

Service Manual

42" PLASMA PDP MONITOR

CHASSIS : SP-115

Model : DP-42SM

(FOR NEC MODULE)



DAEWOO ELECTRONICS Corp.

[http : //svc.dwe.co.kr](http://svc.dwe.co.kr)

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DAEWOO

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1. COMMENTS

This paper is the additional service manual for the DP-42SM / WM / GM using the NEC panel.

Other service contents with the exception of this manual are same as the existing service manual (DP-42SM / WM / GM). The existing service manual was made for ORION panel.

2. Safety Precautions

(1) When moving or laying down a PDP Set, at least two people must be working. Avoid any impact towards the PDP Set.

(2) Do not leave the broken PDP Set on for a long time. To prevent any further damages, after check the broken Set's condition, make sure to turn the power (AC) off.

(3) When opening the BACK COVER, turn off the power (AC) to prevent electric shock. When a PDP is on, high voltage and high current exist inside the Set.

(4) When loosening screws, check the connecting position and type of the screw. Sort out the screws and store them separately. Because screws holding PCB are working as electric circuit GROUNDING, make sure to check if any screw is missing when assembling.

(5) If you open the BACK COVER, you will see a Panel Gas Exhaust Tube. If this part is damaged, entire PDP PANEL must be replaced. Therefore, when working, be careful not to damage this part.

(6) A PDP Set contains different kind of connector cables. When connecting or disconnecting connector cables, check the direction and position of the cable beforehand.

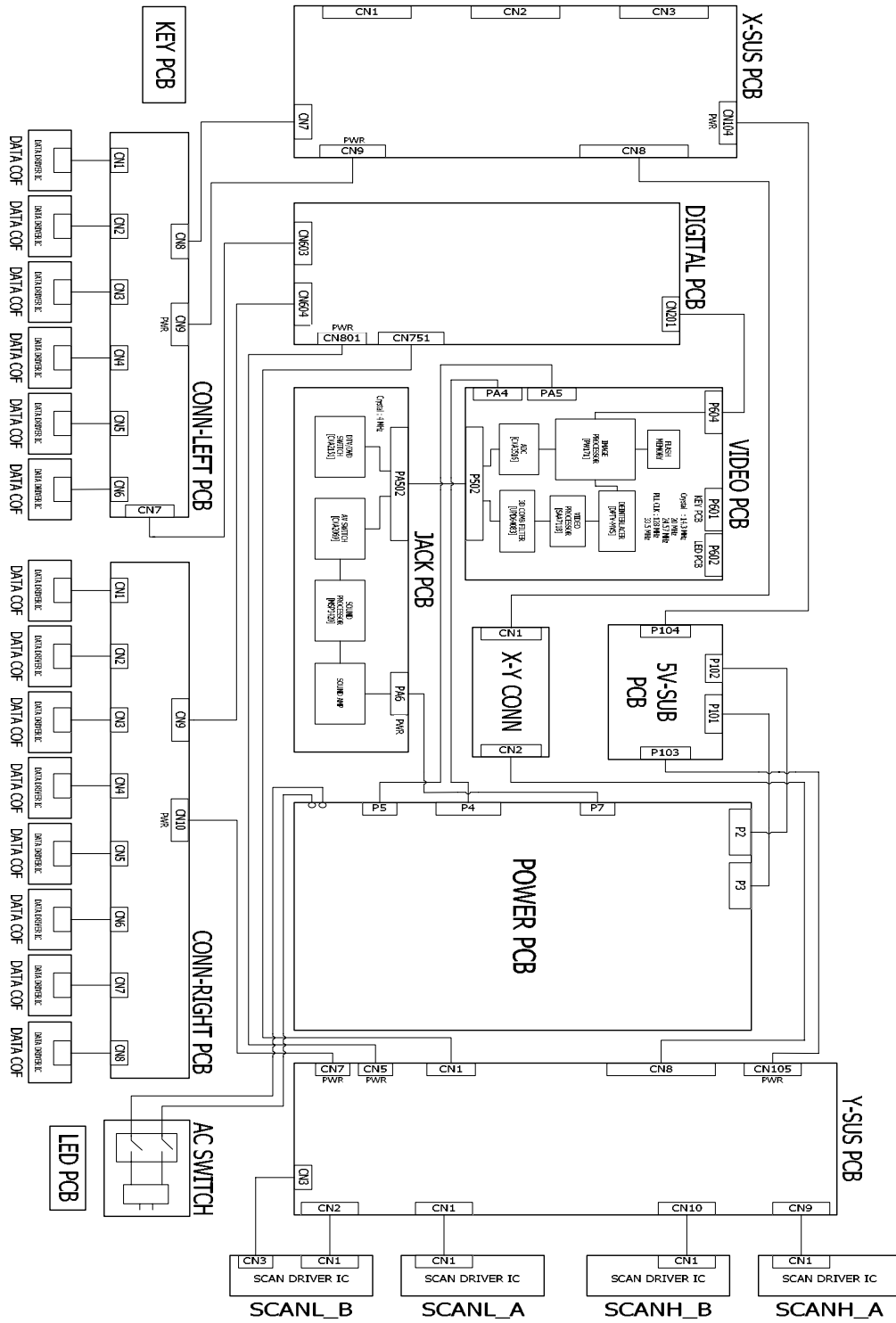
(7) When disconnecting connectors, unplug the connectors slowly with care. Especially when connecting/disconnecting FFC (film) cables or FPC cables, do not unplug the connectors too much instantaneously or strongly, and always handle the cables with care.

(8) Connectors are designed so that if the number of pins or the direction does not match, connectors will not fit. When having problem in plugging the connectors, make sure to check their kind, position, and direction.

3. Product Specification

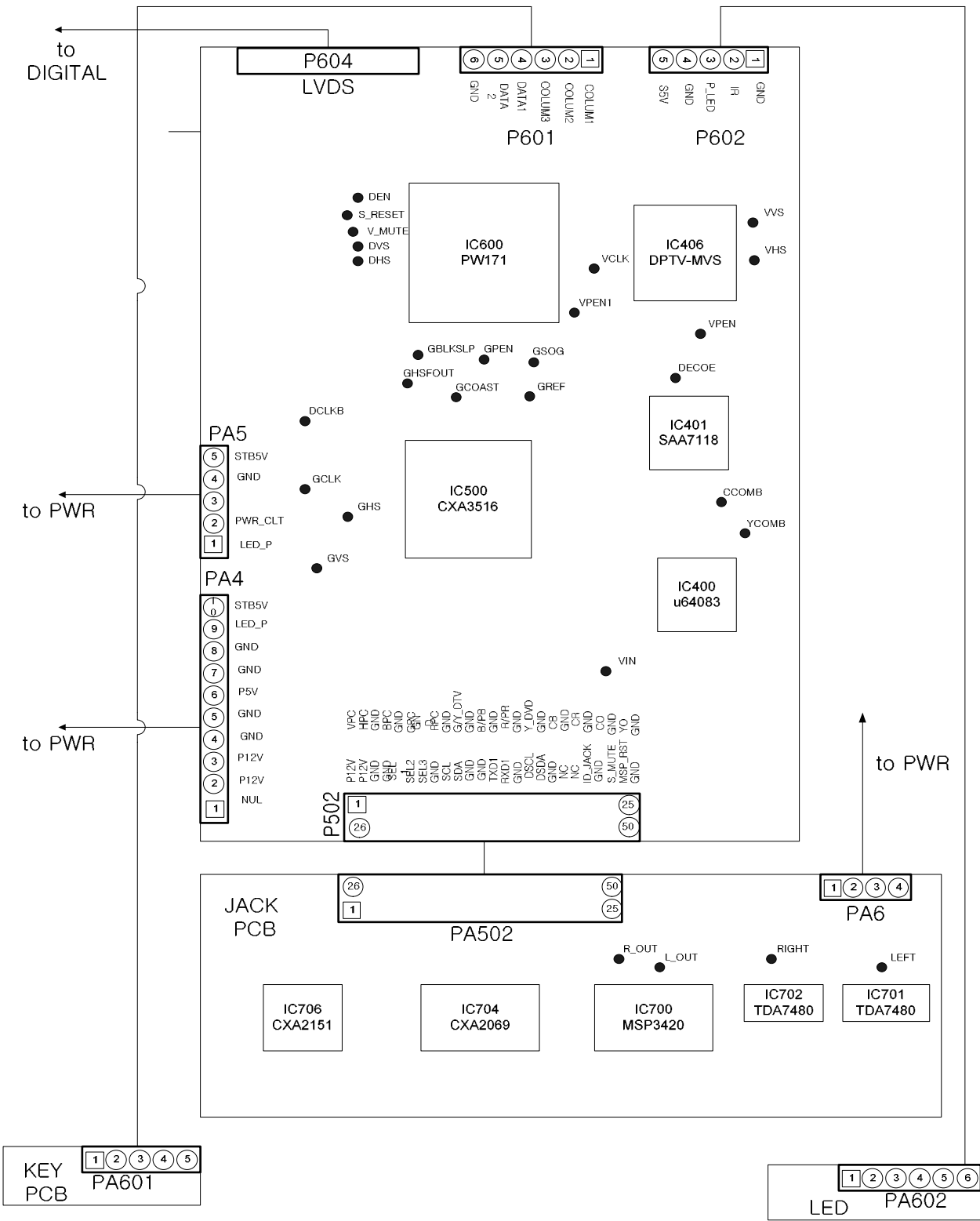
I T E M	S P E C I F I C A T I O N	REMARK
1. GENERAL 1-1. MODEL NO 1-2. CHASSIS NO 1-3. SCREEN SIZE 1-4. COUNTRY 1-5. RESOLUTION 1-6. REMOCON TYPE 1-7. SAFETY STANDARD	DSP-4280NVS SP-115 42"(16:9) WORLD WIDE 853(H) X 480(V) R-V28A (E) UL, C-UL, CE, CB, FCC(CLASS B), CE(CLASS B)	
2. MECHANICAL 2-1. APPEARANCE 1) WITHOUT STAND 2) WITH STAND 3) CARTON BOX 2-2. WEIGHT 1) WITHOUT STAND 2) WITH STAND	WxHxD=1,039 x 628 x 80 mm WxHxD=1,039 x 725 x 320 mm WxHxD=1,256 x 800 x 327 mm 29.9 Kg 36.8 Kg	
3. ELECTRICAL 3-1. VIDEO INPUT 3-2. DTV/DVD INPUT 3-3. PC INPUT 3-4. SOUND INPUT 3-4. SPEAKER OUTPUT 3-5. POWER REQUIREMENT 3-6. POWER CONSUMPTION 3-8. RS-232 CONTROL 3-9. FUNCTION 1) SCALING 2) ZOOM 3) OSD 4) OTHERS	COMPOSITE(NTSC, PAL, SECAM, PAL-M/N, NTSC4.43) & S-VHS(50/60Hz Y/C) 2SETS 1080 i, 720P, 480P , 480i (Y, Pb/Cb, Pr/Cr COMPONENT SIGNAL) 2SETS VGA ~ UXGA (15 PIN D-SUB) 1SET VIDEO 2SETS, DTV/DVD 2SETS, PC 1SET 8W(R) + 8W(L) AC 100V~240V, 50/60Hz 320W RS-232(FOR SOFTWARE UPGRADE) PC: H/V SIZE & POSITION ADJUST VIDEO/DTV/DVD:NOMAL,16:9, PANORAMA,ENLARGE LB,ENLARGE LBS 20 SCALE ZOOM & PANING SUPPORT 11 LANGUAGES STILL, SLEEP MODE,SOUND MODE	

4. BLOCK DIAGRAM



5. A/V BLOCK DESCRIPTION

5-1. AV BLOCK DIAGRAM



5-2.VIDEO PCB

- PROCESS Various Signal (PC, COMPONENT, COMPOSITE) to produce 24BIT DIGITAL output

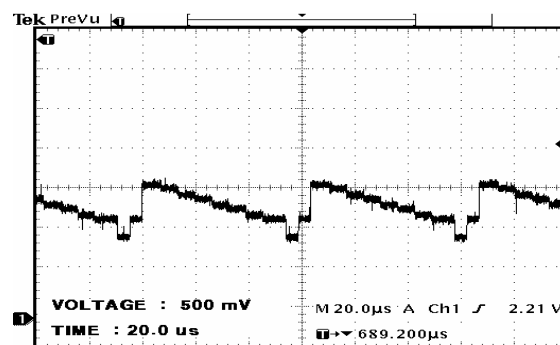
1) IC and TP

(1) IC400(UPD64083)

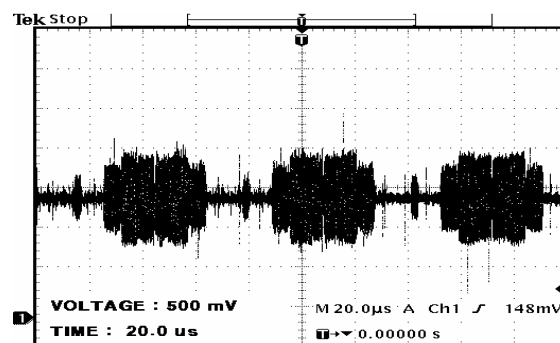
-Using 3D COMBFILTER to separate COMPOSITE signal to Brightness Signal(Y) and Color Signal(C)

*TP (Input : COLOR BAR PATTERN)

A. YCOMP : Brightness Signal(Y)



B. CCOMP : Color Signal (C)



(2) IC401 (SAA7118E)

-Receive NTSC, SECAM, PAL VIDEO by COMPOSITE(V) , S-VHS(Y.C) COMPONENT (Y Cb Cr) and process signal

