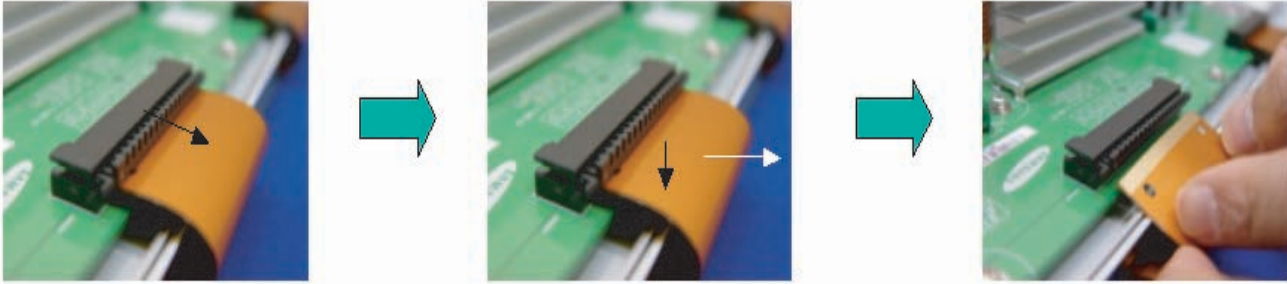


Figure 4-3 Dis-assembly FCC of X-main board

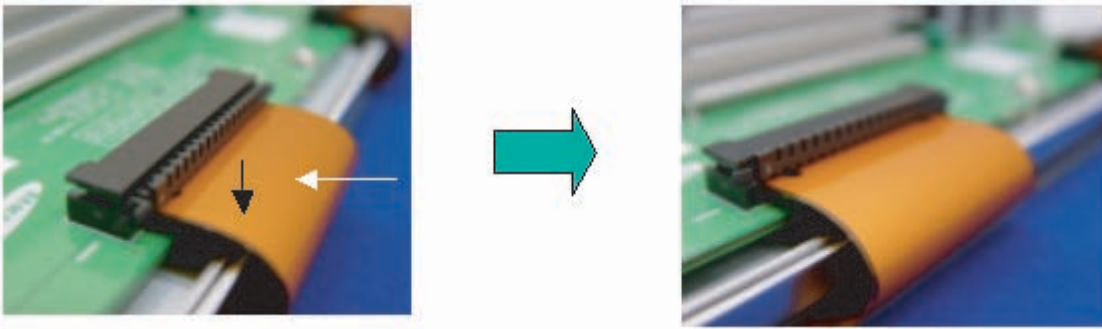


Figure 4-4 Re-assembly FCC of X-main board

#### 4.1.3 FFC and TCP from Connector

- Dis-assembling of TCP:
  1. Open the clamp carefully.
  2. Pull the TCP out from its connector.
- Re-assembling of TCP:
  1. Put the TCP into the connector carefully
  2. Close the clamp completely (until "Click" comes out.).

#### Notes:

- Checking whether the foreign material is on the connector inside before assembling of TCP.
- Be careful, do not damage the board by ESD during handling of TCP.

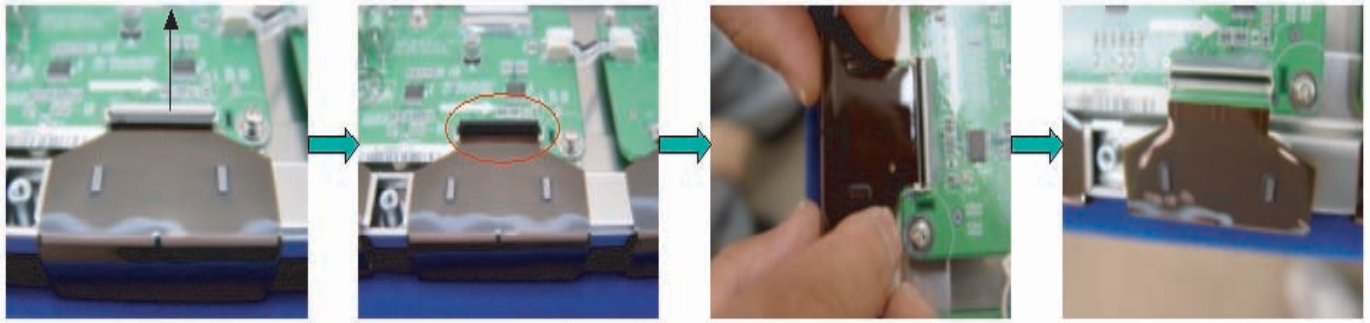


Figure 4-5 Dis-assembly of TCP

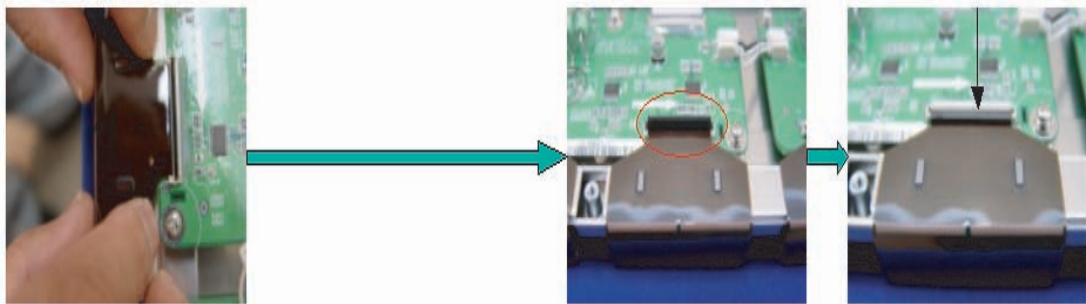


Figure 4-6 Re-assembly of TCP

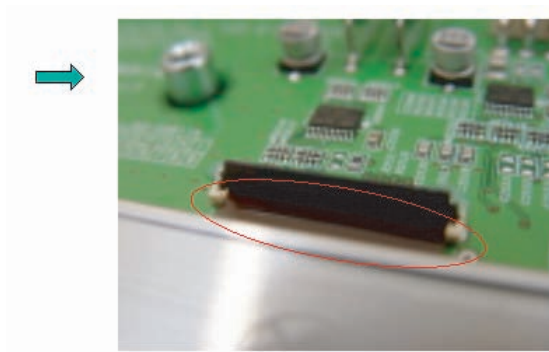


Figure 4-7 Mis-assembly of TCP

The procedure of assembling and disassembling of FFC is same as TCP

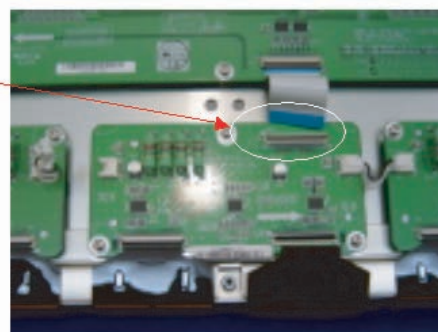


Figure 4-8 Dis- and re-assembly of FFC

#### 4.1.4 Exchange of LBE, LBF, LBG board

1. Depending on the model (see "Photo 2" per model.):
  - **42" SD v3** - Remove the screws in order of 2-3-5-7-1-4-6 (and 10-11-13-16-9-12-14 for HD) from heat sink and then remove heat sink (Photo 1).
  - **42" SD v4** - Remove the screws in order of 2-4-1-5-3 from heat sink and then remove heat sink (Photo 1).
  - **42" HD v3, 37" SD v4, 50" HD v3** - Remove the screws in order of "Centre - Left Side - Right Side" from heat sink and then get rid of heat sink (Photo 1).
  - **50" HD v4** - Remove the screws in order of 2-3-1-4 from heat sink and then remove heat sink (Photo 1).
2. Remove the TPC, FFC, and power cable from the connectors.
3. Remove all the screws from the defective board.
4. Remove the defected board.

**Note:** When replacing the Logic board or Y-main board for a lead-free (Pb-free) board, always replace them together. (this is **only** valid for the 37" SD v4 displays!)
5. Replace the new board and then screw tightly.
6. Clean the connectors.
7. Re-connect the TCP, FFC, and power cable to the connector.
8. Re-assemble the TCP heat sink. Use the same screw mounting order as described above

**Caution:** If you screw too tight, it is possible to damage the Driver IC of the TCP.



Figure 4-9 Photo 1 - Heatsink removal



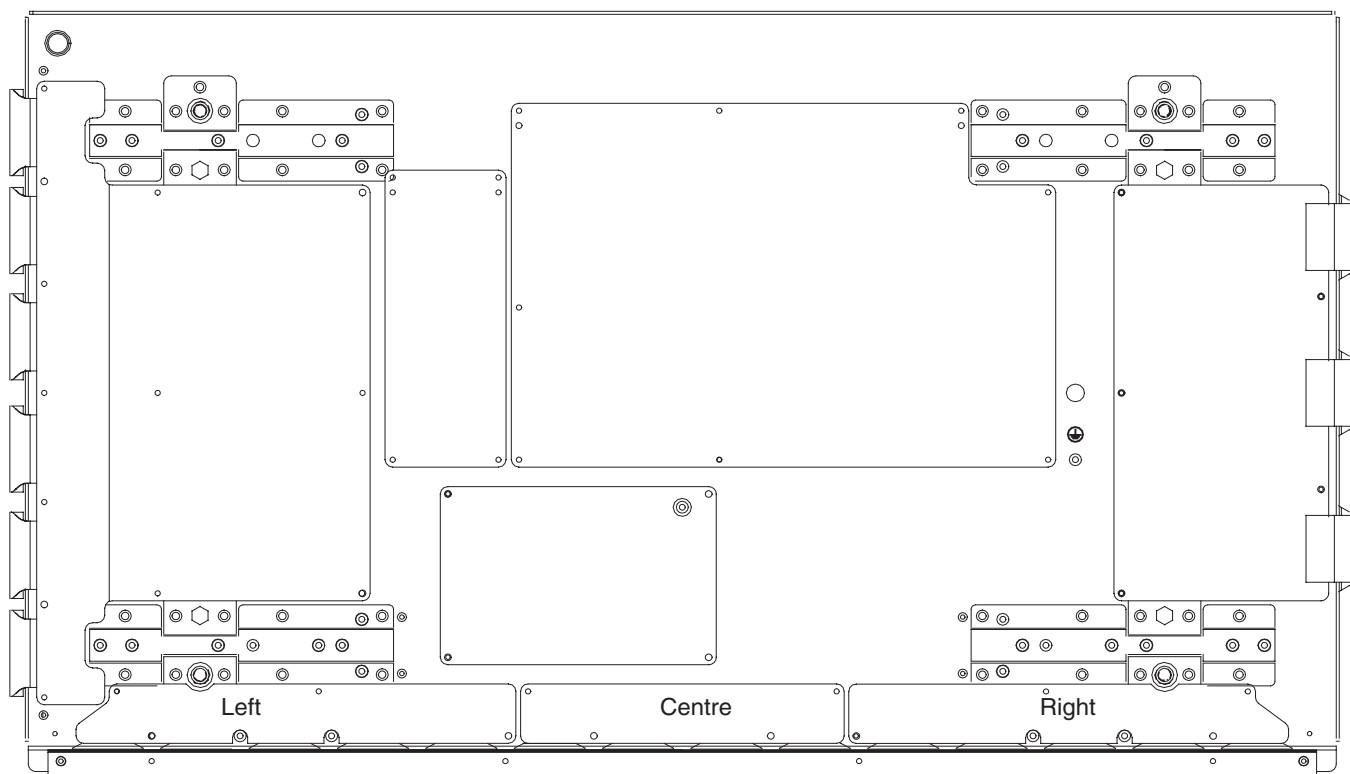


Figure 4-10 Photo 2 - 37" SD v4

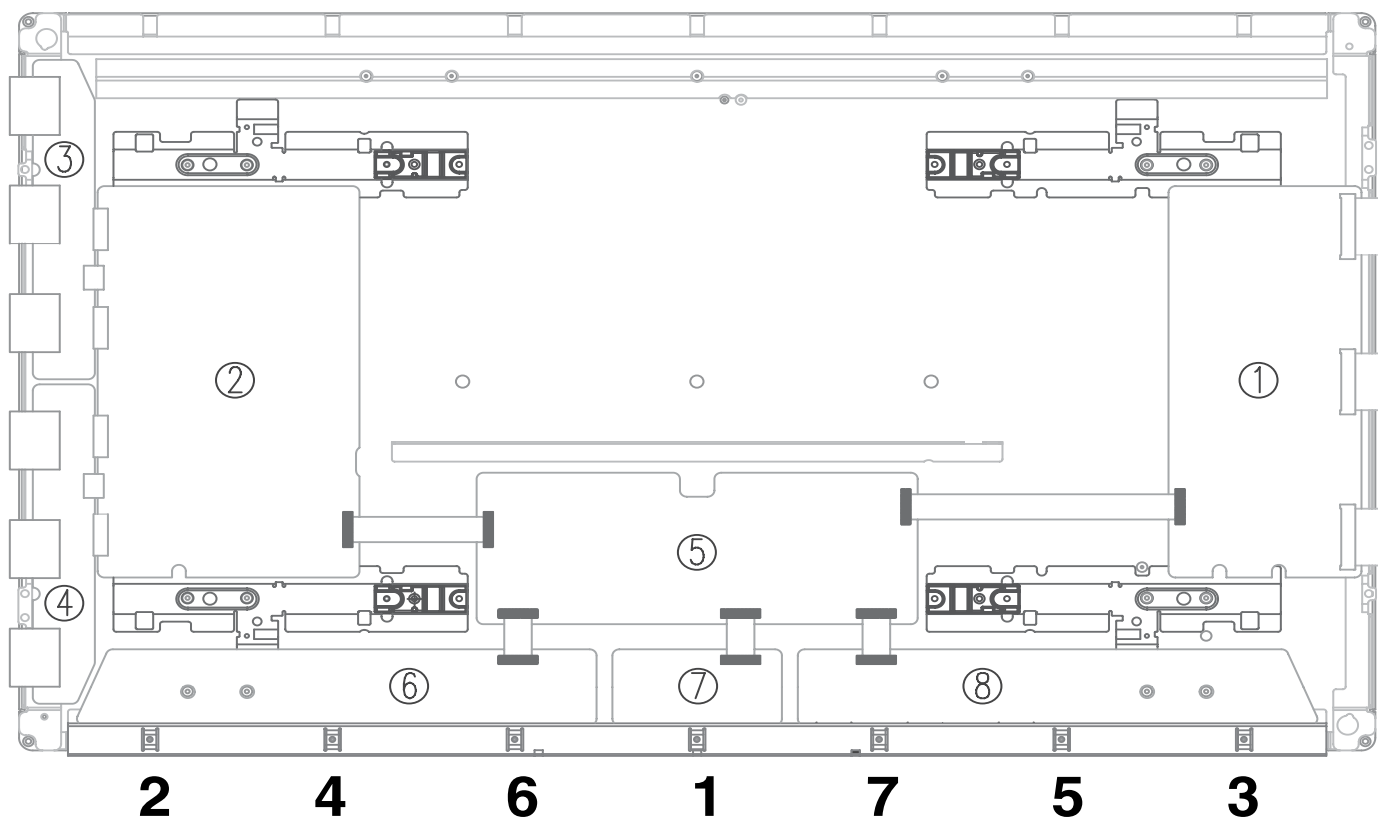
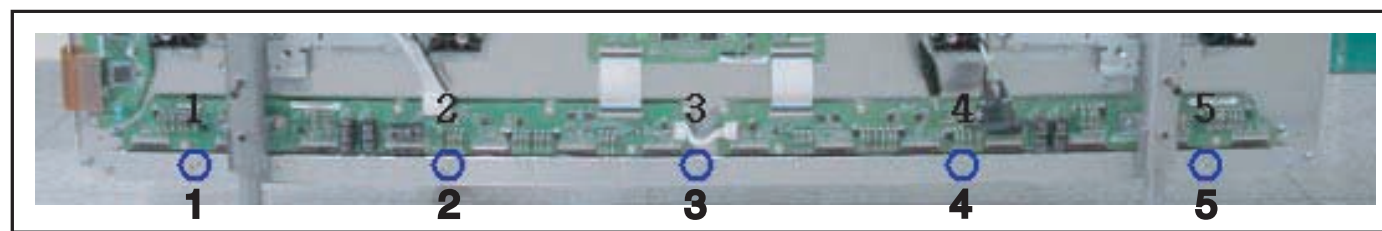


Figure 4-11 Photo 2 - 42" SD v2 and v3



F\_14991\_028.eps  
030805

Figure 4-12 Photo 2 - 42" SD v4

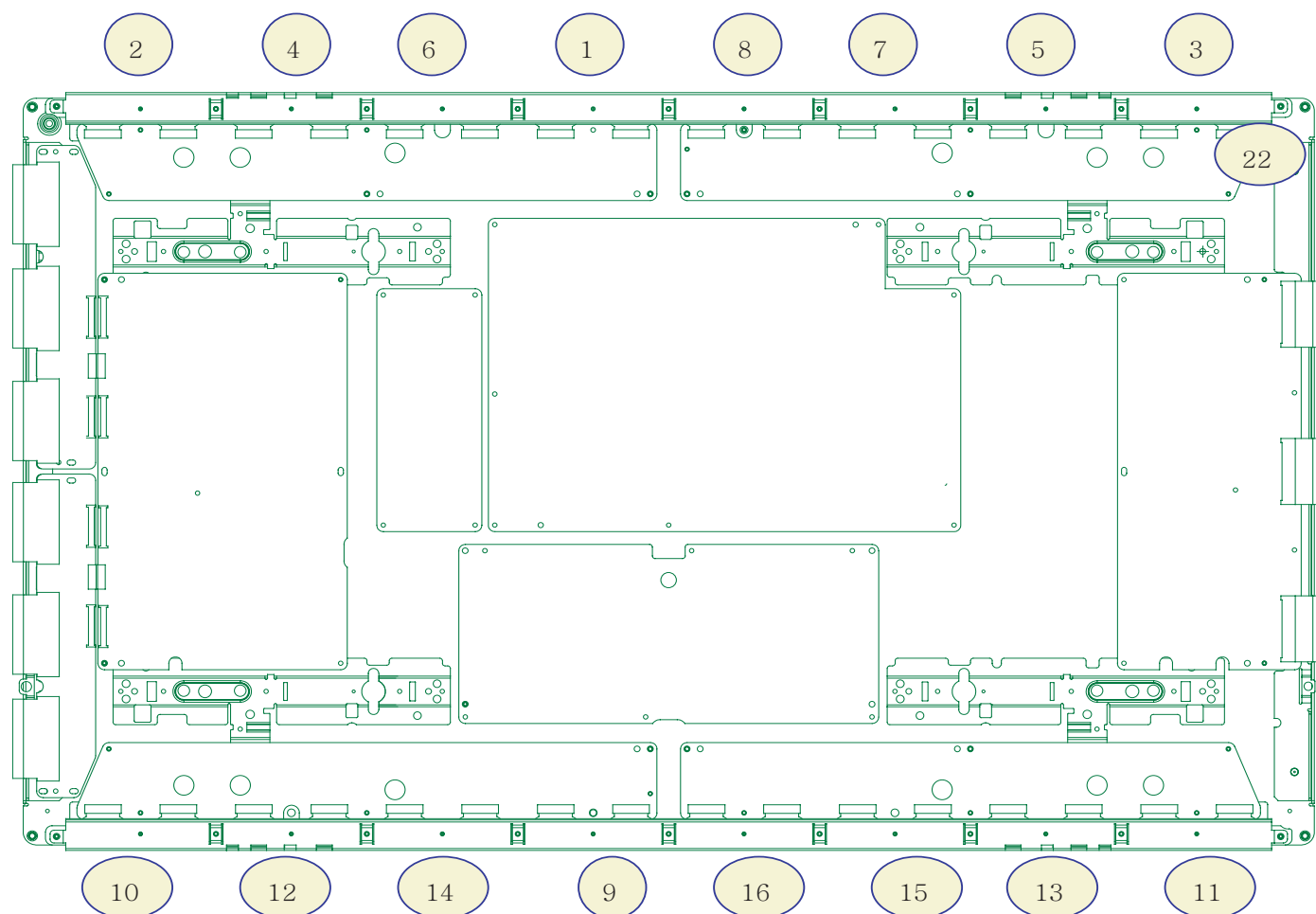
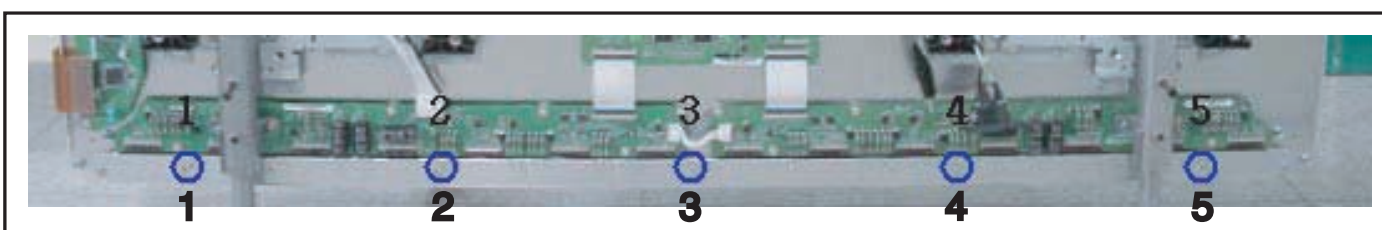


Figure 4-13 Photo 2 - 42" HD v3



F\_14991\_028.eps  
030805

Figure 4-14 Photo 2 - 42" HD v4

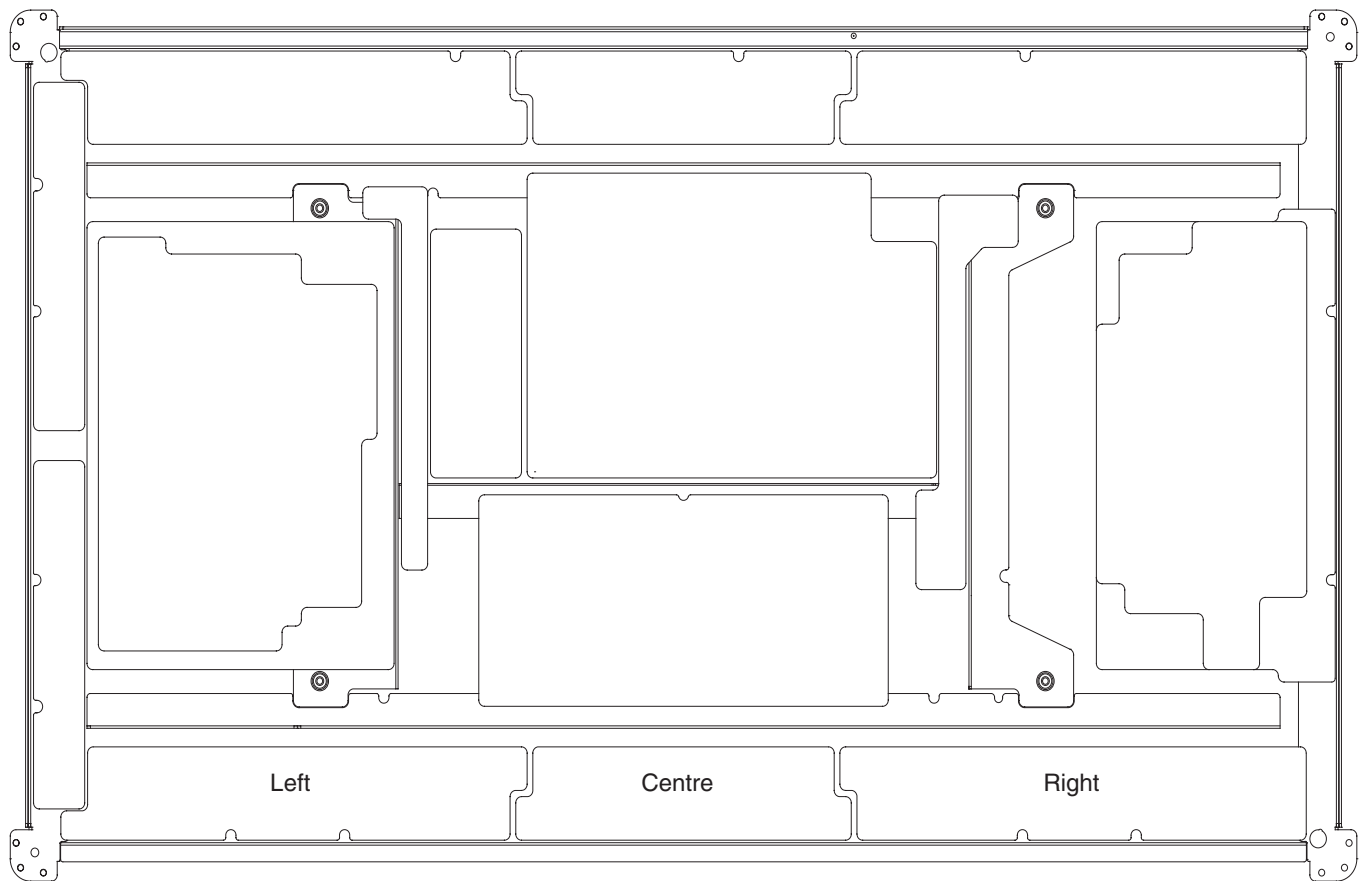


Figure 4-15 Photo 2 - 50" HD v3

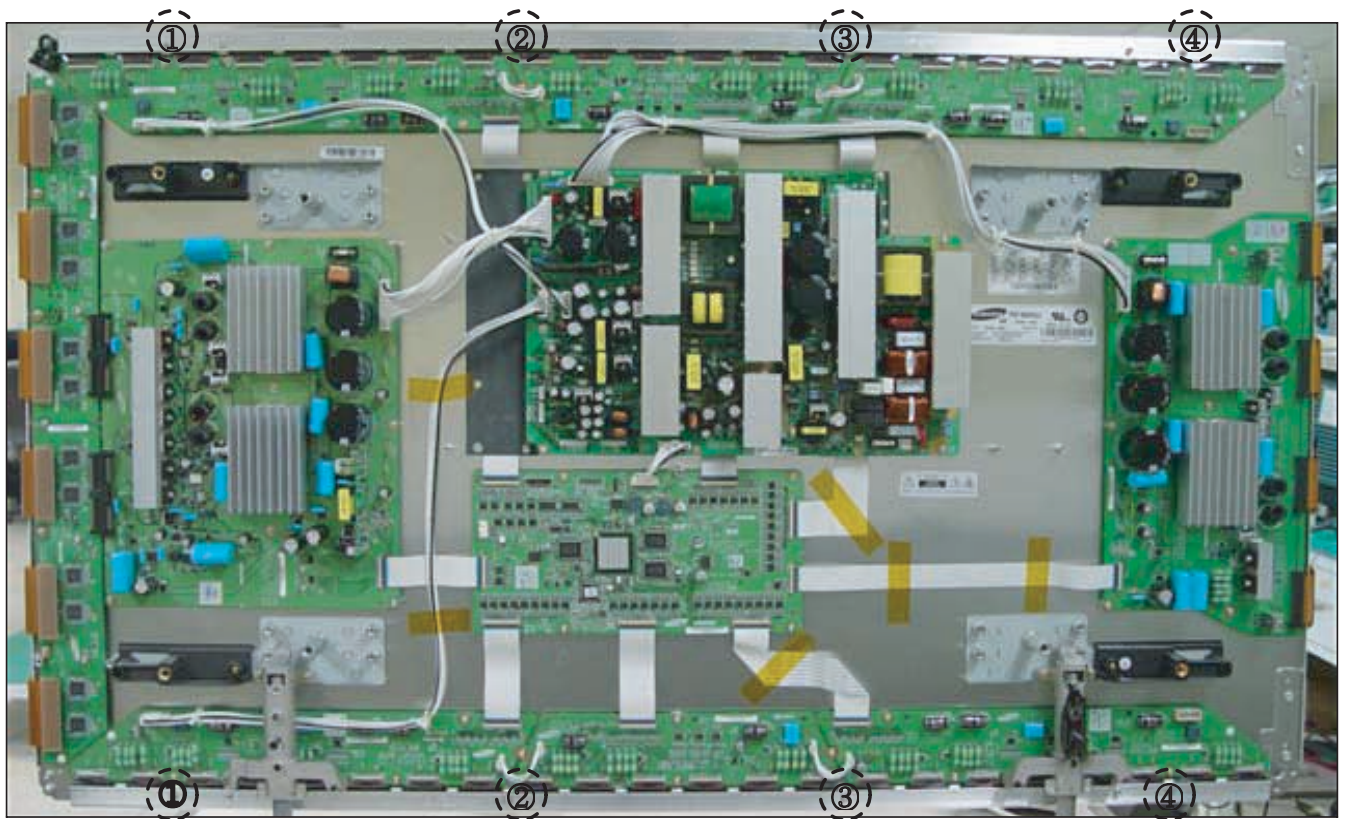
F\_14001\_029.eps  
030805

Figure 4-16 Photo 2 - 50" HD v4

#### 4.1.5 Exchange YBU, YBL and YM board

1. Separate all the FPC connector s of YBU (Y-Buffer upper) and YBL (Y-Buffer lower). See "Photo 1".
  2. Separate all the connector of CN5001 and CN5008 from Y-Main. See "Photo 2".
  3. Loosen all the screws of YBU, YBL, and YM. See "Photo 3".
  4. Remove the board from chassis.
  5. Remove the connector of CN5006 and CN5007 among YBU, YBL and YM.
  6. Remove the YBL and YBU from Y-main.
  7. Remove the defected board.
- Note:** When replacing the Logic board or Y-main board for a lead-free (Pb-free) board, always replace them together. (this is **only** valid for the 37" SD v4 displays!)
8. Re-assemble the YBU and YBL to the Y-Main.
  9. Connect the connector of CN5006 and CN5007 among YBU, YBL and YM. See "Photo 4".
  10. Arrange the board on the chassis and then screw to fix.
  11. Connect the FPC and YM of panel to the connector. See "Photo 5".
  12. Supply the electric power to the module and then check the waveform of the board.
  13. Turn "off" the power after the waveform is adjusted.



Figure 4-17 Photo 1, 2, and 3: Dis-assembly of YBU, YBL, and YM

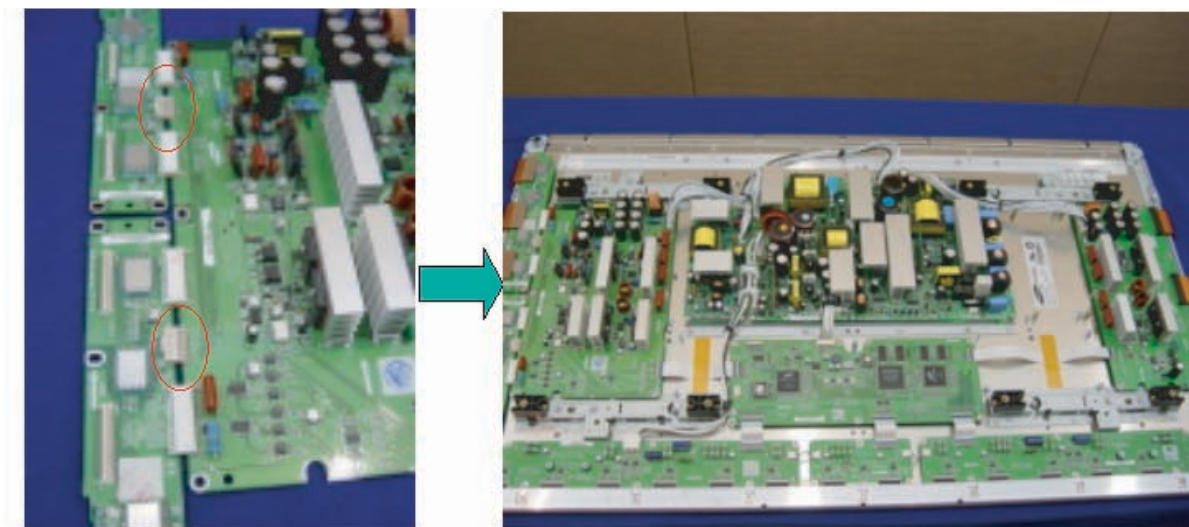


Figure 4-18 Photo 4 and 5: Re-assembly of YBU, YBL, and YM



## 5. Service Modes, Error Codes, and Fault Finding

### Index of this chapter:

- 5.1 Repair Tools
- 5.2 Fault Finding
- 5.3 Defect Description Form

### 5.1 Repair Tools

#### 5.1.1 ComPair

For the v3 and v4 models, it will be possible to generate test patterns with ComPair. The ComPair interface must be connected to the Logic Board with the special interconnection cable (see table below for the order code).

