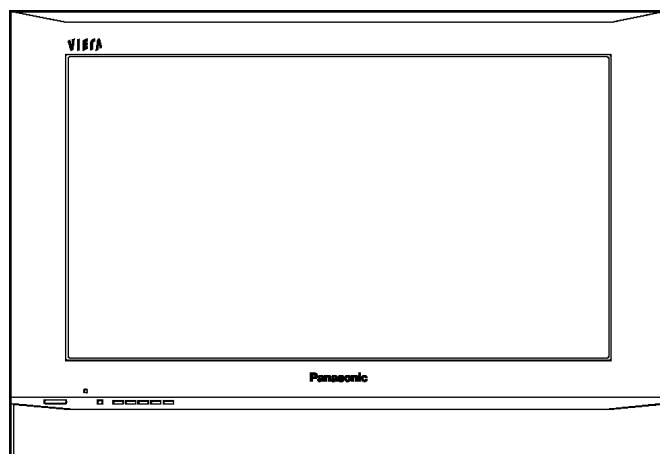


Service Manual

Plasma Television



TH-37PA60H
TH-37PA60M
TH-42PA60A
TH-42PA60H
TH-42PA60M
TH-42PA60MT

GP9DE Chassis

Specifications

Power Source	AC 220-240 V, 50 / 60 Hz
Power Consumption	
Average use	232 W (37-inch) 294 W (42-inch)
Standby condition	0.3 W
Plasma Display panel	
Drive method	AC type
Aspect Ratio	16:9
Contrast Ratio	Max 10000:1
Visible screen size (No. of pixels)	94 cmV (37-inch), 106 cmV (42-inch) 818 mm (W) × 461 mm (H) × 939 mm (diagonal) (37-inch) 920 mm (W) × 518 mm (H) × 1,056 mm (diagonal) (42-inch) 408,960 (852 (W) × 480 (H)) [2,556 × 480 dots]
Sound	
Speaker	12 cm × 6 cm × 2 pcs, 8 Ω
Audio Output	20 W (10 W + 10 W), 10% THD

Receiving Systems / Band name (PA60A)

1. PAL B/G	Reception of Off air broadcasts
2. NTSC 4.43	Playback from Video Tape Recorders
3. NTSC 3.58	Playback from Special Video Tape Recorders and Special Video Disc Players
4. PAL 60Hz	(Via the AV Sockets) only.

**Receiving Systems /
Band name (PA60H/M/MT)**

17 Systems		Function
1	PAL B, G, H	Reception of broadcast transmissions and Playback from Video Cassette Tape Recorders
2	PAL I	
3	PAL D, K	
4	SECAM B, G	
5	SECAM D, K	
6	SECAM K1	
7	NTSC M (NTSC 3.58/4.5 MHz)	

17 Systems		Function
8	NTSC 4.43/5.5 MHz	Playback from Special VCR's or DVD
9	NTSC 4.43/6.0 MHz	
10	NTSC 4.43/6.5 MHz	
11	NTSC 3.58/5.5 MHz	
12	NTSC 3.58/6.0 MHz	
13	NTSC 3.58/6.5 MHz	
14	SECAM I	
15	PAL 60 Hz/5.5 MHz	Playback from Special Disc Players and Special VCR's or DVD
16	PAL 60 Hz/6.0 MHz	
17	PAL 60 Hz/6.5 MHz	

**Receiving Systems /
Band name (PA60A)**

VHF 0 to 12	PAL B
UHF 21 to 69	PAL G
S'1 to S'3	
S1 to S4	

**Receiving Channels
(Regular TV) (PA60H/M/MT)**

VHF BAND	UHF BAND	CATV
2-12 (PAL/SECAM B, K1)	21-69 (PAL G, H, I/SECAM G, K, K1)	S1-S20 (OSCAR)
0-12 (PAL B AUST.)	28-69 (PAL B AUST.)	1-125 (USA CATV)
1-9 (PAL B N.Z.)	13-57 (PAL D, K)	C13-C49 (JAPAN)
1-12 (PAL/SECAM D)	13-62 (NTSC M Japan)	S21-S41 (HYPER)
1-12 (NTSC M Japan)	14-69 (NTSC M USA)	Z1-Z37 (CHINA)
2-13 (NTSC M USA)		5A, 9A (AUST.)

Aerial - Rear
Operating Conditions

Temperature : 0 °C - 40 °C
Humidity : 20 % - 80 % RH (non-condensing)

Connection Terminals

AV1 Input	AUDIO L-R	RCA PIN Type × 2	0.5 V[rms]
	VIDEO	RCA PIN Type × 1	1.0 V[p-p] (75 Ω)
	S VIDEO	Mini Din 4-pin	Y: 1.0 V[p-p] (75 Ω) C: 0.286 V[p-p] (75 Ω)
AV2 Input	AUDIO L-R	RCA PIN Type × 2	0.5 V[rms]
	VIDEO	RCA PIN Type × 1	1.0 V[p-p] (75 Ω)
	COMPONENT	Y P _B /C _B , P _R /C _R	1.0 V[p-p] (including synchronization) ±0.35 V[p-p]
AV3 Input	AUDIO L-R	RCA PIN Type × 2	0.5 V[rms]
	VIDEO	RCA PIN Type × 1	1.0 V[p-p] (75 Ω)
	COMPONENT	Y P _B /C _B , P _R /C _R	1.0 V[p-p] (including synchronization) ±0.35 V[p-p]
Others	HDMI Input	TYPE A Connector	
	Audio Input	RCA PIN Type × 2	0.5 V[rms]
Monitor Output	AUDIO L-R	RCA PIN Type × 2	0.5 V[rms] (high impedance)
	VIDEO	RCA PIN Type × 1	1.0 V[p-p] (75 Ω)

Dimensions (W × H × D)

968 mm × 641 mm × 97 mm (37-inch)
 1,068 mm × 701 mm × 97 mm (42-inch)

Weight

25.0 kg Net (37-inch)
 29.0 kg Net (42-inch)

Notes:

- Design and Specifications are subject to change without notice. Weight and Dimensions shown are approximate.

WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

CONTENTS

	Page		Page
1 Applicable signals	5	10.3. P.C.B. (Printed Circuit Board) exchange	34
2 Safety Precautions	6	10.4. Adjustment Volume Location	35
2.1. General Guidelines	6	10.5. Test Point Location	35
2.2. Touch-Current Check	6	11 Adjustment	36
3 Prevention of Electro Static Discharge (ESD) to Electrostatically Sensitive (ES) Devices	7	11.1. PAL panel white balance adjustment	36
4 About lead free solder (PbF)	8	11.2. HD white balance adjustment	37
5 Service Hint	9	11.3. Sub bright adjustment	38
6 Plasma panel replacement method	10	11.4. ABL adjustment	39
6.1. Remove the Back cover	10	11.5. Sub-Contrast adjustment	40
6.2. Remove the tuner cover	10	12 Hotel mode	41
6.3. Remove the P-Board	10	13 Conductor Views	43
6.4. Remove the PA-Board	10	13.1. P-Board (37inch)	43
6.5. Remove the tuner unit	11	13.2. P-Board (42inch)	46
6.6. Remove the DG-Board	11	13.3. PA-Board	49
6.7. Remove the TA-Board	11	13.4. H, HC and TA-Board	51
6.8. Remove the H-Board	11	13.5. K and S-Board	53
6.9. Remove the HC-Board	12	13.6. DG-Board	54
6.10. Remove the D-Board	12	13.7. D-Board	56
6.11. Remove the SU-Board	12	13.8. C1-Board (37inch)	58
6.12. Remove the SD-Board	13	13.9. C1-Board (42inch)	59
6.13. Remove the SC-Board	13	13.10. C2-Board (37inch)	60
6.14. Remove the SS-Board	13	13.11. C2-Board (42inch)	61
6.15. Remove the C1-Board	14	13.12. SC-Board	62
6.16. Remove the C2-Board	14	13.13. SU-Board (37inch)	65
6.17. Remove the speaker L, R	15	13.14. SU-Board (42inch)	66
6.18. Remove the S-Board	15	13.15. SD-Board (37inch)	67
6.19. Remove the K-Board	16	13.16. SD-Board (42inch)	68
6.20. Remove the stand brackets	16	13.17. SS-Board	69
6.21. Remove the Plasma panel section from the Front frame (glass)	16	14 Schematic and Block Diagram	71
6.22. Replace the plasma panel (finished)	17	14.1. Schematic Diagram Note	71
7 Location of Lead Wiring	18	14.2. Main Block Diagram	72
7.1. Lead of Wiring (1)	18	14.3. P-Board Block Diagram (37inch)	73
7.2. Lead of Wiring (2)	19	14.4. P-Board (1 of 6) Schematic Diagram (37inch)	74
7.3. Lead of Wiring (3)	20	14.5. P-Board (2 of 6) Schematic Diagram (37inch)	75
7.4. Lead of Wiring (4)	21	14.6. P-Board (3 of 6) Schematic Diagram (37inch)	76
7.5. Lead of Wiring (5)	22	14.7. P-Board (4 of 6) Schematic Diagram (37inch)	77
7.6. Lead of Wiring (6)	23	14.8. P-Board (5 of 6) Schematic Diagram (37inch)	78
8 Self Check	24	14.9. P-Board (6 of 6) Schematic Diagram (37inch)	79
8.1. Power LED Blinking timing chart	25	14.10. P-Board Block Diagram (42inch)	80
8.2. No Power	26	14.11. P-Board (1 of 6) Schematic Diagram (42inch)	81
8.3. No Picture	27	14.12. P-Board (2 of 6) Schematic Diagram (42inch)	82
8.4. Local screen failure	28	14.13. P-Board (3 of 6) Schematic Diagram (42inch)	83
9 Service Mode Function	29	14.14. P-Board (4 of 6) Schematic Diagram (42inch)	84
9.1. How to enter SERVICE 1	29	14.15. P-Board (5 of 6) Schematic Diagram (42inch)	85
9.2. How to enter SERVICE 2	29	14.16. P-Board (6 of 6) Schematic Diagram (42inch)	86
9.3. Option Description	31	14.17. PA-Board Block Diagram	87
10 Adjustment Procedure	33	14.18. PA-Board (1 of 2) Schematic Diagram	88
10.1. Driver Set-up	33	14.19. PA-Board (2 of 2) Schematic Diagram	89
10.2. Initialization Pulse Adjust	34	14.20. H, K and TA-Board Block Diagram	90
		14.21. HC-Board Block Diagram	91
		14.22. H-Board (1 of 3) Schematic Diagram	92