*TP

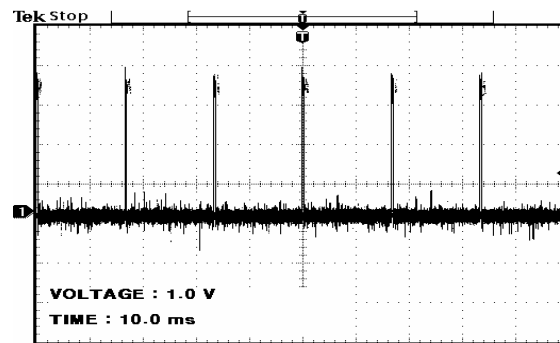
A. DECOE : CHIP ENABLE part. When signal process is done by IC401, output 3.3V DC LEVEL

(3) IC406 (DPTV-MVS)

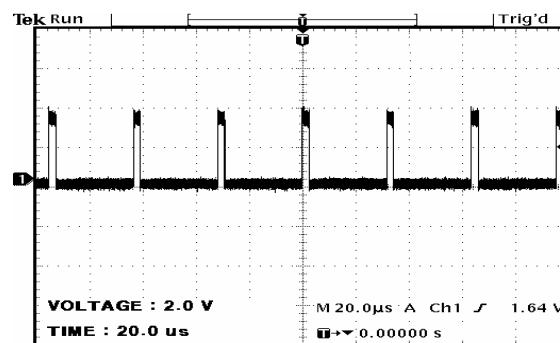
-A Scan Rate Converter which converts Interlace signal into Progressive signal

*TP

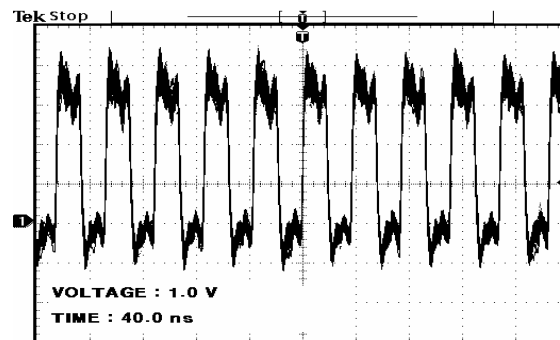
A. VVS : VERTICAL SYNC (output by DPTV-MVS)



B. VHS : HORIZONTAL SYNC (output by DPTV-MVS)



C. VCLK : CLOCK (output by DPTV-MVS)

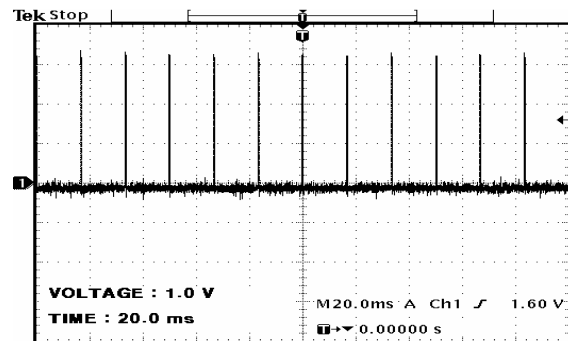


(4) IC500 (CXA3516R)

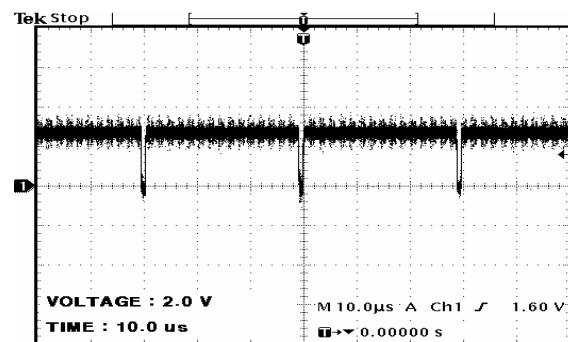
-3-channel 8-bit 165MSPS A/D converter which process PC , DTV signal

* TP

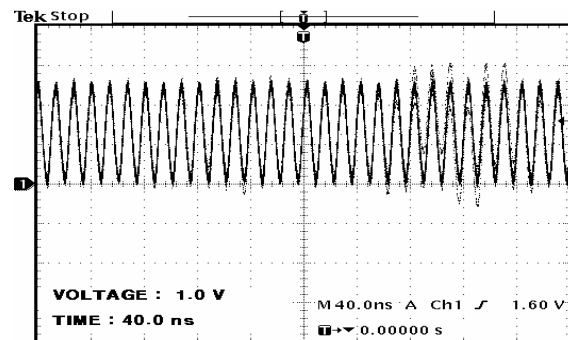
A. GCOAST : COAST CONTROL Signal for PLL (input by CXA3516)



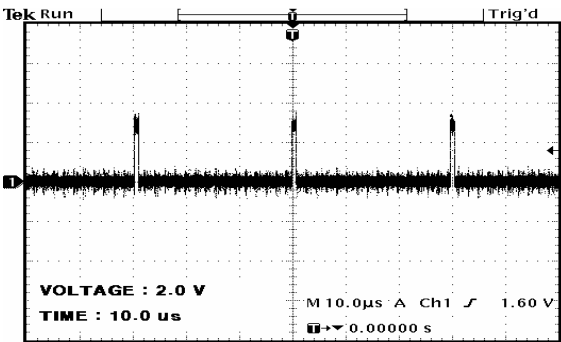
B. GHS : HORIZONTAL SYNC for GRAPHIC (output by CXA3516)



C. GCLK : CLOCK for CLOCK (output by CXA3516)



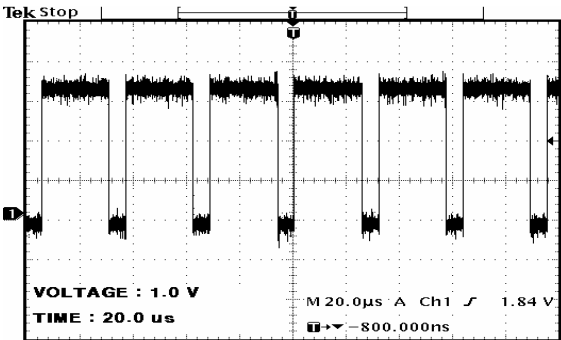
D. GFBK : SYNC for PLL



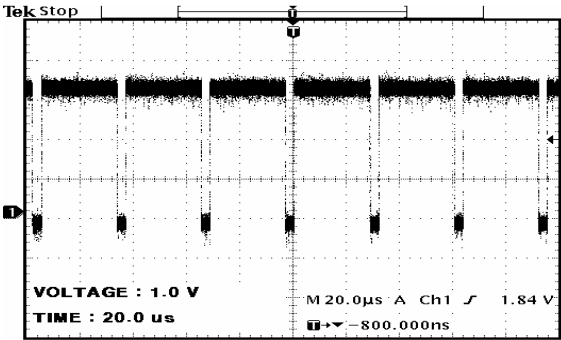
(5) IC600 (PW171) - Image processor IC

*TP

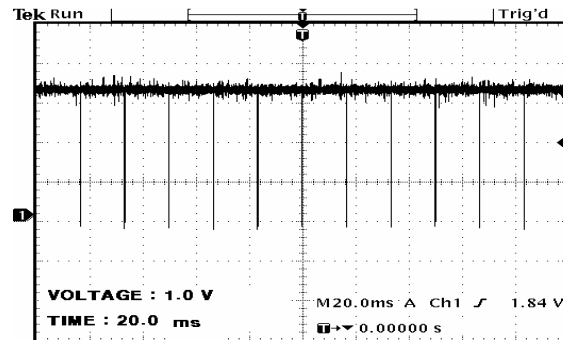
A. DEN : DATA ENABLE (output by PW171)



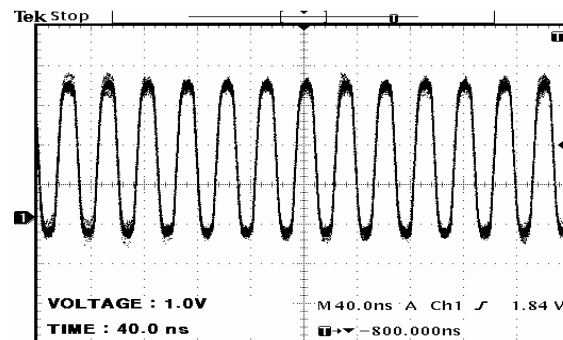
B. DHS : HORIZONTAL SYNC (output by PW171)



C.DVS : VERTICAL SYNC for DISPLAY (output by PW171)



D. DCLKB : CLOCK for DISPLAY (output by PW171)



5-3. JACK PCB

- Separate and process various VIDEO and AUDIO signal

(1) IC706(VIDEO /SYNC SELECTOR)

- This chooses Y Cb/Pb Cr/Pr or RGB signal to output Y Cb/Pb Cr/Pr, to separate SYNC, and to perform SYNC COUNTER.

(2) IC704(7_INPUT 3_OUTPUT AUDIO/VIDEO SWITCH)

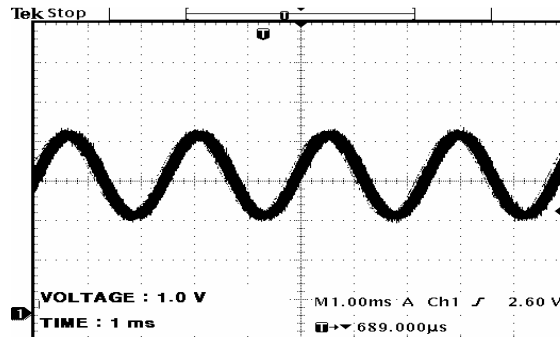
- The IC perform AUDIO or VIDEO SWITCHING

(3) IC700(MULTI STANDARD SOUND PROCDSOR)

- AUDIO SINGNAL VOLUME control, EQUALIZER control

*TP

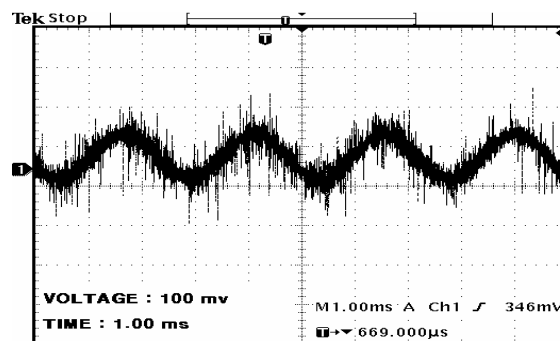
R_OUT(L_OUT) : AUDIO SIGNAL that goes into MSP3420 before AUDIO PROCESSING



(4) IC701 .IC700 (TDA 7480)

*TP

A. RIGHT(LEFT) :AMP input signal before 30dB amplification

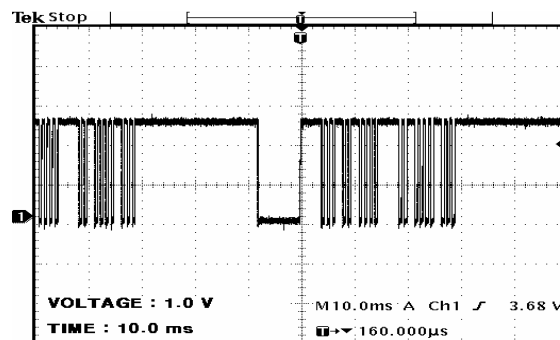


4-1-4.KEY PCB

-Input PCB using KEY

4-1-5.LED PCB

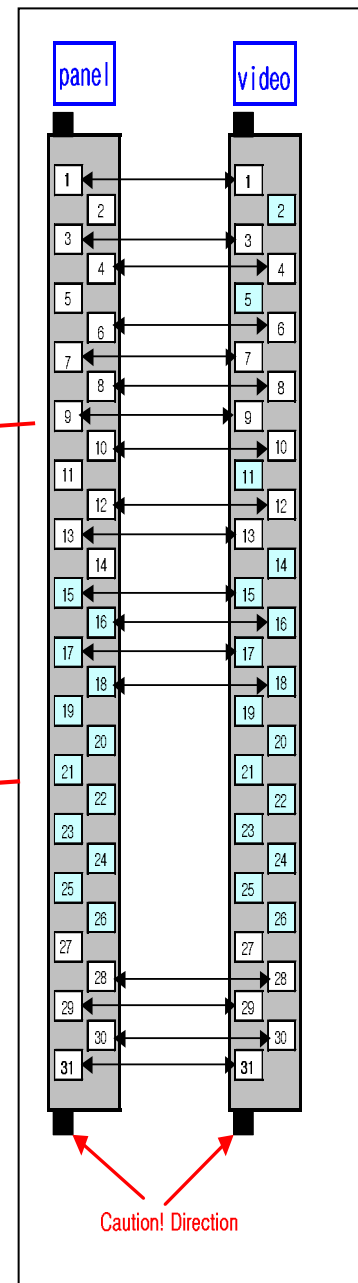
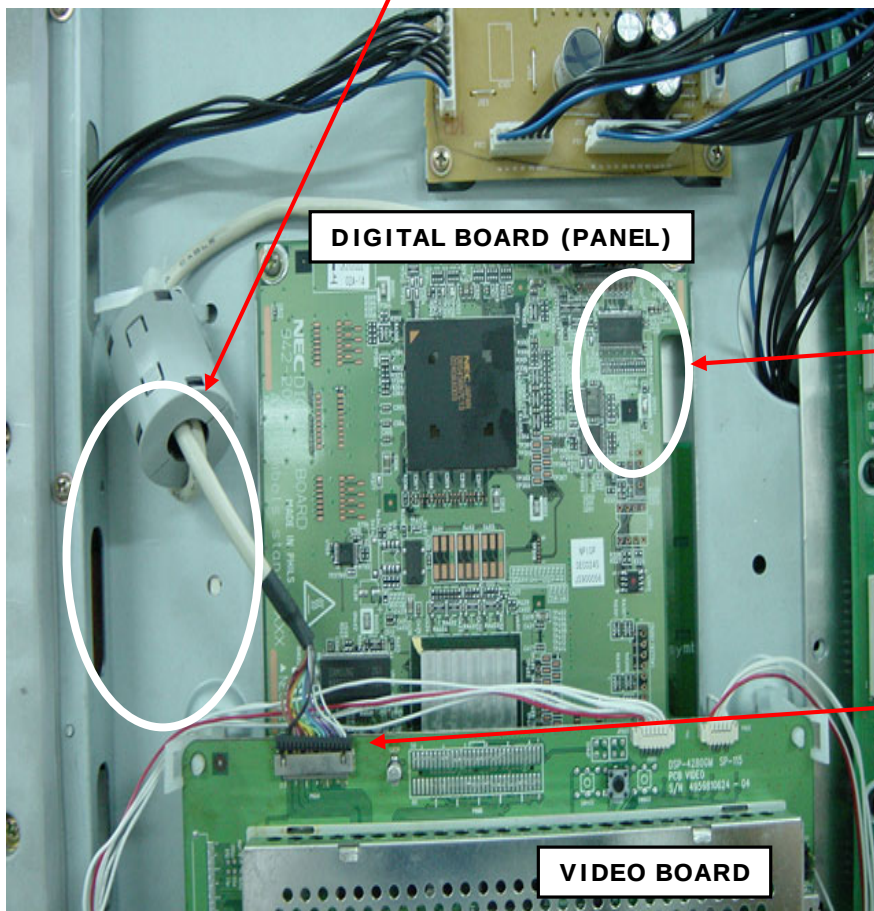
- PCB for REMOCON CONTROL



6. LVDS CABLE

CAUTION!