#### 5.1.2 Other Service Tools

Table 5-1 Overview Service tools

| Service Tools                            | Order Code     |
|------------------------------------------|----------------|
| Jumper J8002 + V2 JIG connector kit      | 3122 785 90760 |
| V3 JIG connector + for SDI panel repair  | 3122 785 90770 |
| Jumper J8002 to be used in connector kit | 3122 785 90780 |
| V2 JIG connector to be used in conn. kit | 3122 785 90790 |
| ComPair / SDI interconnection cable      | 3122 785 90800 |
| Foam buffers (2 pcs.)                    | 3122 785 90581 |

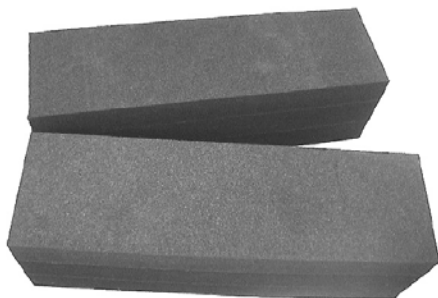


Figure 5-1 Foam buffers



F\_14991\_031.eps  
030805

Figure 5-2 V2 jig



F\_14991\_030.eps  
030805

Figure 5-3 V3 jig

## 5.2 Fault Finding

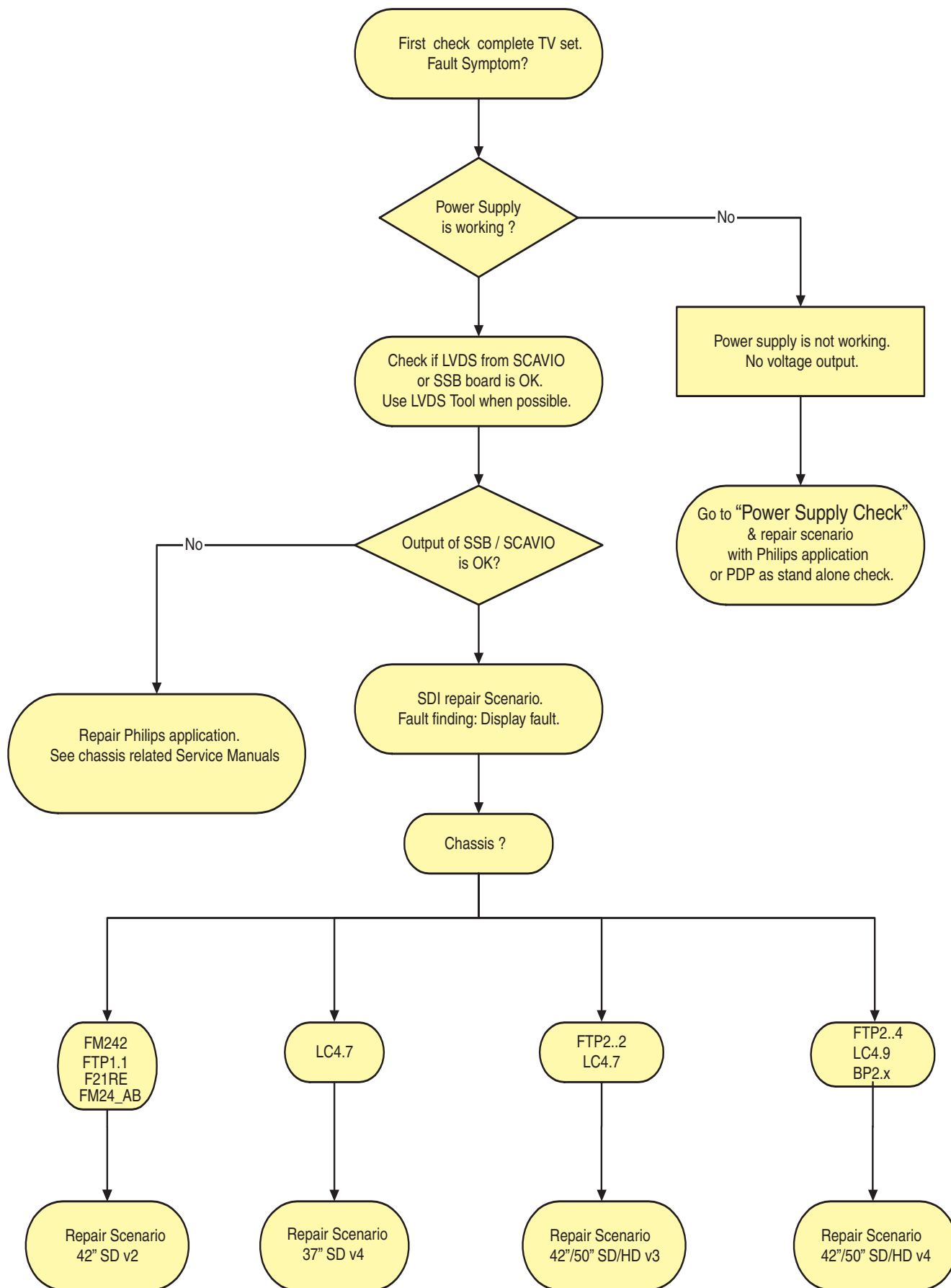


Figure 5-4 Which repair scenario?

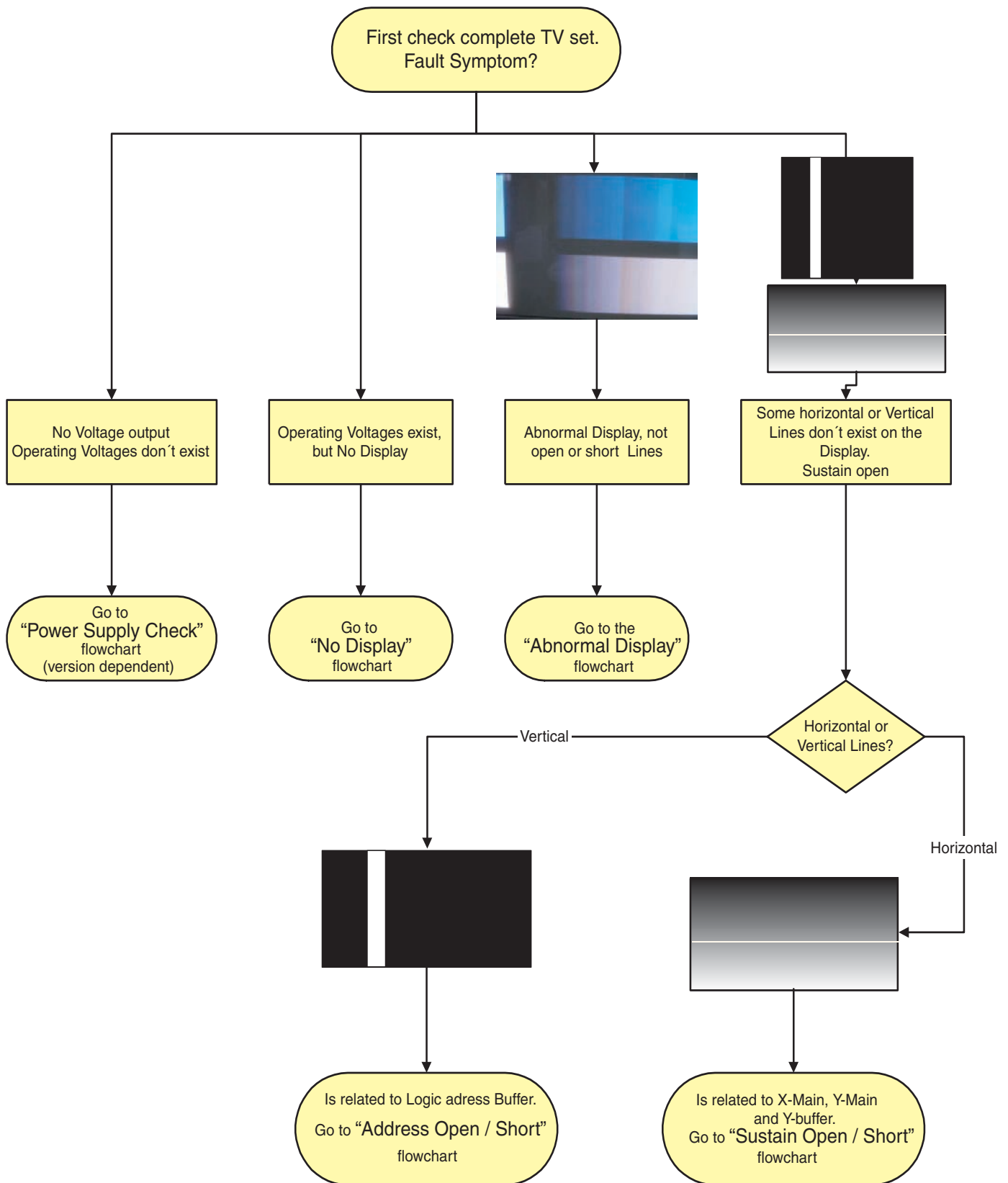


Figure 5-5 Fault symptom overview (complete TV set)

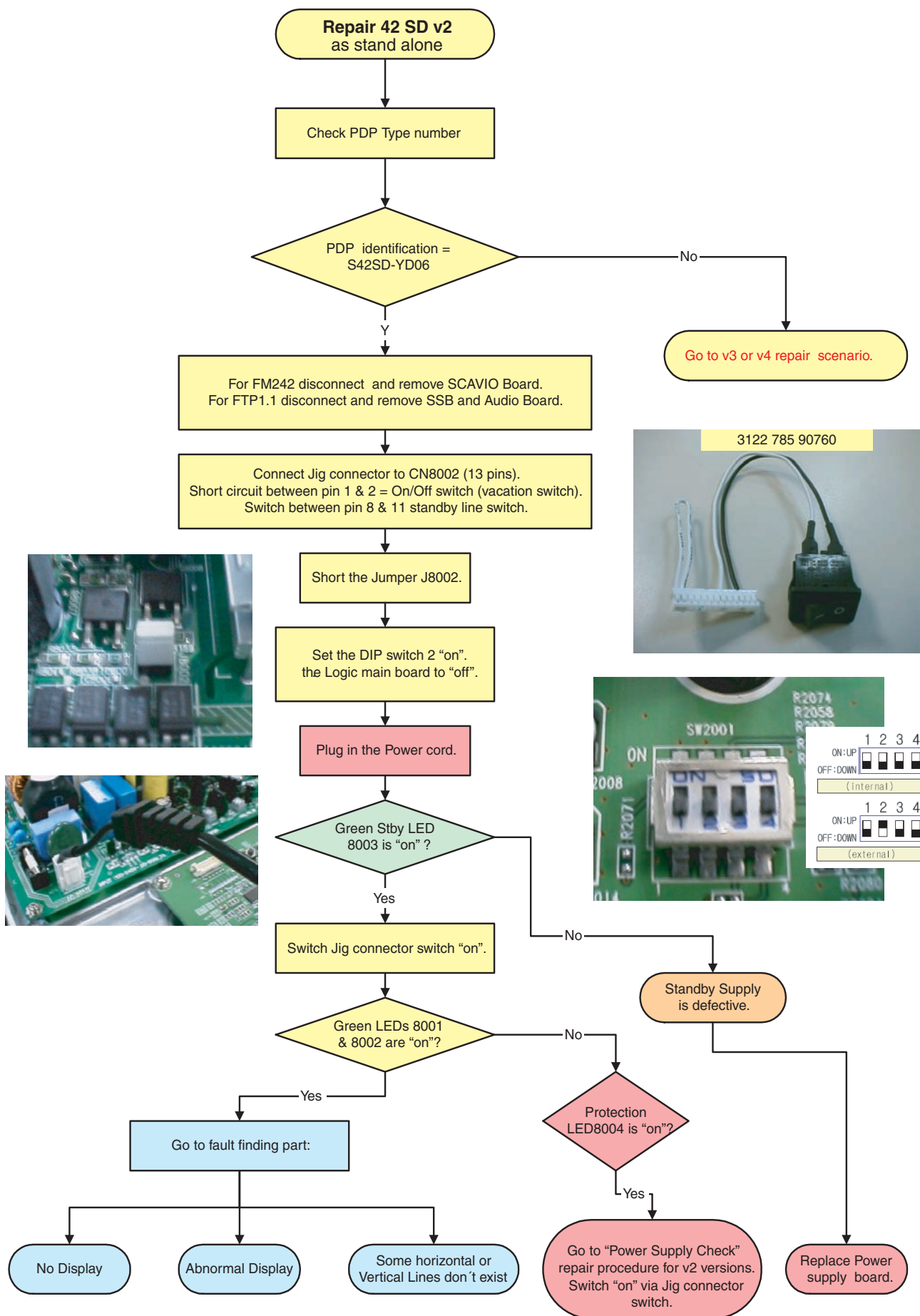


Figure 5-6 Repair scenario v2 stand alone panels



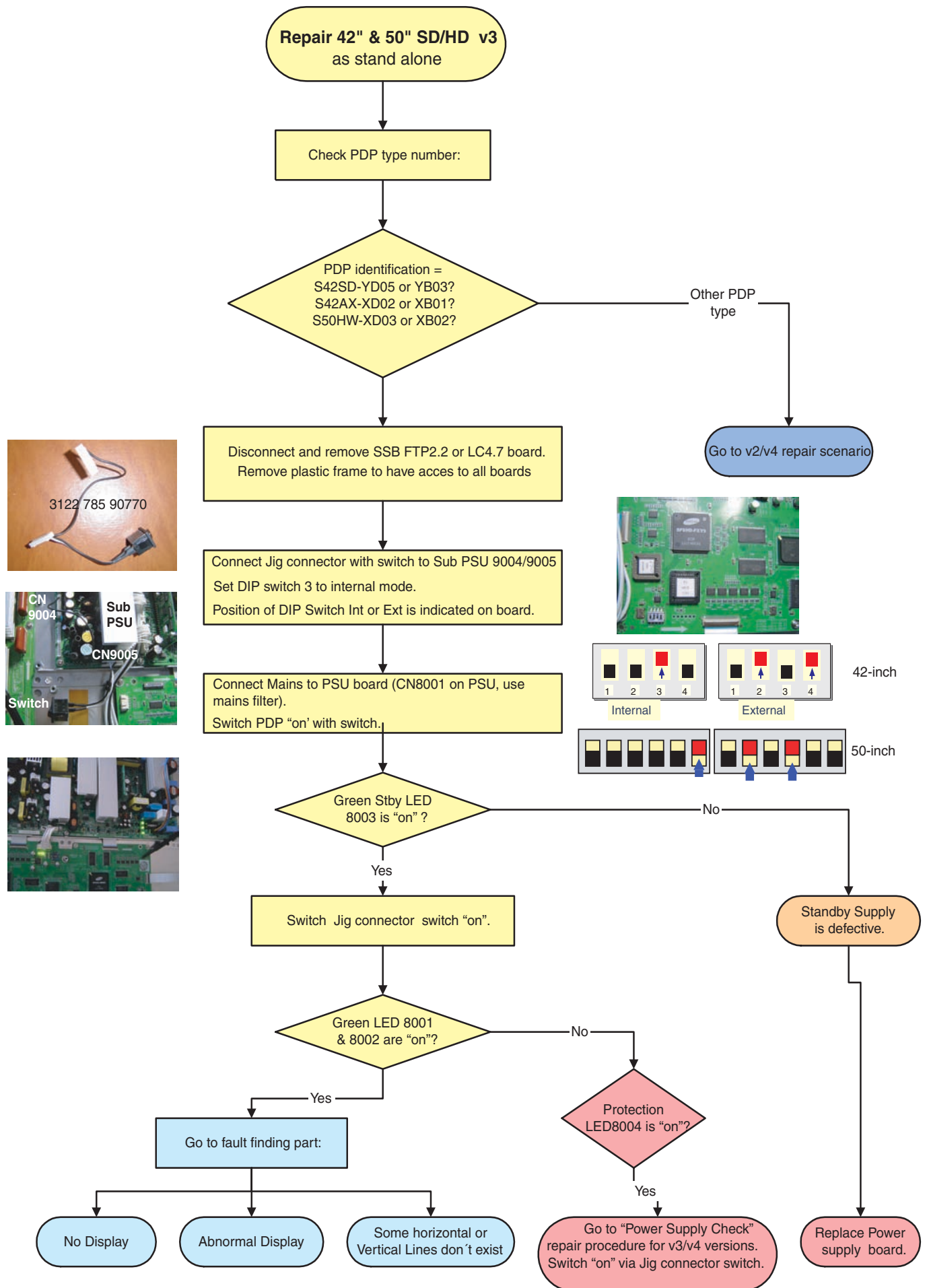


Figure 5-7 Repair scenario 42"/50" SD/HD v3 stand alone panels

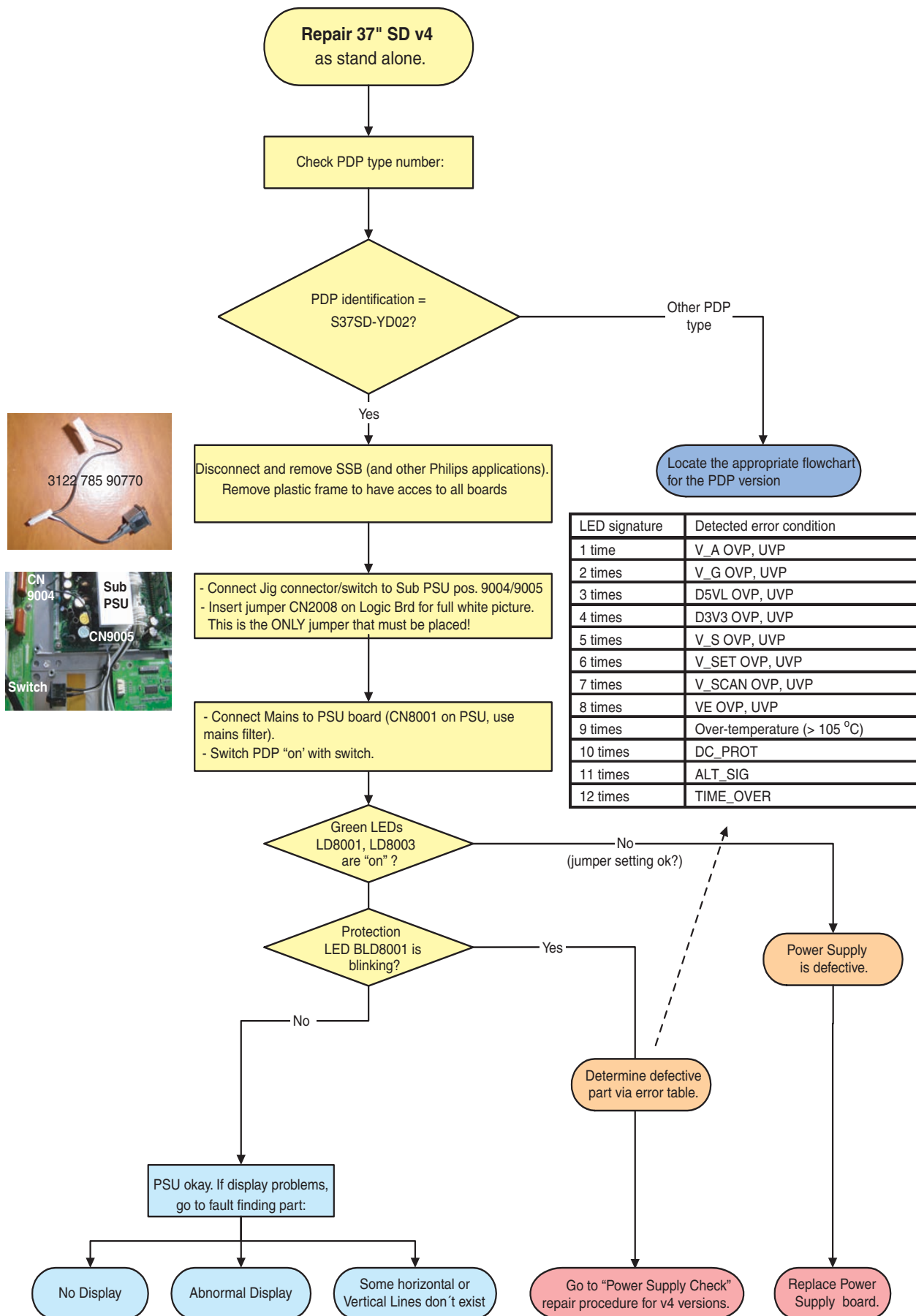


Figure 5-8 Repair scenario 37" SD v4 stand alone panels

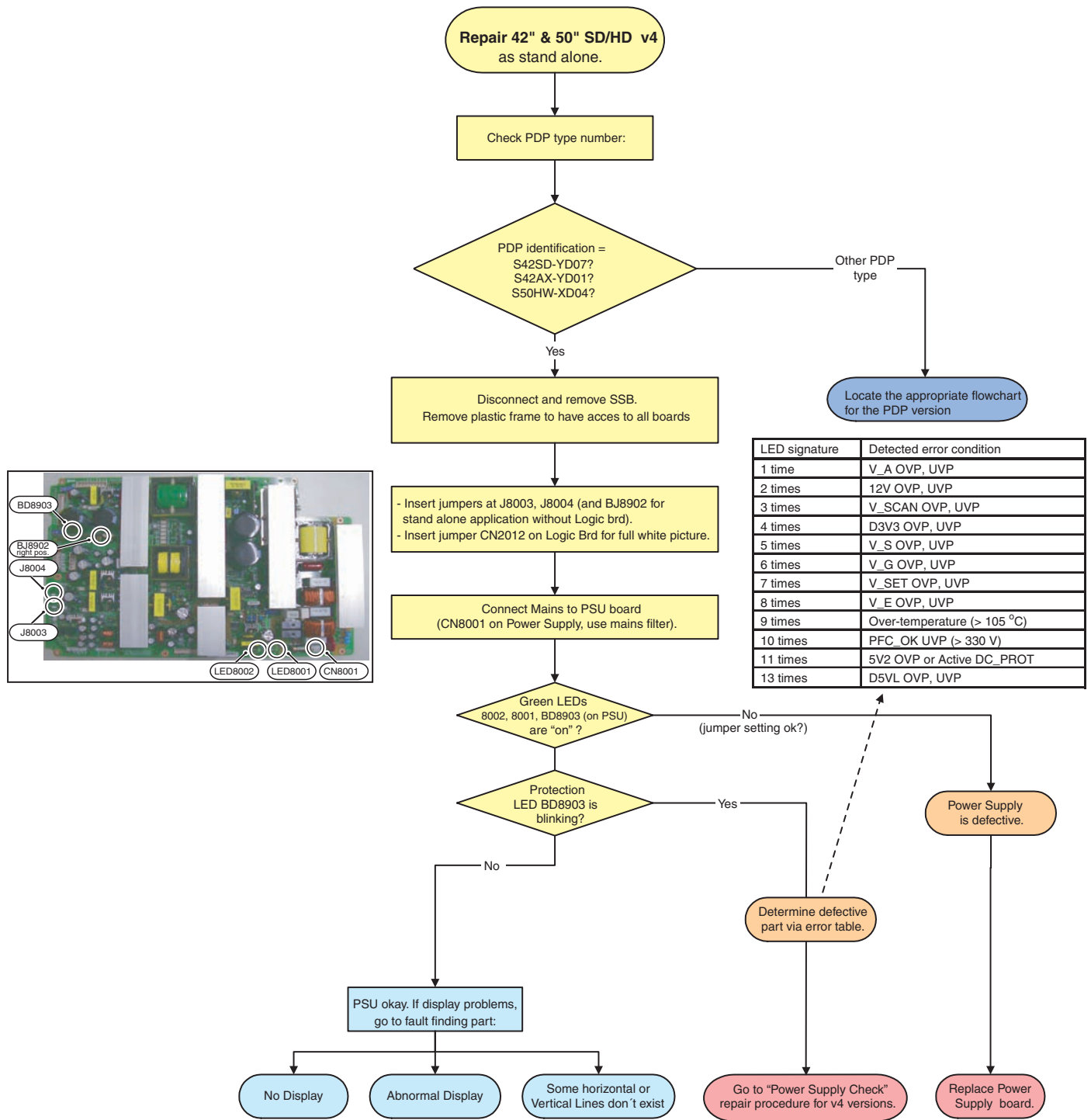


Figure 5-9 Repair scenario 42"/50" SD/HD v4 stand alone panels

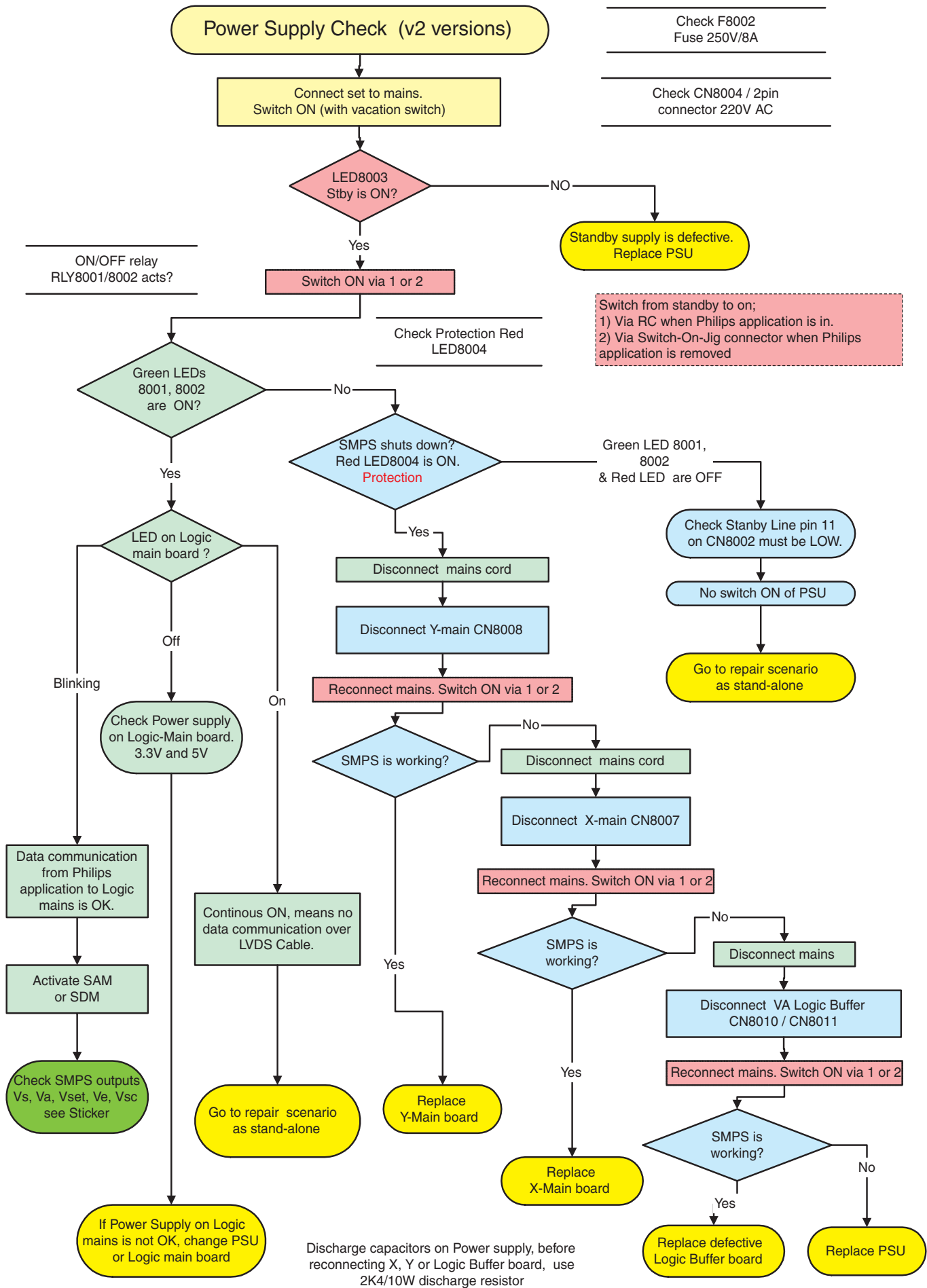
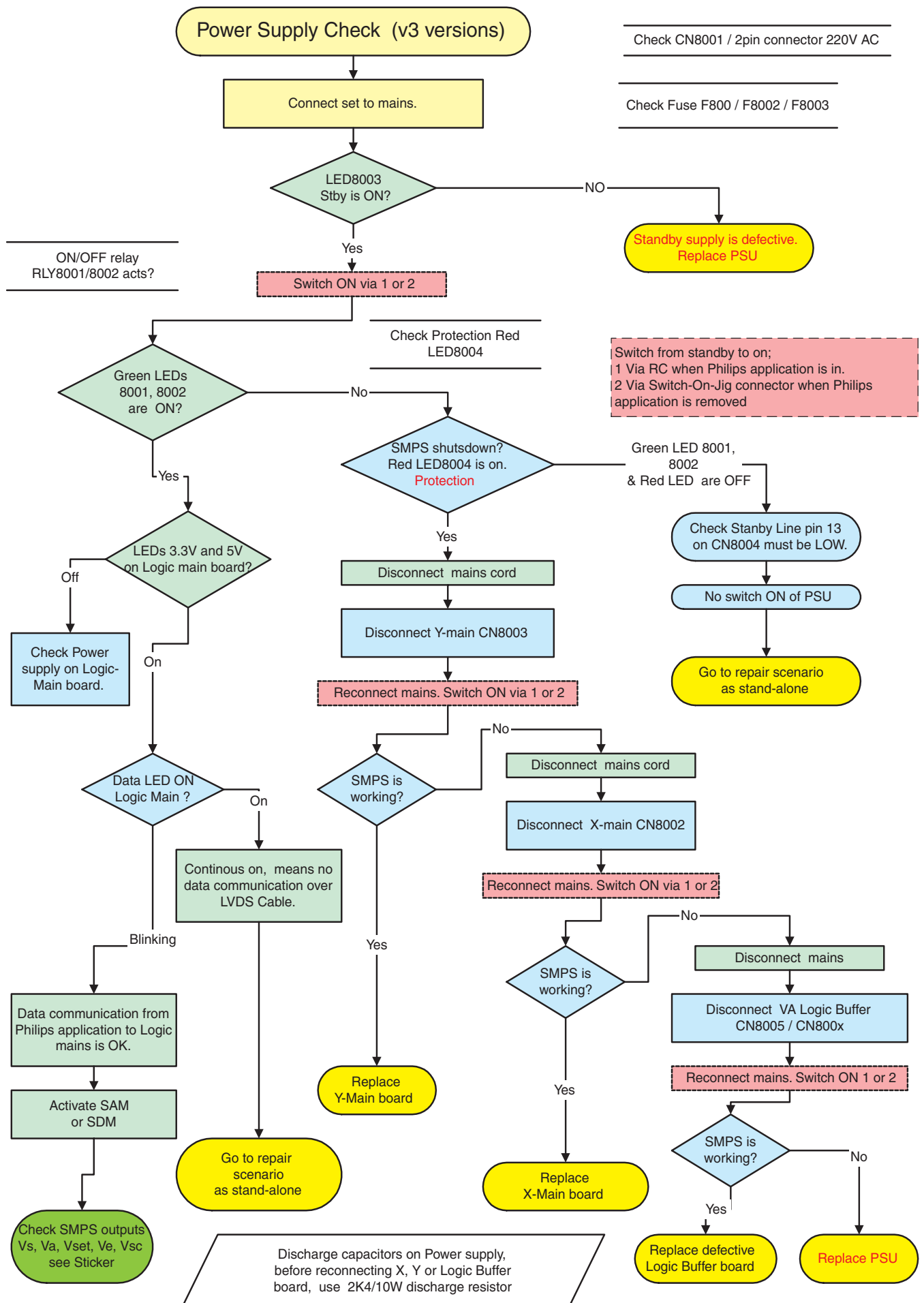