14.23. H-Board (2 of 3) Schematic Diagram	93	14.47. C1-Board (1 of 2) Schematic Diagram (42inch)	117
14.24. H-Board (3 of 3) and K-Board Schematic Diagram	94	14.48. C1-Board (2 of 2) Schematic Diagram (42inch)	118
14.25. HC and TA-Board Schematic Diagram	95	14.49. C2-Board (1 of 2) Schematic Diagram (37inch)	119
14.26. DG-Board (1 of 3) Block Diagram	96	14.50. C2-Board (2 of 2) Schematic Diagram (37inch)	120
14.27. DG-Board (2 of 3) Block Diagram	97	14.51. C2-Board (1 of 2) Schematic Diagram (42inch)	121
14.28. DG-Board (3 of 3) Block Diagram	98	14.52. C2-Board (2 of 2) Schematic Diagram (42inch)	122
14.29. DG-Board (1 of 8) Schematic Diagram	99	14.53. SC, SU and SD-Board Block Diagram	123
14.30. DG-Board (2 of 8) Schematic Diagram	100	14.54. SC-Board (1 of 2) Schematic Diagram	124
14.31. DG-Board (3 of 8) Schematic Diagram	101	14.55. SC-Board (2 of 2) Schematic Diagram	125
14.32. DG-Board (4 of 8) Schematic Diagram	102	14.56. SU-Board Schematic Diagram (37inch)	126
14.33. DG-Board (5 of 8) Schematic Diagram	103	14.57. SU-Board Schematic Diagram (42inch)	127
14.34. DG-Board (6 of 8) Schematic Diagram	104	14.58. SD-Board Schematic Diagram (37inch)	128
14.35. DG-Board (7 of 8) Schematic Diagram	105	14.59. SD-Board Schematic Diagram (42inch)	129
14.36. DG-Board (8 of 8) Schematic Diagram	106	14.60. SS and S-Board Block Diagram	130
14.37. D-Board Block Diagram	107	14.61. SS and S-Board Schematic Diagram	131
14.38. D-Board (1 of 6) Schematic Diagram	108	15 Parts Location & Mechanical Replacement Parts List	133
14.39. D-Board (2 of 6) Schematic Diagram	109	15.1. Parts Location	133
14.40. D-Board (3 of 6) Schematic Diagram	110	15.2. Packing Exploded Views (1)	134
14.41. D-Board (4 of 6) Schematic Diagram	111	15.3. Packing Exploded Views (2)	135
14.42. D-Board (5 of 6) Schematic Diagram	112	15.4. Packing Exploded Views (3)	136
14.43. D-Board (6 of 6) Schematic Diagram	113	15.5. Mechanical Replacement Parts List	137
14.44. C1 and C2 Block Diagram	114	16 Electrical Replacement Parts List	138
14.45. C1-Board (1 of 2) Schematic Diagram (37inch)	115	16.1. Replacement Parts List Notes	138
14.46. C1-Board (2 of 2) Schematic Diagram (37inch)	116	16.2. Electrical Replacement Parts List	139

1 Applicable signals

Applicable input signal for Component (Y, P_B/C_B, P_R/C_R) and HDMI (* Mark)

Signal name	Horizontal frequency (kHz)	Vertical frequency (Hz)	Component	HDMI
525 (480) / 60i	15.73	59.94	*	*
525 (480) / 60p	31.47	59.94	*	*
625 (576) / 50i	15.63	50.00	*	*
625 (576) / 50p	31.25	50.00	*	*
750 (720) / 60p	45.00	60.00	*	*
750 (720) / 50p	37.50	50.00	*	*
1,125 (1,080) / 60i	33.75	60.00	*	*
1,125 (1,080) / 50i	28.13	50.00	*	*

Note: Signals other than above may not be displayed properly.

The above signals are reformatted for optimal viewing on your display.

2 Safety Precautions

2.1. General Guidelines

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

2.2. Touch-Current Check

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a measuring network for touch currents between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use Leakage Current Tester (Simpson 228 or equivalent) to measure the potential across the measuring network.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reserve the AC plug in the AC outlet and repeat each of the above measure.
6. The potential at any point (TOUCH CURRENT) expressed as voltage U_1 and U_2 , does not exceed the following values:

For a. c.: $U_1 = 35 \text{ V (peak)}$ and $U_2 = 0.35 \text{ V (peak)}$;

For d. c.: $U_1 = 1.0 \text{ V}$,

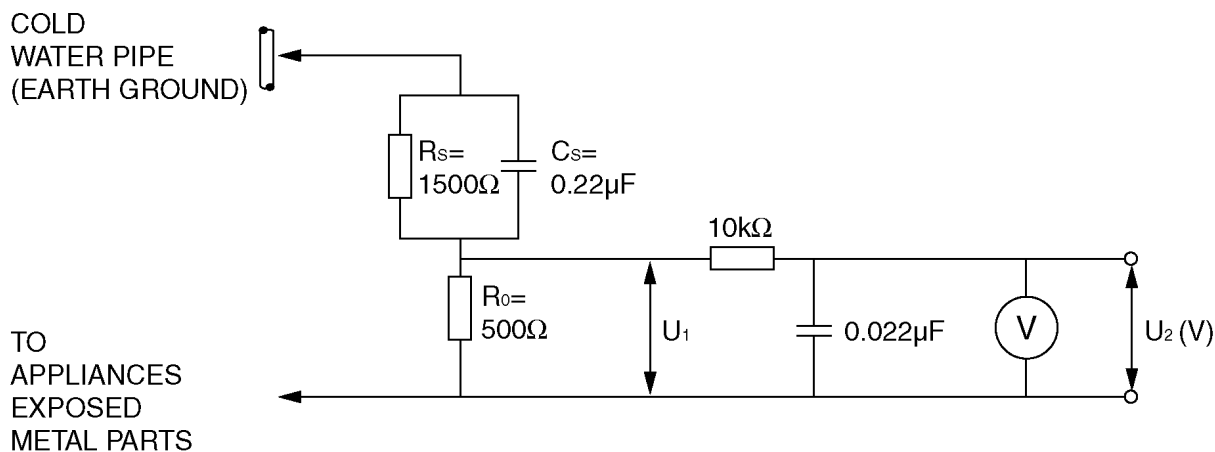
Note:

The limit value of $U_2 = 0.35 \text{ V (peak)}$ for a. c. and $U_1 = 1.0 \text{ V}$ for d. c. correspond to the values 0.7 mA (peak) a. c. and 2.0 mA d. c.

The limit value $U_1 = 35 \text{ V (peak)}$ for a. c. correspond to the value 70 mA (peak) a. c. for frequencies greater than 100 kHz .

7. In case a measurement is out of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

Measuring network for TOUCH CURRENTS



Resistance values in ohms (Ω)

V: Voltmeter or oscilloscope
(r.m.s. or peak reading)

Input resistance: $\geq 1 \text{ M}\Omega$

Input capacitance: $\leq 200 \text{ pF}$

Frequency range: 15 Hz to 1 MHz and d.c. respectively

NOTE - Appropriate measures should be taken to obtain the correct value in case of non-sinusoidal waveforms.

Figure 1

3 Prevention of Electro Static Discharge (ESD) to Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).


1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

Caution

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by  in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

4 About lead free solder (PbF)


Note: Lead is listed as (Pb) in the periodic table of elements.

In the information below, Pb will refer to Lead solder, and PbF will refer to Lead Free Solder.

The Lead Free Solder used in our manufacturing process and discussed below is (Sn+Ag+Cu).

That is Tin (Sn), Silver (Ag) and Copper (Cu) although other types are available.

This model uses Pb Free solder in it's manufacture due to environmental conservation issues. For service and repair work, we'd suggest the use of Pb free solder as well, although Pb solder may be used.