After servicing, you must check if ring core is coupled with LVDS cable. Otherwise, PDP may not display.



7. SERVICE MODE (VIDEO PCB INITIAL DATA)

(1) Input Selection : VIDEO

(2) USER CONTROL INITIAL VALUE

BRIGHTNESS : 35, CONTRAST : 47, COLOR : 32, TINT : 0 (CENTER)
SHARPNESS : 4

(3) SERVICE MODE INITIAL VALUE

1) PW171

SUB-BRIGHTNESS : 28, SUB-CONTRAST : 40

R-BIAS : 64, G-BIAS : 64, B-BIAS : 64

R-GAIN : 64, G-GAIN : 64, B-GAIN : 64

2) SAA7118

SUB BRT : 128, SUB CONT : 50, SUB CLR : 55, SUB TNT : 0

SUB SRP : 10

3) DPTV

SUB BRT : 61, SUB CONT : 16,

4) CXA3516

SUB CONT : 58, Cb OFFSET : 39, Cr OFFSET : 37, HYS : 3,

THRS LD : 14

5) MSP34X0

PRESCALE : 22

6) PANEL

MOVING : Video60STD

STILL : Video60RFC

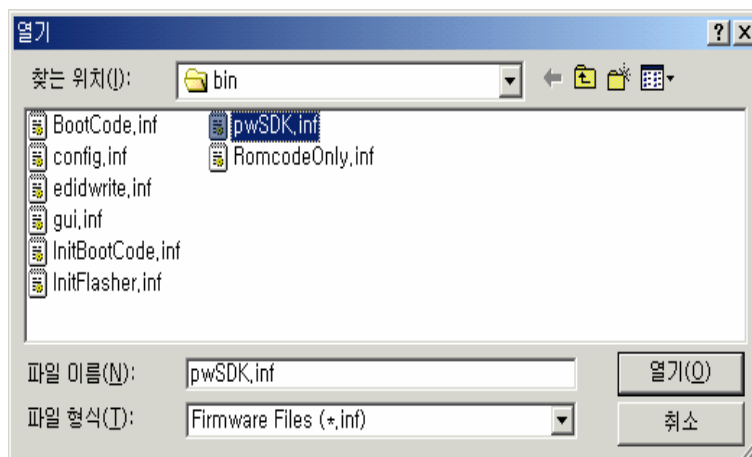
8. SOFTWARE UPGRADE Method

- 1.Connect the JACK PCB to the Video PCB.
- 2.Connect 9 PIN serial cable to the computer's serial port.
- 3.Connect serial cable's opposite end to Jack PCB's RS-232C port.
- 4.Run PC's Flashupgrader.exe and then push "Next(N) >" button.

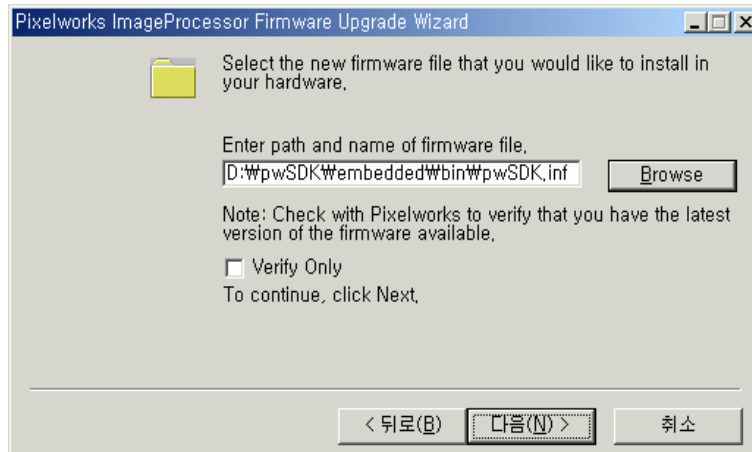


1.Select current Upgrade file

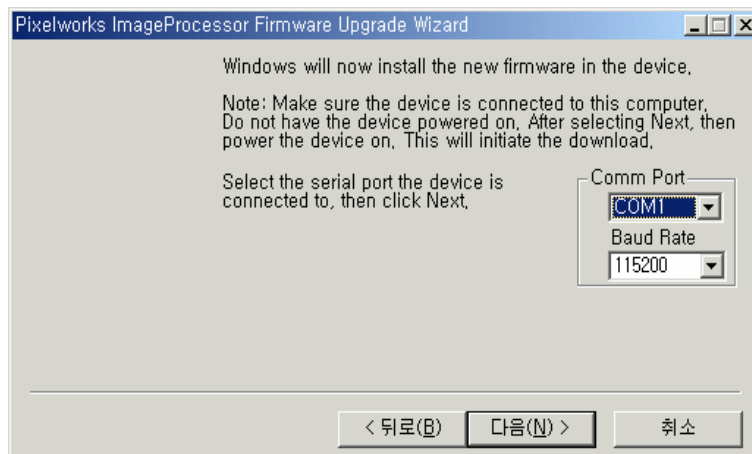
- Copy files sent by research center to a folder you wish to copy.
- Browse and Select pwSDK.inf from the folder.



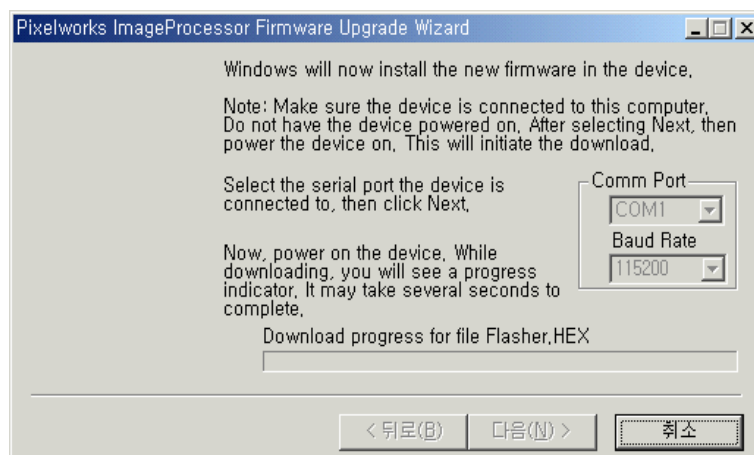
- Push "Next(N) >" button.



1. Select as above and push “Next(N) >” button. Select Comm port and Boud rate and push “Next(N) >” button

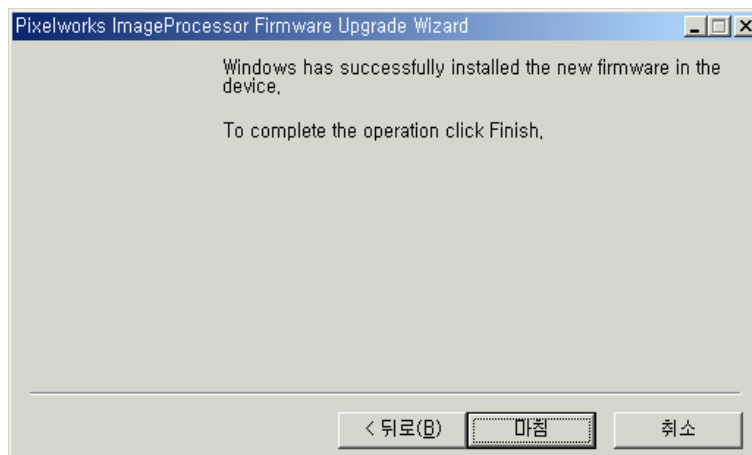


1. Upgrade process will be displayed. Power the AC on will initiate the download.





1. When all files Upgrade are complete, a window (below) will open. Push "Finish" button to complete the process.



9. POWER ADJUSTMENTS

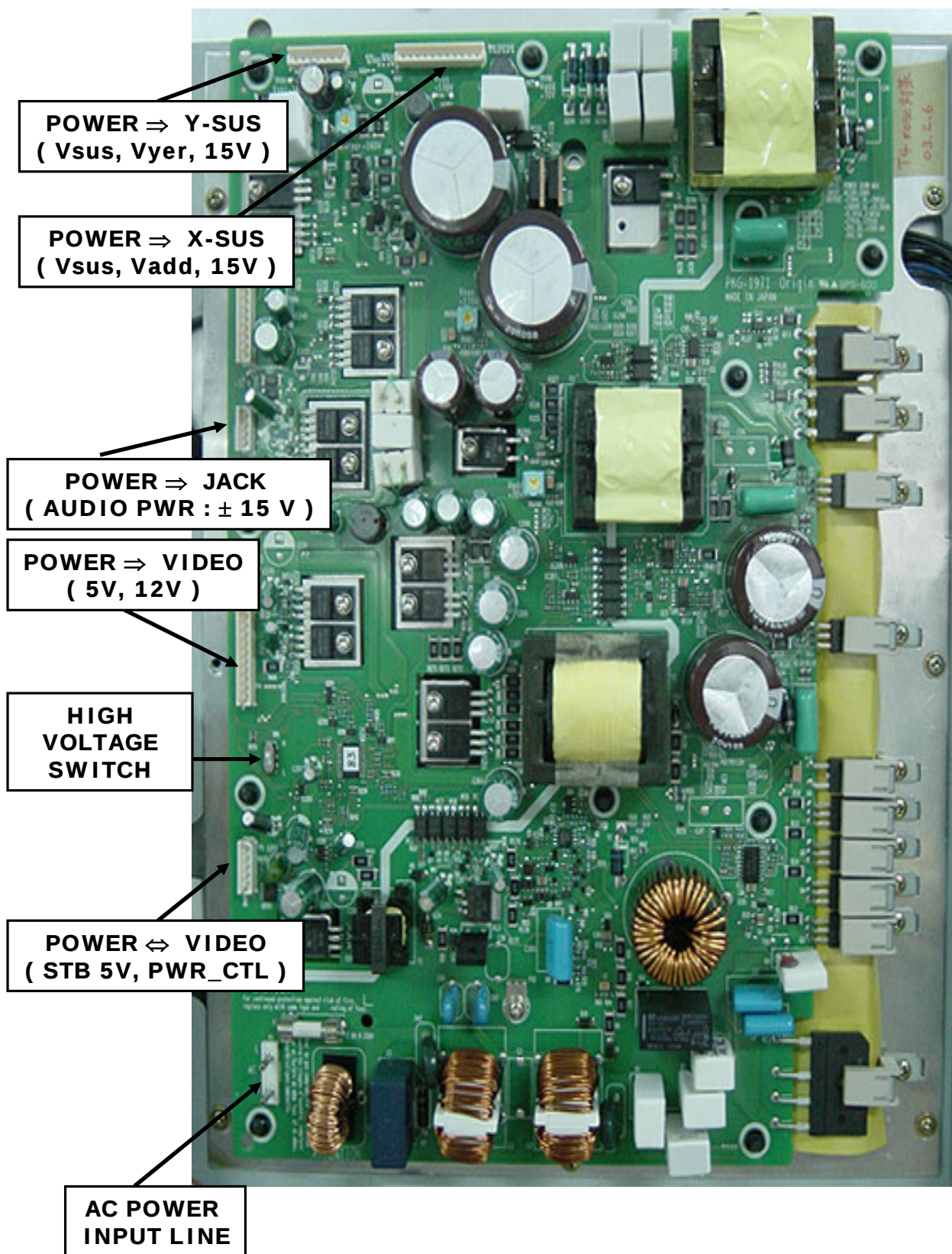
1. Vsus (SUSTAIN Voltage) : Discharge Sustain Voltage