Figure 5-10 Power Supply Check for v2 models





**Figure 5-11 Power Supply Check for v3 models**

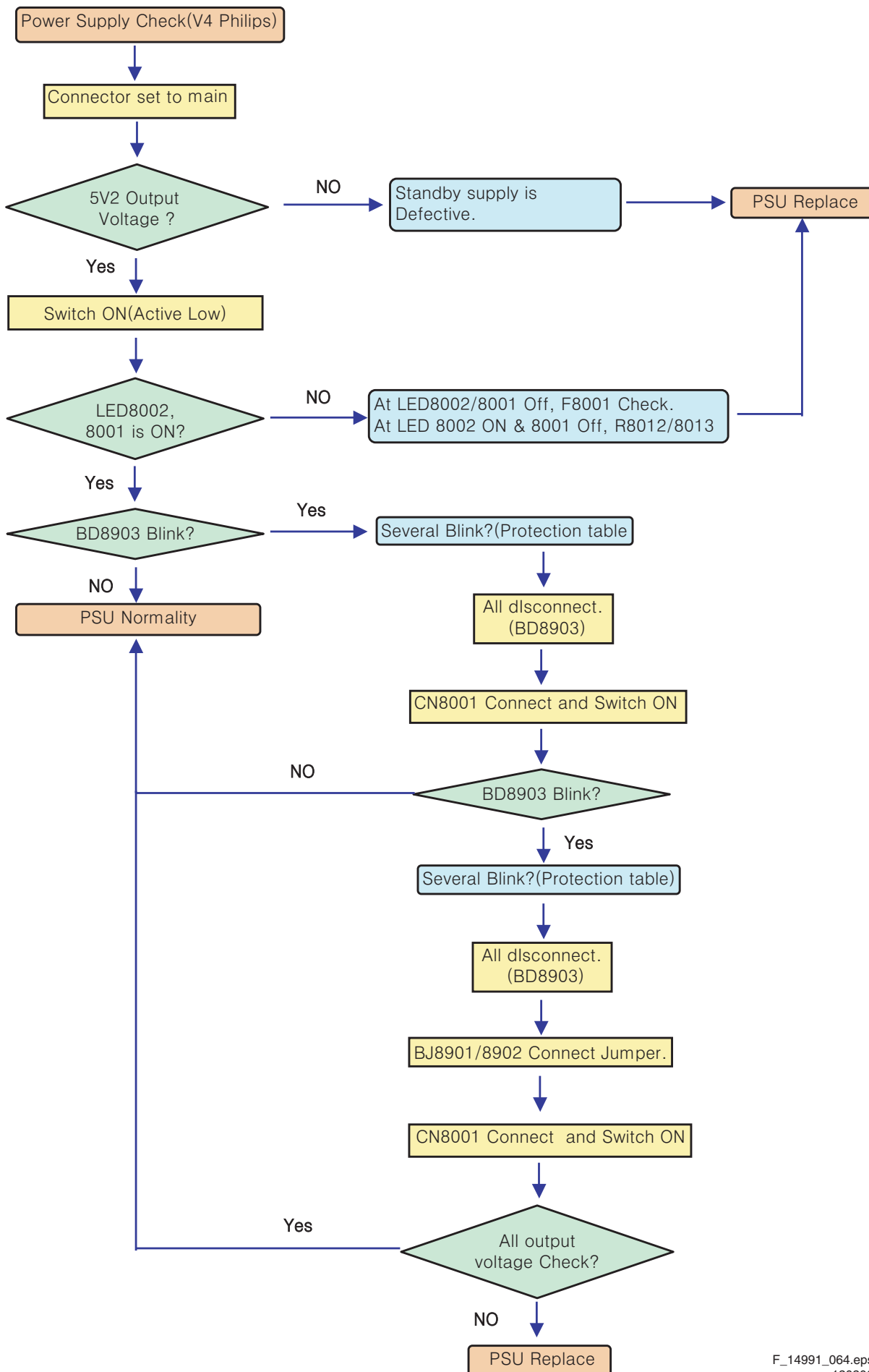


Figure 5-12 Power Supply Check for v4 models

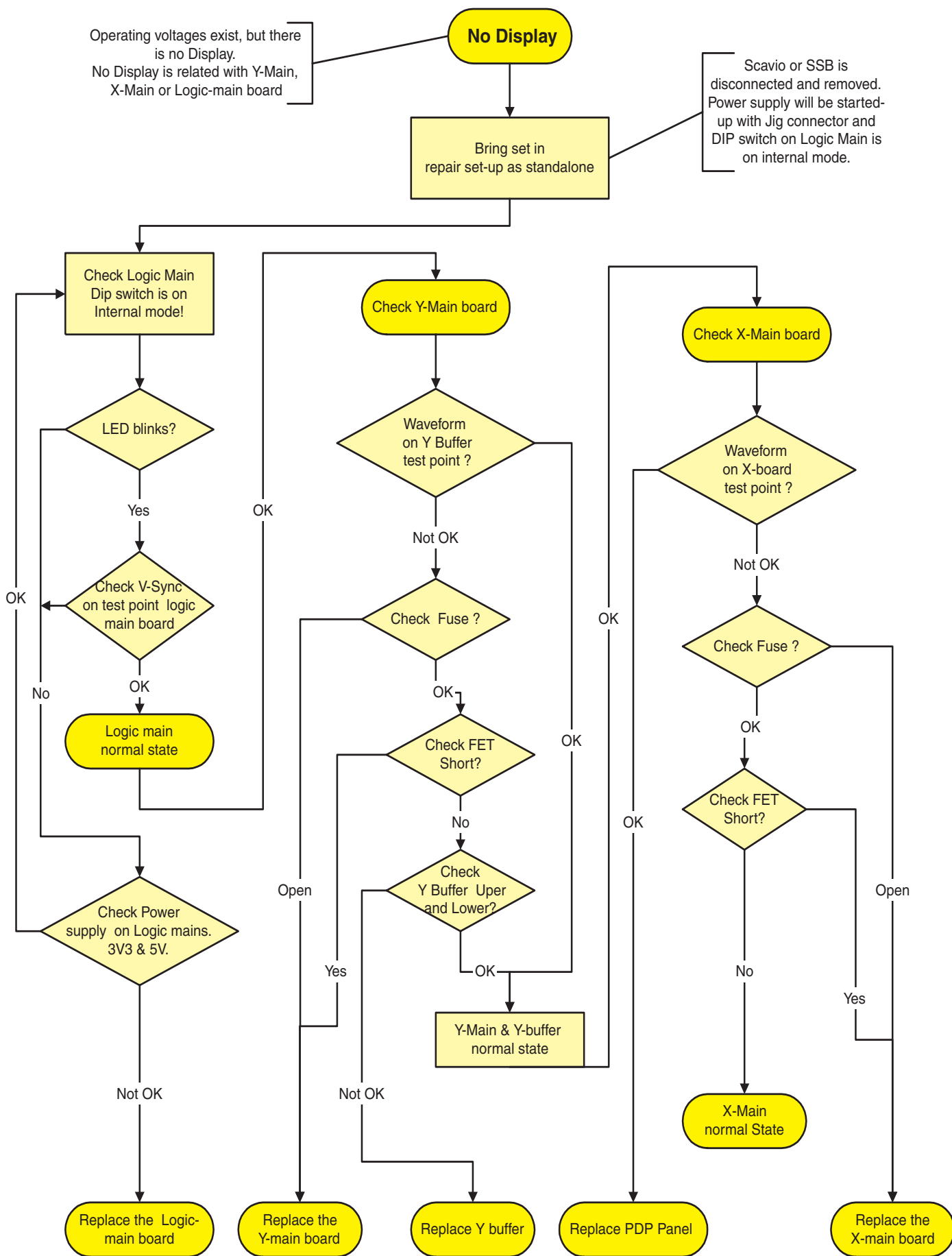


Figure 5-13 Fault symptom: "No Display"

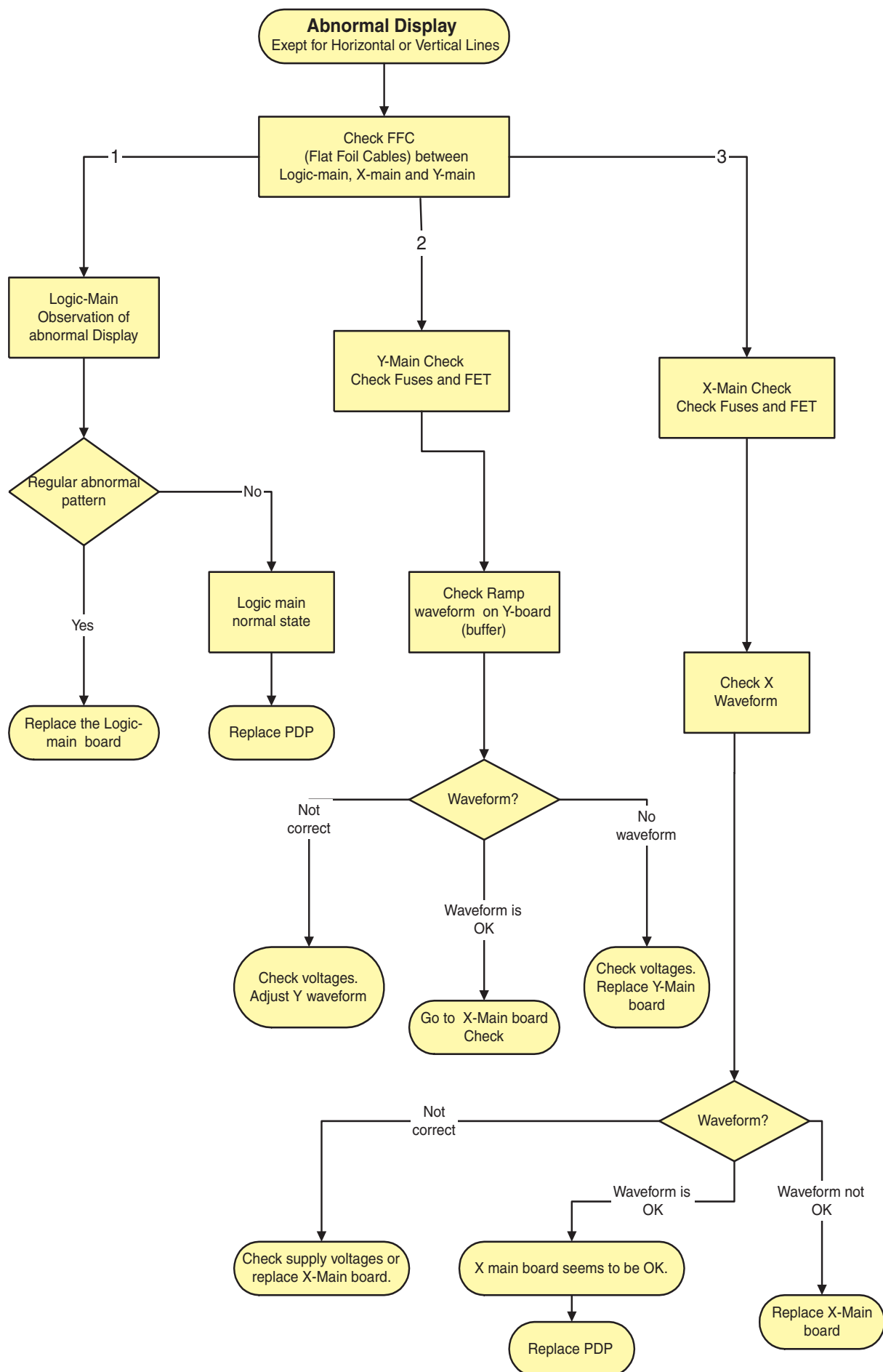


Figure 5-14 Fault symptom: "Abnormal Display"



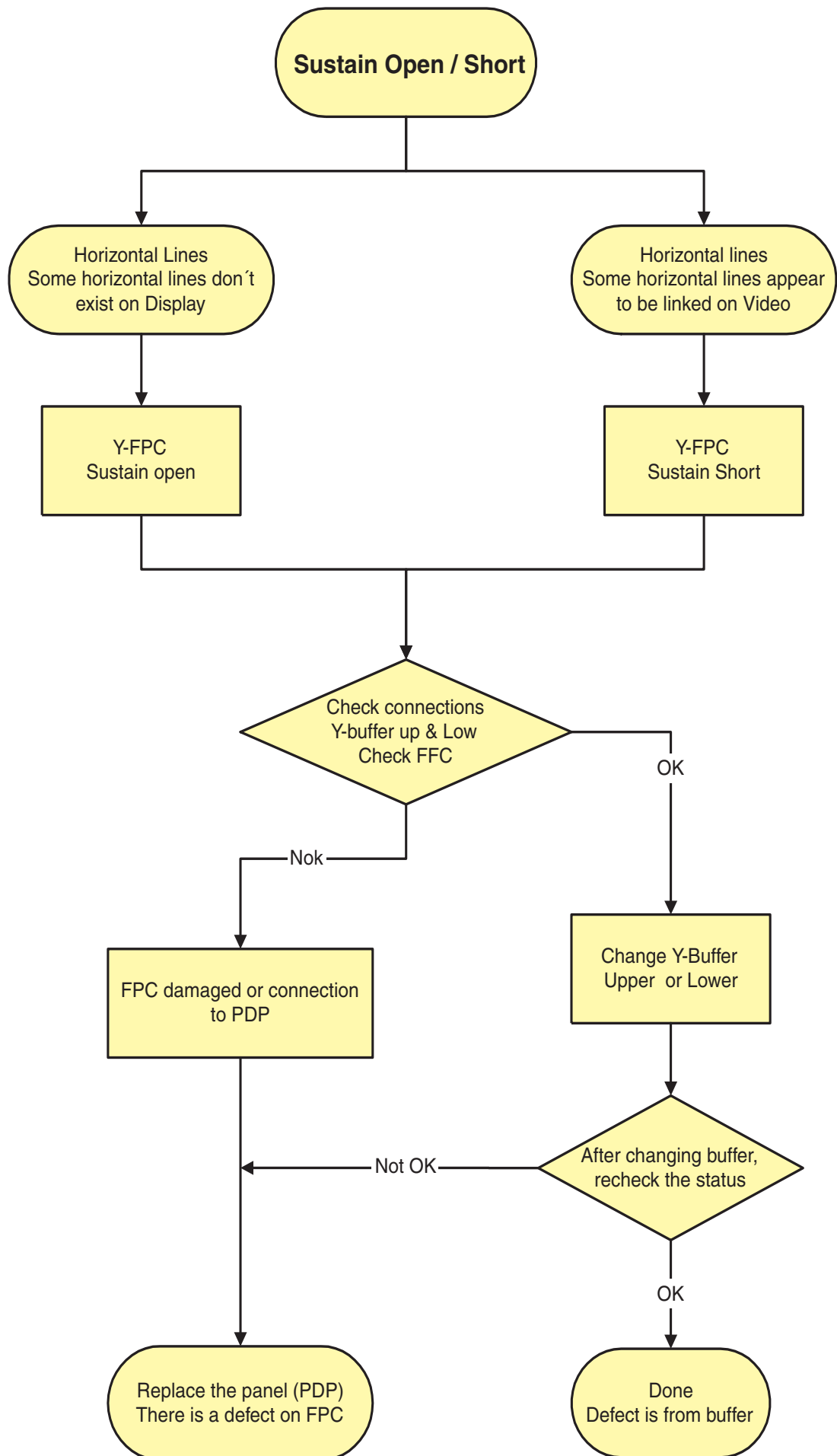


Figure 5-15 Fault symptom: "Sustain open / short"

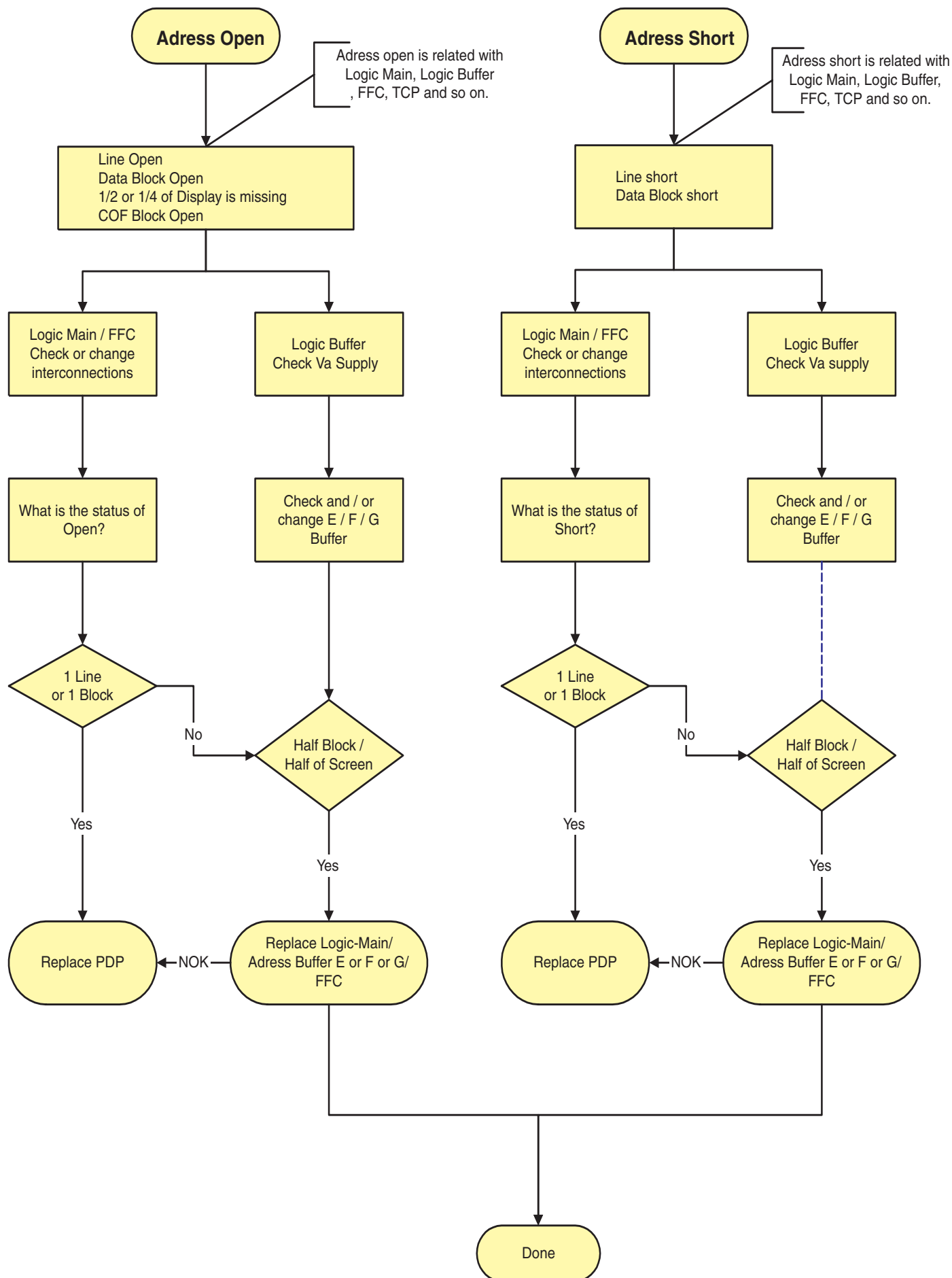


Figure 5-16 Fault symptom: "Address open / short"

### 5.3 Defect Description Form

This form must be used by the workshops for warranty claims:

| DDF FLAT TV (panels & boards) version 1.1                                                                                                                                                                                                                                                             |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        | Date last modified: 08/03/2005 |                                                                                                                                |                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| To be filled in by <u>WORKSHOP / WORK CENTER</u>                                                                                                                                                                                                                                                      |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        |                                |                                                                                                                                |                                   |
| Country:                                                                                                                                                                                                                                                                                              |                                  | <div style="font-size: 24px; font-weight: bold;">Philips</div> <div style="font-size: 18px; font-weight: bold;">LCD &amp; Plasma</div> <div style="border: 1px solid black; padding: 5px; font-weight: bold;">DEFECT DESCRIPTION</div> <div style="border: 1px solid black; padding: 5px; font-weight: bold;">FORM</div>                                                                                                                                                                                                                                                                     |                                        | Type nr./Model nr. set         |                                                                                                                                |                                   |
| Customer Account nr.:                                                                                                                                                                                                                                                                                 |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        | Serial nr. set                 |                                                                                                                                |                                   |
| Job sheet nr.:                                                                                                                                                                                                                                                                                        |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        | Type nr. display               |                                                                                                                                |                                   |
|                                                                                                                                                                                                                                                                                                       |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        | Serial nr. display             |                                                                                                                                |                                   |
|                                                                                                                                                                                                                                                                                                       |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        | Part nr display (12nc)         |                                                                                                                                |                                   |
|                                                                                                                                                                                                                                                                                                       |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        | Return number                  |                                                                                                                                | 0170 _ _ _ _ _                    |
| GENERAL REPAIR DATA                                                                                                                                                                                                                                                                                   | Condition                        | <input type="checkbox"/> Constantly<br><input type="checkbox"/> Intermittently<br><input type="checkbox"/> After a while<br><input type="checkbox"/> In a hot environment<br><input type="checkbox"/> In a cold environment<br><input type="checkbox"/> Other : .....                                                                                                                                                                                                                                                                                                                        |                                        |                                |                                                                                                                                |                                   |
|                                                                                                                                                                                                                                                                                                       | Symptom(s)                       | <input type="checkbox"/> No backlight<br><input type="checkbox"/> No picture<br><input type="checkbox"/> Picture too bright<br><input type="checkbox"/> Shading / smearing on picture<br><input type="checkbox"/> Only partial picture<br><input type="checkbox"/> Unstabel picture<br><input type="checkbox"/> Flickering / flashing picture<br><input type="checkbox"/> Lines across/down image<br><input type="checkbox"/> Inactive row(s)<br><input type="checkbox"/> Inactive column(s)<br><input type="checkbox"/> Missing colour(s)<br><input type="checkbox"/> Other: .....<br>..... |                                        |                                |                                                                                                                                |                                   |
| PANEL REPAIR                                                                                                                                                                                                                                                                                          | Pixel Defect(s):                 | <input type="checkbox"/> Dark dots<br><input type="checkbox"/> Bright dots                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <u>Qty of dots :</u><br>.....<br>..... | Mark Defect(s)                 | <div style="color: red; font-weight: bold; font-size: 1.2em;">----- Picture -----</div> <p>Insert picture or mark defect !</p> |                                   |
|                                                                                                                                                                                                                                                                                                       | Symptoms                         | Following defect symptoms are out of warranty: <div style="display: flex; justify-content: space-between;"> <div> <ul style="list-style-type: none"> <li>Broken glass</li> <li>Scratch(es) on display</li> </ul> </div> <div> <ul style="list-style-type: none"> <li>Number of dark/bright pixels within spec.</li> <li>Burn in (only for Plasma TV)</li> </ul> </div> </div>                                                                                                                                                                                                                |                                        |                                |                                                                                                                                | These symptoms are not claimable. |
| BOARD REPAIR                                                                                                                                                                                                                                                                                          | <u>For Plasma TV repair only</u> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Spare Part Nr. New Board               | Barcode Nr. Defect Board       | Barcode Nr. Replaced Board                                                                                                     |                                   |
|                                                                                                                                                                                                                                                                                                       | 1.                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        |                                |                                                                                                                                |                                   |
|                                                                                                                                                                                                                                                                                                       | 2.                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        |                                |                                                                                                                                |                                   |
|                                                                                                                                                                                                                                                                                                       | 3.                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        |                                |                                                                                                                                |                                   |
|                                                                                                                                                                                                                                                                                                       | 4.                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        |                                |                                                                                                                                |                                   |
| To be filled in by <u>EUROSERVICE</u>                                                                                                                                                                                                                                                                 |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | RMA number:                            |                                | Date of receipt:                                                                                                               |                                   |
| <p>Note 1: The defective LCD-panel / PDP needs to be returned in the same packaging as the new part was send. If not the warranty claim will be rejected.</p> <p>Note 2: Please fill out this form <u>completely</u> and correctly, otherwise Euroservice is unable to fulfil the repair request!</p> |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        |                                |                                                                                                                                |                                   |
| Owner: PHILIPS CE EUROSERVICE                                                                                                                                                                                                                                                                         |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        |                                |                                                                                                                                | DE10WEG                           |

**Figure 5-17 Defect Description Form (DDF)**

## 6. Block Diagrams, Test Point Overview, and Waveforms

- Index of this chapter:
- 6.1 Block Diagram for Logic Circuit
  - 6.2 PSU Board diagram

### 6.1 Block Diagram for Logic Circuit

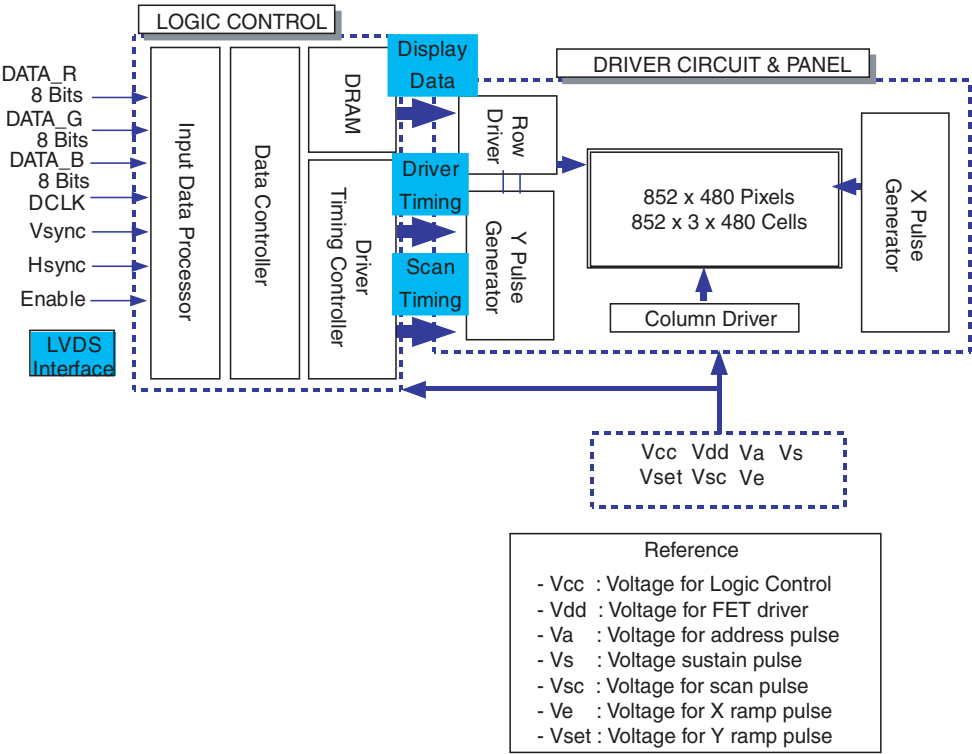


Figure 6-1 Block diagram (37" SD v4)

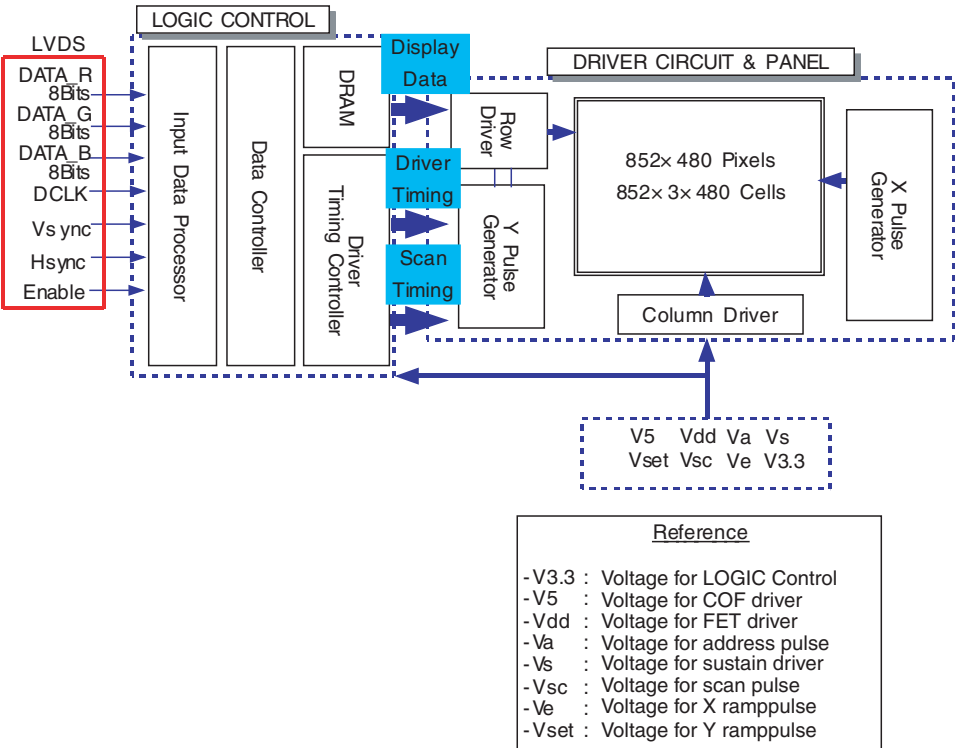
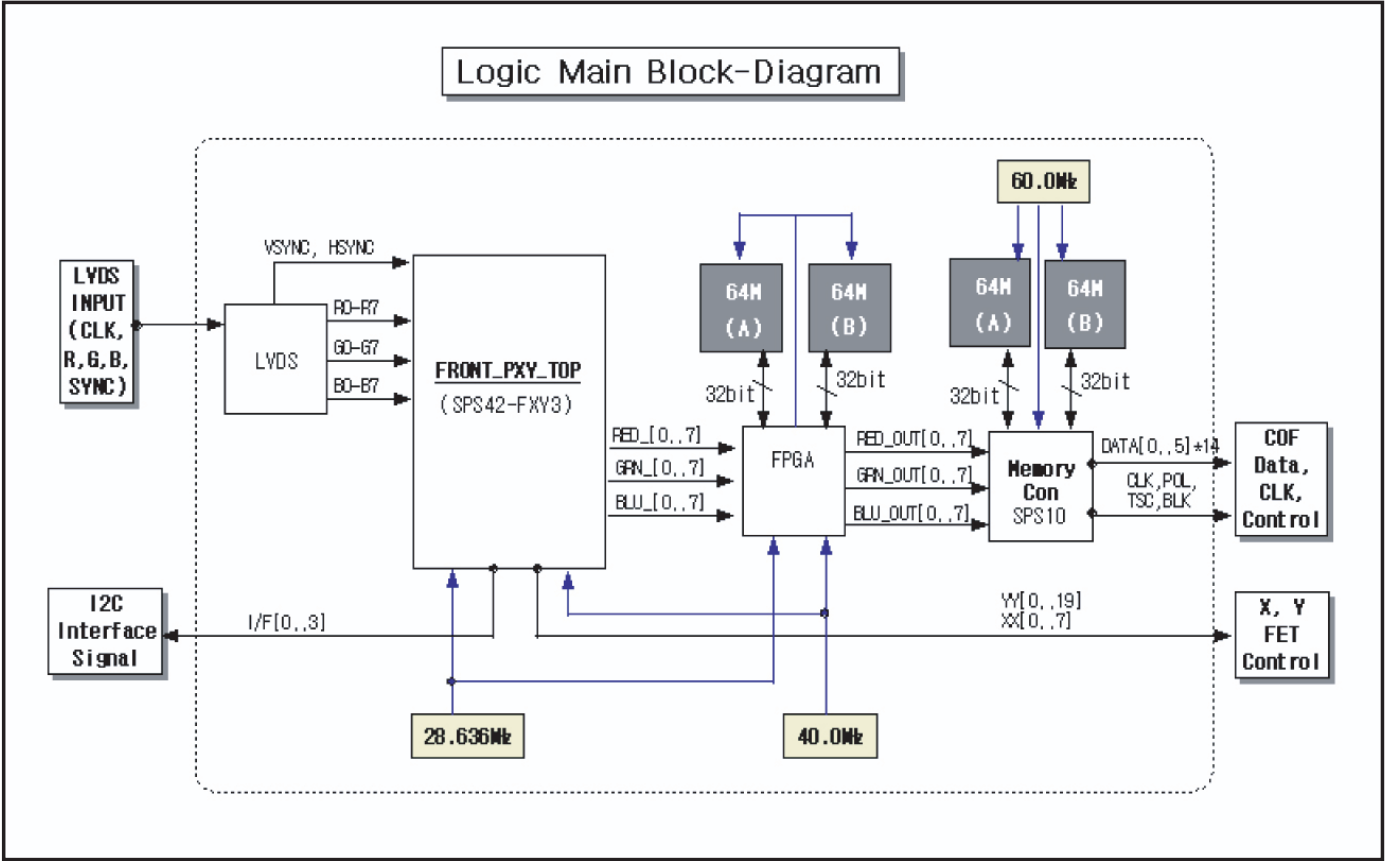
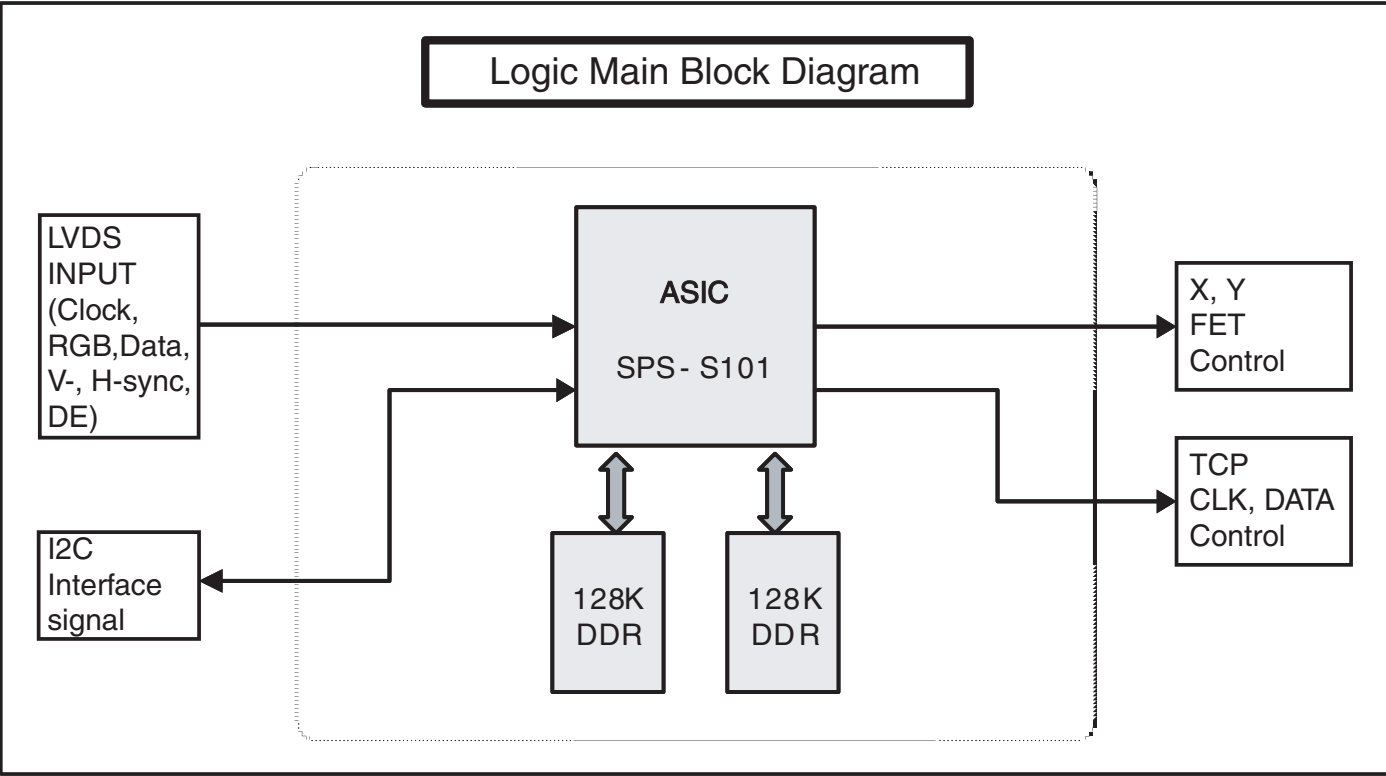