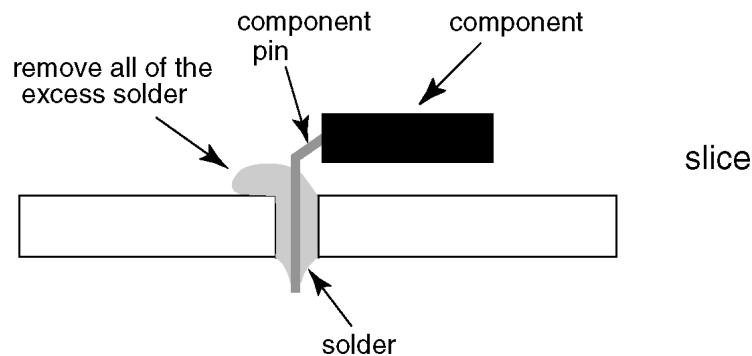
PCBs manufactured using lead free solder will have the PbF within a leaf Symbol  stamped on the back of PCB.

Caution

- Pb free solder has a higher melting point than standard solder. Typically the melting point is 50 ~ 70 °F (30~40 °C) higher. Please use a high temperature soldering iron and set it to 700 ± 20 °F (370 ± 10 °C).
- Pb free solder will tend to splash when heated too high (about 1100 °F or 600 °C).

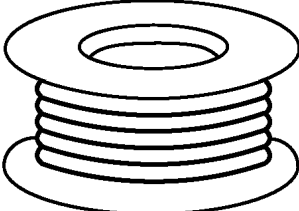
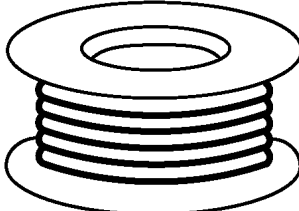
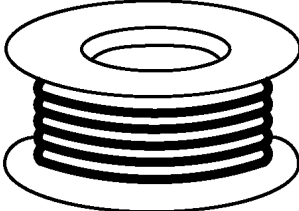
If you must use Pb solder, please completely remove all of the Pb free solder on the pins or solder area before applying Pb solder. If this is not practical, be sure to heat the Pb free solder until it melts, before applying Pb solder.

- After applying PbF solder to double layered boards, please check the component side for excess solder which may flow onto the opposite side. (see figure below)



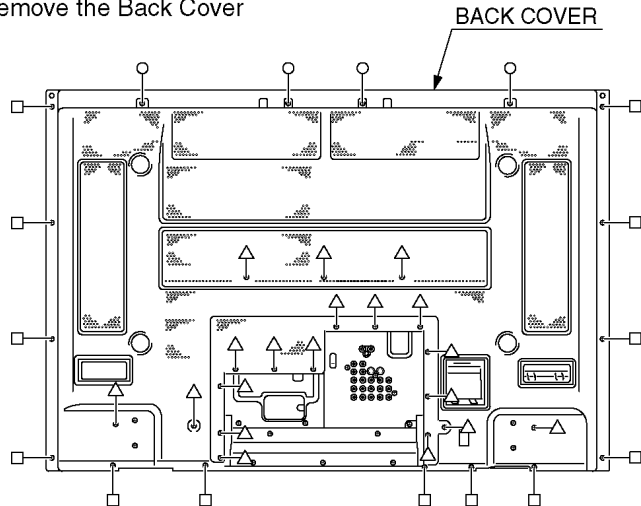
Suggested Pb free solder

There are several kinds of Pb free solder available for purchase. This product uses Sn+Ag+Cu (tin, silver, copper) solder. However, Sn+Cu (tin, copper), Sn+Zn+Bi (tin, zinc, bismuth) solder can also be used.

0.3mm X 100g	0.6mm X 100g	1.0mm X 100g
		

5 Service Hint

Remove the Back Cover



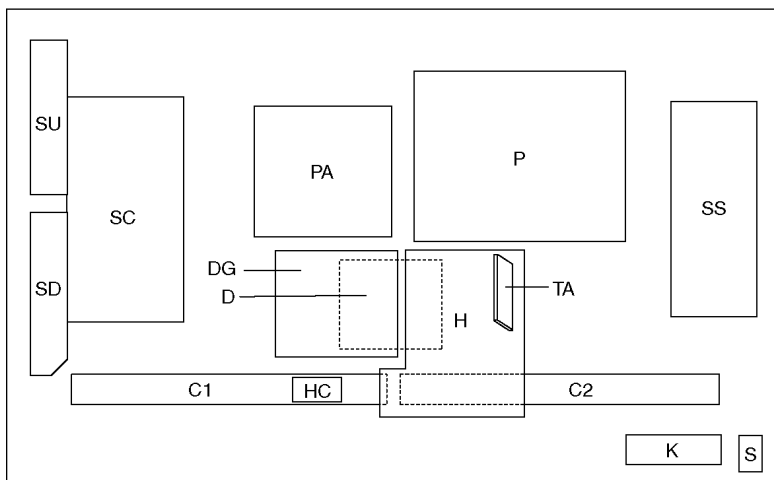
Remove:

4 screws (O) XYN4+F30FJK

13 screws (□) XTB4+12GFJK

19 screws (Δ) THEL0429

Service Position



Board Name	Function	Board Name	Function
P	Power Supply	C1	Data Driver (Lower Right)
PA	DC-DC Converter, Speaker out, Audio AMP	C2	Data Driver (Lower Left)
H	AV Terminal, AV Switch, MSP	SC	Scan Drive
TA	Tuner	SU	Scan out (Upper)
DG	Digital Signal Processor, Micom, HDMI Interface	SD	Scan out (Lower)
D	Format Converter, Plasma AI, Sub-Field Processor	SS	Sustain Drive
HC	Jig Connection	K	Remote receiver, Power LED, Key Switch
		S	Power Switch

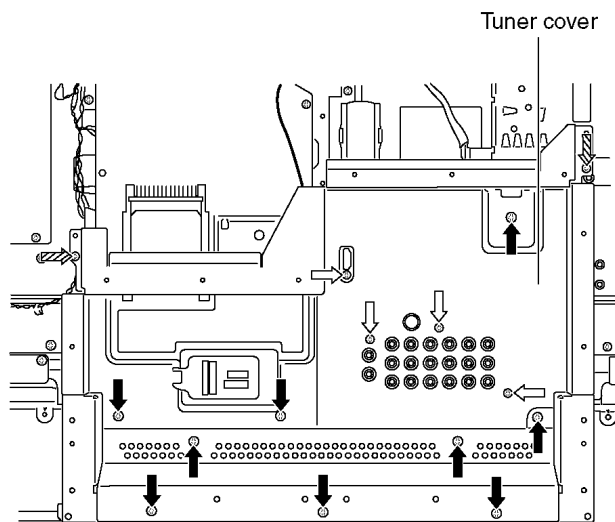
6 Plasma panel replacement method

6.1. Remove the Back cover

1. See Service Hint (Section 5)

6.2. Remove the tuner cover

1. Remove the screws (x9 ➡, x7 ➡, x2 ➡).
2. Remove the tuner cover.



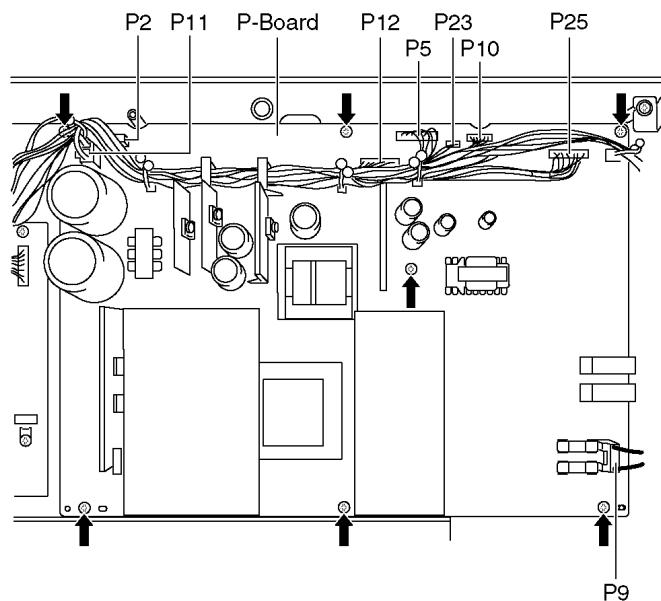
6.3. Remove the P-Board

Caution:

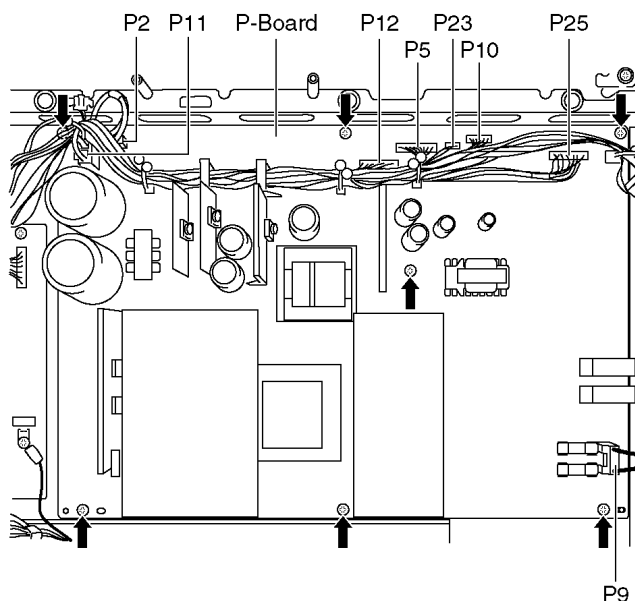
To remove P.C.B. wait 1 minute after power was off for discharge from electrolysis capacitors.