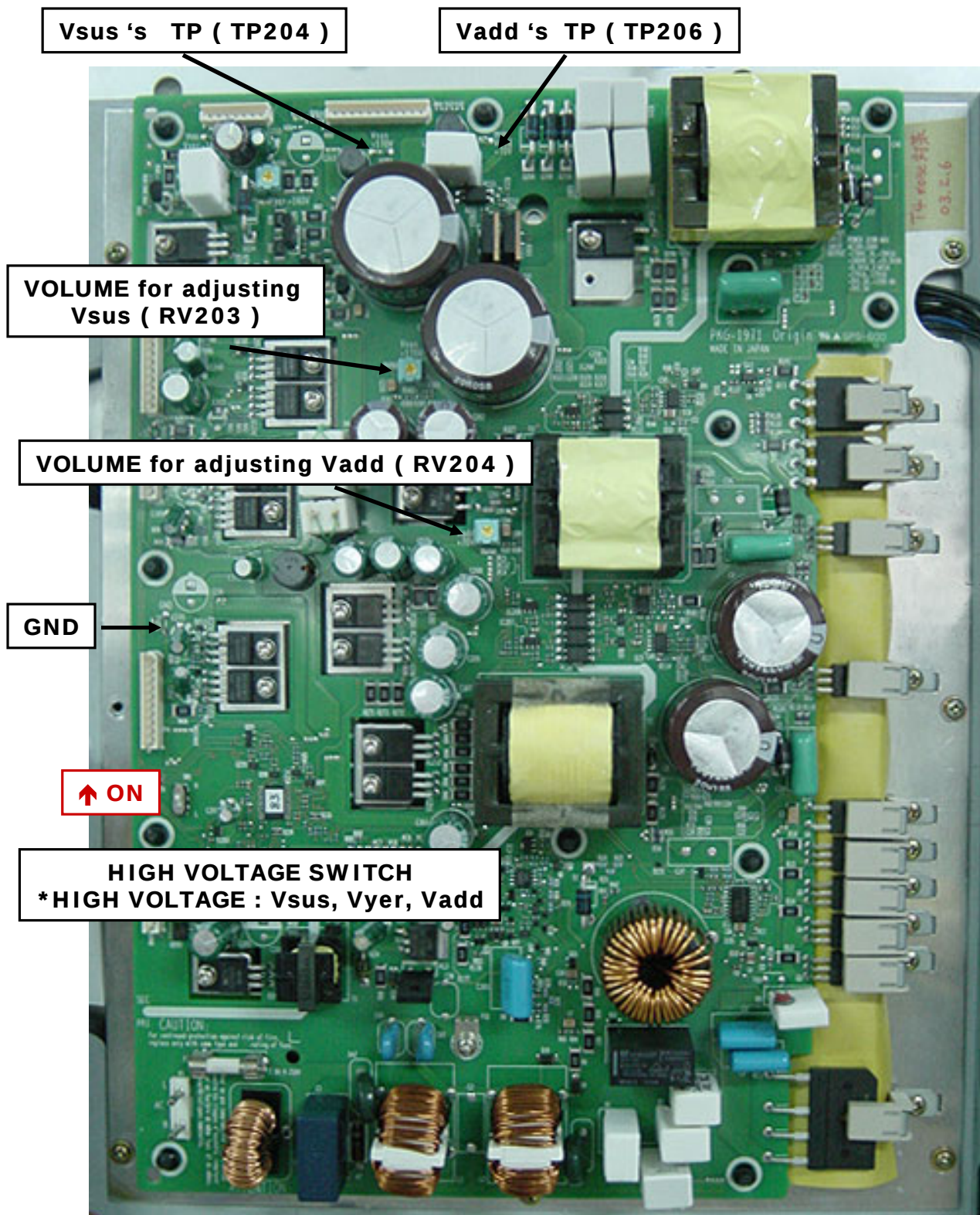
- . METER used : DIGITAL MULTIMETER (DC Voltage Measure Mode)
- . Adjusting TP : TP204 (refer to PAGE 11)
- . Adjusting VOLUME : RV203 (refer to PAGE 11)
- . Standard Voltage : 170V (This value could be different from the optimum adjusting voltage)
- . Optimum adjusting Voltage : Stated in the LABEL
(See voltage adjustment label in the top of Panel Back Plate - PAGE 11)

2. Vadd (ADDRESS voltage) : DATA Input Voltage

- . METER used : DIGITAL MULTIMETER (DC Voltage Measure Mode)
- . Adjusting TP : TP206 (refer to PAGE 11)
- . Adjusting VOLUME : RV204 (refer to PAGE 11)
- . Standard Voltage : 60V (This value could be different from the optimum adjusting voltage)
- . Optimum adjusting Voltage : Stated in the LABEL
(See voltage adjustment label in the top of Panel Back Plate - PAGE 11)

*. As NEC Panel doesn't apply Vyer, it is unnecessary to adjust.



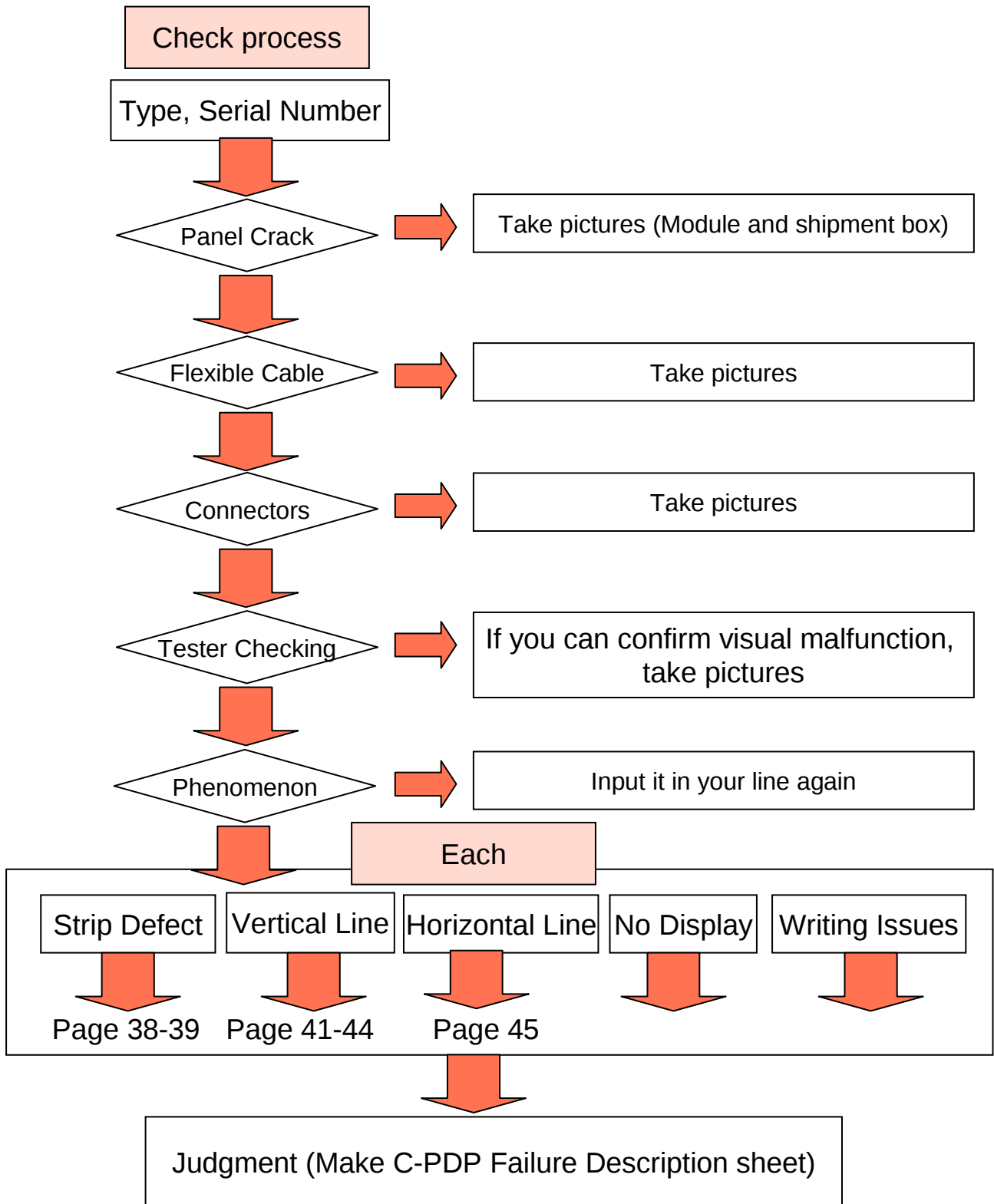


10. ASSEMBLY LIST

No.	PCB ASS'Y NAME	ASS'Y CORD	ASS'Y DESCRIPTION
1	VIDEO PCB AS	PTVDMSG009	PCB VIDEO MANUAL AS
2	JACK PCB AS	PTJAMSG009	PCB JACK MANUAL AS
3	5V SUB PCB AS	PTSBMSG009	PCB SUB MANUAL AS
4	MODULE PDP	4850M06110	NP42B2MF02
5	X-SUS PCB AS	485AS00290	X-SUS PCB AS (NP42B2MF02 NEC)
6	Y-SUS PCB AS	485AS00390	Y-SUS PCB AS (NP42B2MF02 NEC)
7	DIGITAL PCB AS	485AS00490	DIGITAL PCB AS (NP42B2MF02 NEC)
8	CONN CENTER AS	485AS00790	CONN CENTER AS (NP42B2MF02 NEC)
9	CONN LEFT AS	485AS00590	CONN LEFT AS (NP42B2MF02 NEC)
10	CONN RIGHT AS	485AS00690	CONN RIGHT AS (NP42B2MF02 NEC)
11	PANEL GLASS	485AS00190	PANEL GLASS (NP42B2MF02 NEC)
12	GLASS FILTER	4952400200	PDF-6PH02
13	MODULE POWER	4850M05910	PDD-421
14	CONNECTOR	4850711N04	YMH025-11R+YMH025-11R+ULW=230
15	CONNECTOR	4850707N11	YMH025-07R+YMH025-07R+ULW=220
16	CONNECTOR	4850709N06	YMH025-09R+YH396-09V+ULW=400
17	CONNECTOR	4850710N09	YMH025-10R+YH396-10V+ULW=310
18	CONNECTOR	4850704N29	A2501H02-4P+440133-4+ULW=410
19	CONNECTOR	4850710N08	YMH025-10R+YMT025R+ULW=500
20	CONNECTOR	4850705N27	YMH025-05R+YMT025R+ULW=500
21	CONNECTOR	4950706025	12505HS-06+12505TS+ULW=750
22	CONNECTOR	4850705N28	12505HS-05+12505TS+ULW=900
23	CONNECTOR	4850704N28	YMH025-04R+YMT025R+ULW=400
24	CABLE FFC	485900038L	0.5-R-50P-320MM 6X4-6X4
25	CABLE FFC	485900018L	0.5-K-50P-400MM 6X4-6X4
26	CABLE FFC	485900028L	0.5-K-50P-360MM 6X4-6X4
27	FILTER EMI	5PZCAT3035	ZCAT3035-1330
28	BRKT MAIN	4853954100	SECC T1.0
29	SUPPORT CIRCUIT C	4957300400	PCBEHE2-25M-01

11. PDP MODULE CHECK POINT

11-1. Flow Chart



11-2. Serial Number

Module Number and Panel ID



Serial No.

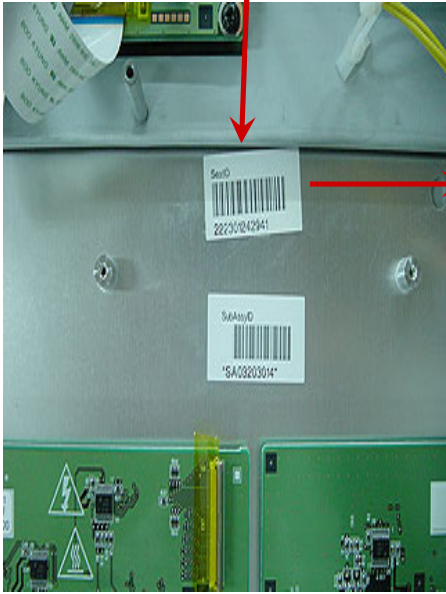
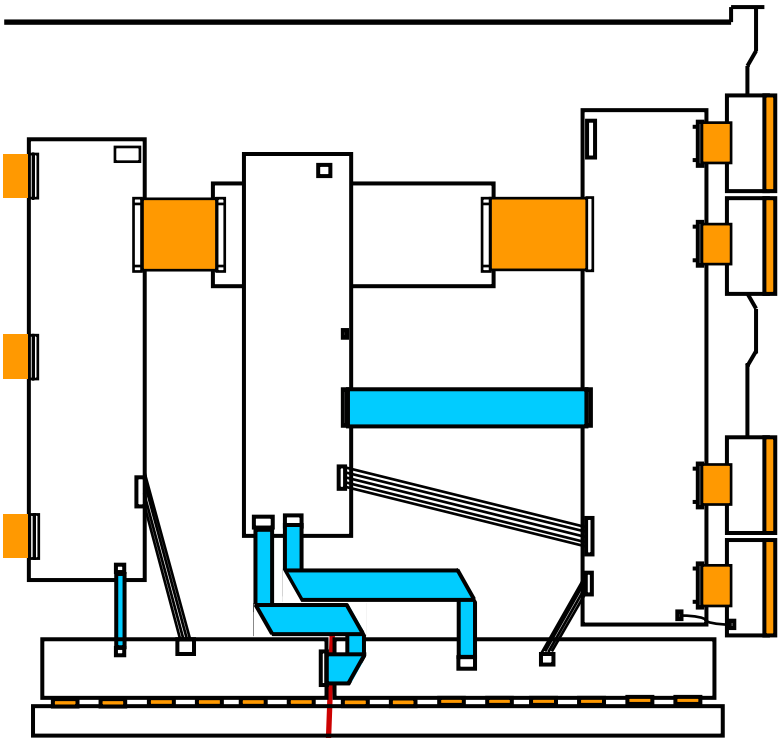
SERIAL NO.
302200129

Vd=60V

Vs=168.4V

Type

CODE CA-01



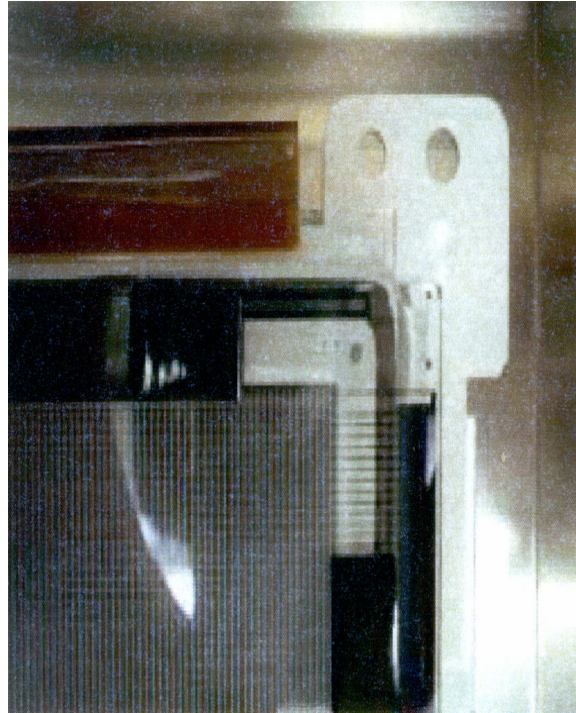
Panel ID

222301242941

11-3. Panel Crack

Panel Crack

Check the surface of glass whether crack or not



This issue may be caused by transportation or treatment after shipment.