Figure 6-2 Block diagram (42" SD v2)



F\_14991\_032.eps  
030805

Figure 6-3 Block diagram (42" SD v3)



F\_14991\_002.eps  
180705

Figure 6-4 Block diagram (42" SD v4)



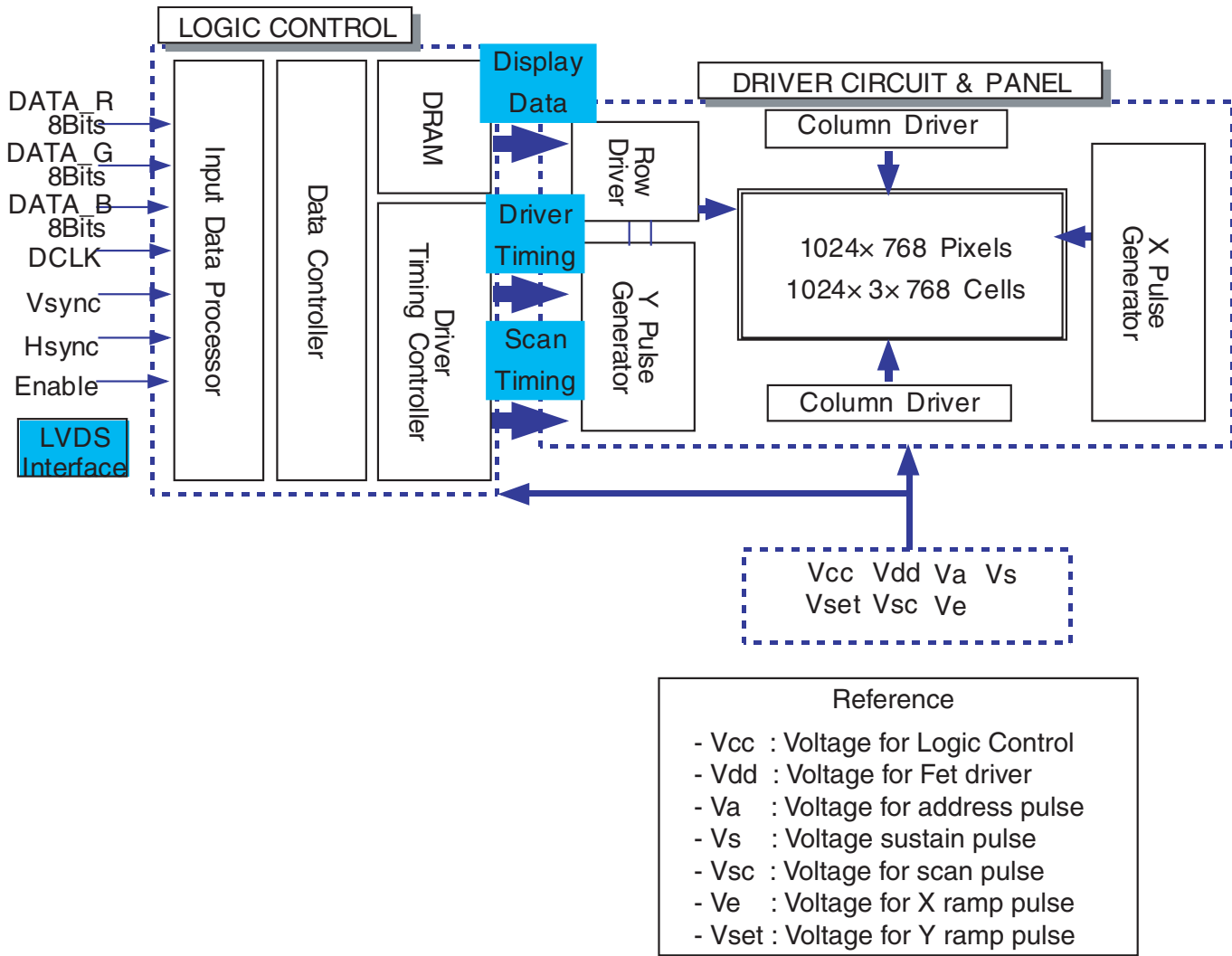


Figure 6-5 Block diagram (42" HD v3)

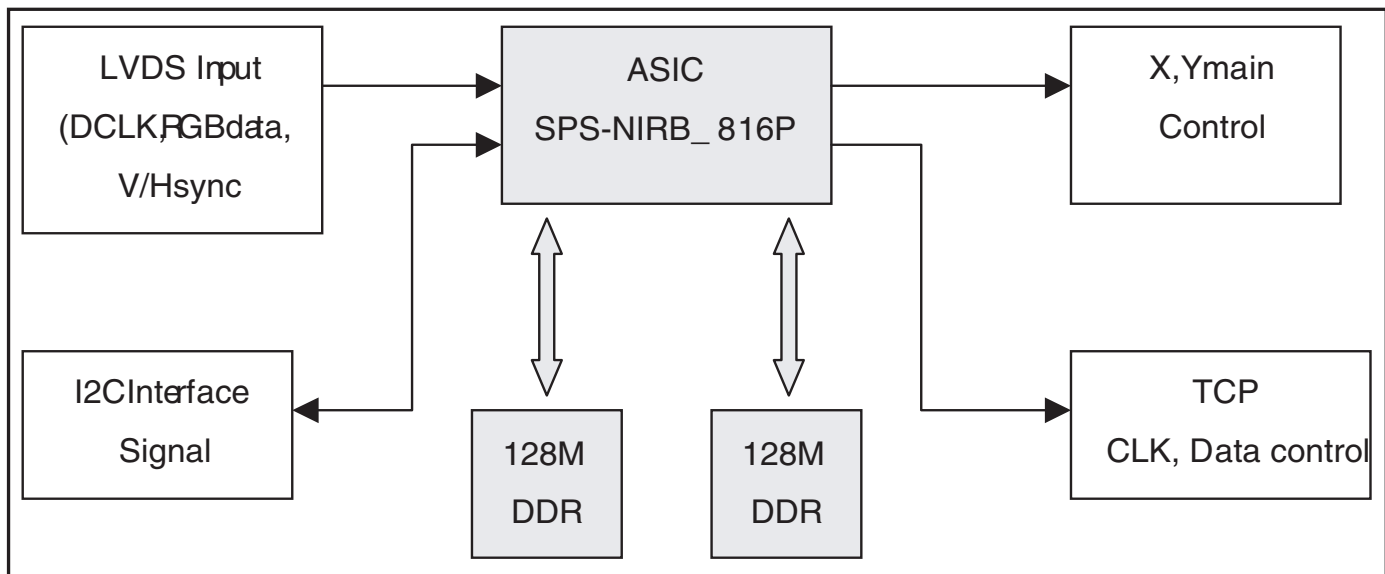
F\_14991\_018.eps  
030805

Figure 6-6 Block diagram (42" HD v4)

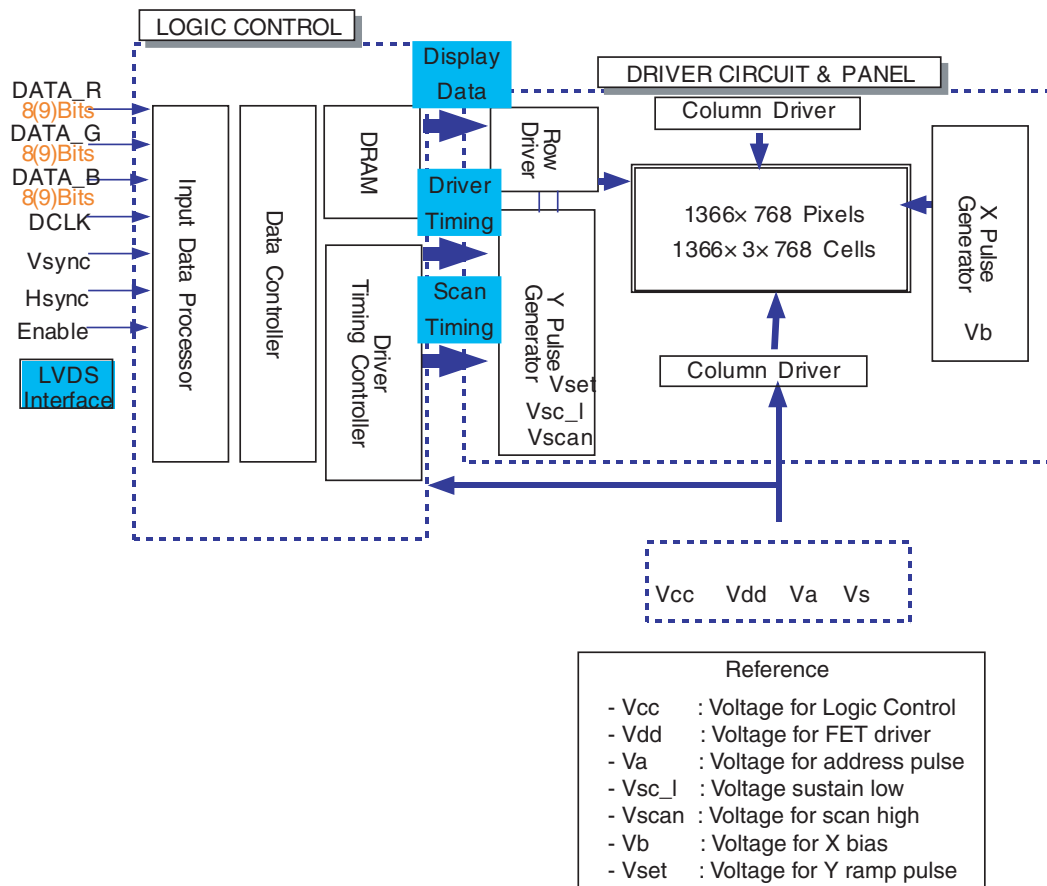


Figure 6-7 Block diagram (50" HD v3)

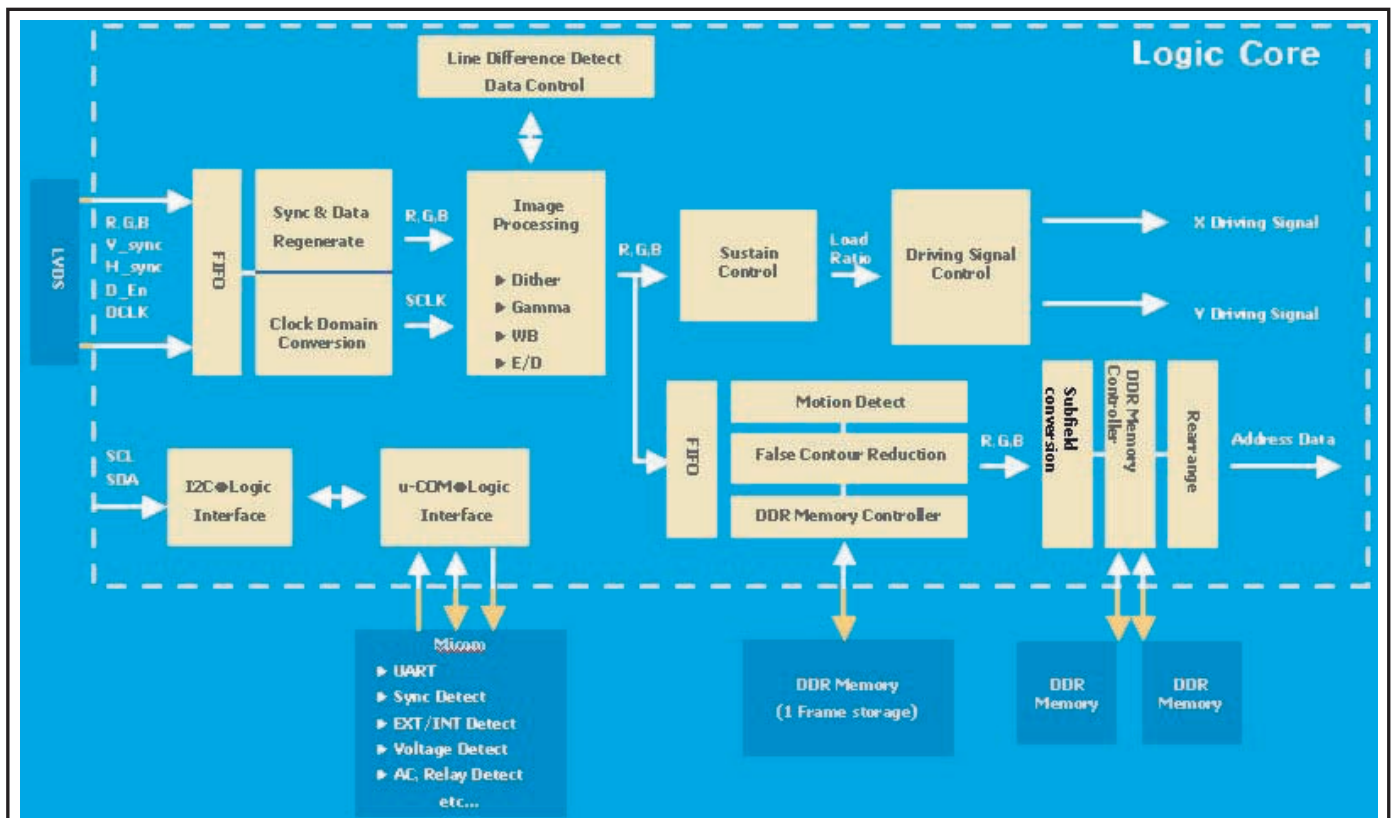


Figure 6-8 Block diagram (50" HD v4)

6.2 PSU Board diagram

6.2.1 PSU 37" SD v4

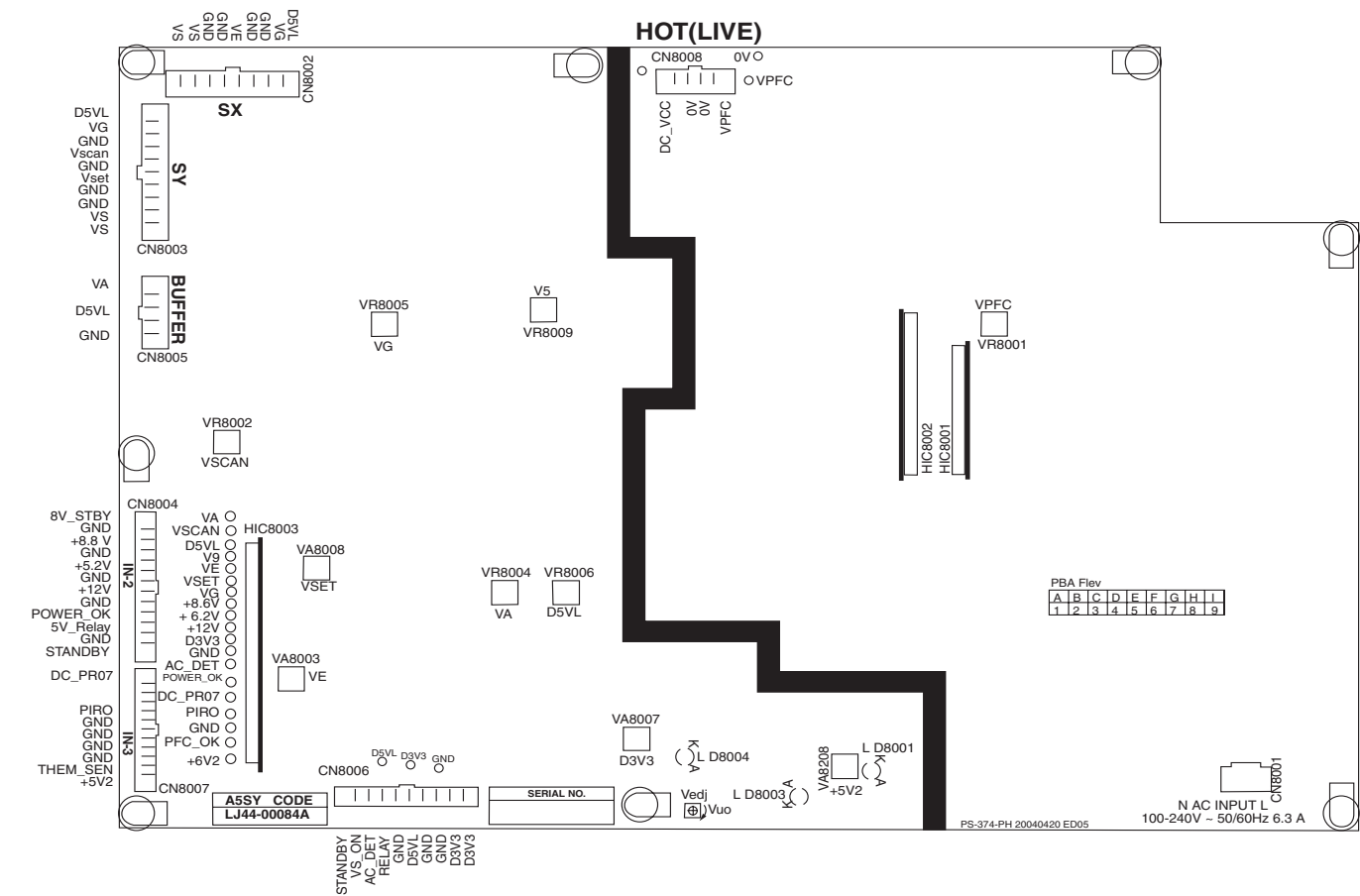


Figure 6-9 PSU layout

Table 6-1 Adjustment voltage level overview

| No | Output voltage (V) | Voltage Setting (Nominal Load) | Output Voltage Variable Point |
|----|--------------------|--------------------------------|-------------------------------|
| 2  | VS                 | 170 V                          | 160 V ~ 185 V                 |
| 3  | VA                 | 70V                            | 60 V ~ 80 V                   |
| 4  | VE                 | 180 V                          | 165 V ~ 195 V                 |
| 5  | VSET               | 173 V                          | 160 V ~ 180 V                 |
| 6  | VSCAN              | -160 V                         | -145 V ~ -175 V               |
| 7  | D5VL               | 5.2 V                          | 5.0 V ~ 6.0 V                 |
| 8  | D3V3               | 3.3 V                          | 2.8 V ~ 3.8 V                 |
| 9  | VCC                | 15 V                           | Fixed                         |
| 10 | 5V2                | 5.4 V                          | 4.5 V ~ 5.6 V                 |
| 11 | 9V_Standby         | 8.5 V ~ 9.5 V                  | Fixed                         |

Check voltage label on the PDP for correct values.

6.2.2 PSU 42" SD v2

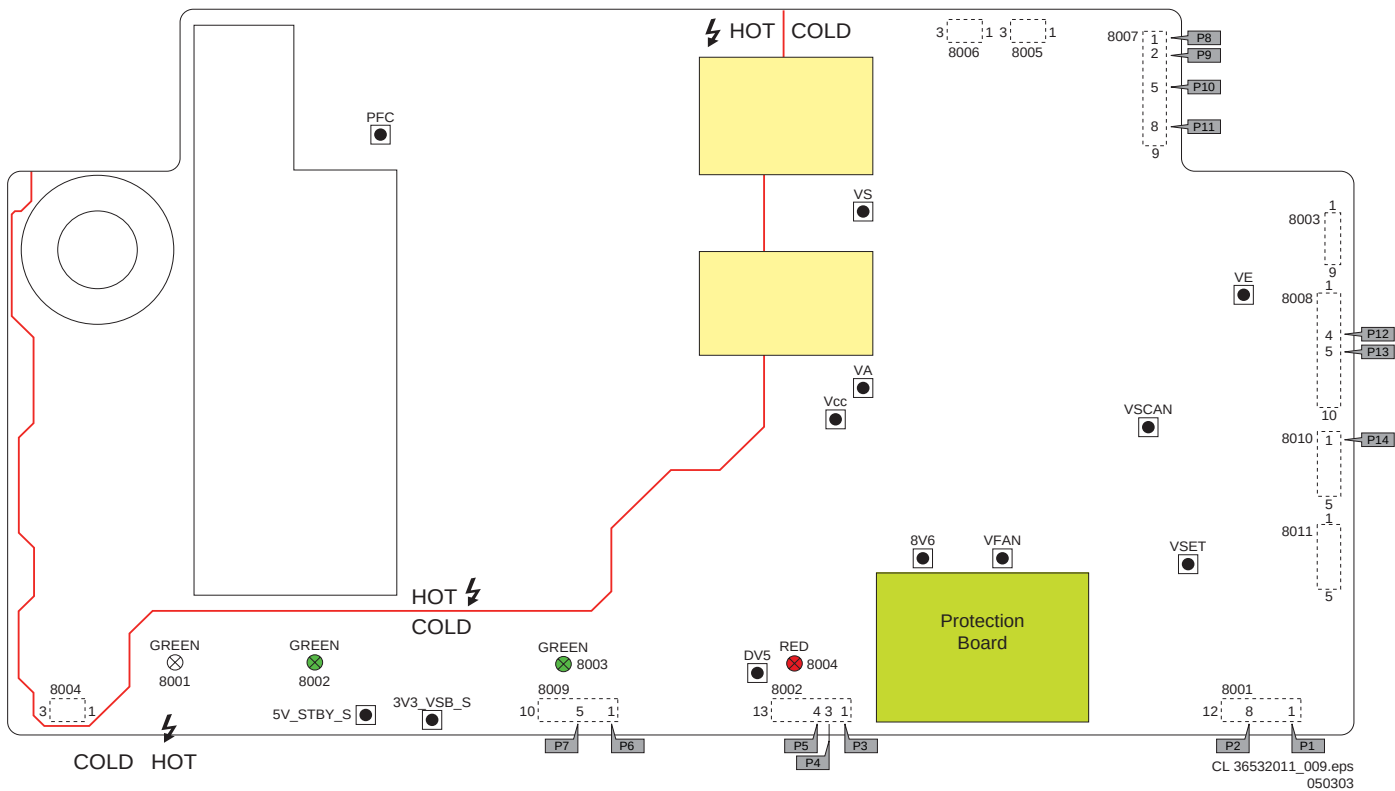


Figure 6-10 PSU layout

Table 6-2 Adjustment voltage level overview

| No                                                 | Output voltage (V) | Voltage Setting (Nominal Load) | Output Voltage Variable Point |
|----------------------------------------------------|--------------------|--------------------------------|-------------------------------|
| 1                                                  | Vs                 | 87V                            | 78V ~ 92V                     |
| 2                                                  | Va                 | 79V                            | 72V ~ 86V                     |
| 3                                                  | Ve                 | 107V                           | 100V ~ 120V                   |
| 4                                                  | Vset               | 93V                            | 75V ~ 95V                     |
| 5                                                  | Vscan              | 79V                            | 65V ~ 85V                     |
| 6                                                  | Vg                 | 15V                            | Fixed                         |
| 7                                                  | D5V                | 5.2V                           | 5V ~ 5.6V                     |
| 8                                                  | D3V3               | 3.3V                           | 2.8V ~ 3.7V                   |
|                                                    |                    |                                |                               |
| Check voltage label on the PDP for correct values. |                    |                                |                               |

6.2.3 PSU 42" SD v3

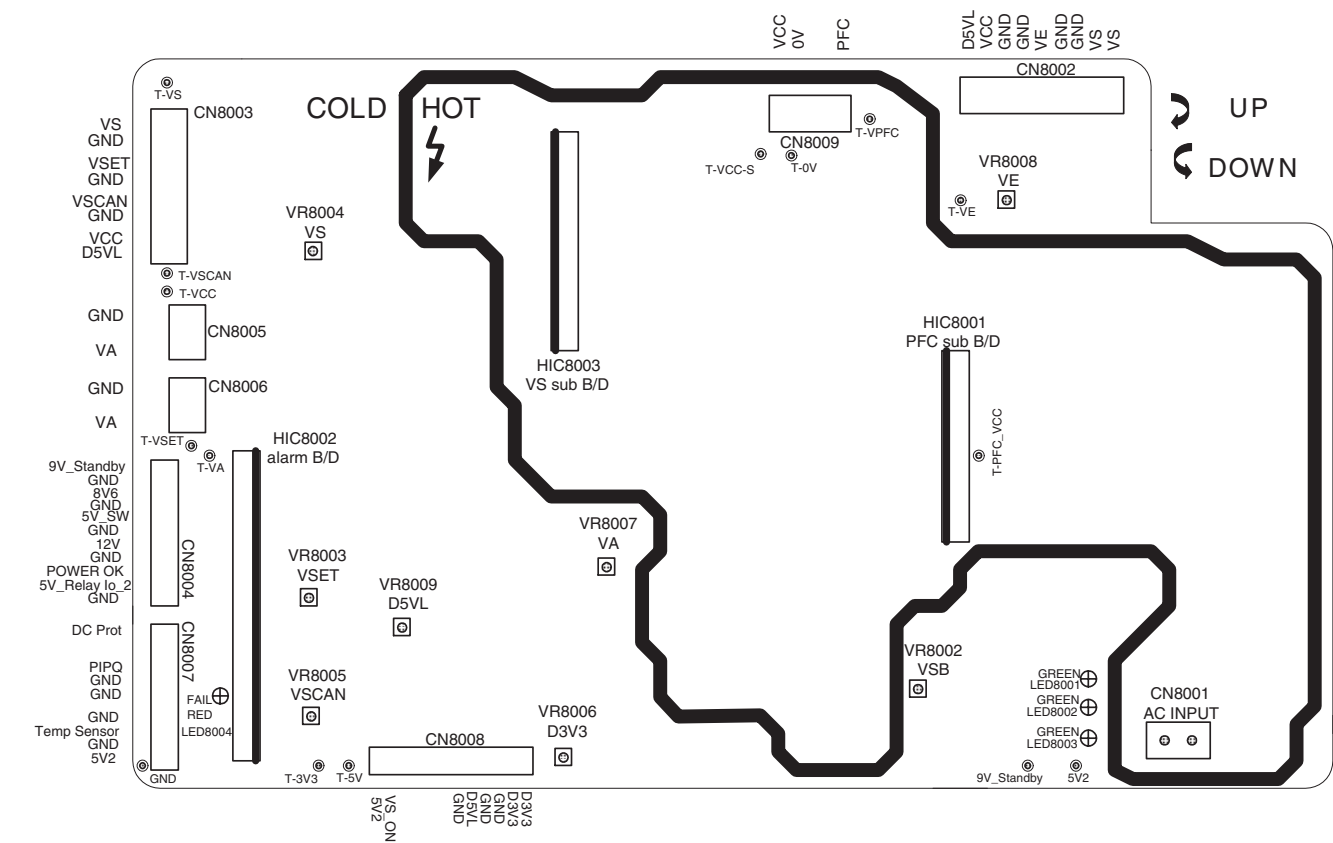


Figure 6-11 PSU layout

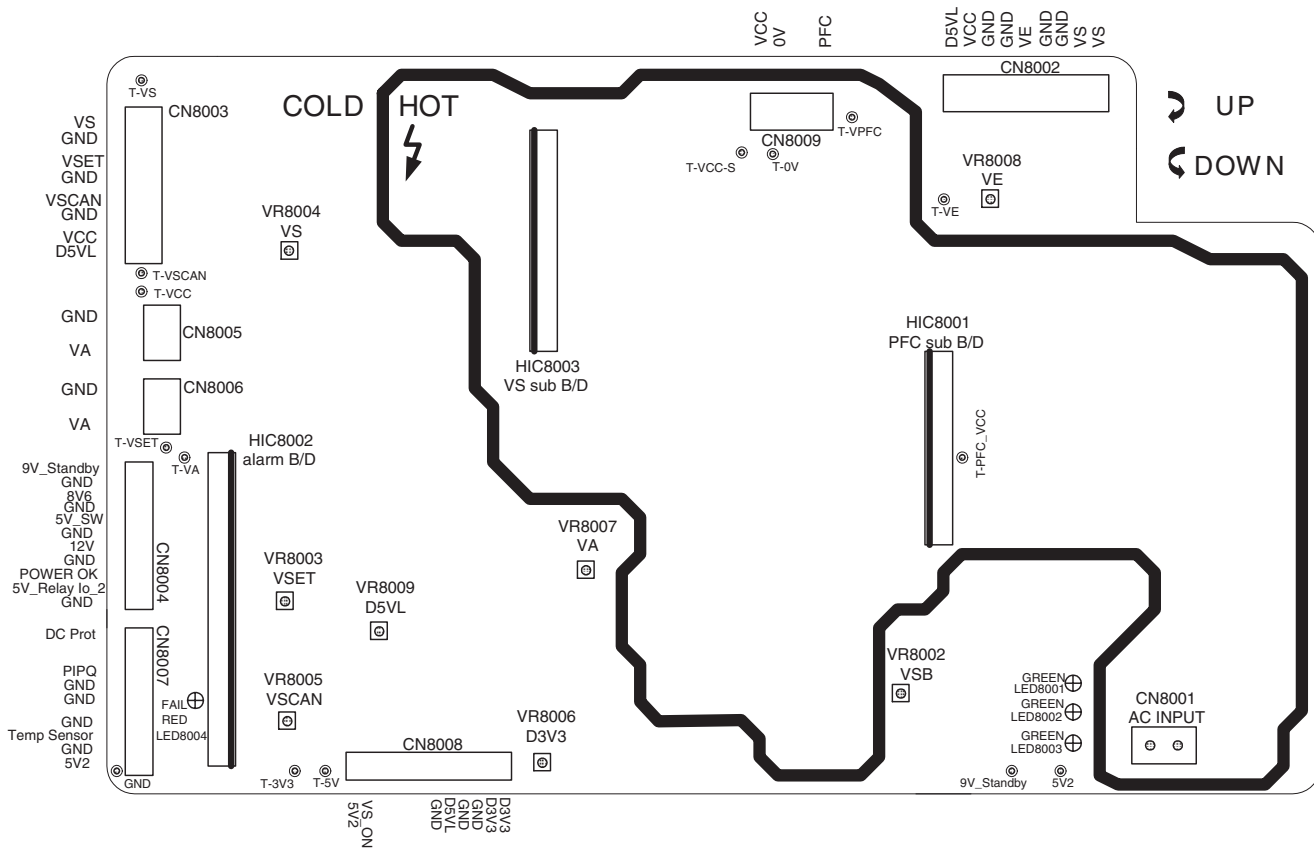
Table 6-3 Adjustment voltage level overview

| No                                                 | Output voltage (V) | Voltage Setting (Nominal Load) | Output Voltage Variable Point |
|----------------------------------------------------|--------------------|--------------------------------|-------------------------------|
| 1                                                  | Vs                 | 175V                           | 160V ~ 185V                   |
| 2                                                  | Va                 | 70V                            | 65V ~ 80V                     |
| 3                                                  | Ve                 | 160V                           | 150V ~ 170V                   |
| 4                                                  | Vset               | 173V                           | 160V ~ 18095V                 |
| 5                                                  | Vscan              | -60V                           | -55V ~ -75V                   |
| 6                                                  | D5VL               | 5.2V                           | 4.0V ~ 6V                     |
| 7                                                  | D3V3               | 3.3V                           | 5V ~ 5.6V                     |
| 8                                                  | Vcc                | 15V                            | Fixed                         |
|                                                    |                    |                                |                               |
| Check voltage label on the PDP for correct values. |                    |                                |                               |





### 6.2.5 PSU 42" HD v3



**Figure 6-13 PSU layout**

### Table 6-5 Adjustment voltage level overview

| No | Output voltage (V) | Voltage Setting (Normal Load) | Output Voltage Variable Point |
|----|--------------------|-------------------------------|-------------------------------|
| 1  | PFC                | 385V $\pm$ 2V                 | 370V ~ 400V                   |
| 2  | VS                 | 175V $\pm$ 1%                 | 160V ~ 185V                   |
| 3  | VA                 | 70V $\pm$ 1%                  | 65V ~ 80V                     |
| 4  | VE                 | 160V $\pm$ 2%                 | 150V ~ 170V                   |
| 5  | VSET               | 173V $\pm$ 2%                 | 160V ~ 180V                   |
| 6  | VSCAN              | -60V $\pm$ 2%                 | -55V ~ -75V                   |
| 7  | D5VL               | 5.2V $\pm$ 2%                 | 4.0V ~ 6.0V                   |
| 8  | D3V3               | 3.3V $\pm$ 2%                 | 2.8V ~ 4.0V                   |
| 9  | VCC                | 15V $\pm$ 5%                  | Fixed                         |
| 10 | 5V2                | 5.4V $\pm$ 3%                 | 3.5V ~ 6.0V                   |
| 11 | 9V_Standby         | 8.5V ~ 9.5V                   | Fixed                         |

Check voltage label on the PDP for correct values.