1. Unlock the cable clampers to free the cable.
2. Disconnect the couplers (P2, P5, P9, P10, P11, P12, P23, and P25).
3. Remove the screws (x7 ➡) and remove the P-Board.

• 37inch

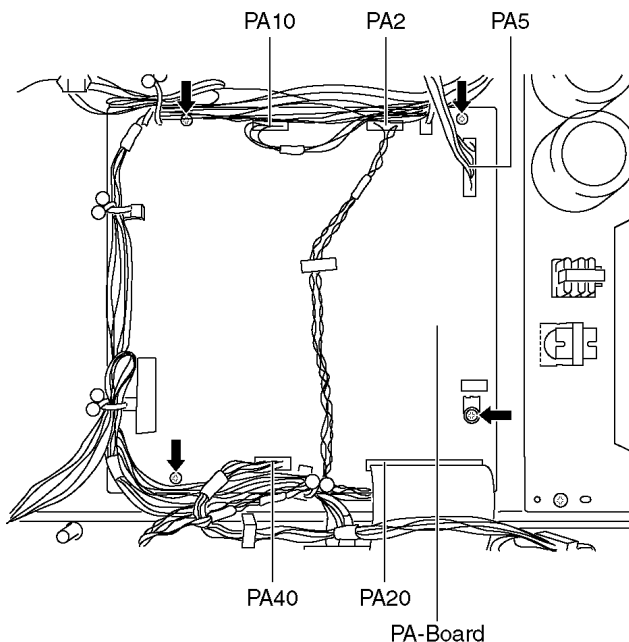


• 42inch



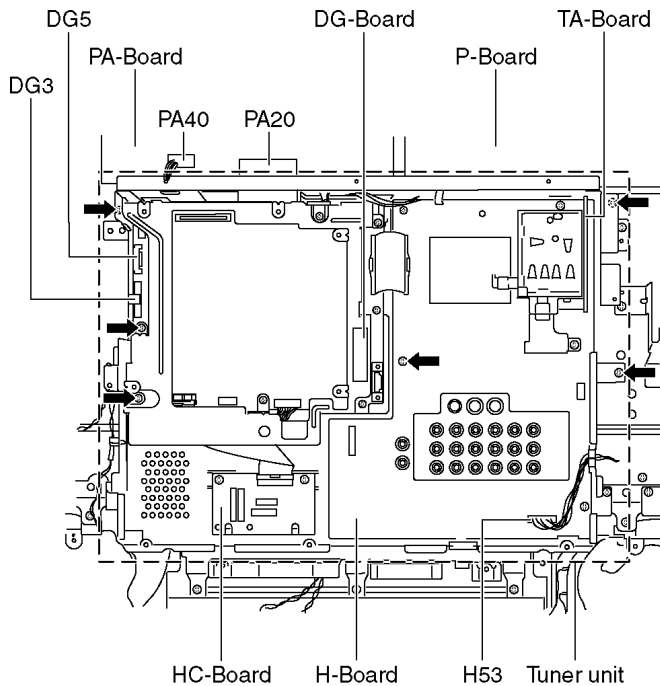
6.4. Remove the PA-Board

1. Unlock the cable clampers to free the cable.
2. Disconnect the couplers (PA2, PA5, PA10 and PA40).
3. Disconnect the flexible cable (PA20).
4. Remove the screws (x4 ➡).
5. Remove the PA-Board.



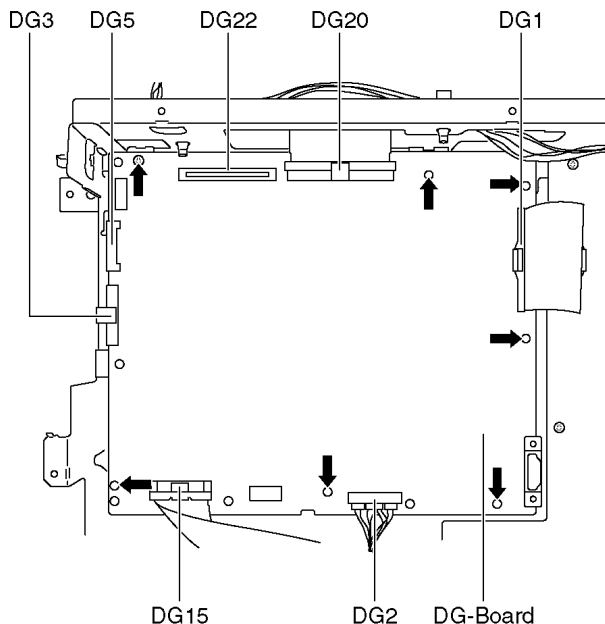
6.5. Remove the tuner unit

1. Unlock the cable clampers to free the cable.
2. Disconnect the couplers (DG5, H53 and PA40).
3. Disconnect the flexible cables (DG3 and PA20).
4. Remove the screws (×4 ➡) remove the tuner unit.



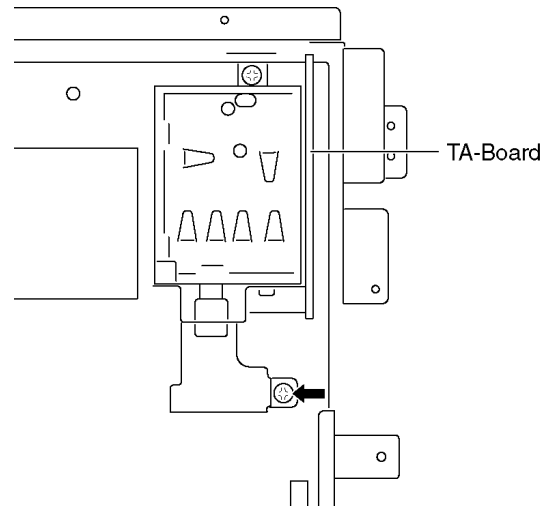
6.6. Remove the DG-Board

1. Disconnect the coupler (DG2).
2. Disconnect the flexible cables (DG1, DG15 and DG20).
3. Remove the screw (×7 ➡) remove the DG-Board.



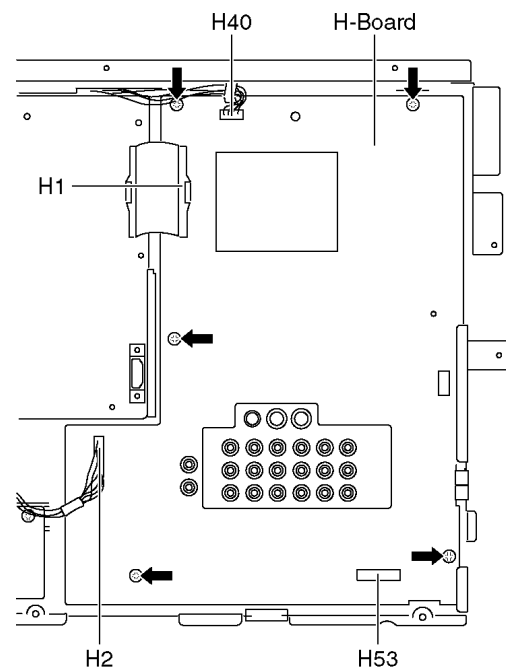
6.7. Remove the TA-Board

1. Remove the screw (×1 ➡) and remove the TA-Board.



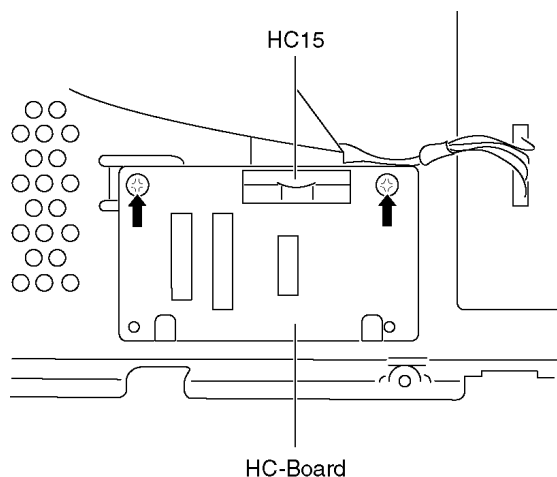
6.8. Remove the H-Board

1. Remove the TA-Board.
2. Unlock the cable clampers to free the cable.
3. Disconnect the couplers (H2 and H40).
4. Disconnect the flexible cable (H1).
5. Remove the screws (×5 ➡) and remove the H-Board.