We would like you to take some pictures, the broken module, the outside box, and inform the shipment data

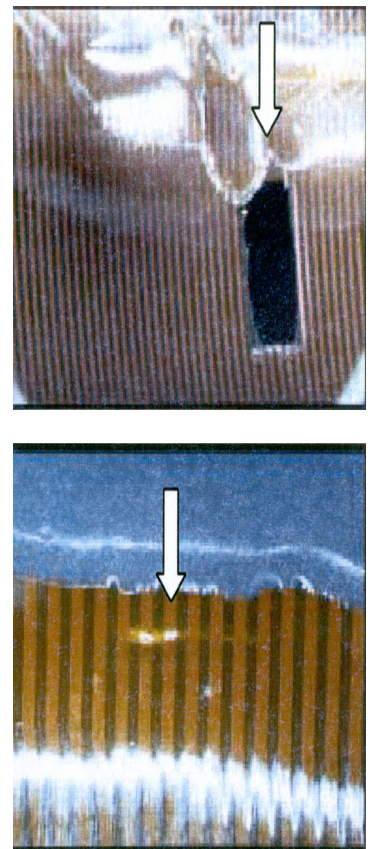
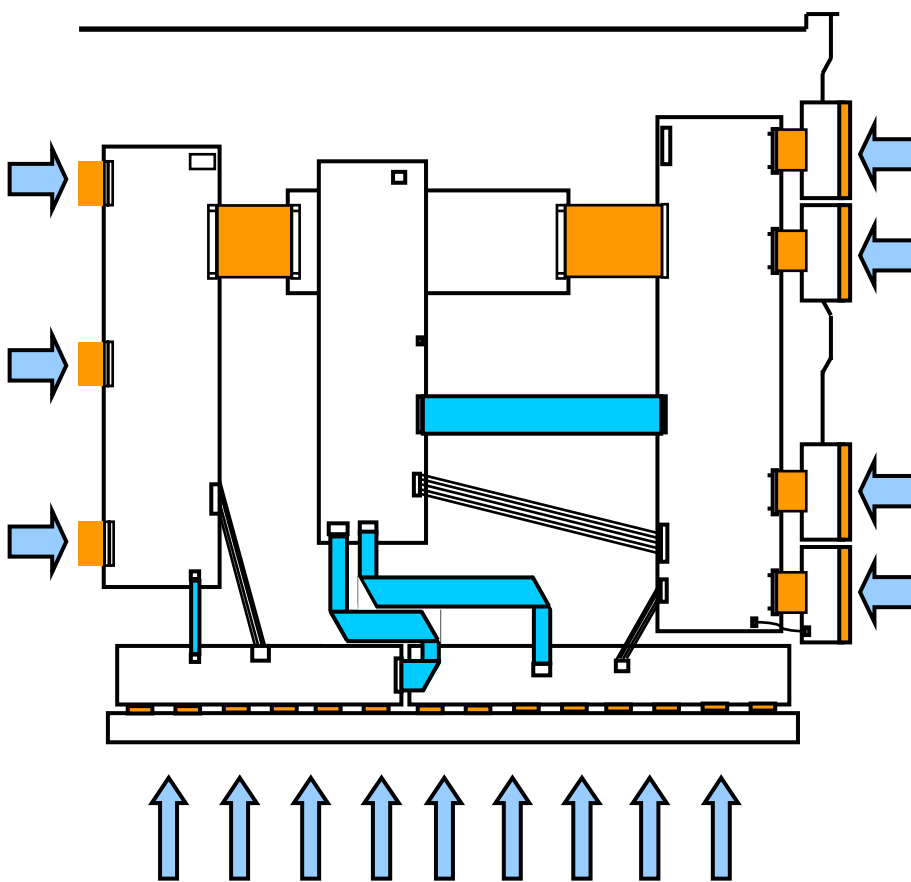
If you do not the pictures, we can dispose the broken modules on our responsibility.

11-4. Flexible cable

Flexible Cable

Check the Flexible Cables whether scratched, broken, or not.

Cutting cable or broken



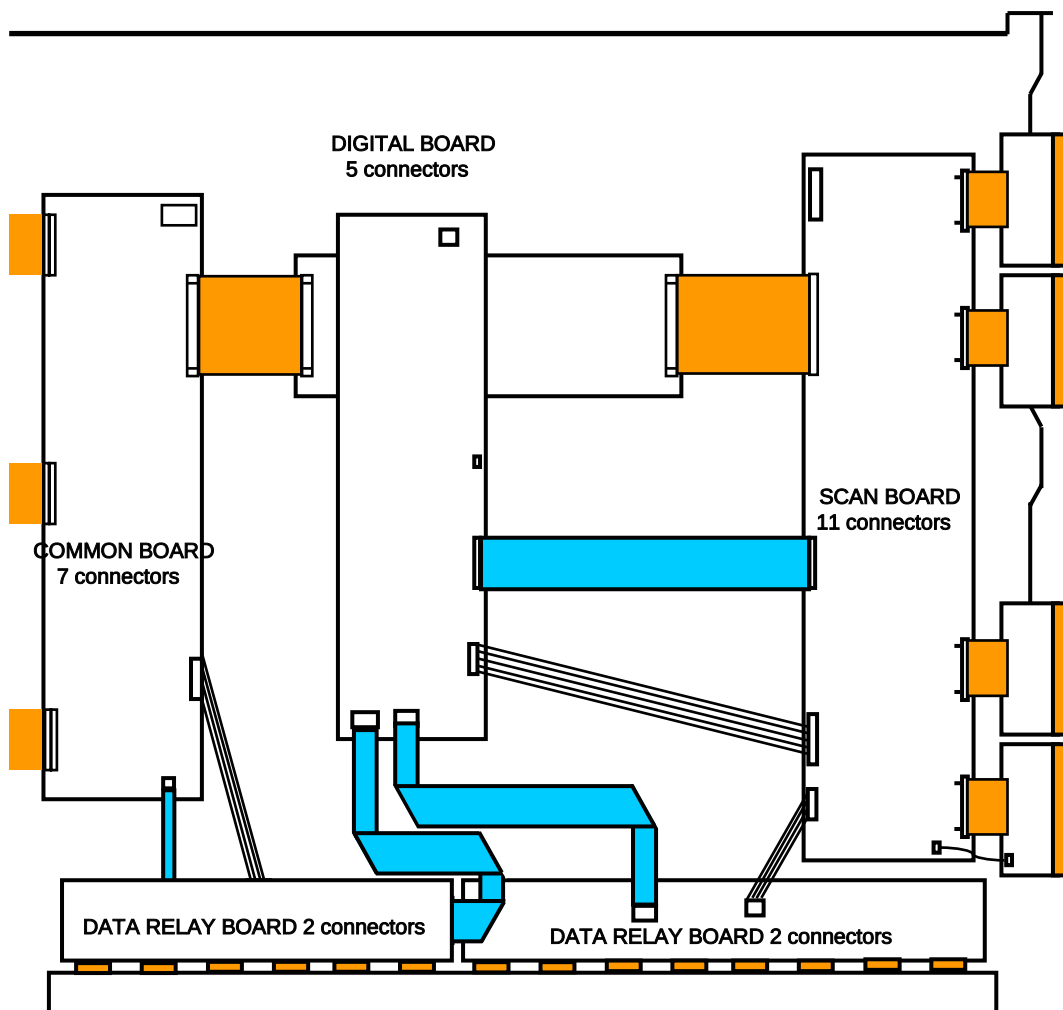
In this case, it caused by handling them at customer line.

We would like you to be careful to handle the modules.

11-5. Connectors

Connectors Condition

Check the Cable or Connectors whether connected and locked, or not
NEC MODULE ONLY (with the exception of video, power and jack board)



We would like you to be careful to handle the modules at assembling

Each Connectors Condition

Data HIC

DIGITAL BOARD

DIGITAL BOARD

SCAN BOARD

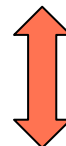
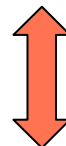
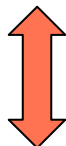
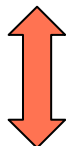
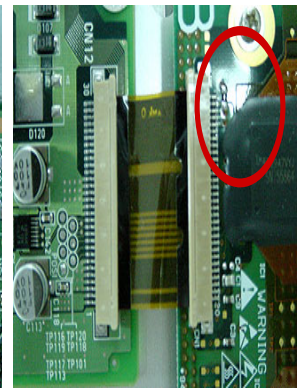
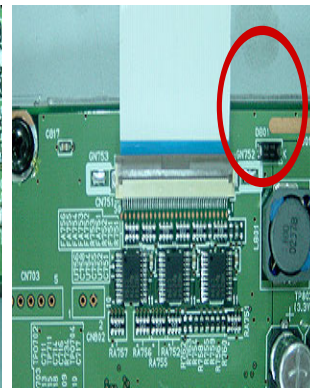
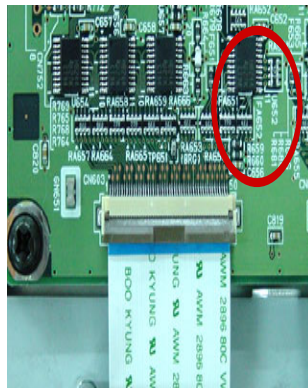
-DATA RELAY BOARD

-DATA RELAY BOARD

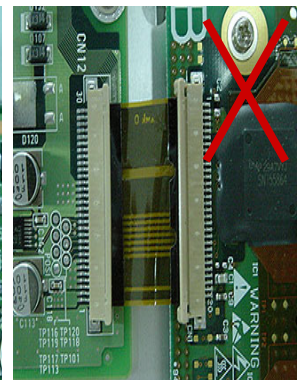
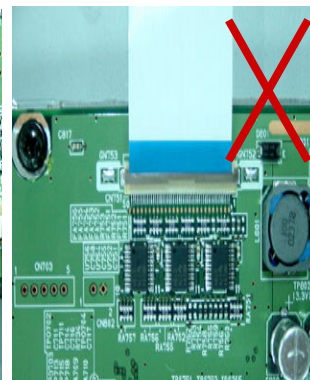
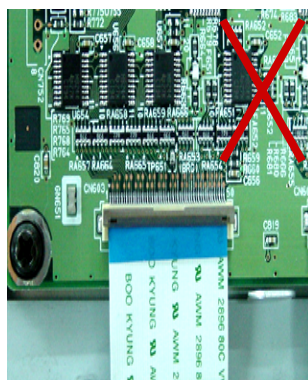
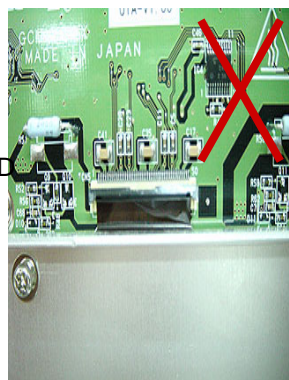
-DATA RELAY BOARD

-SACN DRIVING BOARD

LOCKED



UNLOCKED

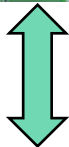
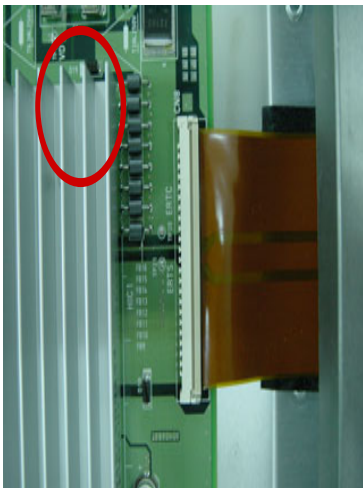


Each Connectors Condition

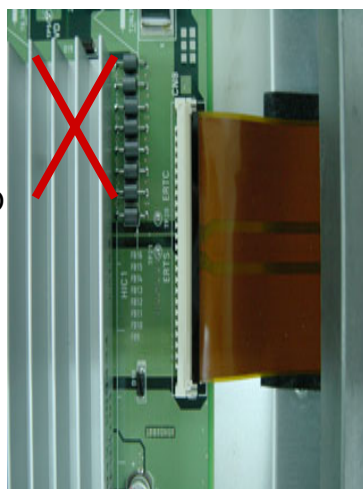
COMMON BOARD

- FLEXIBLE CALBLE

LOCKED



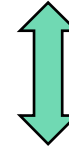
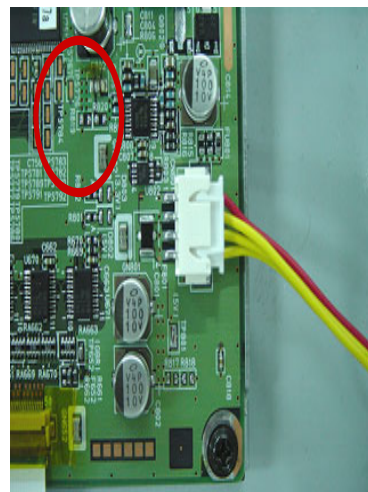
UNLOCKED