6.2.7 PSU 50" HD v3

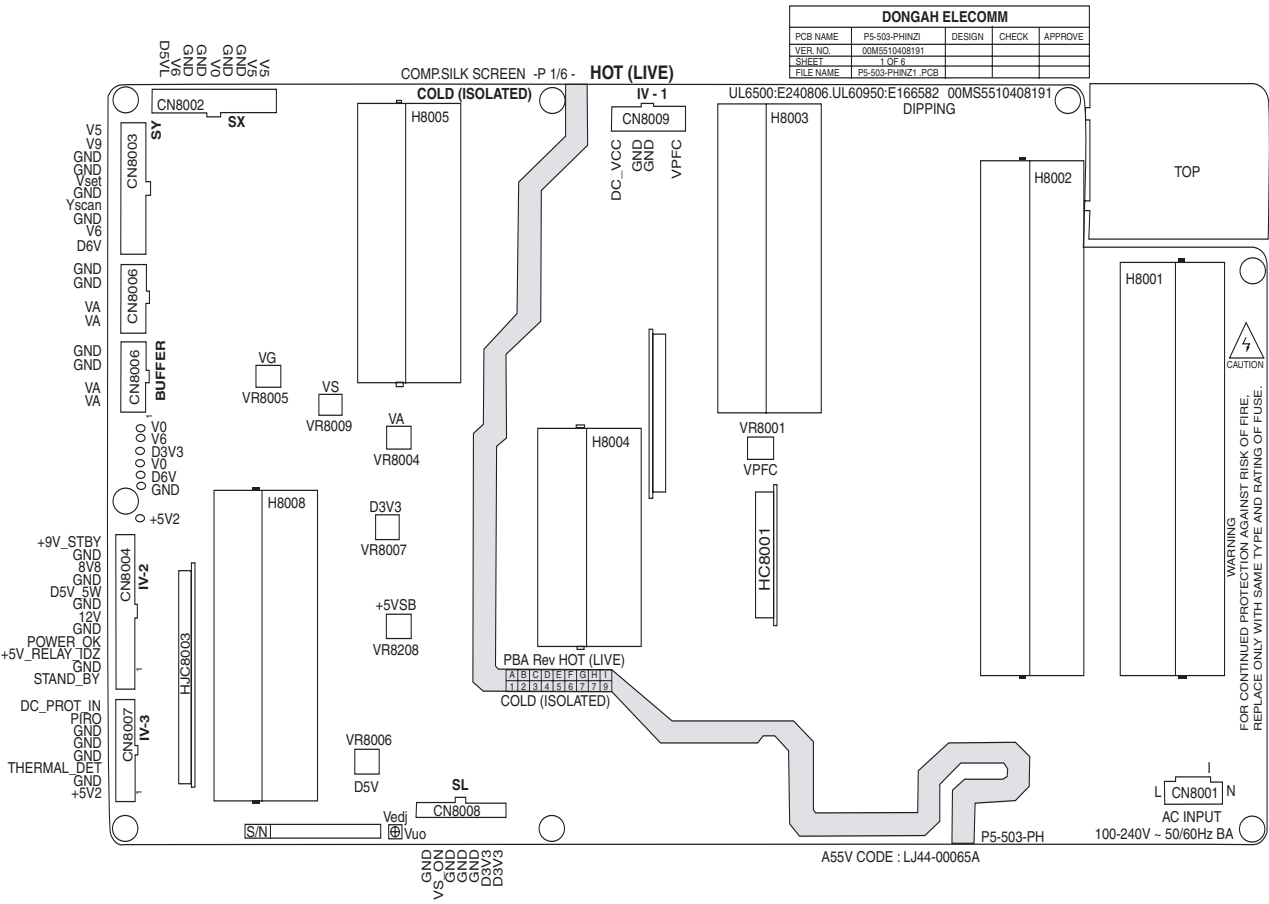


Figure 6-15 PSU layout

Table 6-7 Adjustment voltage level overview

| No | Output voltage (V) | Voltage Setting (Normal Load) | Output Voltage Variable Point |
|----|--------------------|-------------------------------|-------------------------------|
| 1  | PFC                | 385V ± 2V                     | 370V ~ 400V                   |
| 2  | VS                 | 175V ± 1%                     | 160V ~ 185V                   |
| 3  | VA                 | 70V ± 1%                      | 65V ~ 80V                     |
| 4  | VE                 | 160V ± 2%                     | 150V ~ 170V                   |
| 5  | VSET               | 173V ± 2%                     | 160V ~ 180V                   |
| 6  | VSCAN              | -60V ± 2%                     | -55V ~ -75V                   |
| 7  | D5VL               | 5.2V ± 2%                     | 4.0V ~ 6.0V                   |
| 8  | D3V3               | 3.3V ± 2%                     | 2.8V ~ 4.0V                   |
| 9  | VCC                | 15V ± 5%                      | Fixed                         |
| 10 | 5V2                | 5.4V ± 3%                     | 3.5V ~ 6.0V                   |
| 11 | 9V_Standby         | 8.5V ~ 9.5V                   | Fixed                         |

Check voltage label on the PDP for correct values.

6.2.8 PSU 50" HD v4

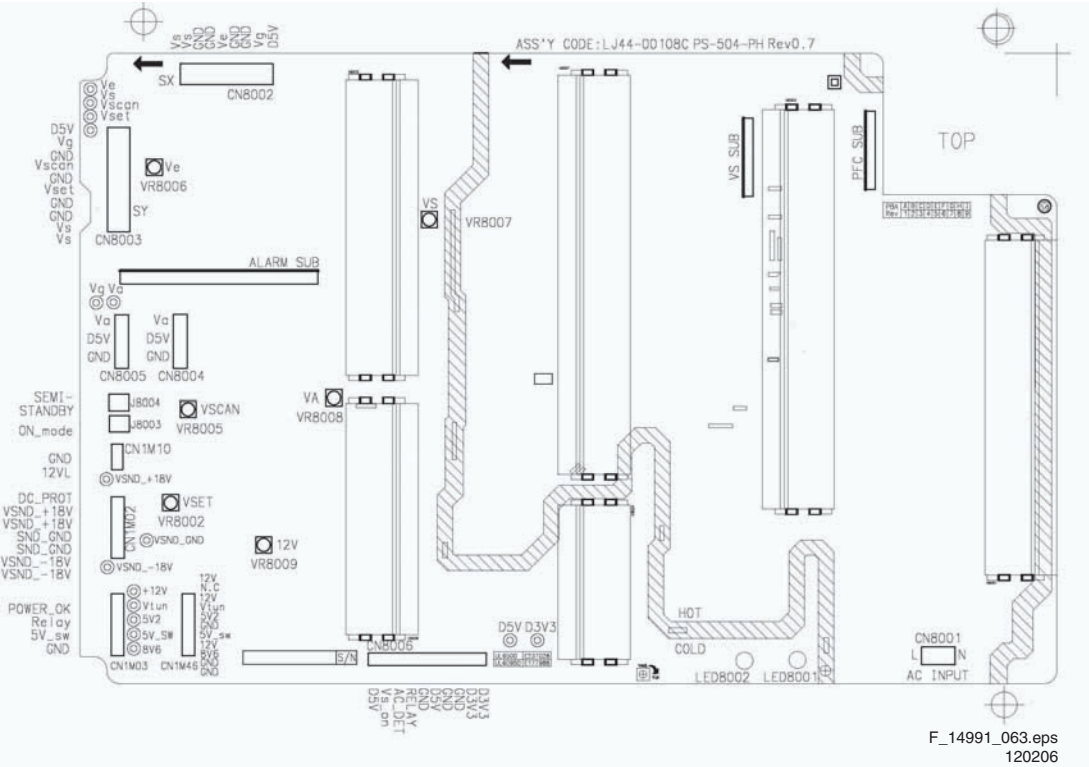


Figure 6-16 PSU layout

Table 6-8 Adjustment voltage level overview

| No | Output voltage (V) | Voltage Setting (Normal Load) | Output Voltage Variable Point |
|----|--------------------|-------------------------------|-------------------------------|
| 1  | VS                 | 200V ± 1%                     | 195V ~ 215V                   |
| 2  | VA                 | 70V ± 1.5%                    | 50V ~ 70V                     |
| 3  | VE                 | 100V ± 1.5%                   | 70V ~ 110V                    |
| 4  | VSET               | 195V ± 1.5%                   | 180V ~ 210V                   |
| 5  | VSCAN              | -175V ± 1.5%                  | -170V ~ -185V                 |
| 6  | VSB                | 5V ± 5%                       | Fixed                         |
| 7  | VG                 | 15V ± 5%                      | Fixed                         |
| 8  | D5VL               | 5.2V ± 5%                     | Fixed                         |
| 9  | D3V3               | 3.3V ± 5%                     | Fixed                         |

Check voltage label on the PDP for correct values.

# 7. Circuit Diagrams and PWB Layouts

Not applicable.



## 8. Alignments

### Index of this chapter:

- 8.1 Alignments 37" SD v4
- 8.2 Alignments 42" SD v2
- 8.3 Alignments 42" SD v3
- 8.4 Alignments 42" HD v3
- 8.6 Alignments 42" HD v4
- 8.7 Alignments 50" HD v3
- 8.8 Alignments 50" HD v4
- 8.9 Alignment value overview (all screens)

### Note:

- Figures can deviate due to the different model executions.

**Important:** Remove all non-default jumpers and reset all DIP switches, after the repair!

### 8.1 Alignments 37" SD v4

1. Set the pattern to Full White (place jumper CN2008 on the Logic Board).
2. Set Vsch (see Figure "Test point location LJ92-0102A") to -38V (see Figure "Waveform adjustment (Y-Board)"). Check with a digital multimeter, connected between the Y-scan test point and ground. Adjust the voltage with VR5000.
3. Check the waveform using an Oscilloscope.
  - Triggering through V\_TOGG of the LOGIC Board (see Figure "Logic PWB").
  - Connect the "ODD" test point, located at the centre of Y\_buffer (see Figure "Potentiometer locations LJ92-01149A"), to the other channel, and then check the first Subfield waveform of one TV-Field.
  - Check the waveform by adjusting Horizontal Division of the oscilloscope.
4. Adjust the flat time of the rising ramp of the 1st subframe to 40  $\mu$ S with VR5001 (see Figure "Rising ramp flat time adjustment").

5. Adjust the flat time of the falling ramp of the 1st subframe to 16  $\mu$ S with VR5002 (see Figure "Falling ramp flat time adjustment").
  - This is a difficult adjustment.
  - It is easier and more accurate to do the following:
    - Count 3 pulses between A and B;
    - Set the difference between A and B to 40 V; the time between C and D will then automatically be set to approximately 16  $\mu$ S
    - Settings of the oscilloscope: vertically 20VDC/div, horizontally 10  $\mu$ S/div.
6. Check with the oscilloscope if the voltage of Vsch is -38 V (see Figure "Y-scan H waveform").

**Special notice:** It is very important, that you execute this adjustment on the 1st Sub-Field (SF) of the 1st Frame of the Reset waveform and then move to the 3rd Sub-field for adjusting.

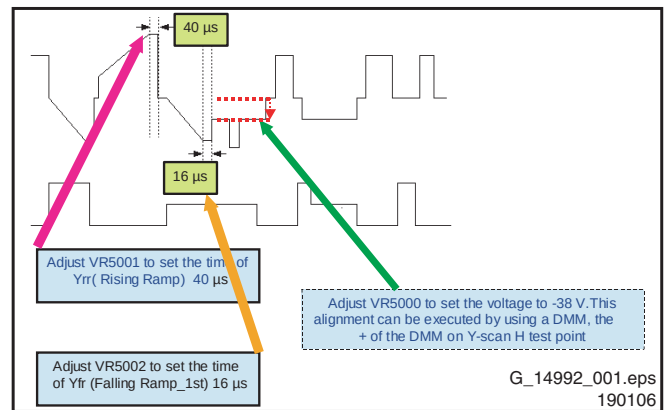


Figure 8-1 Waveform adjustment (Y-Board)

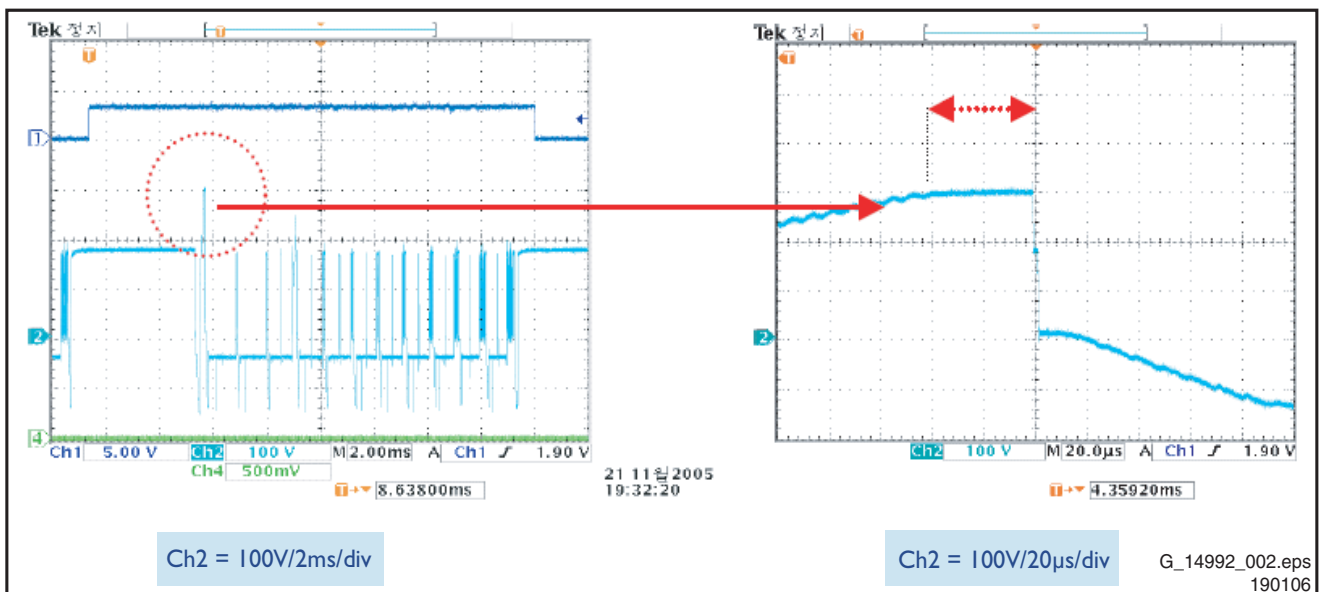


Figure 8-2 Rising ramp flat time adjustment (Y-Board)

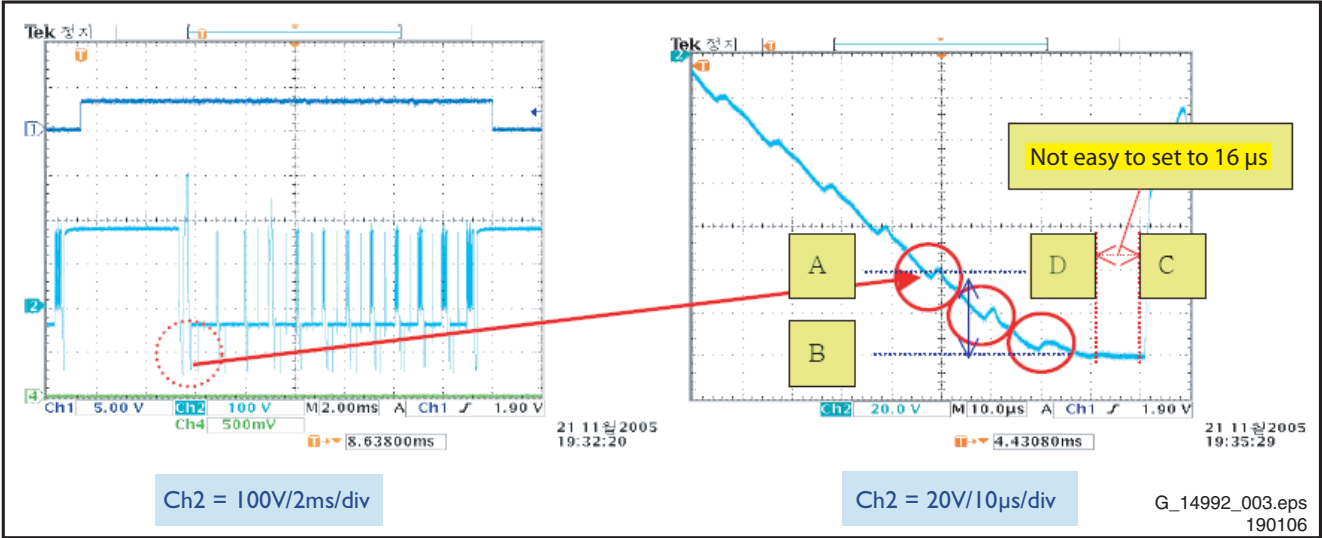


Figure 8-3 Falling ramp flat time adjustment (Y-Board)

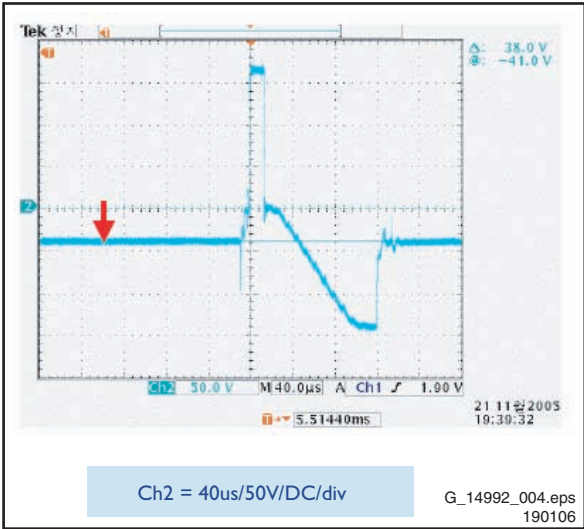


Figure 8-4 Y-scan H waveform (Y-Board)

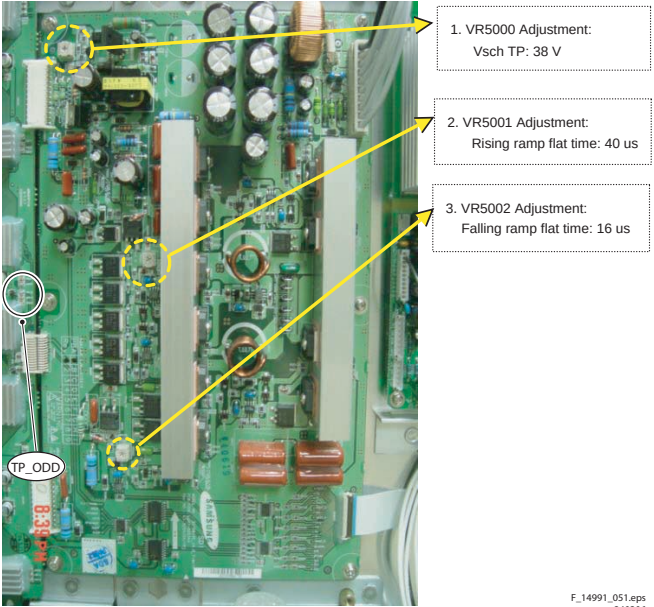


Figure 8-6 Potentiometer locations LJ92-01149A

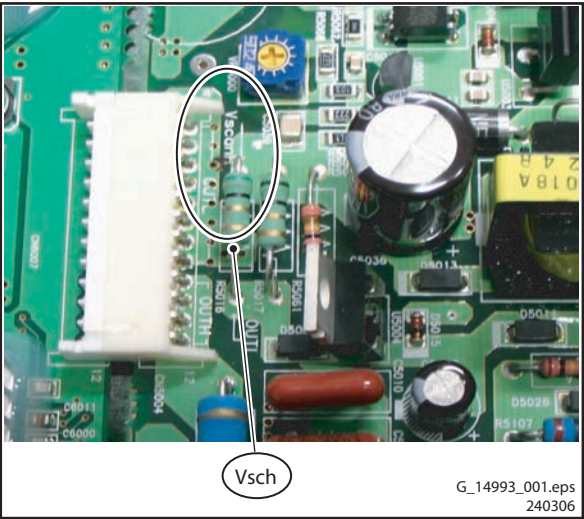


Figure 8-5 Test point location LJ92-01021A

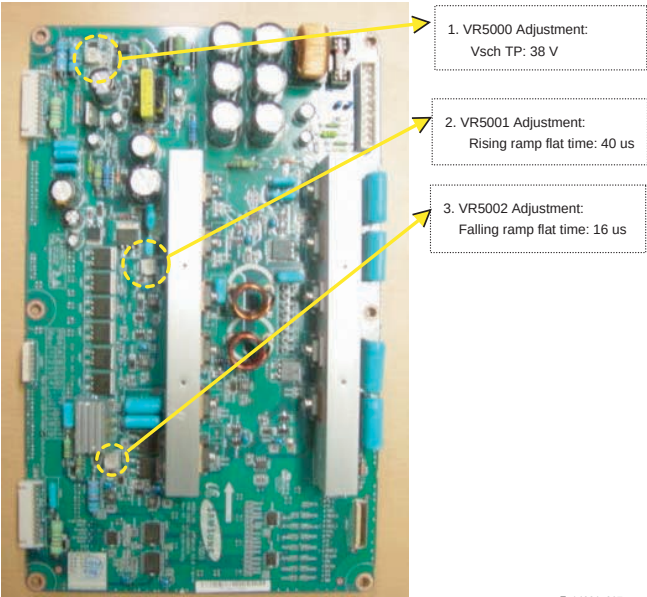


Figure 8-7 Potentiometer locations LJ92-01149B

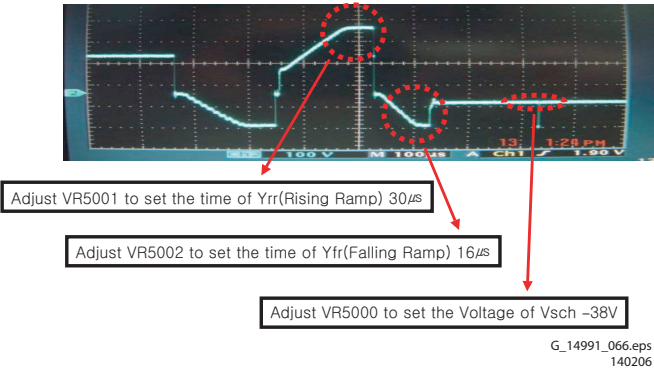
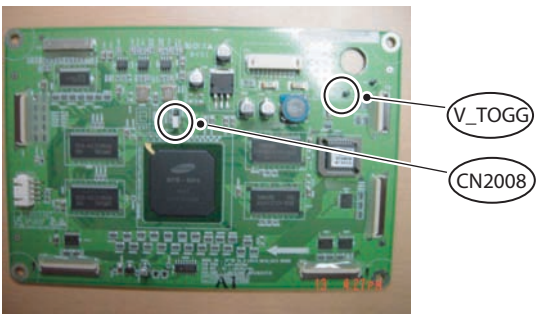
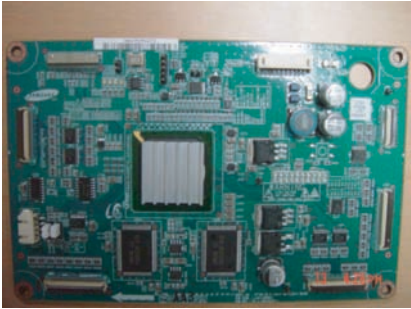


Figure 8-8 Wave form adjustment (Y-Main board)



LJ92-01056A / LJ92-01145A

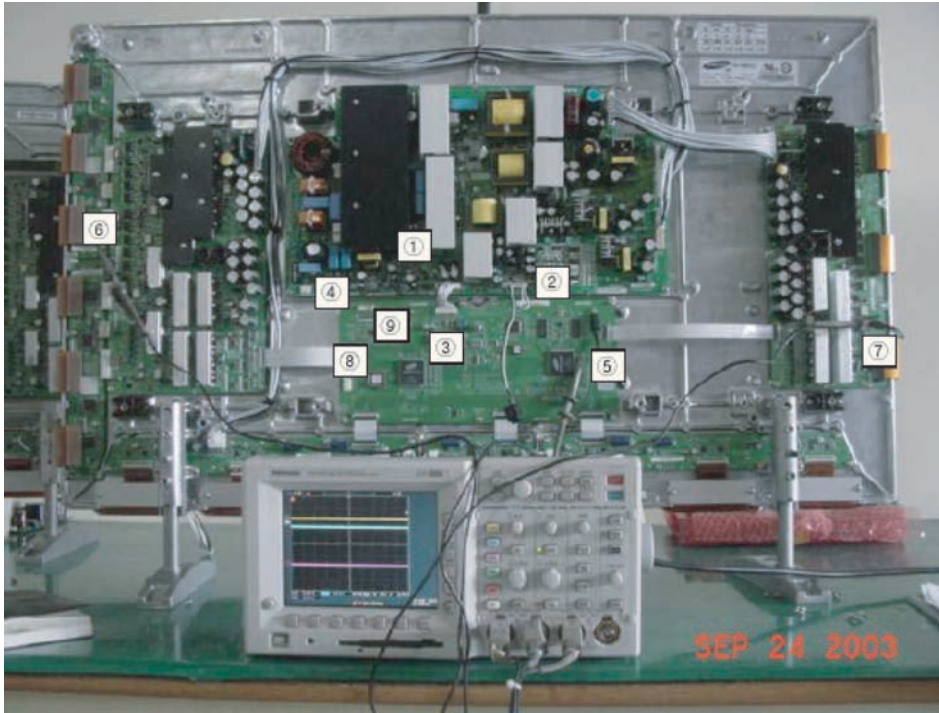


F\_14991\_068.eps  
230306

Figure 8-9 Logic PWB

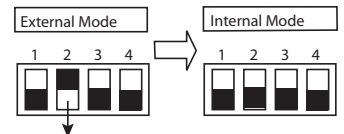


## 8.2 Alignments 42" SD v2



## 1) Preparation

- 1 Insert jumper J8002 on PSU board
- 2 Connect the Jig connector switch
- 3 Put the Logic board dipswitches into internal mode, to generate a Full White screen



- 4 Connect the AC power jig

Connect the Oscilloscope:

- 5 CH1: V-SYNC (CN201)
- 6 CH2: Y-output (OUT4)
- 7 CH3: X-output (TP OUT)
- 8 Connect the Key-scan Board

## 2) Turn-On.

- Turn on the Power switch
- Check the LED on the Logic Board
- Check waveform of X- and Y-board (Refer to Picture below)

Figure 8-10 Adjusting procedure (42" SD v2)

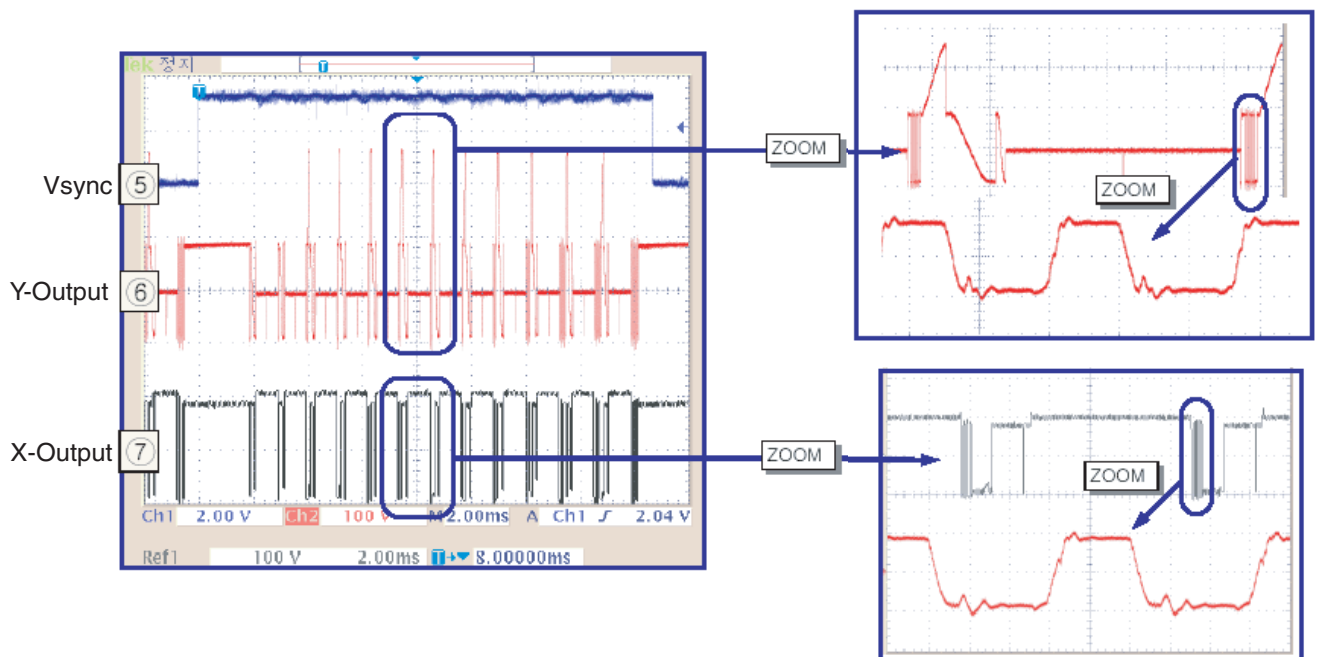


Figure 8-11 Waveform of X- and Y-board (42" SD v2)

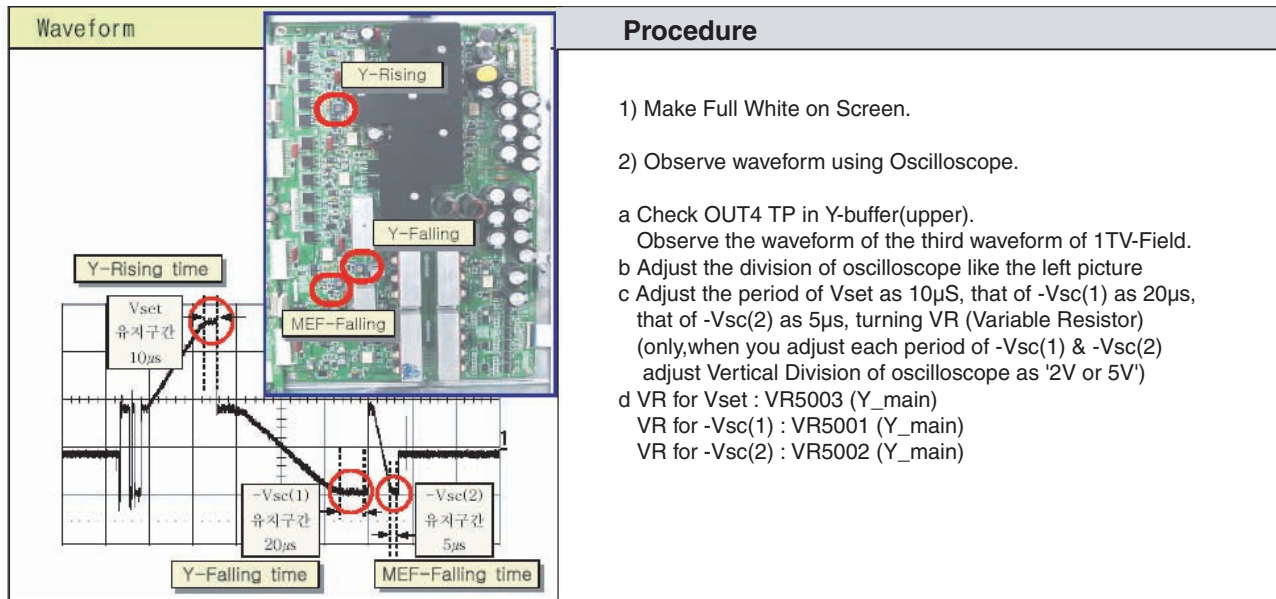


Figure 8-12 How to adjust the waveform (42" SD v2)



### 8.3 Alignments 42" SD v3

1. Put the dipswitches on the Logic Board in the internal position to get a Full White Pattern.
2. You can find the location of the test point and potentiometers in Figure "Potentiometer locations".
3. Adjust  $V_{sch}$  to 40 V with VR5004.
4. Check the waveform with an Oscilloscope.
  - Take the trigger signal from the testpoint marked "V-sync" on the Logic Board.
  - Connect the testpoint marked "OUT 4", located in the centre of Y\_buffer Board to the other channel, and then check the first Subfield operating waveform of one TV-Field.
  - Check the waveform again after adjusting Horizontal Division. Check the Reset waveform when the V\_TOGG Level is changed.
  - Set the  $V_{set}$  to  $10\mu s$  by adjusting VR5002.
  - Set the Falling maintenance time to  $30\mu s$  by adjusting VR5003.
  - Change the waveform position of Oscilloscope to the 3rd Subfield and then set the Falling maintenance time to  $30\mu s$  by adjusting the VR5001. GND maintenance section should be checked after the Vertical Division is readjusted to '2 V or 5 V'.

**Special notice:** It is very important, that you execute this adjustment on the 1st Sub-Field (SF) of the 1st Frame of the

Reset waveform and then move to the 3rd Sub-field for adjusting.