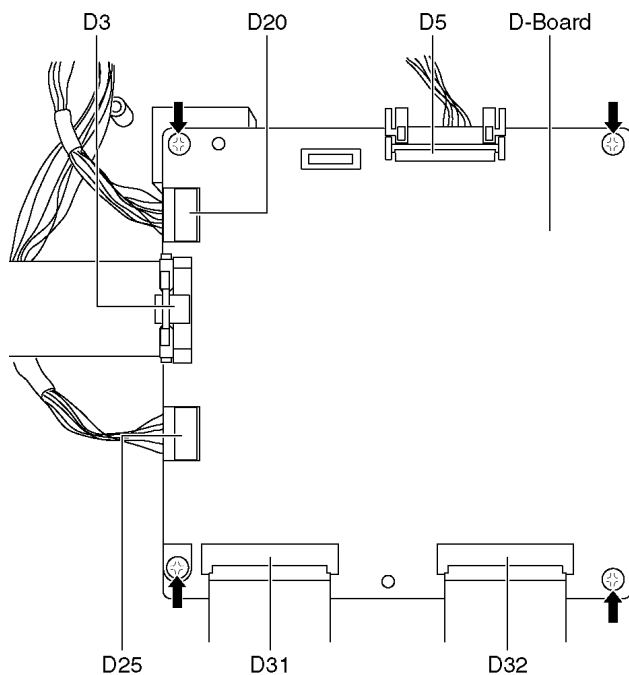
6.9. Remove the HC-Board

1. Disconnect the flexible cable (HC15).
2. Remove the screws (x2 ➡) and remove the HC-Board.



6.10. Remove the D-Board

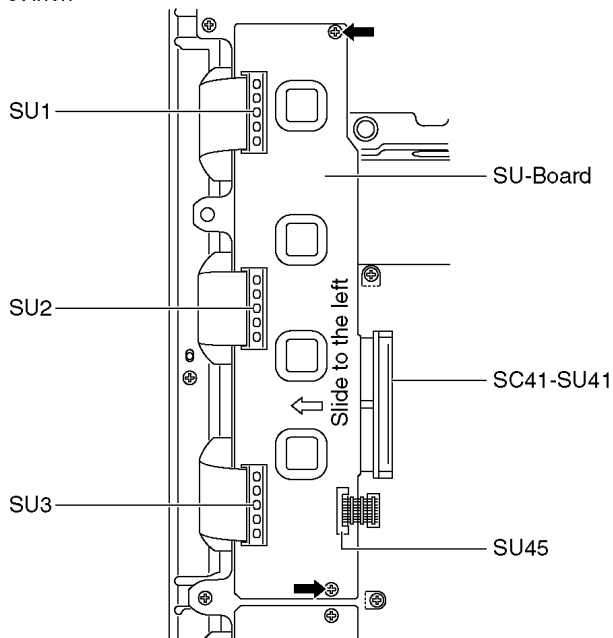
1. Remove the tuner unit. (See section 6.5.)
2. Disconnect the couplers (D5, D20 and D25).
3. Disconnect the flexible cables (D3, D31 and D32).
4. Remove the screws (x4 ➡) and remove the D-Board.



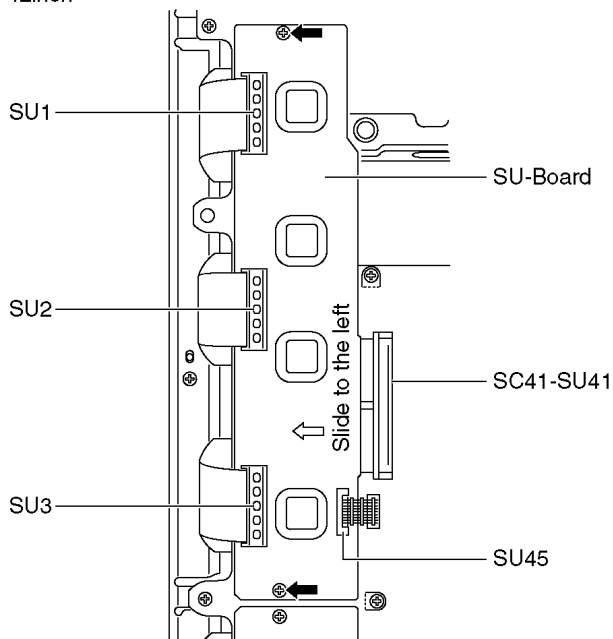
6.11. Remove the SU-Board

1. Remove the screws (x2 ➡).
2. Remove the flexible cables (SU1, SU2 and SU3) and remove the bridge connector (SU45).
3. Slide the SU-Board to the left to disconnect from a coupler (SC41-SU41) on the SC-Board and remove the SU-Board.

• 37inch



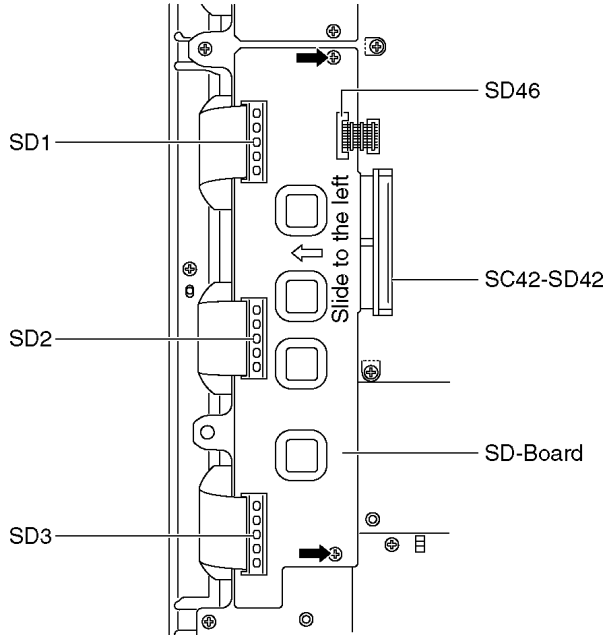
• 42inch



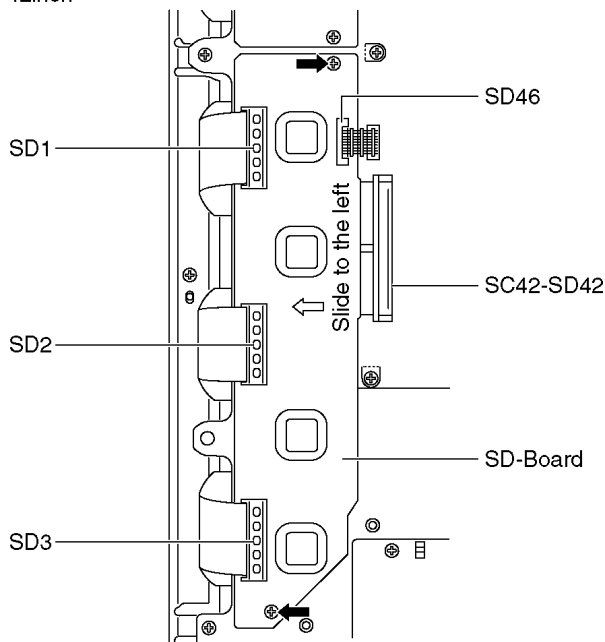
6.12. Remove the SD-Board

1. Remove the screws (×2 ➡).
2. Remove the flexible cables (SD1, SD2 and SD3) and remove the bridge connector (SD46).
3. Slide the SD-Board to the left to disconnect from a coupler (SC42-SD42) on the SC-Board and remove the SD-Board.

• 37inch

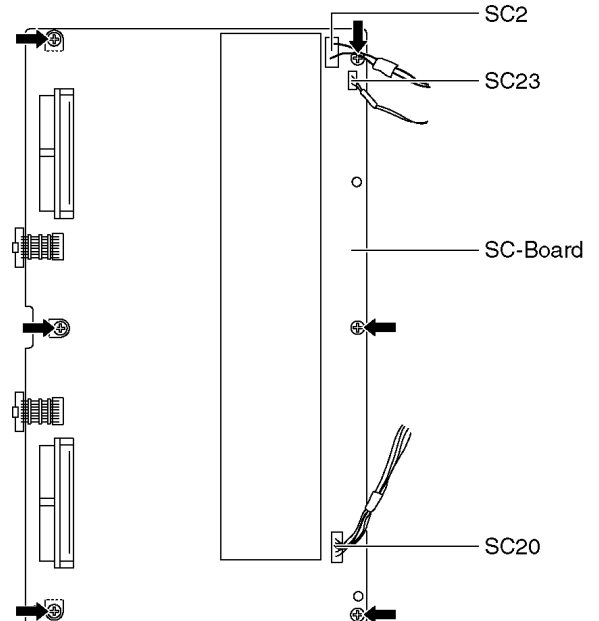


• 42inch



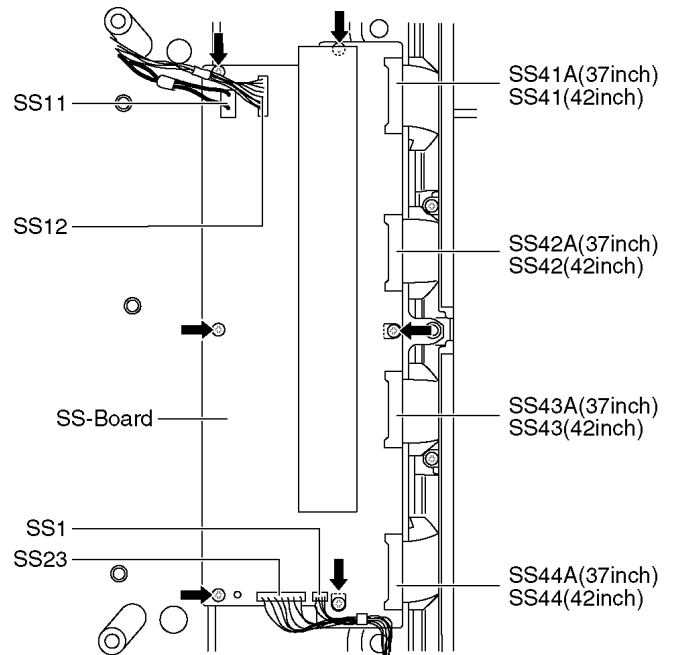
6.13. Remove the SC-Board

1. Unlock the cable clampers to free the cable.
2. Disconnect the couplers (SC2, SC20 and SC23).
3. Remove the screws (×6 ➡) and remove the SC-Board.