DIGITAL BOARD

- FLEXIBLE CALBLE

CONNECTED

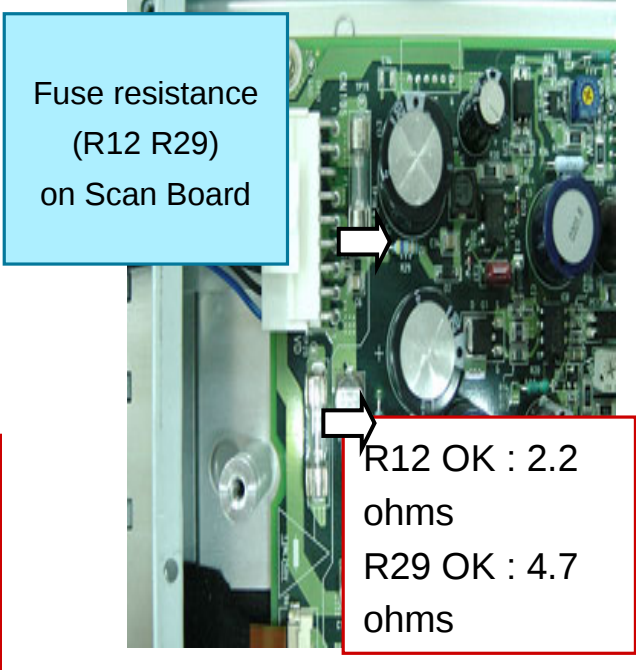
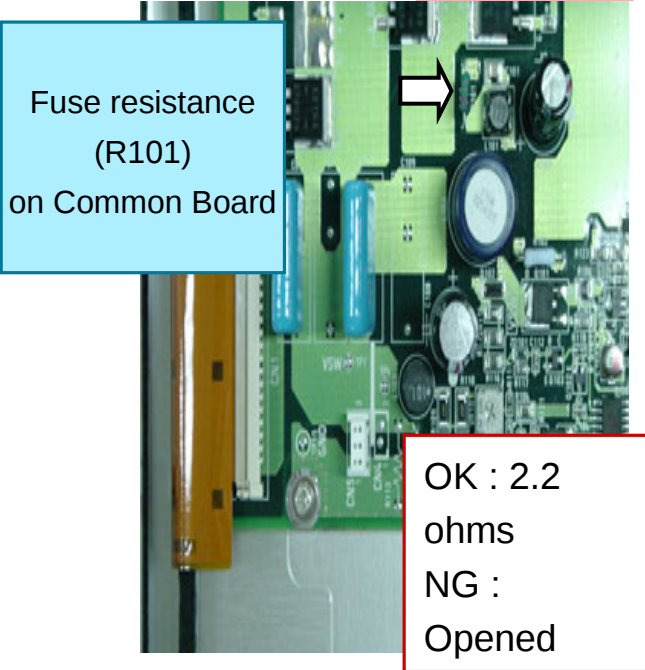
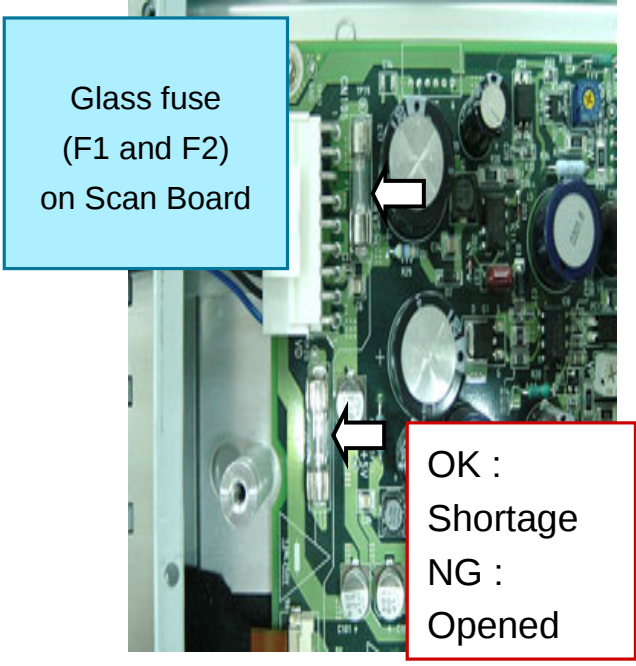
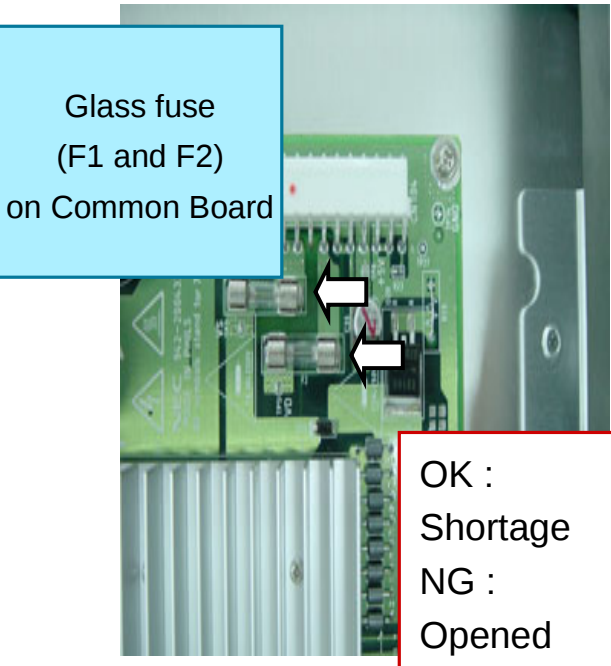


UNCONNECTED



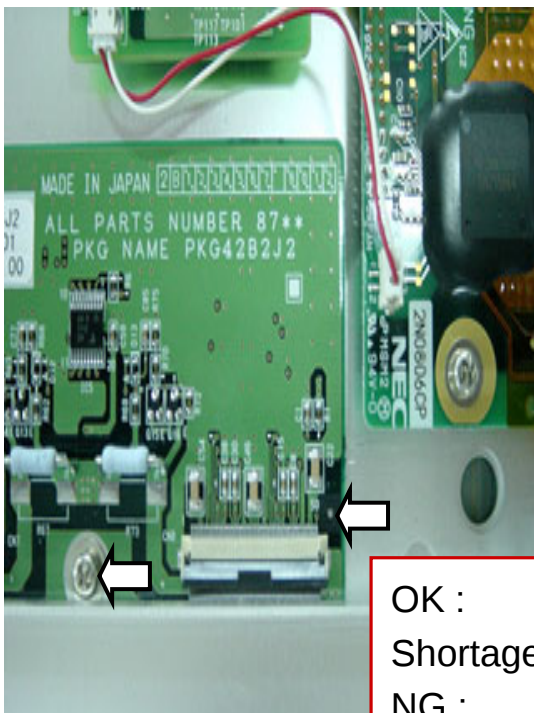
11-6. Tester Checking

Fuse Checking



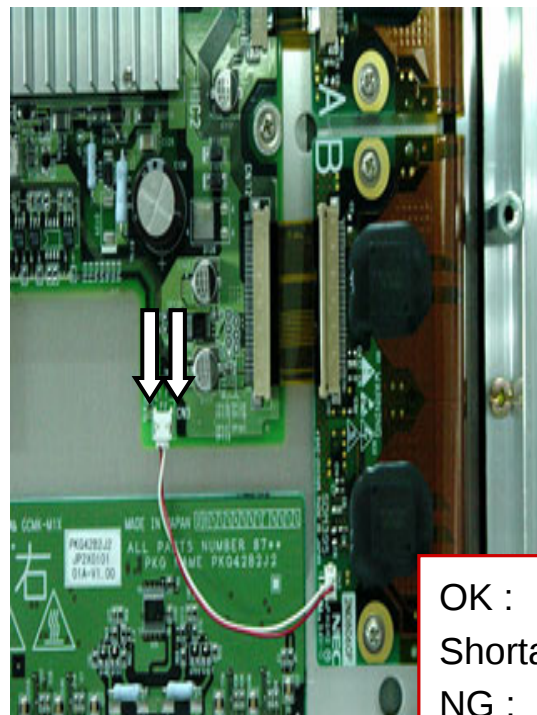
Alarm Line Checking

Glass Alarm
At #50 pin on CN8
On Data Relay Board
(Right-Down)