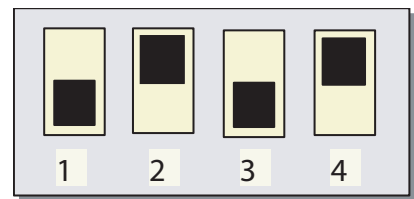


Figure 8-13 DIP switch mode: External

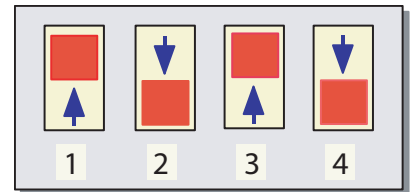


Figure 8-14 DIP switch mode: Internal

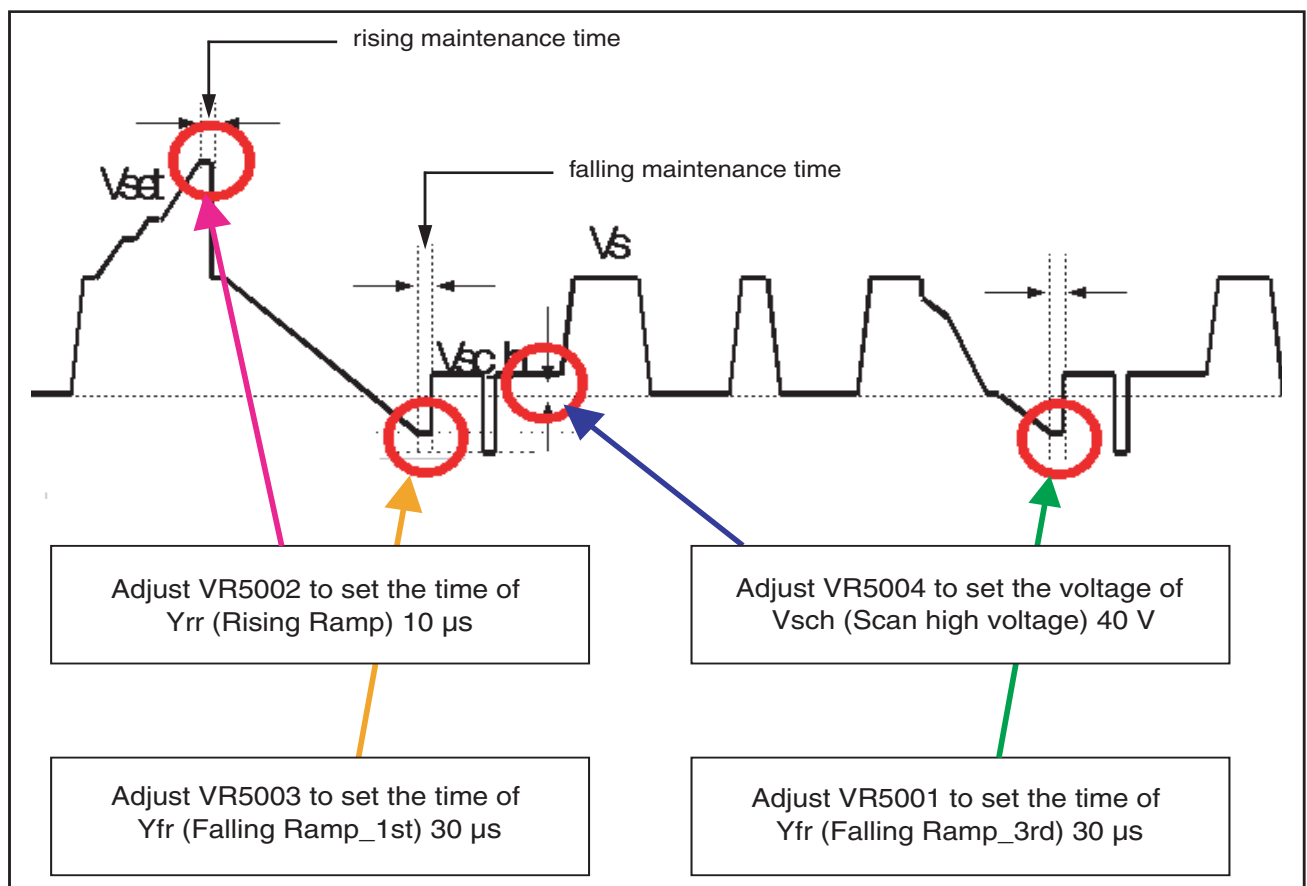


Figure 8-15 TCP ramp waveform inclination adjustment (Y-Board)

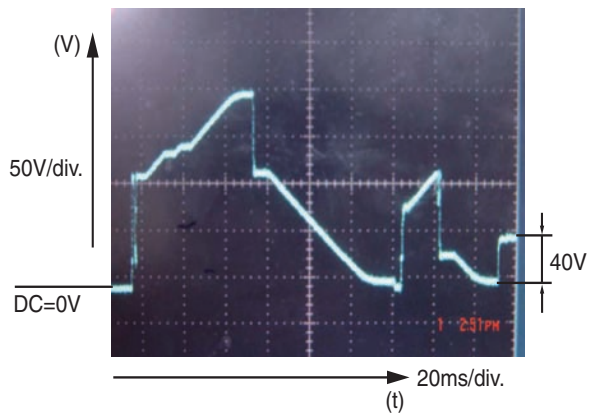


Figure 8-16 Rising ramp

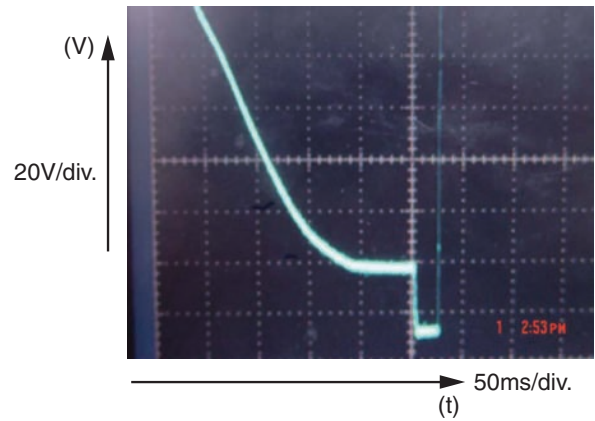


Figure 8-17 Falling ramp

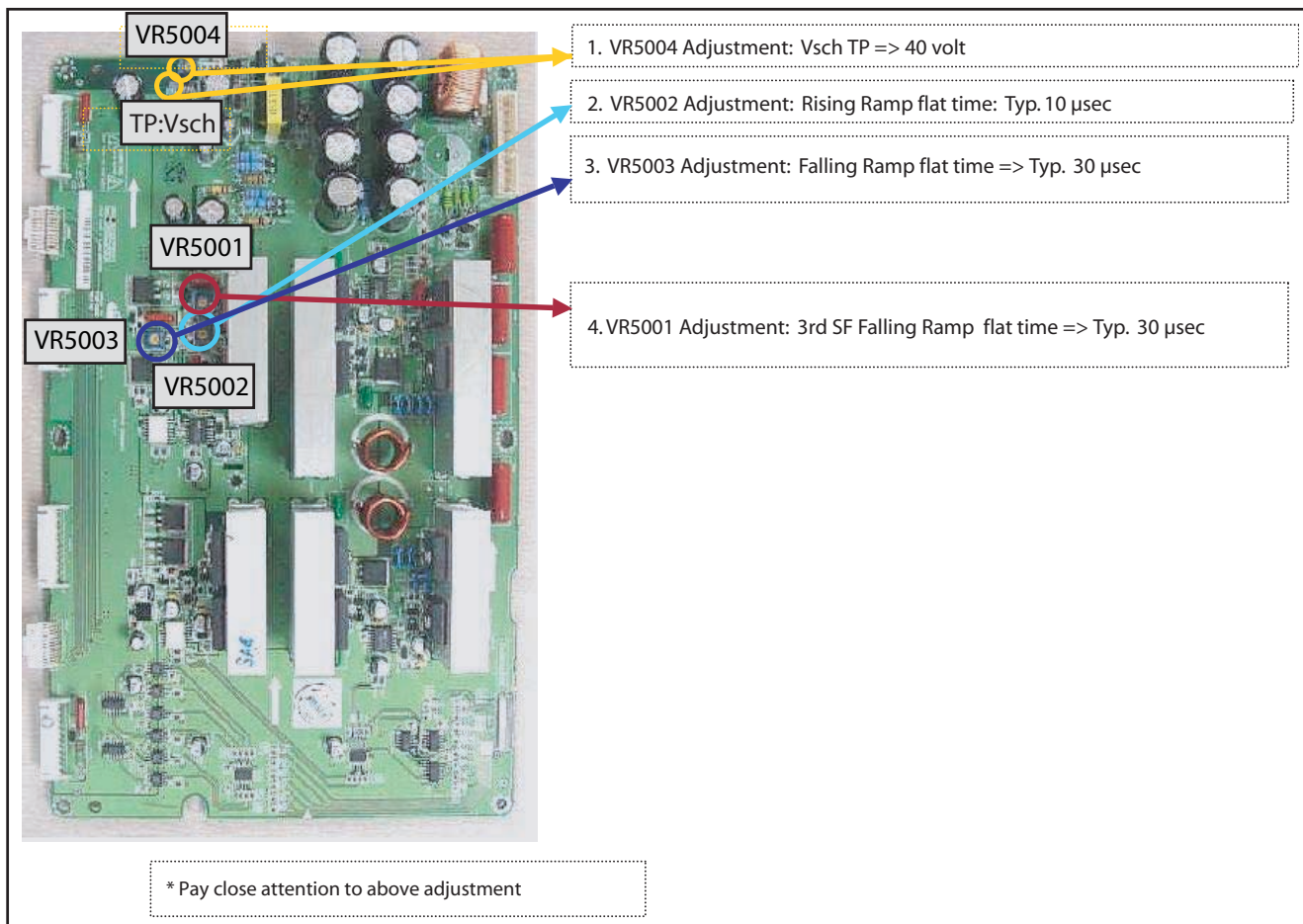
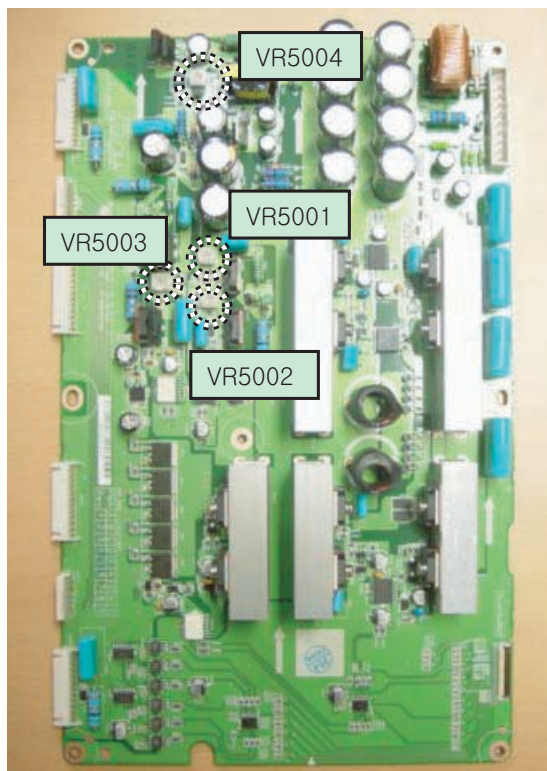
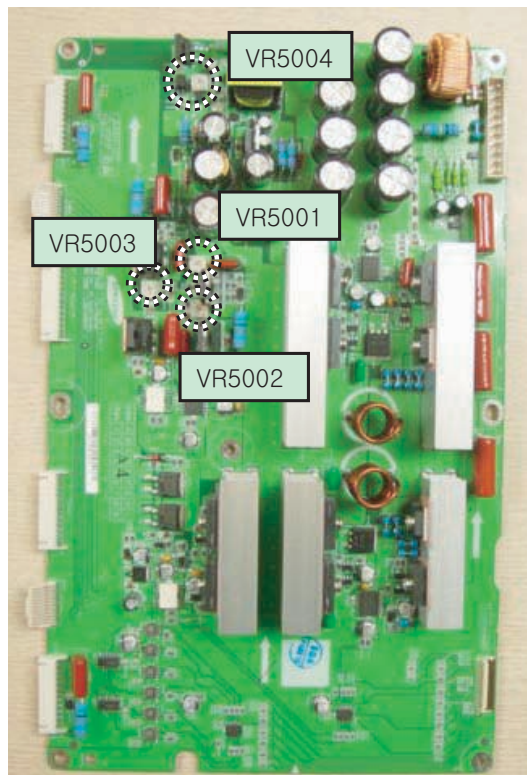


Figure 8-18 Potentiometer locations



LJ92-01284A

F\_14991\_070.eps  
140206**Figure 8-19 Potentiometer locations LJ92-01284A**

LJ92-00944B

F\_14991\_069.eps  
140206**Figure 8-20 Potentiometer locations LJ92-00944B**

## 8.4 Alignments 42" HD v3

1. Put the dipswitches on the Logic Board in the internal position to get a Full White Pattern.
2. Adjust  $V_{sch}$  to Clock-wise max by using VR5004 ( $V_{sch}$  should be connected to "+" unit of DMM).
3. Check the waveform using Oscilloscope.
  - Triggering through  $V_{TOGG}$  of LOGIC Board.
  - Connect the OUT 4 Test Point at the centre of  $Y_{buffer}$  to other channel, and then check the first Subfield operating waveform of one TV-Field.
  - Check the waveform again after adjusting Horizontal Division. Check the Reset waveform when the  $V_{TOGG}$  Level is changed.
  - Set the  $V_{set}$  to 20  $\mu s$  by adjusting VR5002. GND maintenance section should be checked after the Vertical Division is readjusted to '2 V or 5 V'.
  - Set the Falling maintenance time to 20  $\mu s$  by adjusting VR5006.
  - Change the waveform position of Oscilloscope to the 3rd Subfield and then set the Falling maintenance time to 10  $\mu s$  by adjusting the VR5003. GND maintenance section should be checked after the Vertical Division is readjusted to '2 V or 5 V'.

**Special notice:** It is very important, that you execute this adjustment on the 1st Sub-Field (SF) of the 1st Frame of the

Reset waveform and then move to the 3rd Sub-field for adjusting.

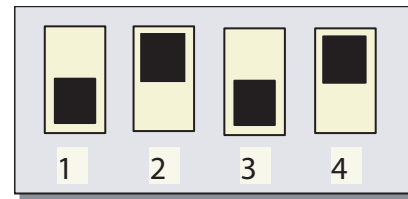


Figure 8-21 DIP switch mode: External

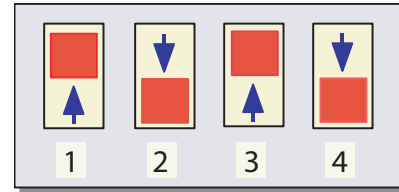


Figure 8-22 DIP switch mode: Internal

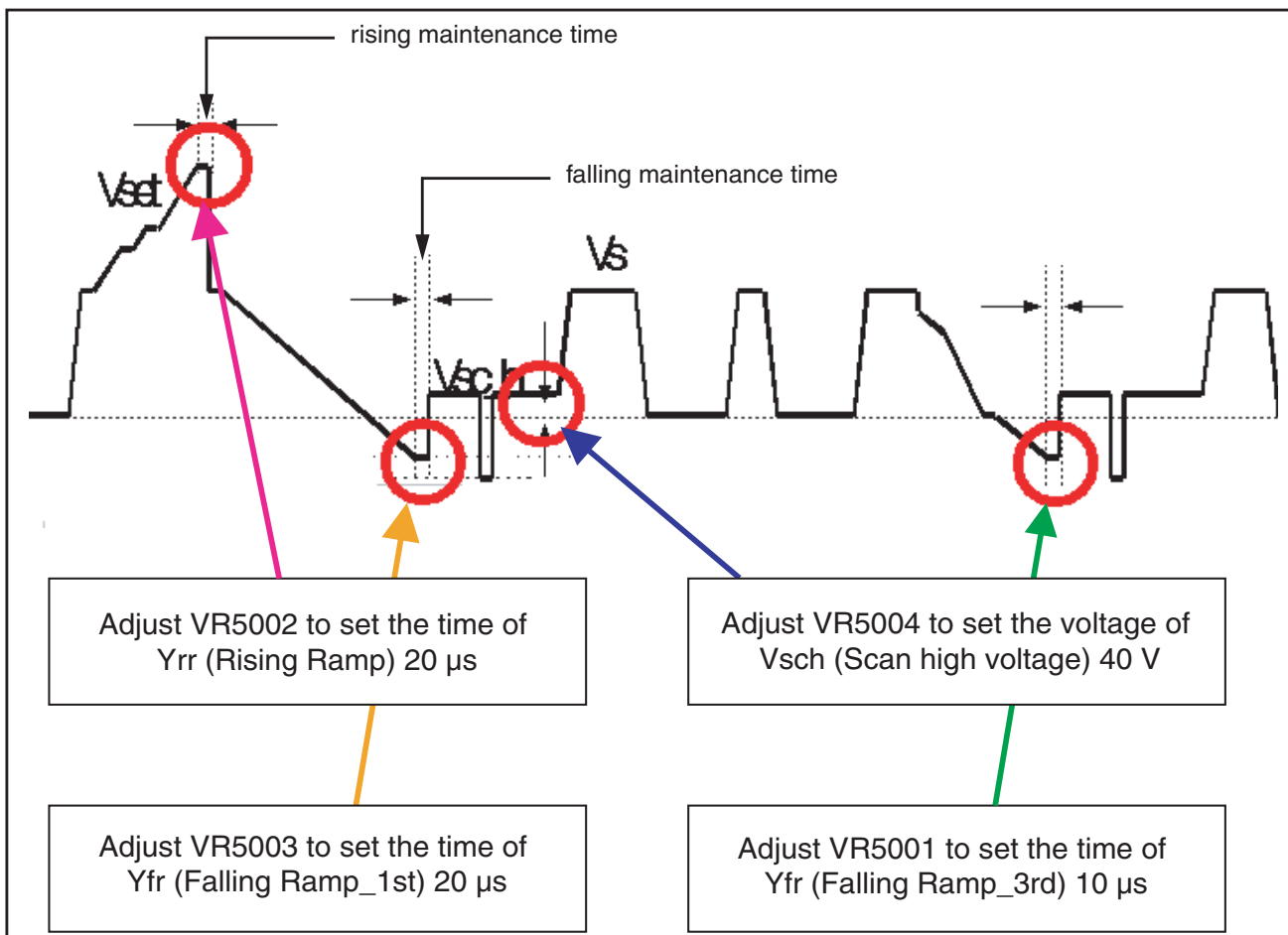


Figure 8-23 TCP ramp waveform inclination adjustment (Y-Board)



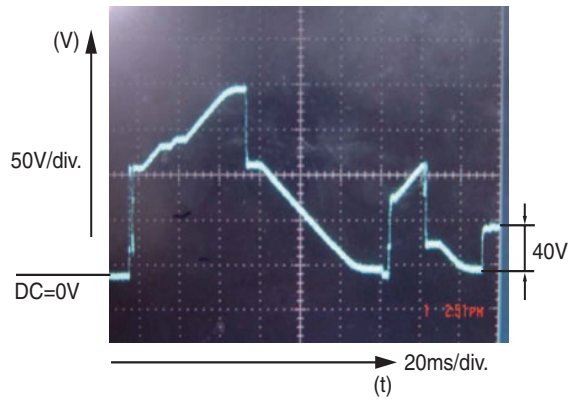


Figure 8-24 Rising ramp

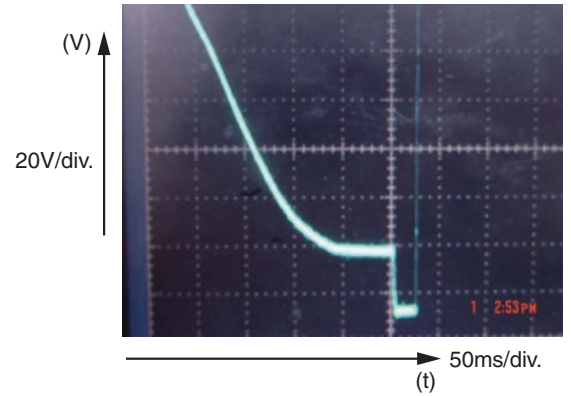


Figure 8-25 Falling ramp

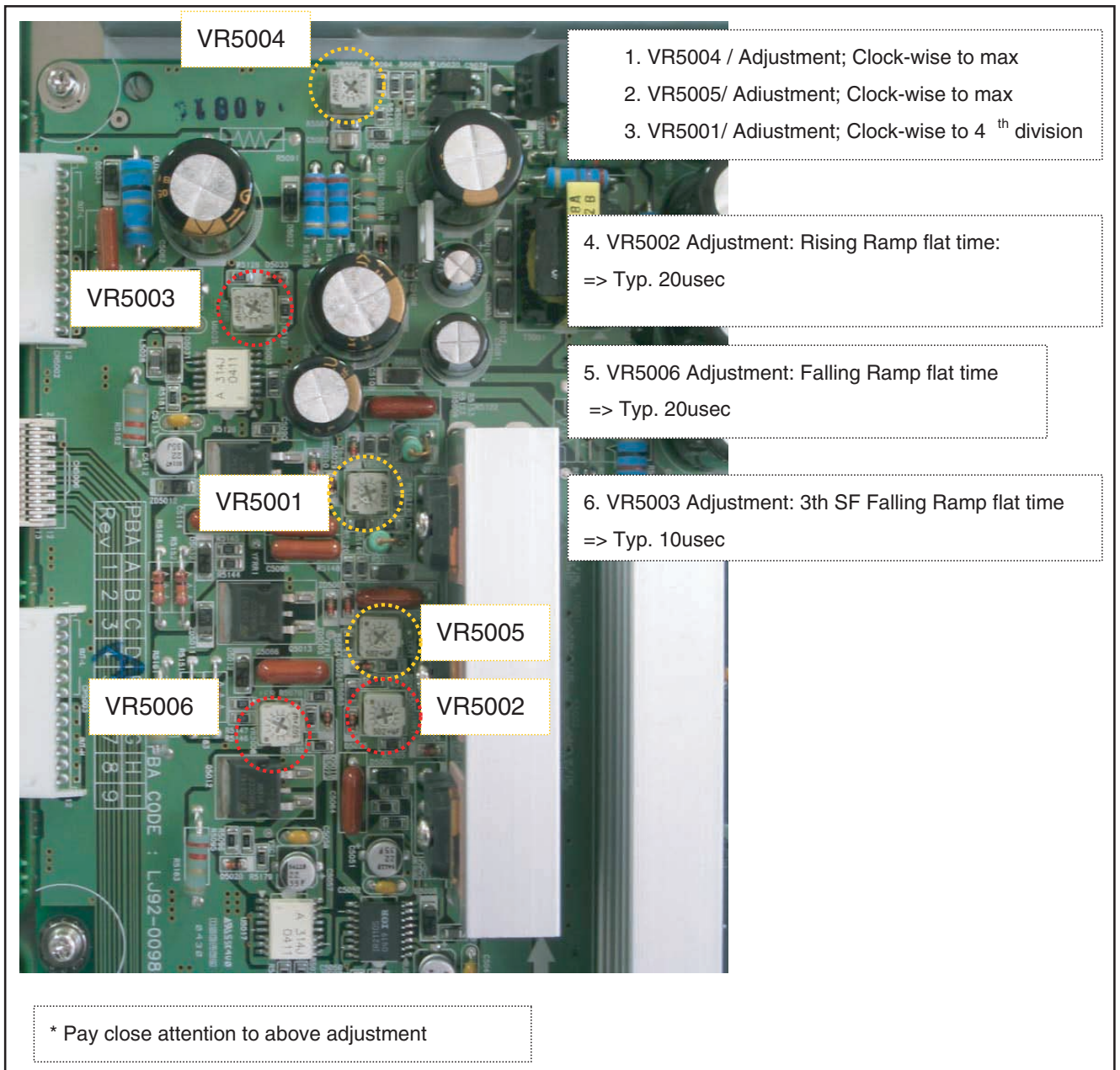
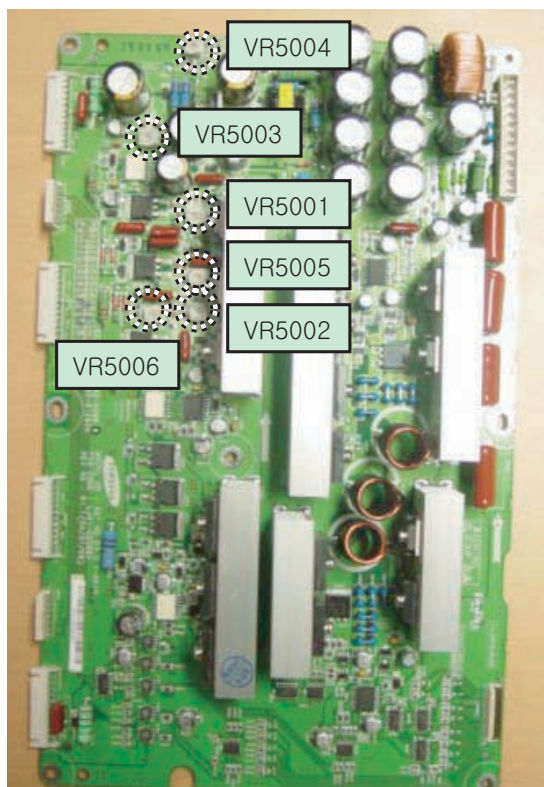


Figure 8-26 Potentiometer locations

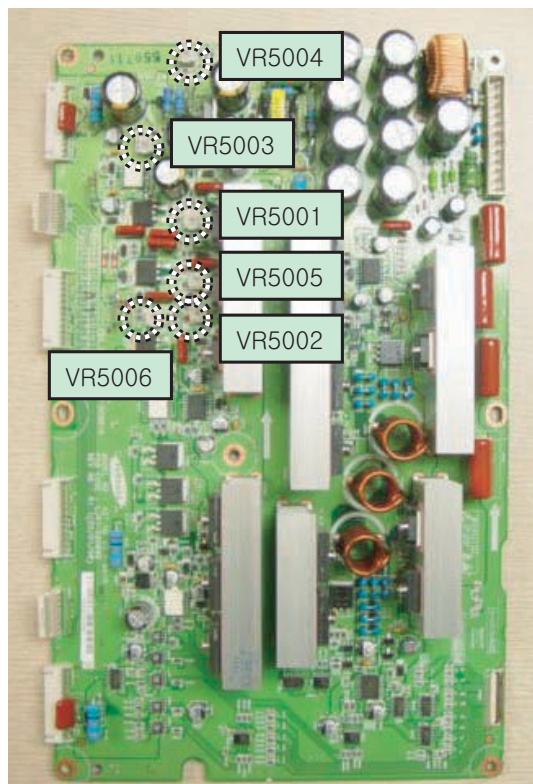




LJ92-00981A

F\_14991\_071.eps  
140206

Figure 8-27 Potentiometer locations LJ92-00981A



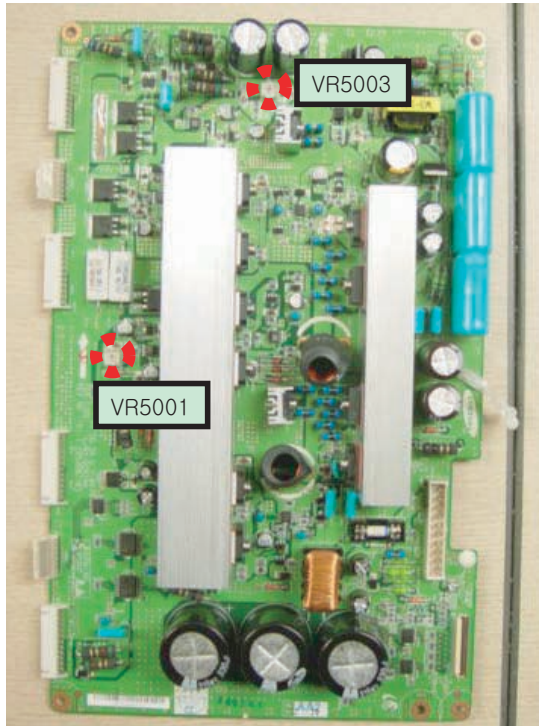
LJ92-00981B

F\_14991\_072.eps  
140206

Figure 8-28 Potentiometer locations LJ92-00981B

## 8.5 Alignments 42" SD v4

1. Get Pattern to be Full White (place jumper CN2034 on Logic Board).
2. Check the waveform using an Oscilloscope.
  - Triggering through V\_TOGG of LOGIC Board.
  - Connect the OUT 240 Test Point at the centre of Y\_buffer to other channel, and then check the first aid-reset waveform from the last sustain of 1TV-Field.



LJ92-01337A

Figure 8-29 Potentiometer locations

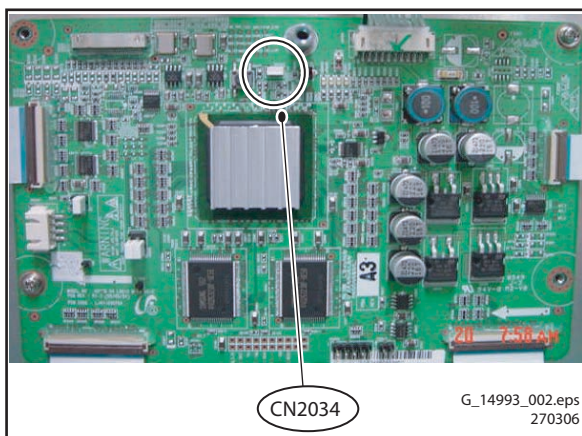
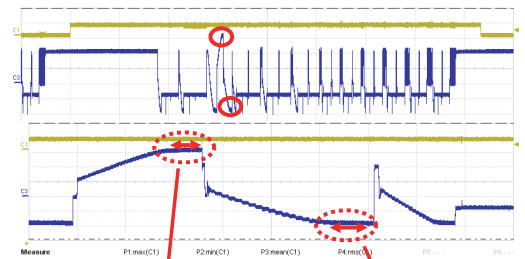


Figure 8-30 Jumper location (Logic board)

- Check the waveform again after adjusting Horizontal Division.  
Check the Reset waveform when the V\_TOGG Level is changed.
- Adjust the flat time of the rising ramp to 60μs with VR5001.
- Adjust the flat time of the falling ramp to 80μs with VR5003.