6.14. Remove the SS-Board

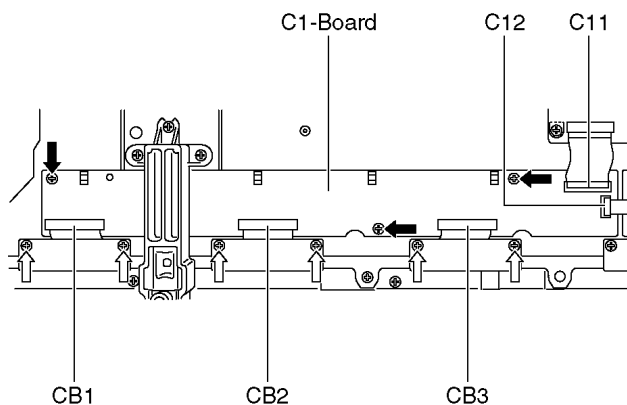
1. Disconnect the couplers (SS1, SS11, SS12 and SS23).
2. Disconnect the flexible cables (SS41A, SS42A, SS43A and SS44A) (37inch).
Disconnect the flexible cables (SS41, SS42, SS43 and SS44) (42inch).
3. Remove the screws (×6 ➡) and remove the SS-Board.



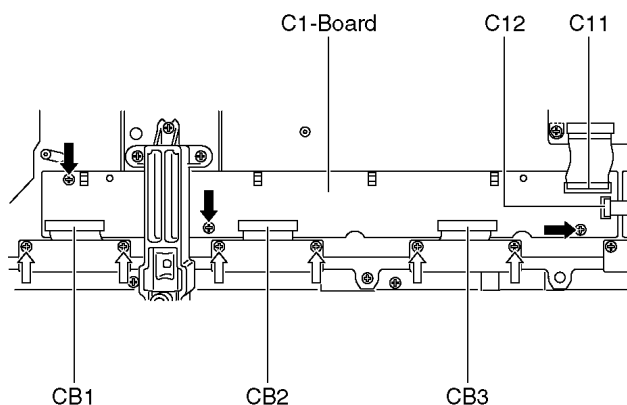
6.15. Remove the C1-Board

1. Remove the tuner unit. (See section 6.5.)
2. Unlock the cable clampers to free the cable.
3. Remove the flexible cables holder fastening screws (x6 ➡).
4. Disconnect the flexible cables (CB1, CB2 and CB3).
5. Disconnect the flexible cables (C11 and C12).
6. Remove the screws (x3 ➡) and remove the C1-Board.

• 37inch



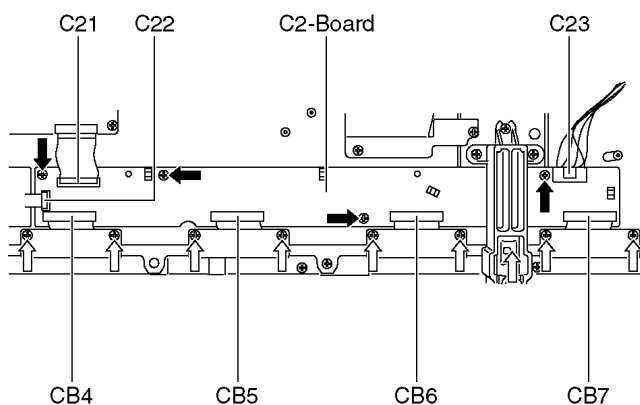
• 42inch



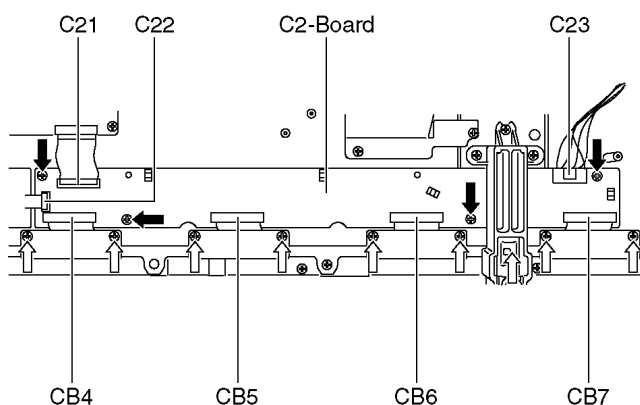
6.16. Remove the C2-Board

1. Remove the tuner unit. (See section 6.5.)
2. Unlock the cable clampers to free the cable.
3. Remove the flexible cables holder fastening screws (x8 ➡).
4. Disconnect the flexible cables (CB4, CB5, CB6 and CB7).
5. Disconnect the flexible cables (C21 and C22).
6. Disconnect the coupler (C23).
7. Remove the screws (x4 ➡) and remove the C2-Board.

• 37inch



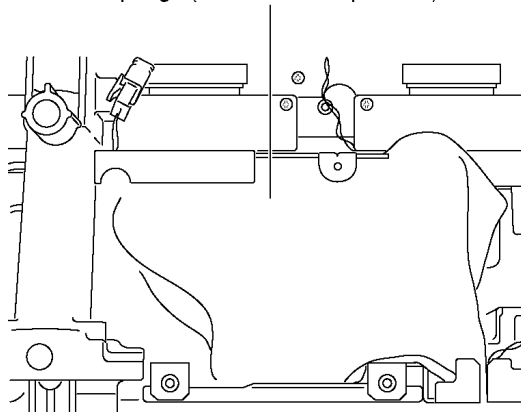
• 42inch



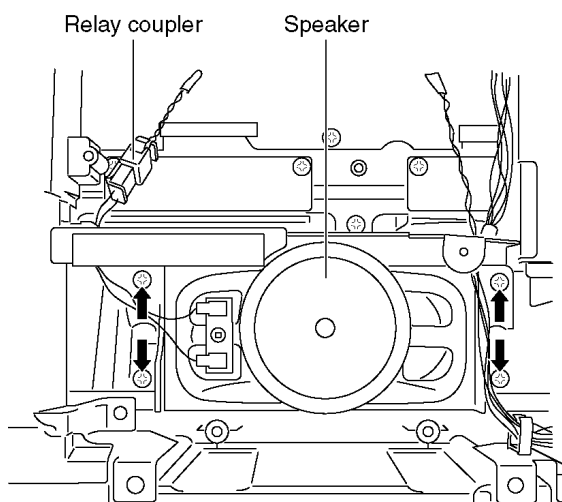
6.17. Remove the speaker L, R

1. Remove the sponge

Sponge (Protected the speakers)