OK :
Shortage
NG :
Opened

Glass Alarm
between pins on CN3
On Scan Board

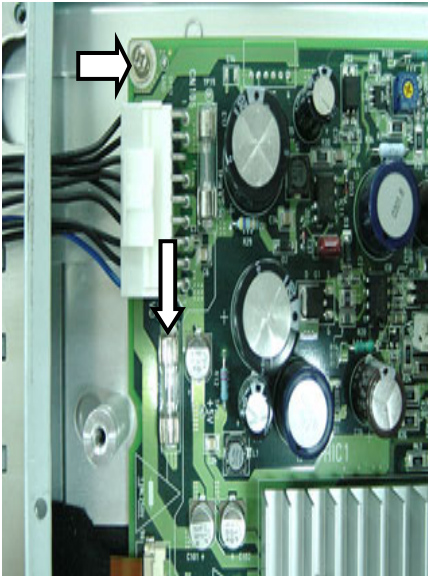


OK :
Shortage
NG :
Opened

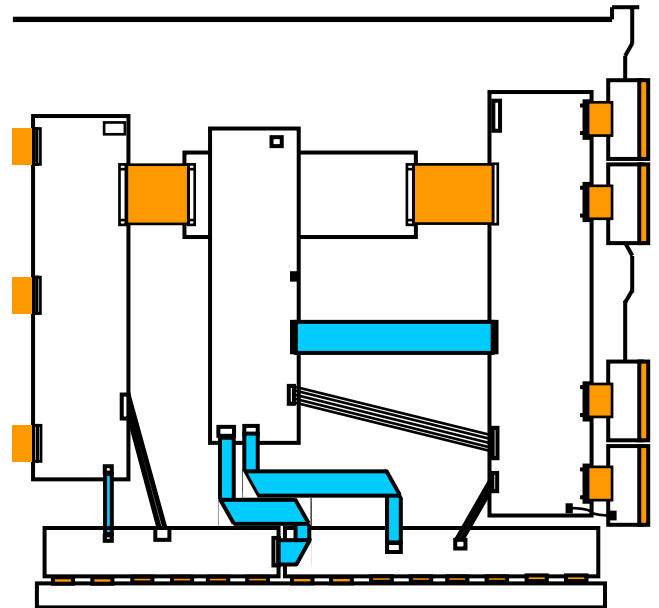
Data HIC line Checking

F2 fuse and GND on scan board

Between F2 fuse and GND

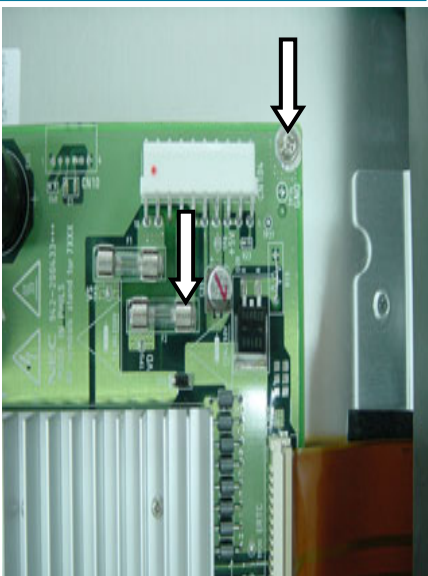


OK :
Opened
NG :Short
age



F2 fuse and GND on scan board

Between F2 fuse and GND

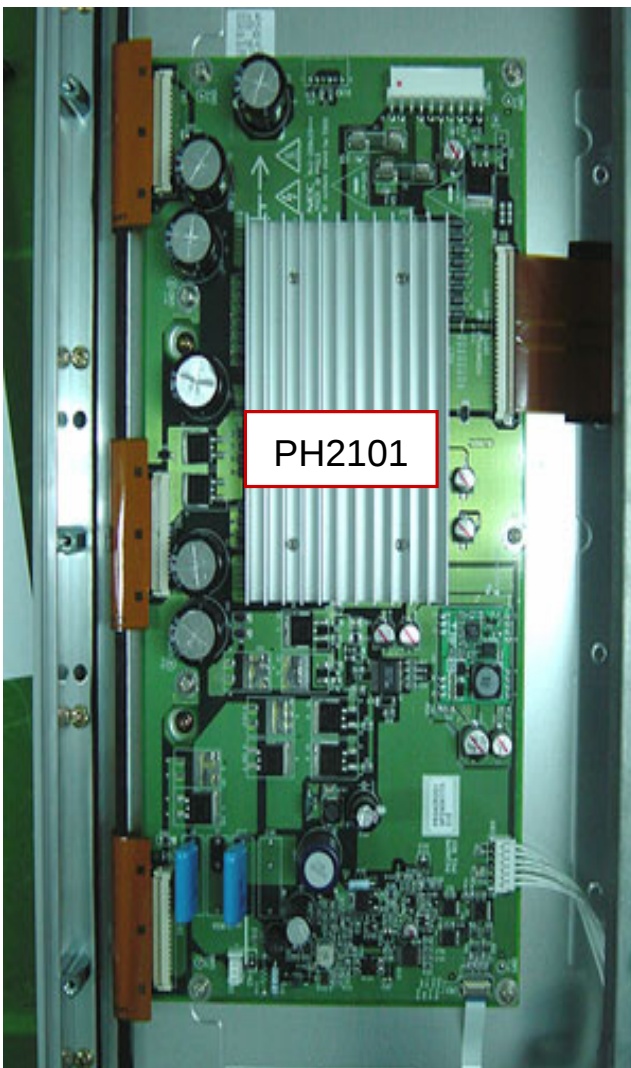


OK : Opened
NG :Shortage

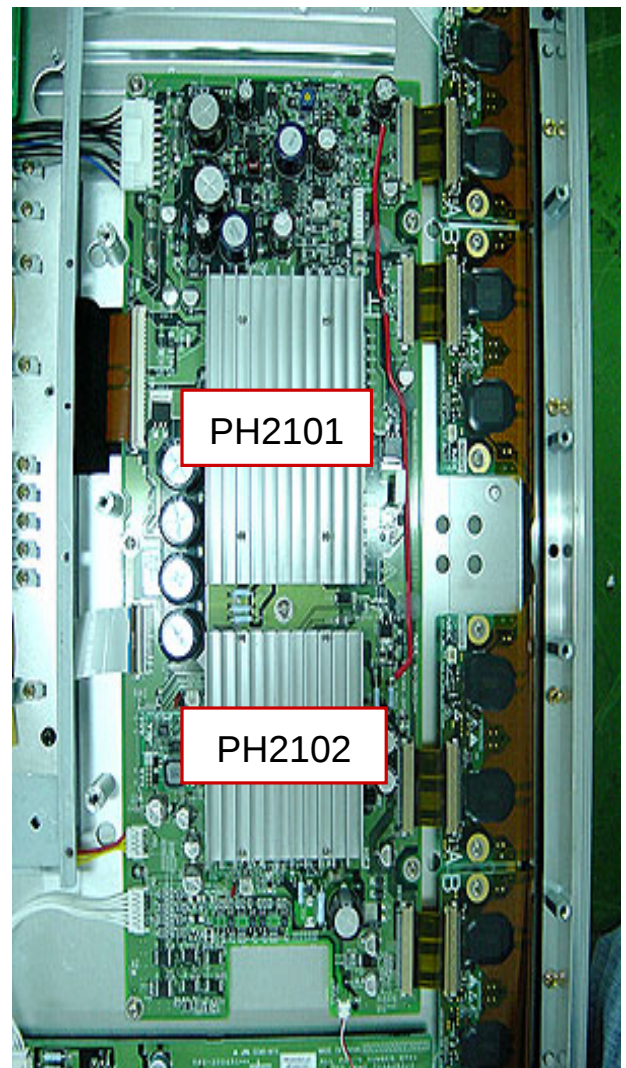
Check between F2 fuse and GND at scan or common board.
If it is shortage,
Remove the heatsink over the data HIC,
And Check the surface of data HIC, the take a picture

Parts Location

COMMON Board



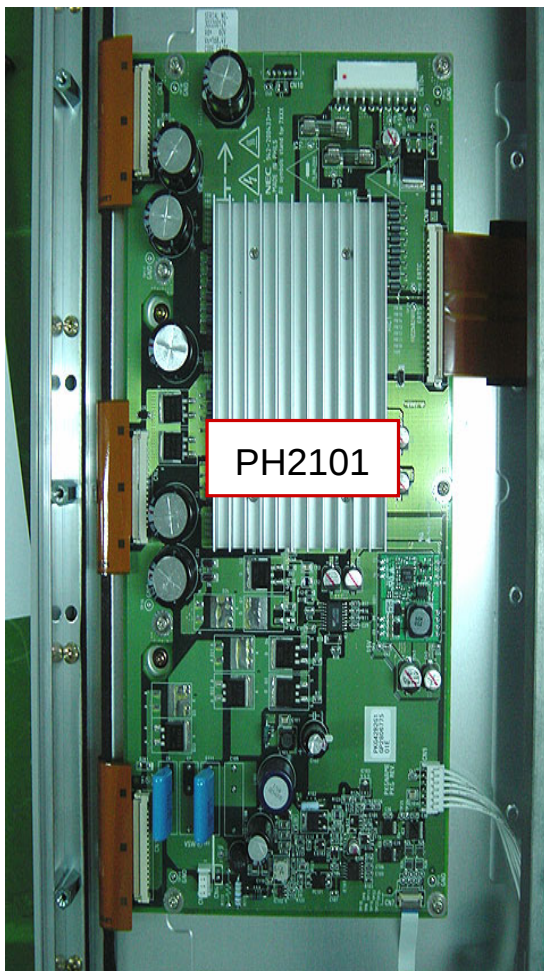
COMMON Board



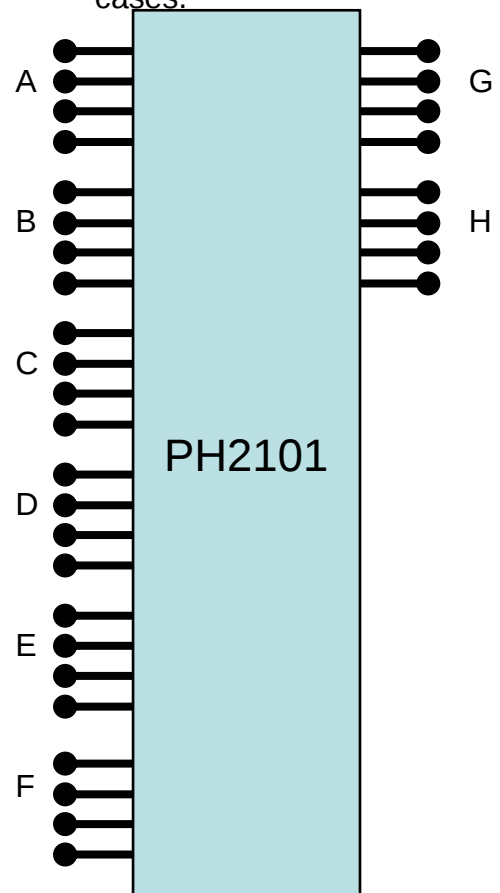
Power HIC Checking

PH2101 on Common board

PH2101 on common board



Check the following cases.



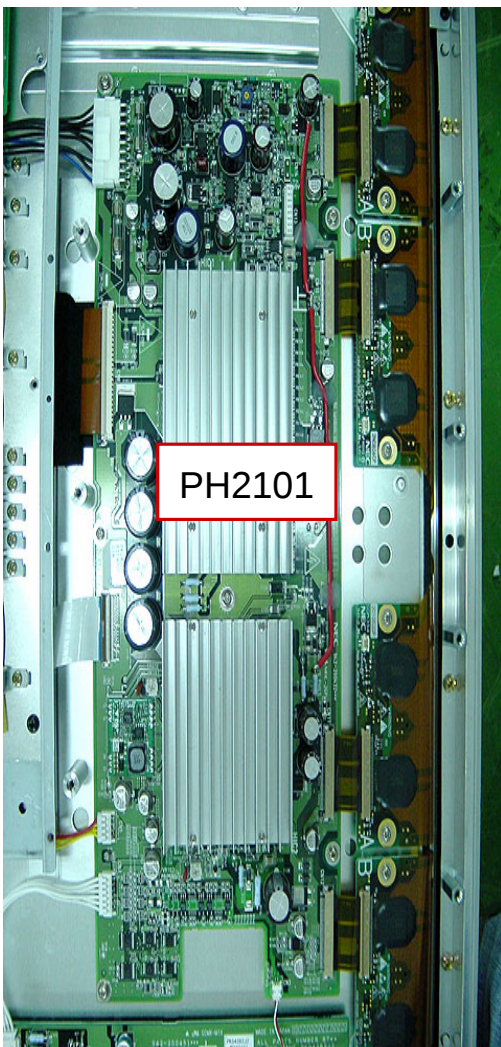
Between A and G
Between B and H
Between C and D
Between E and F

OK : More than
K ohm
NG : Shortage

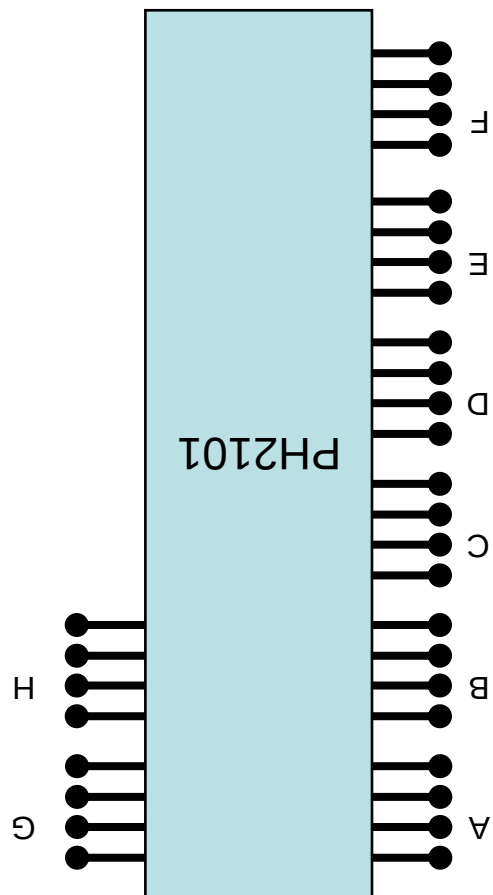
Power HIC Checking

PH2101 on Scan board

PH2101 on scan board



Check the following cases.



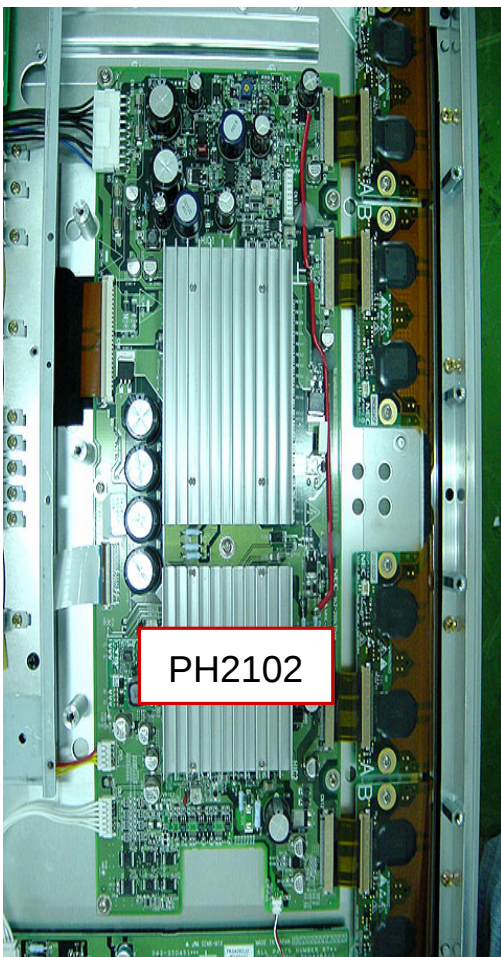
Between A and G
Between B and H
Between C and D
Between E and F

OK : More than
K ohm
NG : Shortage

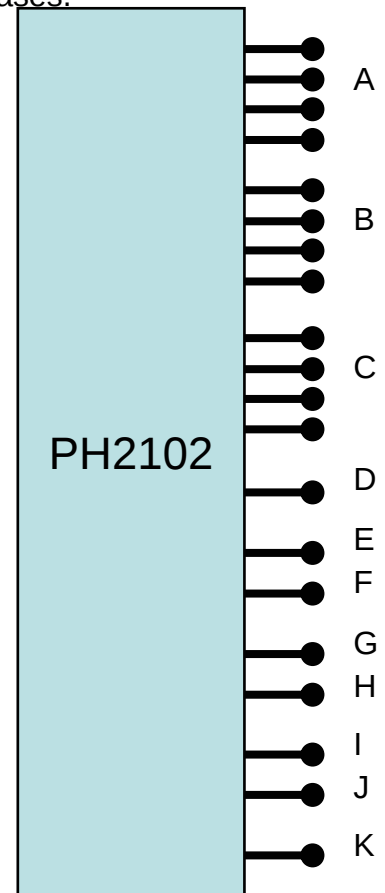
Power HIC Checking

PH2102 on Scan
board

PH2101 on common board



Check the following
cases.

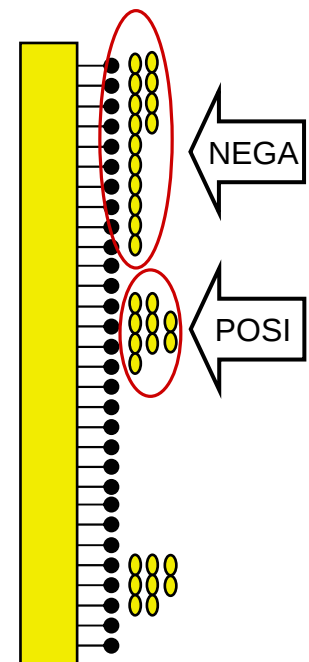
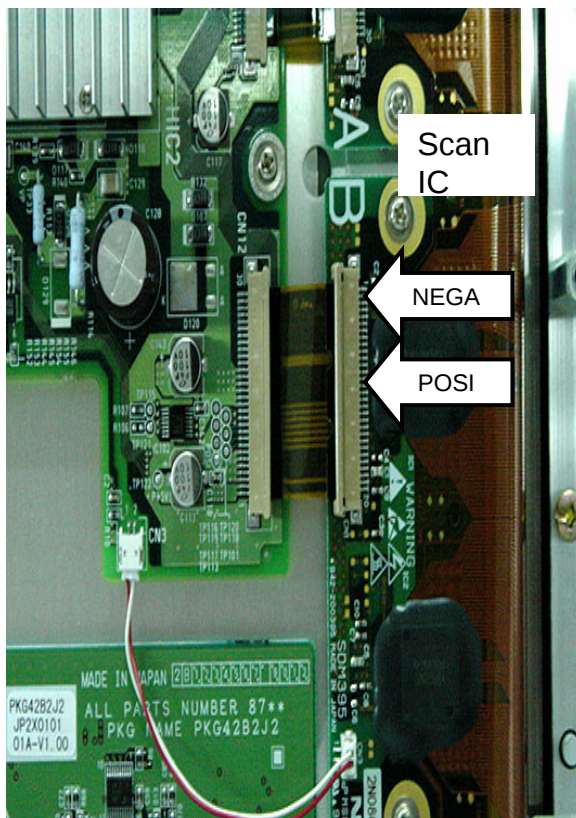


Between A and B
Between B and C
Between D and E
Between F and G
Between H and I
Between J and K

OK : More than
K ohm
NG : Shortage

SCAN IC Driver Checking

Scan IC



OK : More than K ohm
NG : Shortage

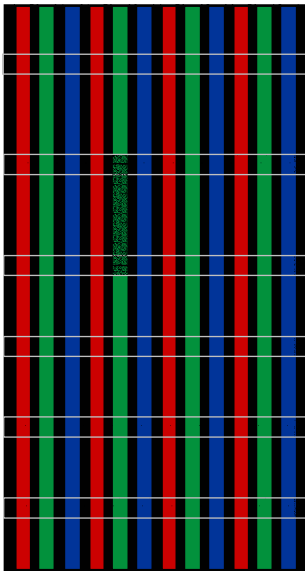
Check the following cases.