1.VR5001 Adjustment : Rising Ramp flat time :  
→ 60 μs

2.VR5003 Adjustment : Falling Ramp flat time :  
→ 80 μs

F\_14991\_074.eps  
140206

Adjust VR5001 to set the time of Yrr(Rising Ramp) 60μs

Adjust VR5003 to set the time of Yfr(Falling Ramp) 80μs

F\_14991\_073.eps  
140206

Figure 8-31 Wave form adjustment (Y-Main board)

8.6 Alignments 42" HD v4

1. Get Pattern to be Full White (place jumper CN2072 on Logic Board).
2. Check the waveform using an Oscilloscope.
  - Triggering through V\_TOGG of LOGIC Board.
  - Connect the OUT 240 Test Point at the centre of Y\_buffer to other channel, and then check the first aid-reset waveform from the last sustain of one TV-Field.
  - Check the waveform again after adjusting Horizontal Division.Check the Reset waveform when the V\_TOGG Level is changed.
  - Set the 15V by adjusting VR5002.
  - Set the 100V and 50us by adjusting VR5001

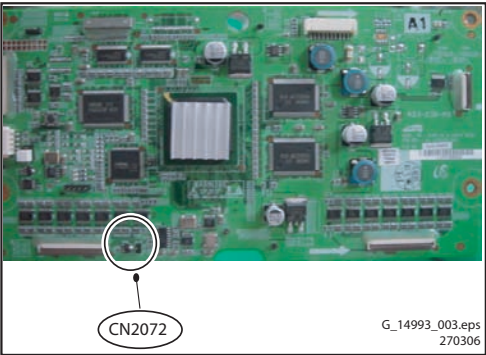


Figure 8-32 Jumper location (Logic board)

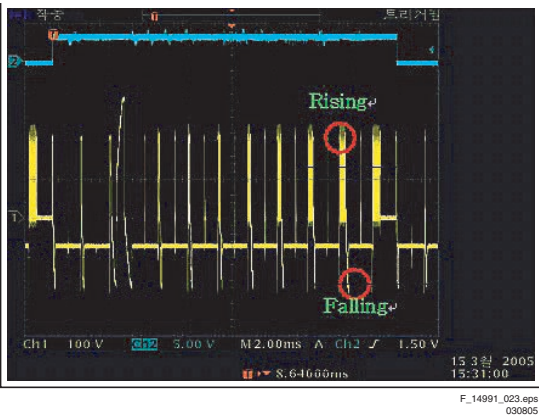


Figure 8-33 1st subfield from the last sustain within 1 frame

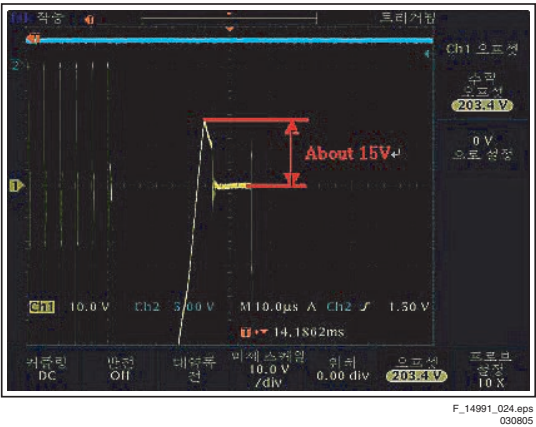


Figure 8-34 Rising ramp of aid-reset

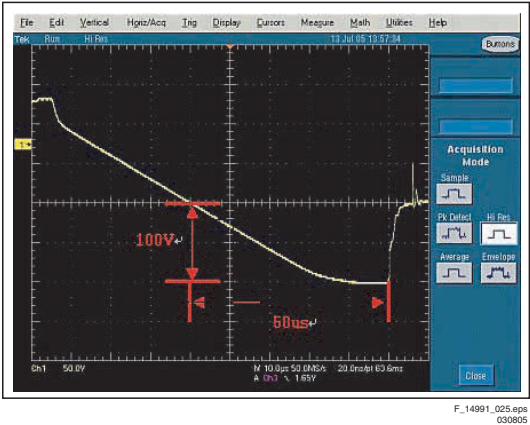


Figure 8-35 Falling ramp of aid-reset

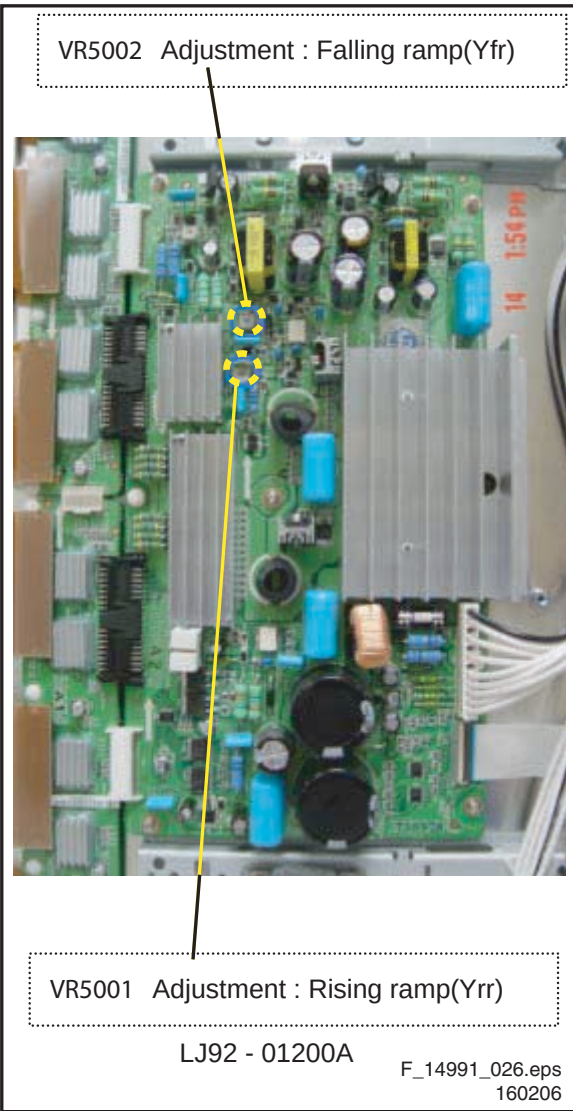


Figure 8-36 Potentiometer locations



## 8.7 Alignments 50" HD v3

1. Put the dipswitches on the Logic Board in the internal position to get a Full White Pattern (see Figure "DIP switch positions").
2. Adjust Vsch to 25 V by using VR5901\_VSC\_h (Vsc\_h should be connected to "+" unit of DMM).
3. Check the waveform using Oscilloscope.
  - Triggering through V\_TOGG of LOGIC Board.
  - Connect the OUT 4 Test Point at the centre of Y\_buffer to other channel, and then check the first Subfield operating waveform of one TV-Field.
  - Check the waveform again after adjusting Horizontal Division. Check the Reset waveform when the V\_TOGG Level is changed.
  - Set the Rising Ramp Flat Time to 50  $\mu$ s by adjusting VR5000. GND maintenance section should be

checked after the Vertical Division is readjusted to '2 V or 5 V'.

- Set the Falling maintenance time to 35  $\mu$ s by adjusting VR5001.
- Change the waveform position of Oscilloscope to the 3rd Subfield and then set the Falling maintenance time to 20 $\mu$ s by adjusting the VR5002.
- GND maintenance section should be checked after the Vertical Division is readjusted to '2 V or 5 V'.

**Special notice:** When you adjust the inclination of waveform, do check and adjustment being based on the Reset waveform of 1st Sub-field of 1st Frame and then move to 3rd Sub-field for adjusting.

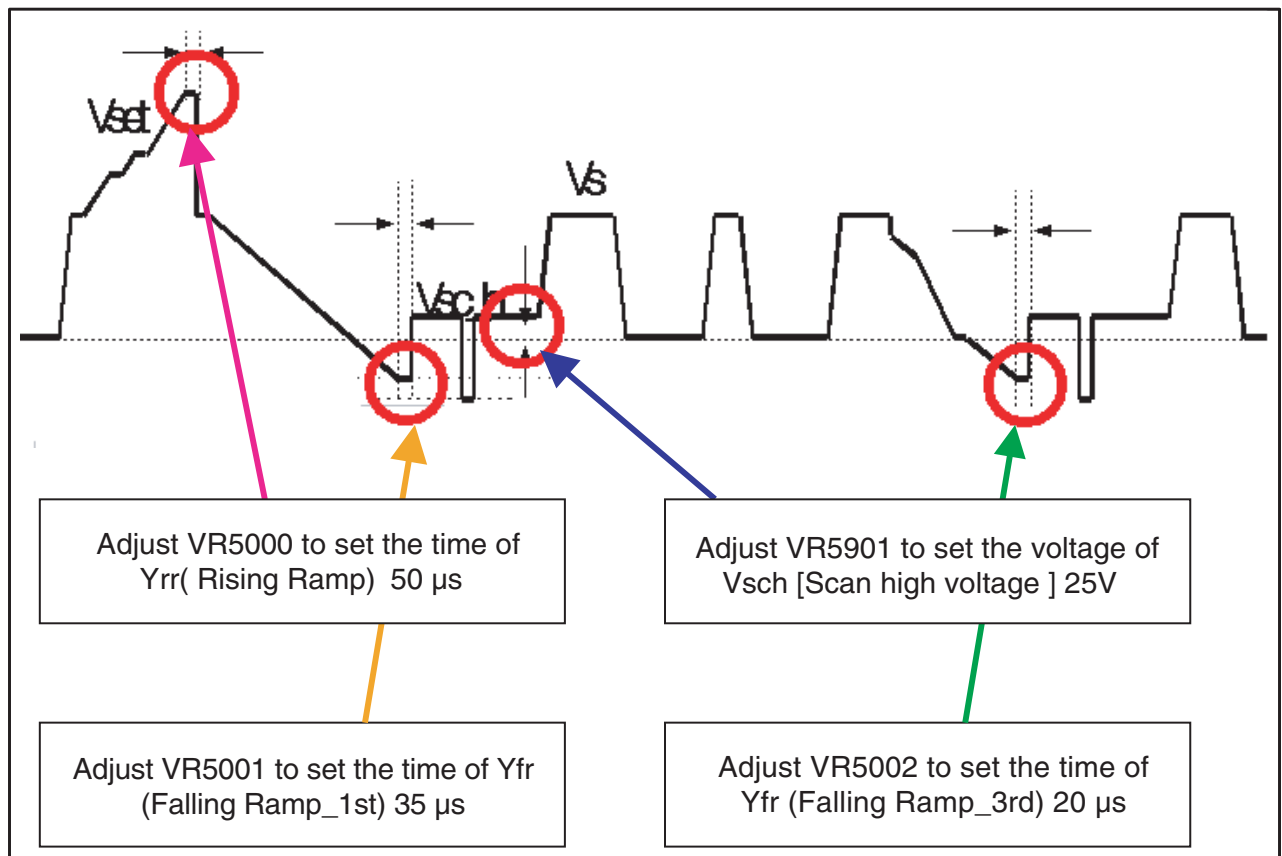


Figure 8-37 TCP ramp waveform inclination adjustment (Y-Board)

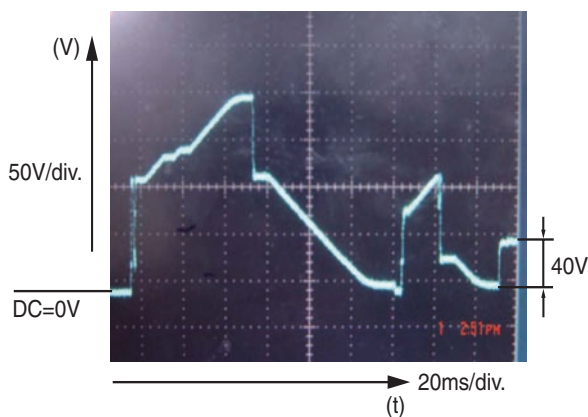


Figure 8-38 Rising ramp

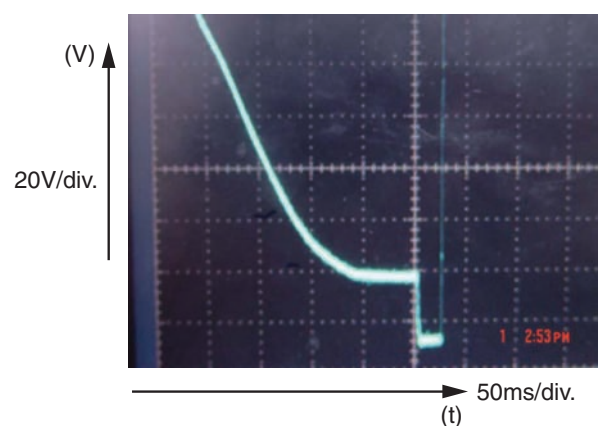


Figure 8-39 Falling ramp

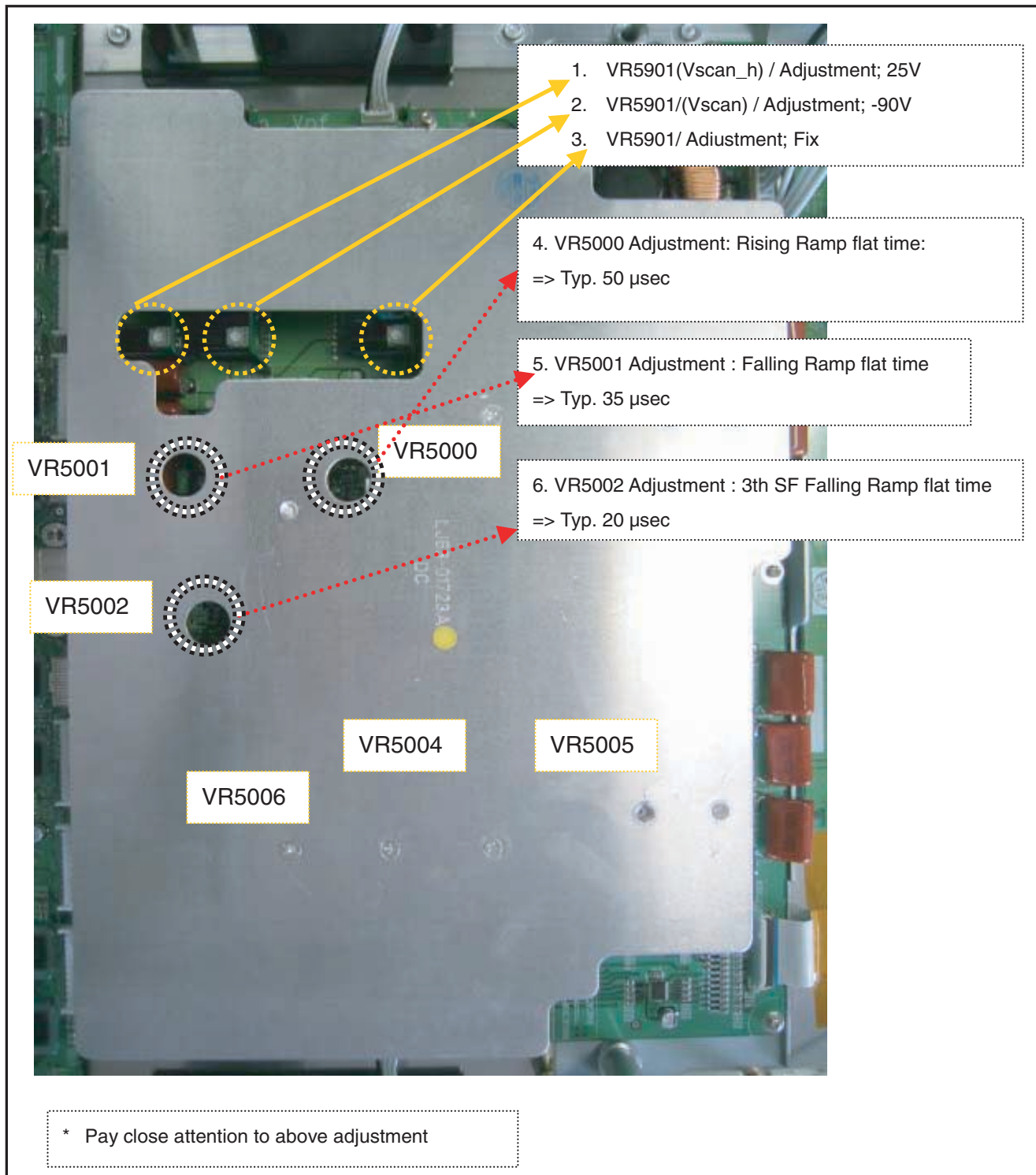
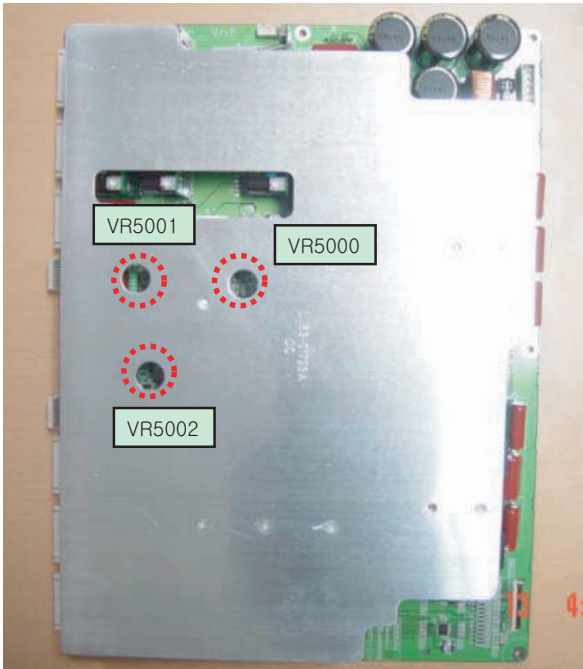


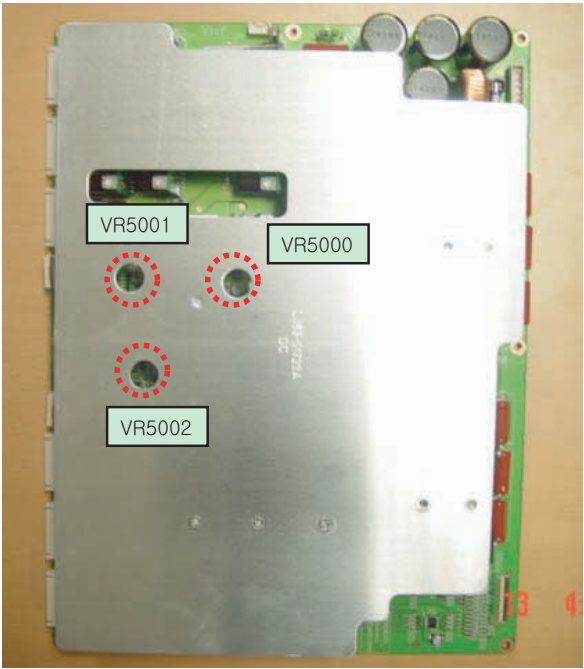
Figure 8-40 Potentiometer locations





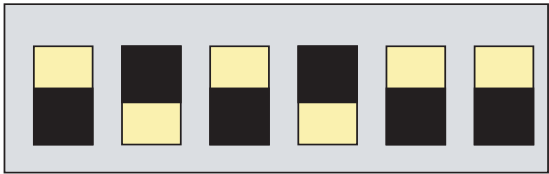
LJ92-00853A

Figure 8-41 Potentiometer locations LJ92-00853A

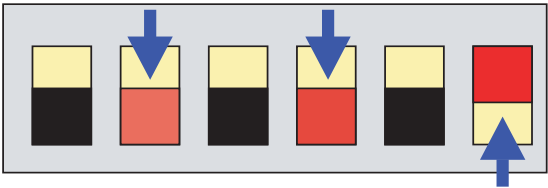


LJ92-00853B

Figure 8-42 Potentiometer locations LJ92-00853B



< External >



< Internal >

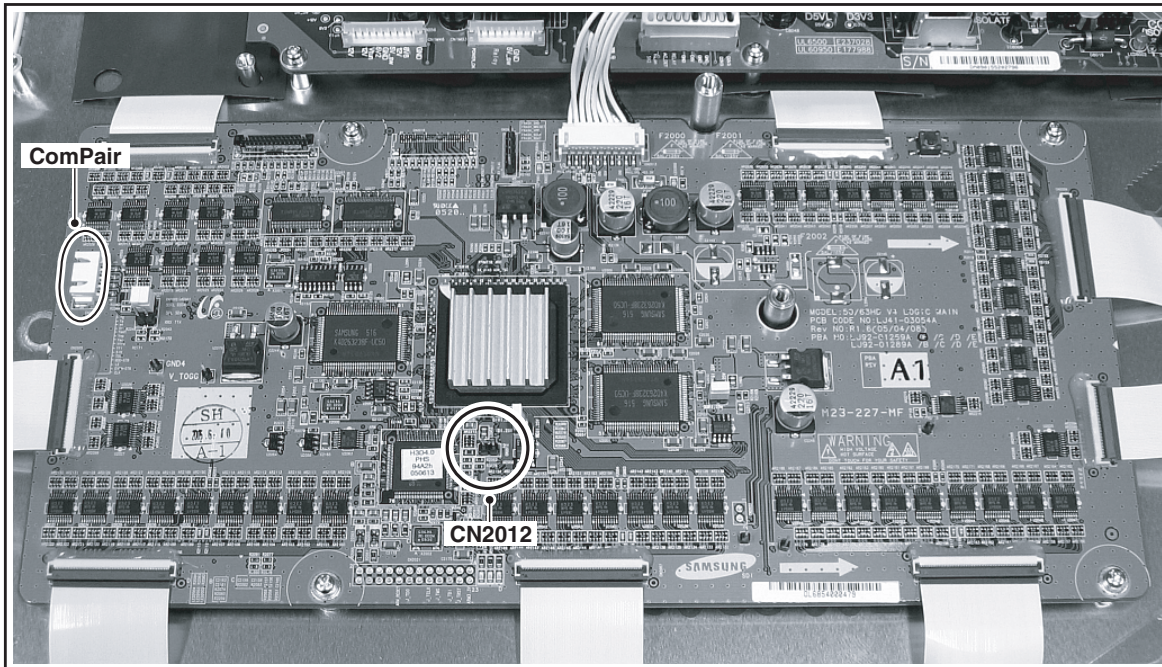
F\_14991\_050.eps  
230306

Figure 8-43 DIP switch positions

## 8.8 Alignments 50" HD v4

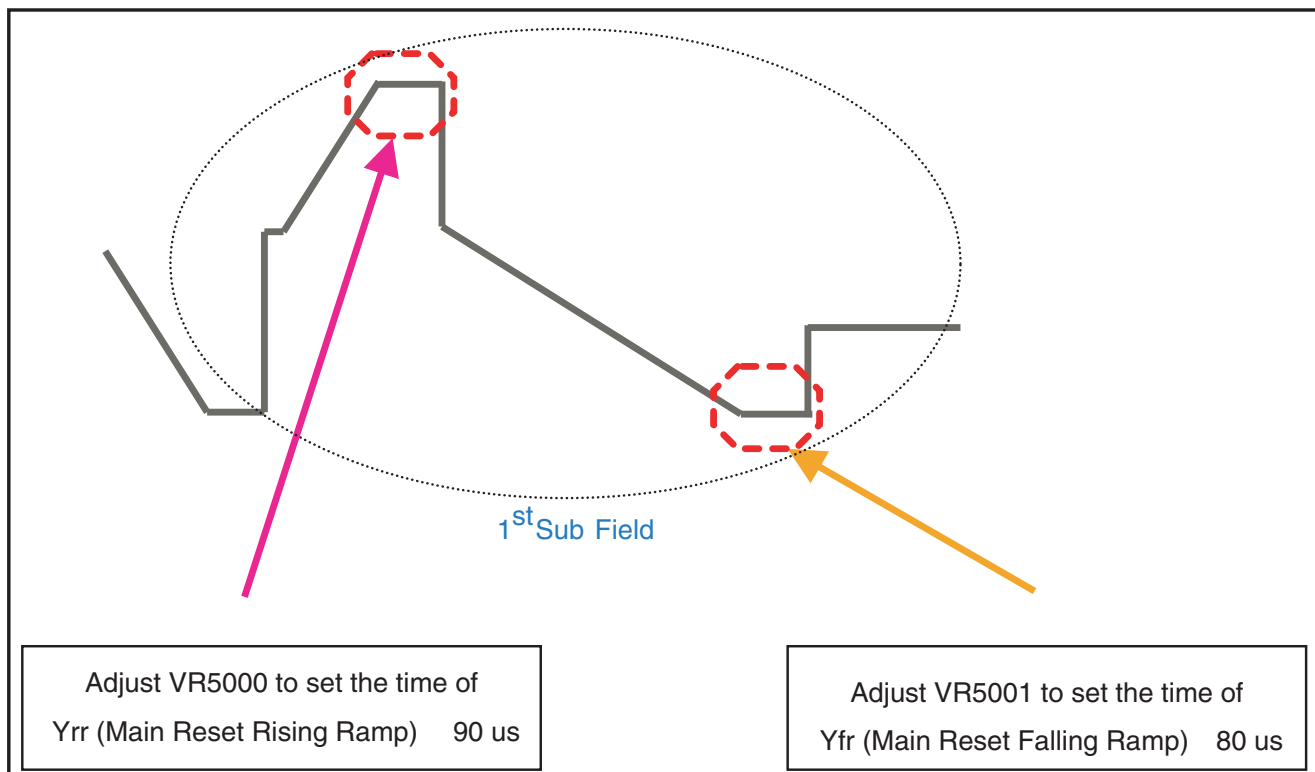
1. Get Pattern to be Full White (place jumper CN2012 on Logic Board).
2. Locate all testpoints and potentiometers of the board at hand.
  - Triggering through V\_TOGG of LOGIC Board.
  - Connect the CN5111 Test Point at the Y\_buffer to other channel, and then check the first Subfield operating waveform of one TV-Field.

- Check the waveform again after adjusting Horizontal Division. Check the Reset waveform when the V\_TOGG Level is changed.
- Set the Rising Ramp Flat Time to 90  $\mu$ s by adjusting VR5000.
- Set the Falling maintenance time to 80  $\mu$ s by adjusting VR5001.



F\_14991\_052.eps  
081105

Figure 8-44 Jumper CN2012 / ComPair connector on v4 Logic board



F\_14991\_020.eps  
030805

Figure 8-45 TCP ramp waveform inclination adjustment (Y-Board)

F\_14991\_021a.eps  
030805

Figure 8-46 Rising ramp

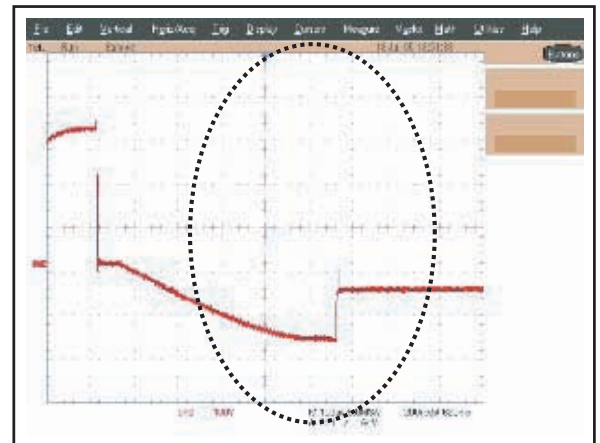
F\_14991\_021b.eps  
030805

Figure 8-47 Falling ramp

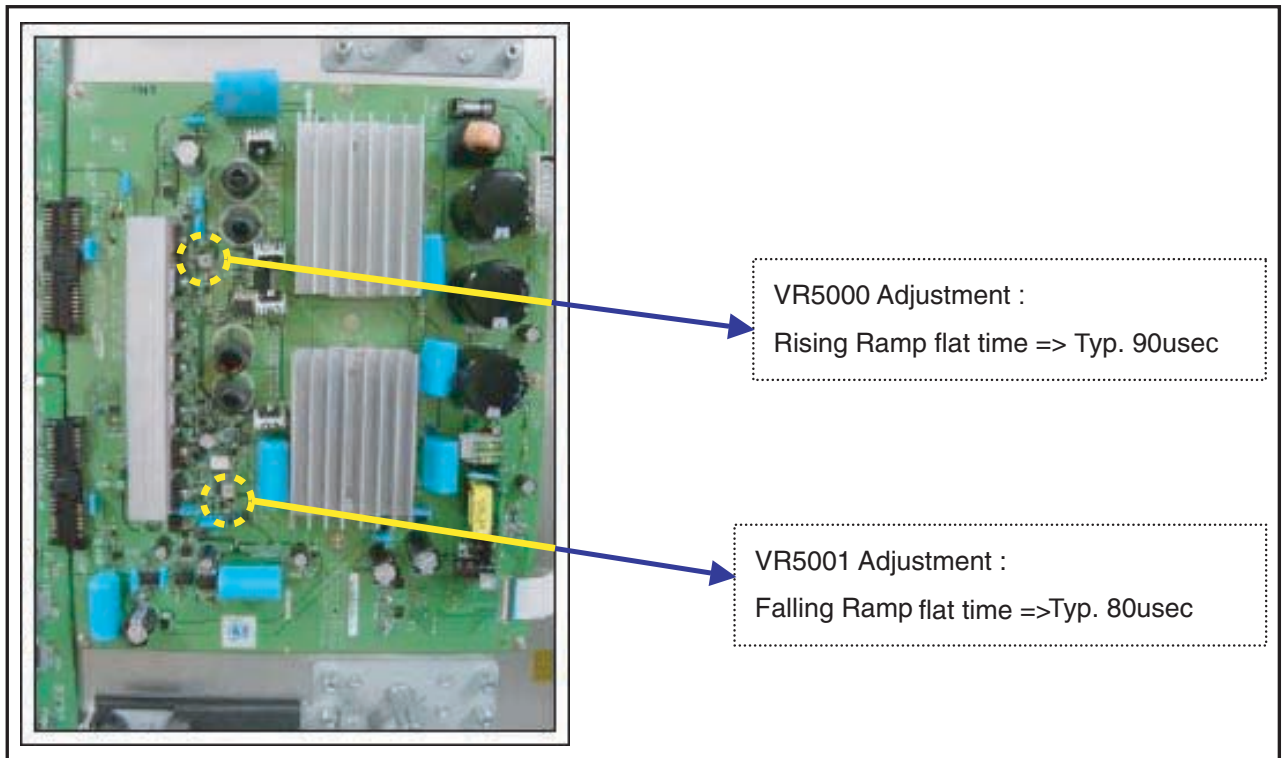
F\_14991\_022.eps  
030805

Figure 8-48 Potentiometer locations

## 8.9 Alignment value overview (all screens)

Table 8-1 Alignment table Y PWB

| Model     | Wave Form              | Item   | Default              |
|-----------|------------------------|--------|----------------------|
| 37"SD v4  | Rising_Ramp            | VR5001 | 30 $\mu$ s (30 ~ 40) |
|           | Falling_Ramp_1st       | VR5002 | 16 $\mu$ s (10 ~ 20) |
|           | Vsch                   | VR5000 | 38 V                 |
| 42" SD v2 | Rising_Ramp (Vset)     | VR5003 | 10 $\mu$ s           |
|           | -Vsc 1                 | VR5001 | 20 $\mu$ s           |
|           | -Vsc 2                 | VR5002 | 5 $\mu$ s            |
| 42" SD v3 | Rising_Ramp            | VR5002 | 10 $\mu$ s           |
|           | Falling_Ramp_1st       | VR5003 | 30 $\mu$ s           |
|           | Falling_Ramp_3rd       | VR5001 | 30 $\mu$ s           |
|           | Vsch                   | VR5004 | 40 V                 |
| 42" SD v4 | Rising_Ramp            | VR5001 | 60 $\mu$ s           |
|           | Falling_Ramp_1st       | VR5003 | 80 $\mu$ s           |
| 42" HD v3 | Rising_Ramp            | VR5002 | 10 $\mu$ s           |
|           | Falling_Ramp_1st       | VR5003 | 20 $\mu$ s           |
|           | Falling_Ramp_3rd       | VR5001 | 10 $\mu$ s           |
|           | Vsch Scan high voltage | VR5004 | 40 V                 |
| 42" HD v4 | Rising_Ramp            | VR5001 | 15 V                 |
|           | Falling_Ramp_1st       | VR5002 | 50 $\mu$ s           |
| 50" HD v3 | Rising_Ramp            | VR5000 | 50 $\mu$ s           |
|           | Falling_Ramp_1st       | VR5001 | 35 $\mu$ s           |
|           | Falling_Ramp_3rd       | VR5002 | 20 $\mu$ s           |
|           | Vsch Scan high voltage | VR5901 | 25 V                 |
| 50" HD v4 | Rising_Ramp            | VR5001 | 90 $\mu$ s           |
|           | Falling_Ramp_1st       | VR5003 | 80 $\mu$ s           |

## 9. Circuit Descriptions, Abbreviation List, and IC Data Sheets

### Index of this chapter:

- 9.1 Main function of Each Assembly
- 9.2 Abbreviation List
- 9.3 IC Data Sheets

### 9.1 Main function of Each Assembly

#### 9.1.1 X Main Board

The X Main board generates a drive signal by switching the FET in synchronization with logic main board timing, and supplies the X electrode of the panel with the drive signal through the connector.

1. Maintain voltage waveforms (including ERC).
2. Generate X rising ramp signal.
3. Maintain Ve bias between Scan intervals.

#### 9.1.2 Y Main Board

The Y Main board generates a drive signal by switching the FET in synchronization with the logic Main Board timing and sequential supplies the Y electrode of the panel with the drive signal through the scan driver IC on the Y-buffer board. This board connected to the panel's Y terminal has the following main functions.

1. Maintain voltage waveforms (including ERC).
2. Generate Y-rising Falling Ramp.
3. Maintain V scan bias.

#### 9.1.3 Logic Main Board

The Logic Main board generates and outputs the address drive output signal and the X,Y drive signal by processing the video signals. This Board buffers the address drive output signal and feeds it to the address drive IC (COF module, video signal- X Y drive signal generation, frame memory circuit / address data rearrangement).

#### 9.1.4 Logic Buffer (E, F)

The Logic Buffer transmits data signal and control signal.

#### 9.1.5 Y Buffer Board (Upper, Lower)

The Y Buffer board consisting of the upper and lower boards supplies the Y-terminal with scan waveforms. The board comprises eight scan driver ICs (ST microelectronics STV 7617: 64 or 65 output pins), but four ICs for the SD class.

#### 9.1.6 AC Noise Filter

The AC Noise filter has function for removing noise (low frequency) and blocking surge. It affects safety standards (EMC, EMI).

#### 9.1.7 TCP (Tape Carrier Package)

The TCP applies the Va pulse to the address electrode and constitutes address discharge by the potential difference between the Va pulse and the pulse applied to the Y electrode. The TCP comprise four data driver ICs (STV7610A: 96 pins output pins). Seven TCPs are required for signal scan.

### 9.2 Abbreviation List

|      |                                     |
|------|-------------------------------------|
| AC   | Alternating Current                 |
| COF  | Circuit On Foil                     |
| DC   | Direct Current                      |
| ERC  | Energy Recovery Circuit             |
| ESD  | Electro Static Discharge            |
| FET  | Field Effect Transistor             |
| FFC  | Flat Foil Cable                     |
| FPC  | Flexible Printed Circuit            |
| FTV  | Flat TeleVision                     |
| HD   | High Definition                     |
| I/O  | Input/Output                        |
| IC   | Integrated Circuit                  |
| LB   | Logic Buffer                        |
| LED  | Light Emitting Diode                |
| LVDS | Low Voltage Differential Signalling |
| PCB  | Printed Circuit Board (same as PWB) |
| PDP  | Plasma Display Panel                |
| PSU  | Power Supply Unit                   |
| PWB  | Printed Wiring Board (same as PCB)  |
| RGB  | Red, Green, Blue colour space       |
| SD   | Standard Definition                 |
| SDI  | Samsung Display Industry (supplier) |
| SMPS | Switched Mode Power Supply          |
| SSB  | Small Signal Board                  |
| SF   | Sub Field                           |
| TCP  | Tape Carrier Package                |
| VR   | Variable Resistor                   |
| Vsc  | Scan Voltage                        |
| YBL  | Y Buffer Lower board                |
| YBU  | Y Buffer Upper board                |
| YM   | Y Main board                        |

### 9.3 IC Data Sheets

Not applicable.