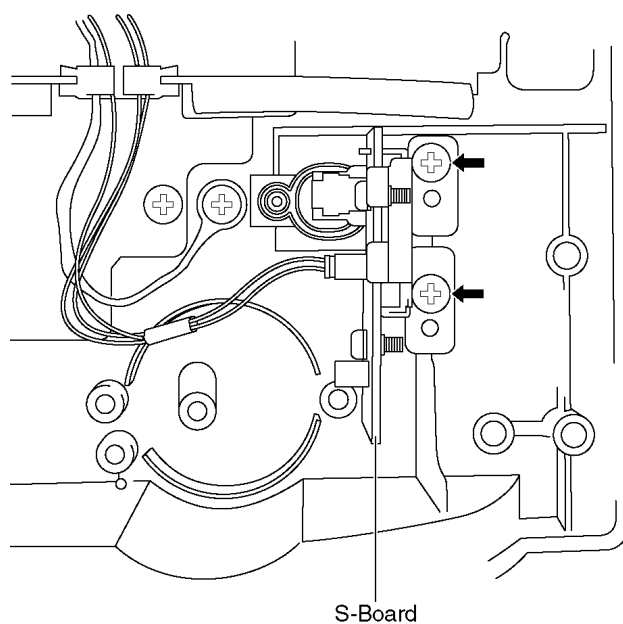


2. Disconnect the relay couplers
3. Remove the screws (×4 ➡ each) and remove the speaker L, R.

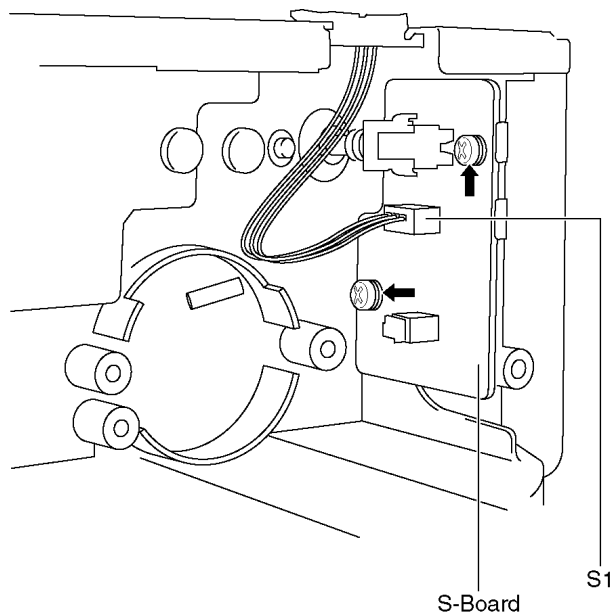


6.18. Remove the S-Board

1. Remove the screw (×2 ➡) and remove the S-Board unit.

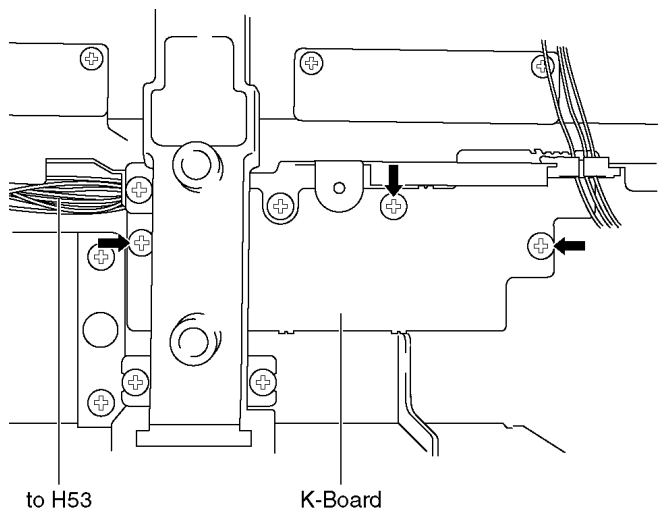


2. Unlock the cable clampers to free the cable.
3. Disconnect the coupler (S1).
4. Remove the screws (×2 ➡) and remove the S-Board.



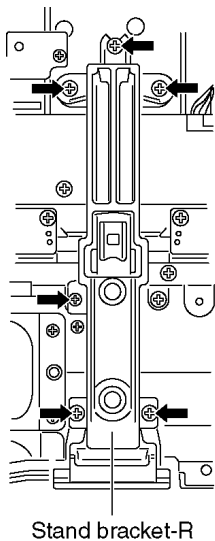
6.19. Remove the K-Board

1. Unlock the cable clampers to free the cable.
2. Disconnect the coupler (H53). (see section 6.5.)
3. Remove the screws (x3 ➡) and remove the K-Board.

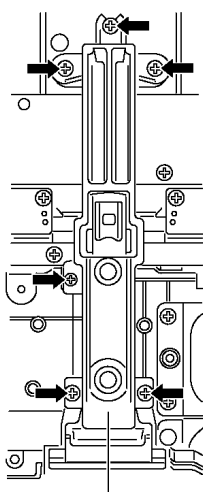


6.20. Remove the stand brackets

1. Remove the plasma panel section from the servicing stand and lay on a flat surface such as a table (covered) with the plasma panel surface facing downward.
2. Remove the stand brackets (left, right) fastening screws (x6 ➡ each) and remove the stand brackets (left, right).



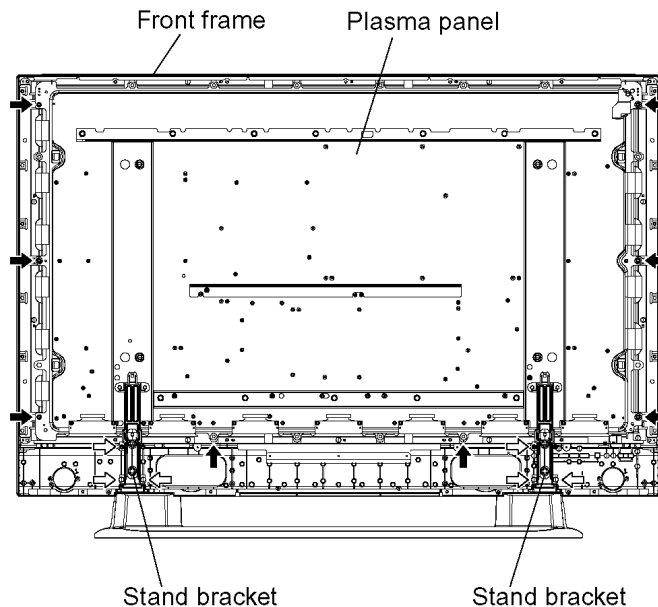
Stand bracket-R



Stand bracket-L

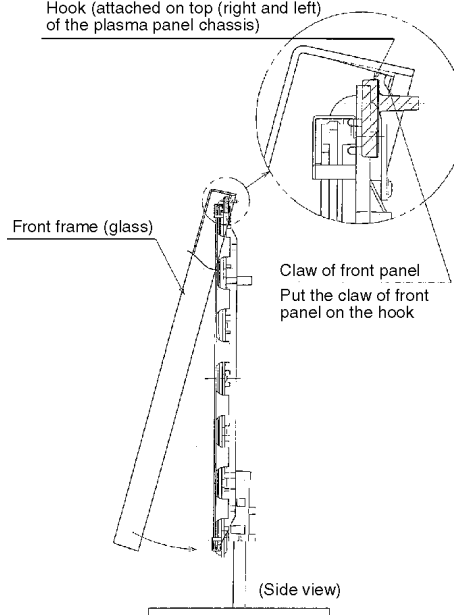
6.21. Remove the Plasma panel section from the Front frame (glass)

1. Remove the front frame and the plasma panel fastening screws (x8 ➡).
2. Remove the front frame and the stand brackets fastening screws (x6 ➡).



3. For leaving the plasma panel from the front frame, pull the bottom of the front frame forward, lift, and remove.

Hook (attached on top (right and left) of the plasma panel chassis)



6.22. Replace the plasma panel (finished)

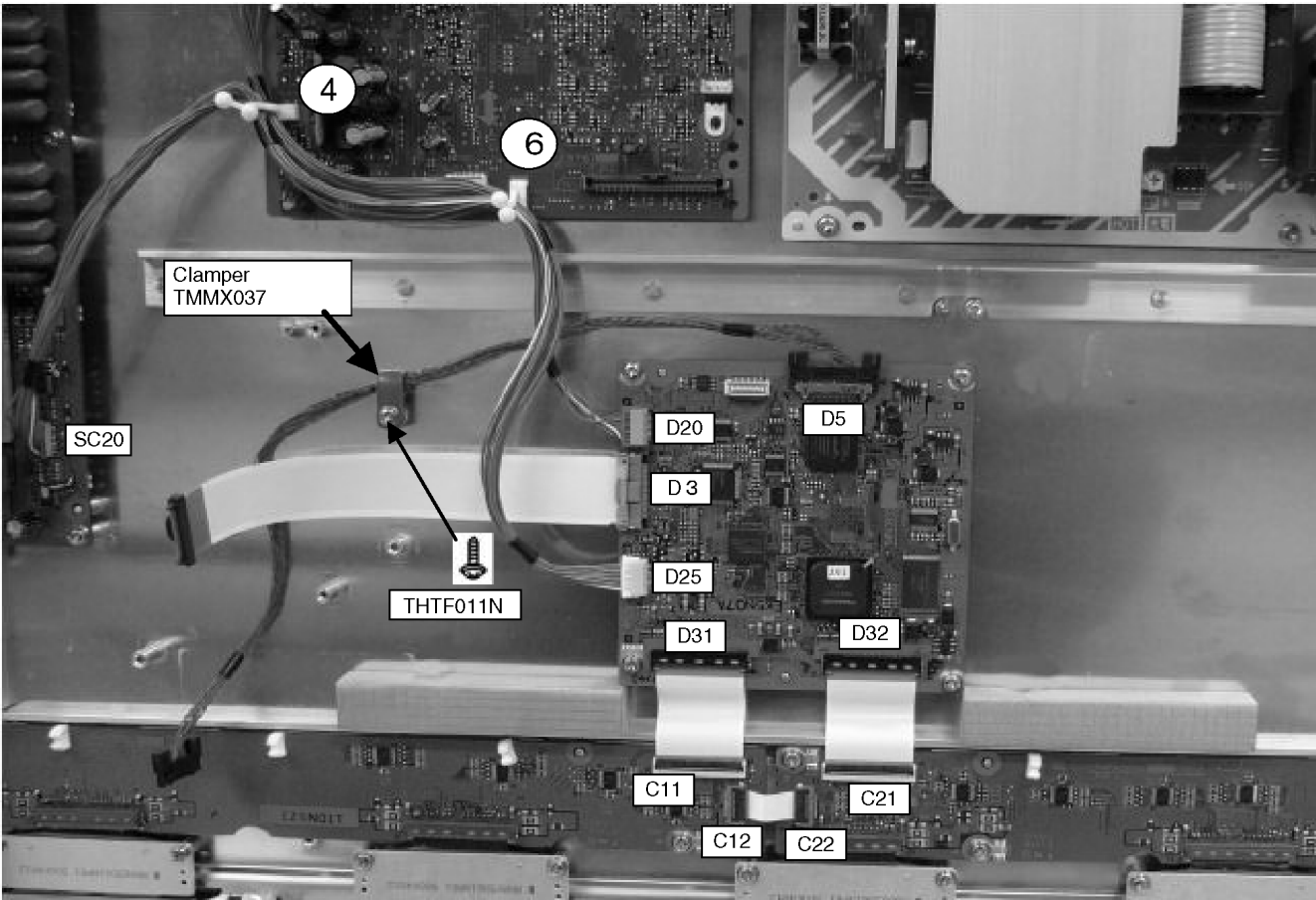
1. Place the new plasma panel (finished) on the flat surface of the table (covered by a soft cloth), with the plasma panel surface facing downward.
2. Attach the C1-Board and the C2-Board, connect the flexible cables (×7) from the Plasma panel to the C1-Board and the C2-Board, and fit the flexible cable holders.
3. Attach the Hooks (left, right) and fit the stand brackets (L, R) to the new plasma panel.
4. Place the plasma panel section on the servicing stand.
5. Attach the front frame and each P.C.Board and so on, to the new plasma panel.