Between NEGA and POSI

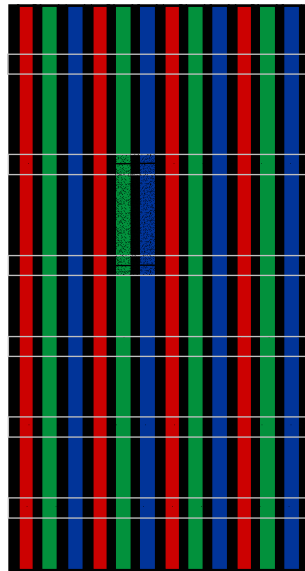
11-7. Strip Defect

Strip Defect

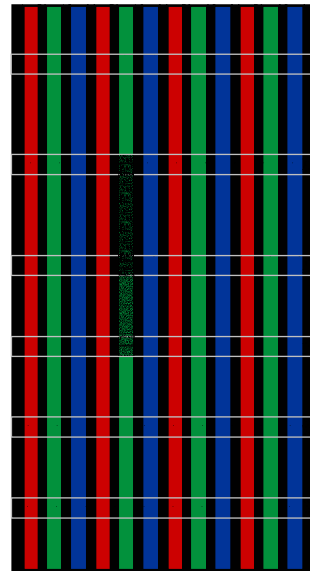
Compare with specification



1 Strip

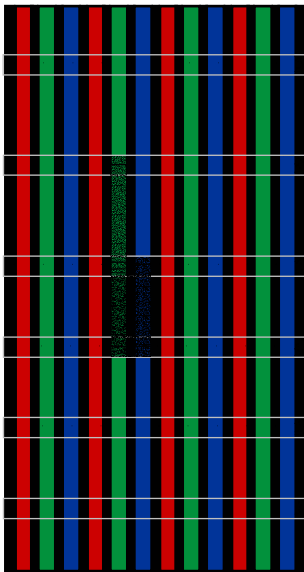


2 Strip

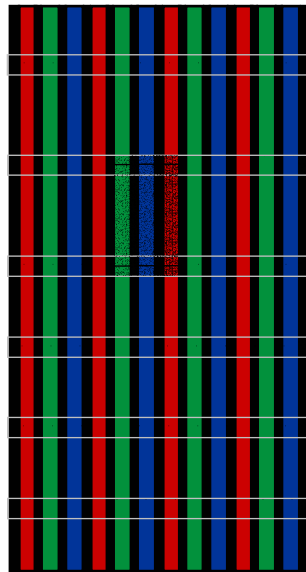


2 Strip

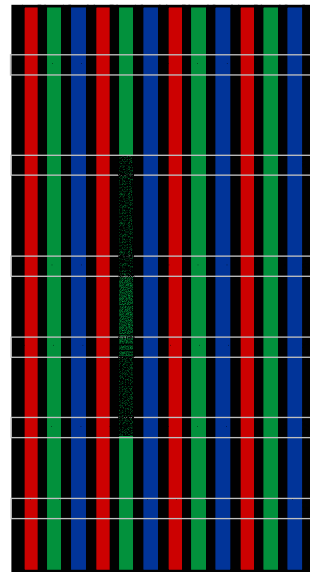
Strip Defect



3 Strip



3 Strip



3 Strip

11-8. Vertical Line

Vertical Line

Single line

Open Mode



ALL Red
Pattern

ALL Green
Pattern

ALL Blue
Pattern

ALL Black
Pattern



Black 1 Line



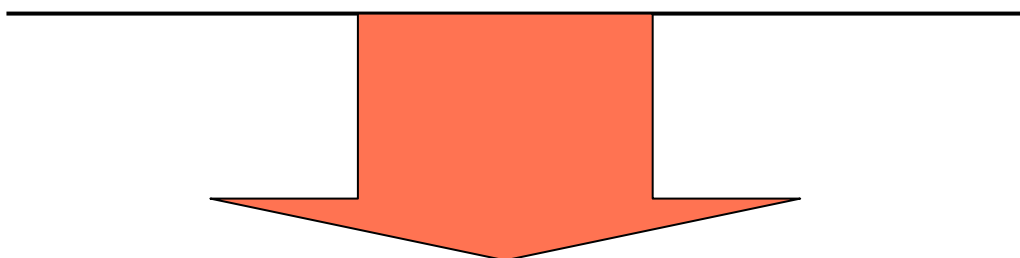
Red 1 Line



Red1 Line



No
Appearance



Red 1 Line Open
Mode

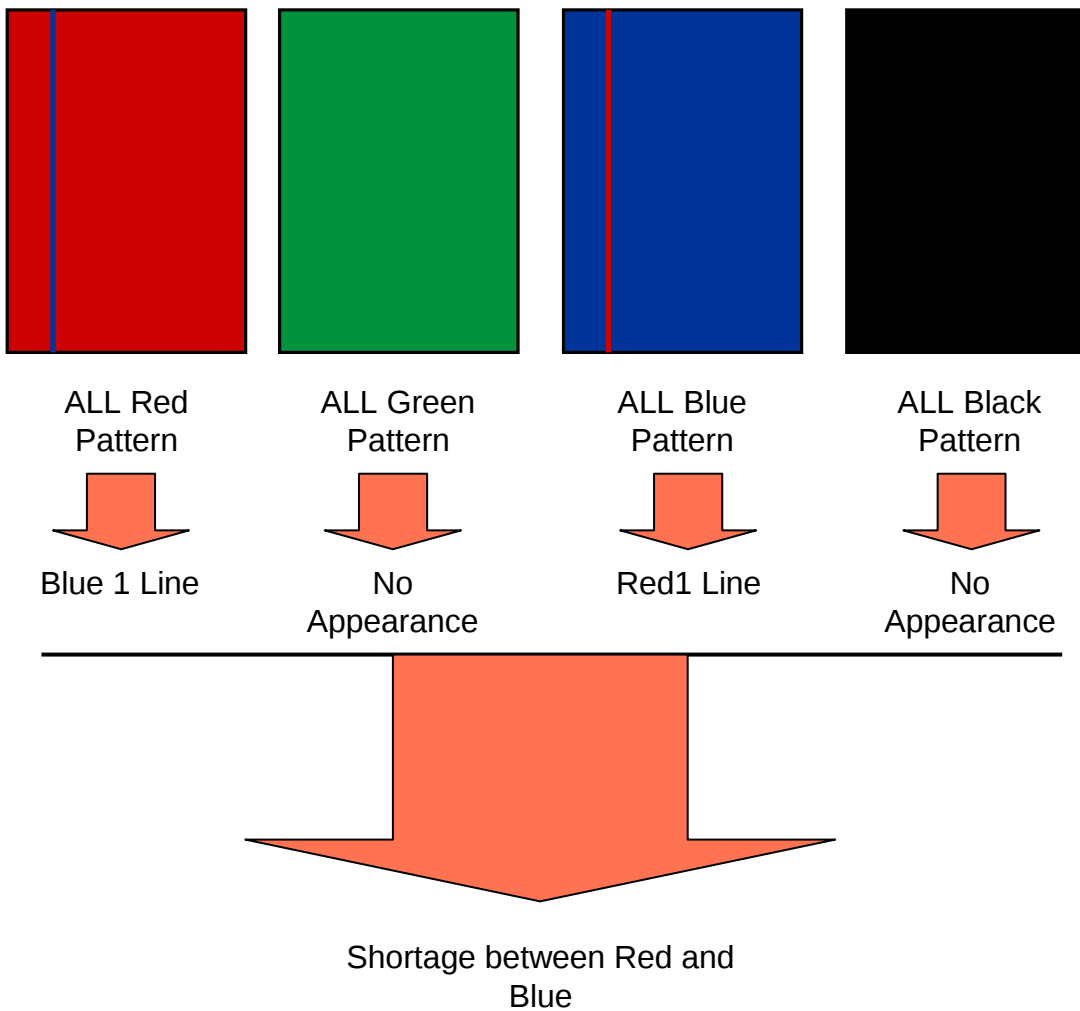
[Check Point]

- a) The broken data flexible cable.
If OK, Data IC Broken.

Vertical Line

Two line

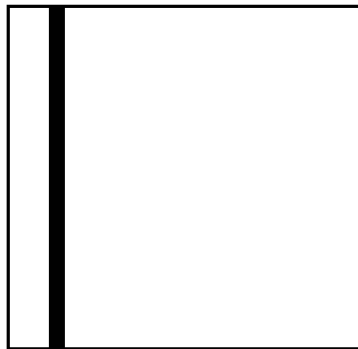
Shortage Mode



[Check Point] a) This phenomenon is caused by panel issues.

Vertical Line

Block



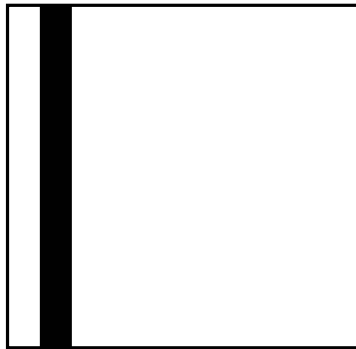
1/2 data IC Block (width
30mm)

[Check Point]

- a) The broken surface IC on data IC.
- b) The broken data flexible cable.

Vertical Line

Block



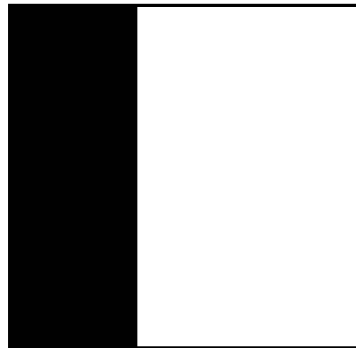
1 data IC Block

[Check Point]

- a) Lacking connector between Data Relay board and Data IC.
- b) The broken data flexible cable.

Vertical Line

Block



Many data IC Block

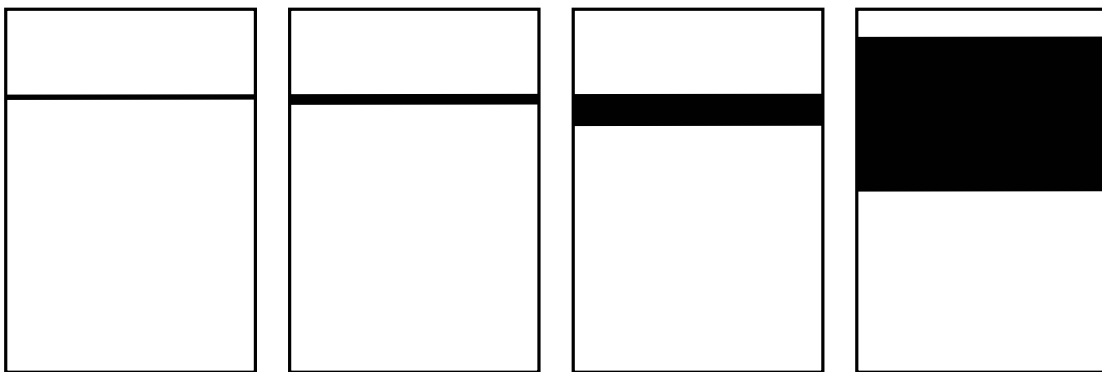
[Check Point]

- a) Lacking connector between Data Relay board and Scan or Common board
- b) The broken data flexible cable
- c) Shortage between leads in connector.
Foreign Material etc.

11-9. Horizontal Line

Horizontal Line

Single line, two lines or block

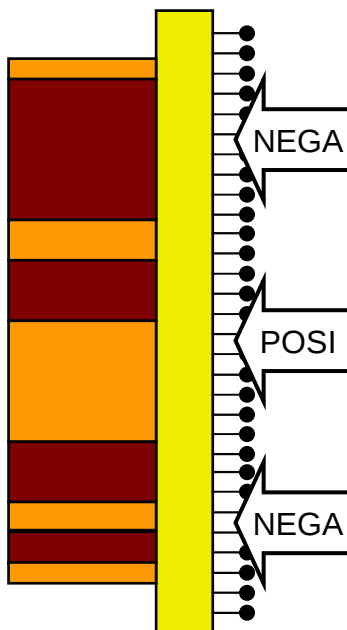


Single

Two Line

Block

Block



[Check Point]

a) The broken surface IC on scan IC driver.

Check the resistance between NEGA and POSI on scan IC board. (Normal : K ohm Level)

b) The broken data flexible cable.

c) Lacking connector between scan IC and scan board.

This technical diagram illustrates the exploded view of a window frame assembly. The components are identified by numbered callouts from 1 to 72. The assembly includes a main frame (1), a sash (2), and various hardware components such as hinges (3, 4), rollers (5, 6), and a handle (7). The diagram shows the spatial relationship between these parts, indicating how they fit together. The frame is composed of multiple sections (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72) that form the outer structure. The sash is shown in the center, with rollers (5, 6) and hinges (3, 4) visible. The handle (7) is shown at the bottom right. The diagram is a black and white line drawing with clear lines and no shading.