## 10. Spare Parts List

### Notes;

- Determine the SDI part / model number of the PDP
- Find the SDI part number on the actual board to be replaced.  
SDI part number begin with "LJ92" and for the SMPS and sub SMPS the part number will begin with "LJ44".
- Find the SDI board part number in the spare parts overview.
- Find the SDI part number in this overview that matches the part number that is actually on the original board.
- Cross the SDI board part number to the philips part number.
- Order the philips part number.

- Note:** The appearance of a leaded and lead-free board can be different; the colour of the PWB and also the layout of the components are sometimes different.



E\_06532\_026.eps  
081105

Figure 10-1 Lead-free logo SDI

Table 10-1 Spare parts overview 37" SD v4

| PDP type                   | 37" SD v4                                                                           |                |                                |                | Lead Free type<br>being compatible<br>with Lead type<br>PWB |
|----------------------------|-------------------------------------------------------------------------------------|----------------|--------------------------------|----------------|-------------------------------------------------------------|
| PDP 12NC                   | 9322 217 39682 (8204 000 77261)                                                     |                |                                |                |                                                             |
| PDP model type and version | S37SD-YD02                                                                          |                |                                |                |                                                             |
| Remarks                    | Lead type boards being not compatible with lead free type<br>will not be phased out |                |                                |                |                                                             |
| Boards                     | Codes for lead type PWB's                                                           |                | Codes for lead-free type PWB's |                |                                                             |
| Logic-Buffer (E)           | LJ92-00976A                                                                         | 9965 000 26187 | LJ92-01138B                    | 9965 000 32616 | N                                                           |
| Logic-Buffer (F)           | LJ92-00977A                                                                         | 9965 000 26188 | LJ92-01139B                    | 9965 000 32617 | N                                                           |
| Logic-Buffer (G)           | LJ92-01002A                                                                         | 9965 000 26189 | LJ92-01140B                    | 9965 000 32618 | N                                                           |
| Logic-Buffer (H)           | -                                                                                   | -              | -                              | -              | -                                                           |
| Logic-Buffer (I)           | -                                                                                   | -              | -                              | -              | -                                                           |
| Logic-Buffer (J)           | -                                                                                   | -              | -                              | -              | -                                                           |
| Y-Buffer (up)              | LJ92-01022A                                                                         | 9965 000 26190 | LJ92-01147A                    | 9965 000 32619 | N                                                           |
| Y-Buffer (down)            | -                                                                                   | -              | -                              | -              | -                                                           |
| Logic-Board                | LJ92-01056A (See Kit 1 Note)<br>LJ92-01145A (See Kit 2 Note)                        | 9965 000 26191 | LJ92-01257A                    | 9965 000 29322 | N                                                           |
| SUBL                       | -                                                                                   | -              | -                              | -              | -                                                           |
| SUBR                       | -                                                                                   | -              | -                              | -              | -                                                           |
| X-Board                    | LJ92-01020A                                                                         | 9965 000 26192 | LJ92-01268A                    | 9965 000 32620 | N                                                           |
| Y-Board                    | LJ92-01021A                                                                         | 9965 000 26193 | LJ92-01149B                    | 9965 000 32621 | N                                                           |
| SMPS (PSU)                 | LJ44-00084A                                                                         | 9965 000 26194 | LJ44-00084B                    | 9965 000 32622 | Y                                                           |
| SUB PSU                    | LJ44-00075A                                                                         | 9965 000 25131 | LJ44-00075B                    | 9965 000 32623 | Y                                                           |
|                            |                                                                                     | Kit 1          | LJ93-00205A                    | 9965 000 33796 |                                                             |
|                            |                                                                                     | Kit 2          | LJ93-00204A                    | 9965 000 33797 |                                                             |

### Note:

**Kit 1:** 37" FCR kit consists of 4 boards ( Logic + Y-main + Y and E buffer)

reference Symptom Cure information TV-05/0006

CORRECTION XI: PDP with "Lead" boards and use of Logic board (LJ92-01056A):

Replace the Logic board, the Y-Main board, the Y-buffer board, and the Logic buffer E board together.

These four boards are available in Service Kit number 1 (with order code 9965 000 33796 (LJ93-00205A)).

The content of Service Kit number 1 is:

- \* Logic main board 9965 000 29322 (LJ92-01257A).
- \* Y-Main board 9965 000 32621 (LJ92-01149B).
- \* Y-Buffer board 9965 000 32619 (LJ92-01147A).
- \* Logic-Buffer E 9965 000 32616 (LJ92-01138B).

### Note:

**FCR Kit:** = False contouring reduction kit

### Note:

**Kit 2:** 37" FCR kit consists of 2 boards (logic + Y-main)

reference Symptom Cure information TV-05/0006

CORRECTION XI

PDP with "Lead-free" boards and use of Logic board (LJ92-01145A):

Replace the Logic board and the Y-Main board together. These two boards are available in Service Kit number 2 (with order code 9965 000 33797 (LJ93-00204A)).

The content of Service Kit number 2 is:

- \* Logic main board 9965 000 29322 (LJ92-01257A).
- \* Y-Main board 9965 000 32621 (LJ92-01149B).

3) PDP with "Lead-free" boards and use of Logic board (LJ92-01257A):

In case this PDP has a defective board, replace this defective board only

Table 10-2 Spare parts overview 42" SD v2

| PDP type                   | 42"SDv2                                                                             |                |
|----------------------------|-------------------------------------------------------------------------------------|----------------|
| PDP model 12NC             | 9322 195 45682                                                                      |                |
| PDP model type and version | S42SD-YD06                                                                          |                |
| Remarks                    | Codes for lead type PWBs (this model has been produced with leaded type PWB's only) |                |
| Boards                     | PWB Codes                                                                           |                |
| Logic-Buffer (E)           | LJ92-00632A                                                                         | 9965 000 17726 |
| Logic-Buffer (F)           | LJ92-00633A                                                                         | 9965 000 17725 |
| Logic-Buffer (G)           | LJ92-00634A                                                                         | 9965 000 17724 |
| Logic-Buffer (H)           | -                                                                                   | -              |
| Logic-Buffer (I)           | -                                                                                   | -              |
| Logic-Buffer (J)           | -                                                                                   | -              |
| Y-Buffer (up)              | LJ92-00751A                                                                         | 9965 000 17727 |
| Y-Buffer (down)            | LJ92-00750A                                                                         | 9965 000 17728 |
| Logic-Board                | LJ92-00818A                                                                         | 9965 000 17729 |
| SUBL                       | -                                                                                   | -              |
| SUBR                       | -                                                                                   | -              |
| X-Board                    | LJ92-00998A                                                                         | 9965 000 17720 |
| Y-Board                    | LJ92-00999A                                                                         | 9965 000 17731 |
| SMPS (PSU)                 | LJ44-00049A                                                                         | 9965 000 17730 |
| SUB PSU                    | -                                                                                   | -              |

Table 10-3 Spare parts overview 42" SD v3

| PDP type                   | 42" SD v3                         |                |                               |                | Lead Free type<br>being compatible<br>with Lead type<br>PWB |
|----------------------------|-----------------------------------|----------------|-------------------------------|----------------|-------------------------------------------------------------|
| PDP model 12NC             | 9322 215 27682                    |                |                               |                |                                                             |
| PDP model type and version | S42SD-YD05                        |                |                               |                |                                                             |
| Remarks                    | Lead type boards being phased out |                |                               |                |                                                             |
| Boards                     | Codes for leaded type PWBs        |                | Codes for lead-free type PWBs |                |                                                             |
| Logic-Buffer (E)           | LJ92-00811A                       | 9965 000 25109 | LJ92-00811B                   | 9965 000 32624 | Y                                                           |
| Logic-Buffer (F)           | LJ92-00812A                       | 9965 000 25110 | LJ92-00812B                   | 9965 000 32625 | Y                                                           |
| Logic-Buffer (G)           | LJ92-00813A                       | 9965 000 25111 | LJ92-00813B                   | 9965 000 32626 | Y                                                           |
| Logic-Buffer (H)           | -                                 | -              | -                             | -              | -                                                           |
| Logic-Buffer (I)           | -                                 | -              | -                             | -              | -                                                           |
| Logic-Buffer (J)           | -                                 | -              | -                             | -              | -                                                           |
| Y-Buffer (up)              | LJ92-00796A                       | 9965 000 25112 | LJ92-01285A                   | 9965 000 32376 | Y                                                           |
| Y-Buffer (down)            | LJ92-00797A                       | 9965 000 25113 | LJ92-01286A                   | 9965 000 32377 | Y                                                           |
| Logic-Board                | LJ92-00975D                       | 9965 000 25114 | LJ92-01247D                   | 9965 000 32378 | N (tbd)                                                     |
| SUBL                       | -                                 | -              | -                             | -              | -                                                           |
| SUBR                       | -                                 | -              | -                             | -              | -                                                           |
| X-Board                    | LJ92-00943A                       | 9965 000 25115 | LJ92-01283A                   | 9965 000 32627 | Y                                                           |
| Y-Board                    | LJ92-00944B                       | 9965 000 25116 | LJ92-01284A                   | 9965 000 32379 | Y                                                           |
| SMPS (PSU)                 | LJ44- 000 58A                     | 9965 000 25108 | LJ44-00058B                   | 9965 000 32638 | Y                                                           |
| SUB PSU                    | LJ44- 000 75A                     | 9965 000 25131 | LJ44-00075B                   | 9965 000 32623 | Y                                                           |

Table 10-4 Spare parts overview 42" SD v4 (Part 1)

| PDP type                   | 42" SD v4                                                                                |                |                                                                                                                           |                | Boards from<br>PP42SD015A<br>and<br>S42SD-YD07 (*)<br>being<br>compatible |
|----------------------------|------------------------------------------------------------------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------|----------------|---------------------------------------------------------------------------|
| PDP model 12NC             | 9322 226 37682                                                                           |                |                                                                                                                           |                |                                                                           |
| PDP model type and version | S42SD-YD07 (*)                                                                           |                | S42SD-YD07 (PP42SD015A)                                                                                                   |                |                                                                           |
| Remarks                    | No supply of new SMPS LJ44-00092B.<br>Compatibility with LJ44-00101C + cable: tdb (15/2) |                | Version number used by SDI:PP42SD015B(SMPS Rev.0.55)<br>New SMPS supply:LJ44-00101C + cables. Service<br>information: tbd |                |                                                                           |
| Logic-Buffer (E)           | LJ92-01026A                                                                              | 9965 000 29205 | LJ92-01026A                                                                                                               | 9965 000 29205 | Y                                                                         |
| Logic-Buffer (F)           | LJ92-01027A                                                                              | 9965 000 29206 | LJ92-01027A                                                                                                               | 9965 000 29206 | Y                                                                         |
| Logic-Buffer (G)           | -                                                                                        | -              | -                                                                                                                         | -              | -                                                                         |
| Logic-Buffer (H)           | -                                                                                        | -              | -                                                                                                                         | -              | -                                                                         |
| Logic-Buffer (I)           | -                                                                                        | -              | -                                                                                                                         | -              | -                                                                         |
| Logic-Buffer (J)           | -                                                                                        | -              | -                                                                                                                         | -              | -                                                                         |
| Y-Buffer (up)              | LJ92-01031A                                                                              | 9965 000 29207 | LJ92-01031A                                                                                                               | 9965 000 29207 | Y                                                                         |
| Y-Buffer (down)            | LJ92-01032A                                                                              | 9965 000 29208 | LJ92-01032A                                                                                                               | 9965 000 29208 | Y                                                                         |
| Logic-Board                | LJ92-01274D                                                                              | 9966 000 30042 | LJ92-01274D                                                                                                               | 9966 000 30042 | Y                                                                         |
| SUBL                       | -                                                                                        | -              | -                                                                                                                         | -              | -                                                                         |
| SUBR                       | -                                                                                        | -              | -                                                                                                                         | -              | -                                                                         |
| X-Board                    | LJ92-01029A                                                                              | 9965 000 29204 | LJ92-01336A                                                                                                               | 9965 000 32628 | Y                                                                         |
| Y-Board                    | LJ92-01030A                                                                              | 9965 000 29209 | LJ92-01337A                                                                                                               | 9965 000 32629 | Y                                                                         |
| SMPS (PSU)                 | LJ44-00092B                                                                              | 9965 000 29210 | LJ44-00101A                                                                                                               | 9965 000 29210 | N (tdb)                                                                   |
| SUB PSU                    | -                                                                                        | -              | -                                                                                                                         | -              | -                                                                         |

Table 10-5 Spare parts overview 42" SD v4 (Part 2)

| PDP type                   | 42" SD v4                                                                                                                    |                |                                                                |                                                          |                | Service Information                                            |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------|----------------|----------------------------------------------------------------|----------------------------------------------------------|----------------|----------------------------------------------------------------|
| PDP model 12NC             | 9322 226 96682                                                                                                               |                |                                                                | 9322 233 81682                                           |                | 932223381682<br>being backwards<br>compatible tbd              |
| PDP model type and version | S42SD-YD07 (PP42SD015B)                                                                                                      |                |                                                                | S42SD-YD07 (PP42SD015F)                                  |                |                                                                |
| Remarks                    | Version number used by<br>SDI:PP42SD015B(SMPS Rev.0.55)<br>New SMPS supply:LJ44-00101C +<br>cables. Service information: tbd |                | PWB's from<br>PP42SD015B and<br>PP42SD015A<br>being compatible | Version number used by SDI: PP42SD015F (SMPS<br>Rev.0.7) |                | PWB's from<br>PP42SD015B and<br>PP42SD015F<br>being compatible |
| Logic-Buffer (E)           | LJ92-01026A                                                                                                                  | 9965 000 29205 | Y                                                              | LJ92-01026A                                              | 9965 000 29205 | Y                                                              |
| Logic-Buffer (F)           | LJ92-01027A                                                                                                                  | 9965 000 29206 | Y                                                              | LJ92-01027A                                              | 9965 000 29206 | Y                                                              |
| Logic-Buffer (G)           | -                                                                                                                            | -              | -                                                              | -                                                        | -              | -                                                              |
| Logic-Buffer (H)           | -                                                                                                                            | -              | -                                                              | -                                                        | -              | -                                                              |
| Logic-Buffer (I)           | -                                                                                                                            | -              | -                                                              | -                                                        | -              | -                                                              |
| Logic-Buffer (J)           | -                                                                                                                            | -              | -                                                              | -                                                        | -              | -                                                              |
| Y-Buffer (up)              | LJ92-01031A                                                                                                                  | 9965 000 29207 | Y                                                              | LJ92-01031A                                              | 9965 000 29207 | Y                                                              |
| Y-Buffer (down)            | LJ92-01032A                                                                                                                  | 9965 000 29208 | Y                                                              | LJ92-01032A                                              | 9965 000 29208 | Y                                                              |
| Logic-Board                | LJ92-01274D                                                                                                                  | 9966 000 30042 | Y                                                              | LJ92-01274D                                              | 9966 000 30042 | Y                                                              |
| SUBL                       | -                                                                                                                            | -              | -                                                              | -                                                        | -              | -                                                              |
| SUBR                       | -                                                                                                                            | -              | -                                                              | -                                                        | -              | -                                                              |
| X-Board                    | LJ92-01336A                                                                                                                  | 9965 000 32628 | Y                                                              | LJ92-01336A                                              | 9965 000 32628 | Y                                                              |
| Y-Board                    | LJ92-01337A                                                                                                                  | 9965 000 32629 | Y                                                              | LJ92-01337A                                              | 9965 000 32629 | Y                                                              |
| SMPS (PSU)                 | LJ44-00101B                                                                                                                  | 9965 000 32630 | N                                                              | LJ44-00101C                                              | 9965 000 33880 | Y                                                              |
| SUB PSU                    | -                                                                                                                            | -              | -                                                              | -                                                        | -              | -                                                              |

Table 10-6 Spare parts overview 42" HD v3

| PDP type                   | 42" HD v3                         |                |                               |                | Lead Free type<br>being compatible<br>with Lead type<br>PWB |
|----------------------------|-----------------------------------|----------------|-------------------------------|----------------|-------------------------------------------------------------|
| PDP model 12NC             | 9322 215 25682                    |                |                               |                |                                                             |
| PDP model type and version | S42AX-XD02                        |                |                               |                |                                                             |
| Remarks                    | Lead type boards being phased out |                |                               |                |                                                             |
| Boards                     | Codes for leaded type PWBs        |                | Codes for lead-free type PWBs |                |                                                             |
| Logic-Buffer (E)           | LJ92-00895A                       | 9965 000 25101 | LJ92-01264A                   | 9965 000 32631 | Y                                                           |
| Logic-Buffer (F)           | LJ92-00896A                       | 9965 000 25102 | LJ92-01265A                   | 9965 000 32632 | Y                                                           |
| Logic-Buffer (G)           | -                                 | -              | -                             | -              | -                                                           |
| Logic-Buffer (H)           | -                                 | -              | -                             | -              | -                                                           |
| Logic-Buffer (I)           | -                                 | -              | -                             | -              | -                                                           |
| Logic-Buffer (J)           | -                                 | -              | -                             | -              | -                                                           |
| Y-Buffer (up)              | LJ92-00993A                       | 9965 000 25103 | LJ92-00993B                   | 9965 000 32633 | Y                                                           |
| Y-Buffer (down)            | LJ92-00994A                       | 9965 000 25104 | LJ92-00994B                   | 9965 000 32634 | Y                                                           |
| Logic-Board                | LJ92-00990E                       | 9965 000 25105 | LJ92-01221C                   | 9965 000 32635 | Y                                                           |
| SUBL                       | -                                 | -              | -                             | -              | -                                                           |
| SUBR                       | -                                 | -              | -                             | -              | -                                                           |
| X-Board                    | LJ92-00980A                       | 9965 000 25106 | LJ92-00980B                   | 9965 000 32636 | Y                                                           |
| Y-Board                    | LJ92-00981A                       | 9965 000 25107 | LJ92-00981B                   | 9965 000 32637 | Y                                                           |
| SMPS (PSU)                 | LJ44-00058A                       | 9965 000 25108 | LJ44-00058B                   | 9965 000 32638 | Y                                                           |
| SUB PSU                    | LJ44-00075A                       | 9965 000 25131 | LJ44-00075B                   | 9965 000 32623 | Y                                                           |

Table 10-7 Spare parts overview 42" HD v4 (Part 1)

| PDP type                   | 42" HD v4                                                                                  |                |                                                                                   |                | Boards from<br>S42AX-YD01(*)<br>and PP42AX-<br>007A being<br>Compatible |
|----------------------------|--------------------------------------------------------------------------------------------|----------------|-----------------------------------------------------------------------------------|----------------|-------------------------------------------------------------------------|
| PDP model 12NC             | 8204 000 78191                                                                             |                | 9322 225 38682                                                                    |                |                                                                         |
| PDP model type and version | S42AX-YD01 (*)                                                                             |                | S42AX-YD01 (PP42AX-007A)                                                          |                |                                                                         |
| Remarks                    | SMPS LJ44-00092A being phased out<br>supply:LJ44-00101C + cables. Service information: tbd |                | (SMPS Rev.0.55) New SMPS supply:LJ44-00101C + cables.<br>Service information: tbd |                |                                                                         |
| Logic-Buffer (E)           | LJ92-01054A                                                                                | 9965 000 29197 | LJ92-01054A                                                                       | 9965 000 29197 | Y                                                                       |
| Logic-Buffer (F)           | LJ92-01055A                                                                                | 9965 000 29198 | LJ92-01055A                                                                       | 9965 000 29198 | Y                                                                       |
| Logic-Buffer (G)           | -                                                                                          | -              | -                                                                                 | -              | -                                                                       |
| Logic-Buffer (H)           | -                                                                                          | -              | -                                                                                 | -              | -                                                                       |
| Logic-Buffer (I)           | -                                                                                          | -              | -                                                                                 | -              | -                                                                       |
| Logic-Buffer (J)           | -                                                                                          | -              | -                                                                                 | -              | -                                                                       |
| Y-Buffer (up)              | LJ92-01117A                                                                                | 9965 000 29199 | LJ92-01202A                                                                       | 9965 000 32639 | Y                                                                       |
| Y-Buffer (down)            | LJ92-01118A                                                                                | 9965 000 29200 | LJ92-01203A                                                                       | 9965 000 32640 | Y                                                                       |
| Logic-Board                | LJ92-01053A                                                                                | 9965 000 29203 | LJ92-01270B                                                                       | 9965 000 32641 | Y                                                                       |
| SUBL                       | -                                                                                          | -              | -                                                                                 | -              | -                                                                       |
| SUBR                       | -                                                                                          | -              | -                                                                                 | -              | -                                                                       |
| X-Board                    | LJ92-01115A                                                                                | 9965 000 29196 | LJ92-01199A                                                                       | 9965 000 32642 | Y                                                                       |
| Y-Board                    | LJ92-01200A                                                                                | 9965 000 32643 | LJ92-01200A                                                                       | 9965 000 32643 | Y                                                                       |
| SMPS (PSU)                 | LJ44-00092A                                                                                | 9965 000 29202 | LJ44-00101A                                                                       | 9965 000 29210 | N                                                                       |
| SUB PSU                    | -                                                                                          | -              | -                                                                                 | -              | -                                                                       |

Table 10-8 Spare parts overview 42" HD v4 (Part 2)

| PDP type                   | 42" HD v4                                                                      |                |                                                         |                                                                                |                | Service Information 9322 233 80682 being backwards compatible tbd |
|----------------------------|--------------------------------------------------------------------------------|----------------|---------------------------------------------------------|--------------------------------------------------------------------------------|----------------|-------------------------------------------------------------------|
| PDP model 12NC             | 9322 226 95682                                                                 |                |                                                         | 9322 233 80682                                                                 |                |                                                                   |
| PDP model type and version | S42AX-YD01 (PP42AX-008A)                                                       |                | PWB's from PP42AX-007A and PP42AX-008A being Compatible | S42AX-YD01 (PP42AX-008B)                                                       |                | PWB's from PP42AX-008A and PP42AX-008B being compatible           |
| Remarks                    | (SMPS Rev.0.65) New SMPS supply:LJ44-00101C + cables. Service information: tbd |                |                                                         | (SMPS Rev.0.55) New SMPS supply:LJ44-00101C + cables. Service information: tbd |                |                                                                   |
| Logic-Buffer (E)           | LJ92-01054A                                                                    | 9965 000 29197 | Y                                                       | LJ92-01054A                                                                    | 9965 000 29197 | Y                                                                 |
| Logic-Buffer (F)           | LJ92-01055A                                                                    | 9965 000 29198 | Y                                                       | LJ92-01055A                                                                    | 9965 000 29198 | Y                                                                 |
| Logic-Buffer (G)           | -                                                                              | -              | -                                                       | -                                                                              | -              | -                                                                 |
| Logic-Buffer (H)           | -                                                                              | -              | -                                                       | -                                                                              | -              | -                                                                 |
| Logic-Buffer (I)           | -                                                                              | -              | -                                                       | -                                                                              | -              | -                                                                 |
| Logic-Buffer (J)           | -                                                                              | -              | -                                                       | -                                                                              | -              | -                                                                 |
| Y-Buffer (up)              | LJ92-01202A                                                                    | 9965 000 32639 | Y                                                       | LJ92-01202A                                                                    | 9965 000 32639 | Y                                                                 |
| Y-Buffer (down)            | LJ92-01203A                                                                    | 9965 000 32640 | Y                                                       | LJ92-01203A                                                                    | 9965 000 32640 | Y                                                                 |
| Logic-Board                | LJ92-01270B                                                                    | 9965 000 32641 | Y                                                       | LJ92-01270B                                                                    | 9965 000 32641 | Y                                                                 |
| SUBL                       | -                                                                              | -              | -                                                       | -                                                                              | -              | -                                                                 |
| SUBR                       | -                                                                              | -              | -                                                       | -                                                                              | -              | -                                                                 |
| X-Board                    | LJ92-01199A                                                                    | 9965 000 32642 | Y                                                       | LJ92-01199A                                                                    | 9965 000 32642 | Y                                                                 |
| Y-Board                    | LJ92-01200A                                                                    | 9965 000 32643 | Y                                                       | LJ92-01200A                                                                    | 9965 000 32643 | Y                                                                 |
| SMPS (PSU)                 | LJ44-00101B                                                                    | 9965 000 32630 | N                                                       | LJ44-00101C                                                                    | 9965 000 33880 | Y                                                                 |
| SUB PSU                    | -                                                                              | -              | -                                                       | -                                                                              | -              | -                                                                 |

Table 10-9 Spare parts overview 50" HD v3

| PDP type                   | 50" HD v3                         |                |                              |                |                                                    |  |
|----------------------------|-----------------------------------|----------------|------------------------------|----------------|----------------------------------------------------|--|
| PDP model 12NC             | 9322 215 26682                    |                |                              |                |                                                    |  |
| PDP model type and version | S50HW-XD03 (PP50HW004C)           |                |                              |                |                                                    |  |
| Remarks                    | Lead type boards being phased out |                |                              |                | Lead Free type being compatible with Lead type PWB |  |
| Boards                     | Codes for leaded type PWBs        |                | Codes for lead-free typePWBs |                |                                                    |  |
| Logic-Buffer (E)           | LJ92-00917A                       | 9965 000 25117 | LJ92-00917B                  | 9965 000 32614 | Y                                                  |  |
| Logic-Buffer (F)           | LJ92-00918A                       | 9965 000 25118 | LJ92-00918B                  | 9965 000 32615 | Y                                                  |  |
| Logic-Buffer (G)           | LJ92-00919A                       | 9965 000 25119 | LJ92-00919B                  | 9965 000 32646 | Y                                                  |  |
| Logic-Buffer (H)           | LJ92-00920A                       | 9965 000 25120 | LJ92-00920B                  | 9965 000 32647 | Y                                                  |  |
| Logic-Buffer (I)           | LJ92-00921A                       | 9965 000 25121 | LJ92-00921B                  | 9965 000 32648 | Y                                                  |  |
| Logic-Buffer (J)           | LJ92-00922A                       | 9965 000 25122 | LJ92-00922B                  | 9965 000 32649 | Y                                                  |  |
| Y-Buffer (up)              | LJ92-00880A                       | 9965 000 25123 | LJ92-00880B                  | 9965 000 32650 | Y                                                  |  |
| Y-Buffer (down)            | LJ92-00881A                       | 9965 000 25124 | LJ92-00881B                  | 9965 000 32651 | Y                                                  |  |
| Logic-Board                | LJ92-00949C                       | 9965 000 25125 | LJ92-01224B                  | 9965 000 32652 | Y                                                  |  |
| SUBL                       | LJ92-00923A                       | 9965 000 25126 | LJ92-00923B                  | 9965 000 32653 | Y                                                  |  |
| SUBR                       | LJ92-00959A                       | 9965 000 25127 | LJ92-00959B                  | 9965 000 32654 | Y                                                  |  |
| X-Board                    | LJ92-00852A                       | 9965 000 25128 | LJ92-00852B                  | 9965 000 32655 | Y                                                  |  |
| Y-Board                    | LJ92-00853A                       | 9965 000 25129 | LJ92-00853B                  | 9965 000 32656 | Y                                                  |  |
| SMPS (PSU)                 | LJ44-000 65A                      | 9965 000 25130 | LJ44-00065B                  | 9965 000 32657 | Y                                                  |  |
| SUB PSU                    | LJ44-000 99A                      | 9965 000 26195 | LJ44-00099B                  | 9965 000 32658 | Y                                                  |  |

Table 10-10 Spare parts overview 50” HD v4 (Part 1)

| PDP type                   | 50" HD v4                                                                                                        |                |                                                                                                                  |                | PWB's from<br>PP50HW-005A and<br>PP50HW-005B<br>being compatible |
|----------------------------|------------------------------------------------------------------------------------------------------------------|----------------|------------------------------------------------------------------------------------------------------------------|----------------|------------------------------------------------------------------|
| PDP model 12NC             | 9322 226 54682                                                                                                   |                | 9322 226 97682                                                                                                   |                |                                                                  |
| PDP model type and version | S50HW-XD04 (PP50HW-005A)                                                                                         |                | S50HW-XD04 (PP50HW-005B)                                                                                         |                |                                                                  |
| Remarks                    | Codes for PWBs from 932222654682 PP50H-005A<br>New SMPS supply:LJ44-00108C + cables.<br>Service information: tbd |                | Codes for PWBs from 932222697682 PP50H-005B<br>New SMPS supply:LJ44-00108C + cables.<br>Service information: tbd |                |                                                                  |
| Logic-Buffer (E)           | LJ92-01103A                                                                                                      | 9965 000 30025 | LJ92-01103A                                                                                                      | 9965 000 30025 | Y                                                                |
| Logic-Buffer (F)           | LJ92-01104A                                                                                                      | 9965 000 30026 | LJ92-01104A                                                                                                      | 9965 000 30026 | Y                                                                |
| Logic-Buffer (G)           | LJ92-01105A                                                                                                      | 9965 000 30027 | LJ92-01105A                                                                                                      | 9965 000 30027 | Y                                                                |
| Logic-Buffer (H)           | -                                                                                                                | -              | -                                                                                                                | -              | -                                                                |
| Logic-Buffer (I)           | -                                                                                                                | -              | -                                                                                                                | -              | -                                                                |
| Logic-Buffer (J)           | -                                                                                                                | -              | -                                                                                                                | -              | -                                                                |
| Y-Buffer (up)              | LJ92-01047A                                                                                                      | 9965 000 30028 | LJ92-01047A                                                                                                      | 9965 000 30028 | Y                                                                |
| Y-Buffer (down)            | LJ92-01048A                                                                                                      | 9965 000 30029 | LJ92-01048A                                                                                                      | 9965 000 30029 | Y                                                                |
| Logic-Board                | LJ92-01269B                                                                                                      | 9965 000 30032 | LJ92-01269B                                                                                                      | 9965 000 30032 | Y                                                                |
| SUBL                       | -                                                                                                                | -              | -                                                                                                                | -              | -                                                                |
| SUBR                       | -                                                                                                                | -              | -                                                                                                                | -              | -                                                                |
| X-Board                    | LJ92-01045A                                                                                                      | 9965 000 30024 | LJ92-01045A                                                                                                      | 9965 000 30024 | Y                                                                |
| Y-Board                    | LJ92-01046A                                                                                                      | 9965 000 30030 | LJ92-01046A                                                                                                      | 9965 000 30030 | Y                                                                |
| SMPS (PSU)                 | LJ44-00108A                                                                                                      | 9965 000 33390 | LJ44-00108B                                                                                                      | 9965 000 30031 | N                                                                |
| SUB PSU                    | -                                                                                                                | -              | -                                                                                                                | -              | -                                                                |

Table 10-11 Spare parts overview 50” HD v4 (Part 2)

| PDP type                   | 50" HD v4                                   |                | Service information:<br>932223379682<br>being backwards compatible: tdb |
|----------------------------|---------------------------------------------|----------------|-------------------------------------------------------------------------|
| PDP model 12NC             | 9322 233 79682                              |                |                                                                         |
| PDP model type and version | S50HW-XD04 (PP50HW-005B)                    |                | PWB's from<br>PP50HW-005B and<br>PP50HW-005E<br>being compatible        |
| Remarks                    | Codes for PWBs from 932223379682 PP50H-005E |                |                                                                         |
| Logic-Buffer (E)           | LJ92-01103A                                 | 9965 000 30025 | Y                                                                       |
| Logic-Buffer (F)           | LJ92-01104A                                 | 9965 000 30026 | Y                                                                       |
| Logic-Buffer (G)           | LJ92-01105A                                 | 9965 000 30027 | -                                                                       |
| Logic-Buffer (H)           | -                                           | -              | -                                                                       |
| Logic-Buffer (I)           | -                                           | -              | -                                                                       |
| Logic-Buffer (J)           | -                                           | -              | -                                                                       |
| Y-Buffer (up)              | LJ92-01047A                                 | 9965 000 30028 | Y                                                                       |
| Y-Buffer (down)            | LJ92-01048A                                 | 9965 000 30029 | Y                                                                       |
| Logic-Board                | LJ92-01269B                                 | 9965 000 30032 | Y                                                                       |
| SUBL                       | -                                           | -              | -                                                                       |
| SUBR                       | -                                           | -              | -                                                                       |
| X-Board                    | LJ92-01045A                                 | 9965 000 30024 | Y                                                                       |
| Y-Board                    | LJ92-01046A                                 | 9965 000 30030 | Y                                                                       |
| SMPS (PSU)                 | LJ44-00108C                                 | 9965 000 33879 | Y                                                                       |
| SUB PSU                    | -                                           | -              | -                                                                       |

**Note:** All 42- and 50-inch v4 panels are lead-free. Differences in table above are related to the SMPS (PSU).



# 11. Revision List

## Manual xxxx xxx xxxx.0

- First release.

## Manual xxxx xxx xxxx.1

- **General:** Update of whole manual to the latest publication standards and information.
- **37" SD v4:** Errors corrected, and info updated.
- **42" SD v2:** Errors corrected, and info updated.
- **42" SD v3:** Errors corrected, and info updated.
- **42" SD v4:** New.
- **42" HD v3:** Errors corrected, and info updated.
- **42" HD v4:** New.
- **50" HD v3:** Errors corrected, and info updated.
- **50" HD v4:** New.

## Manual xxxx xxx xxxx.2

- SMPS layouts and voltages updated
- Alignments updated
- Parts list updated

## Manual xxxx xxx xxxx.3

- **General:** Correction of some minor errors.
- **Chapter 8, Alignments:** Errors corrected, and info updated.