*** When fitting the front frame, be careful to allow any debris, dust or handling residue to remain between the front glass and plasma panel.**

7 Location of Lead Wiring

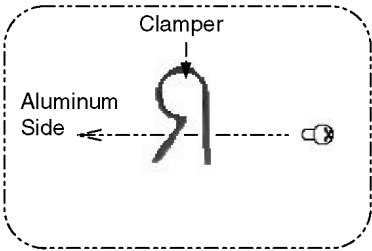
7.1. Lead of Wiring (1)

The wire is dressed as shown in figure.



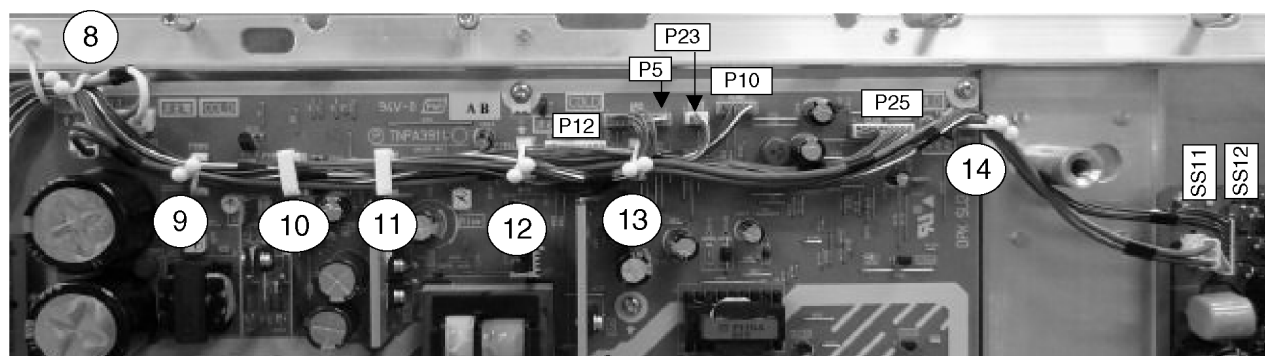
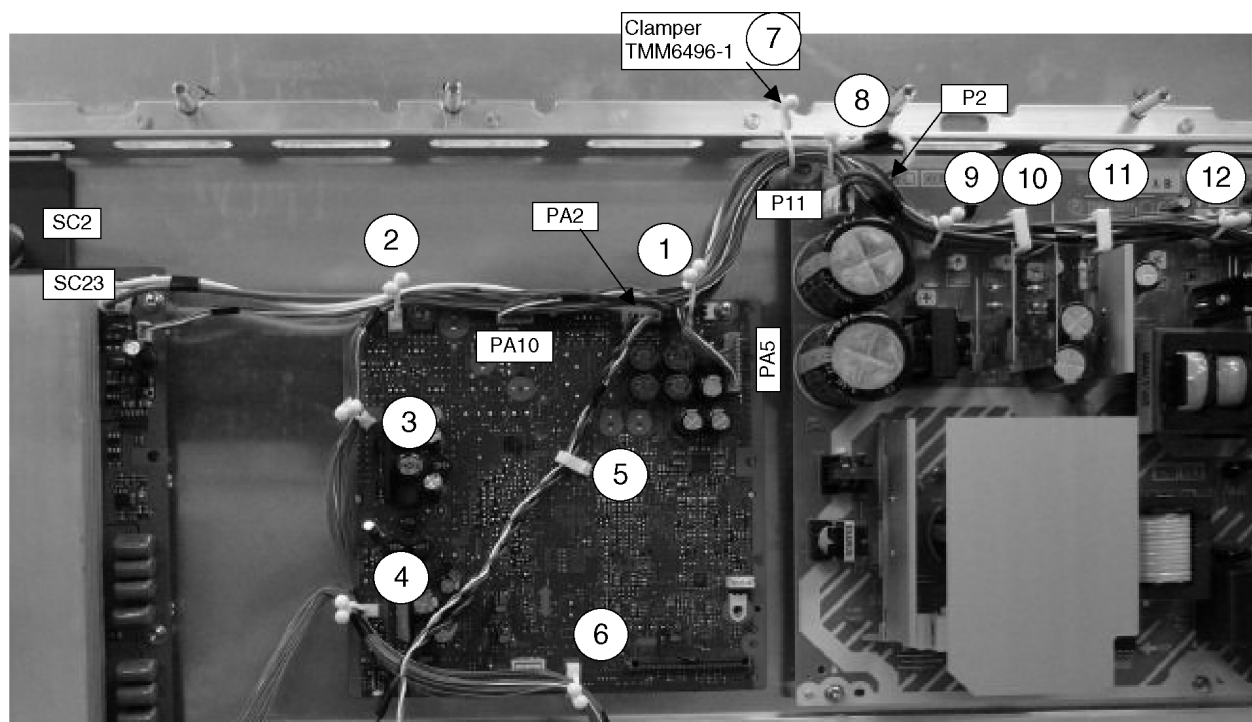
CON:No-CON:No		④	⑥				
D3	- DG3						
D5	- DG5						
D20	- SC20	○	○				
D25	- P25	○	○				
D31	- C11						
D32	- C21						
C12	- C22						

CON: No (Connector No.)



7.2. Lead of Wiring (2)

The wire is dressed as shown in figure.

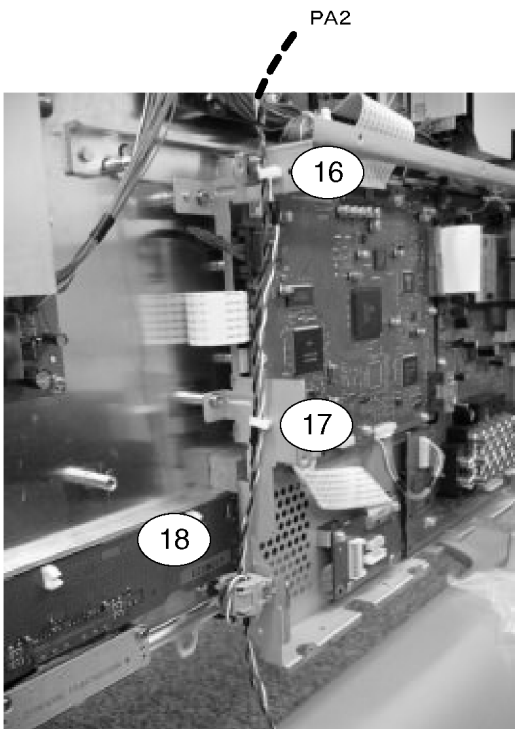
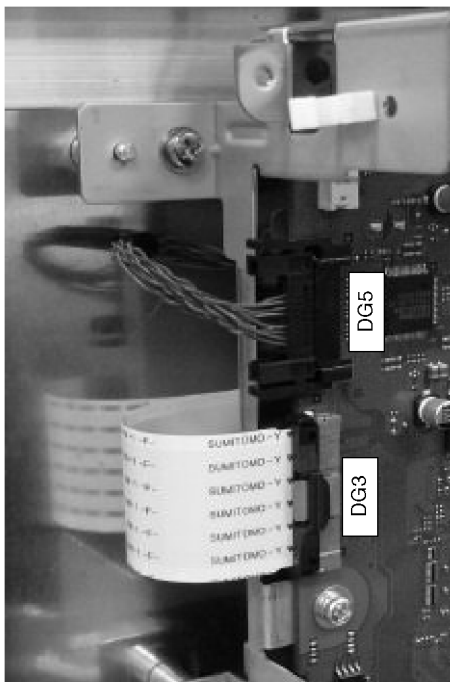
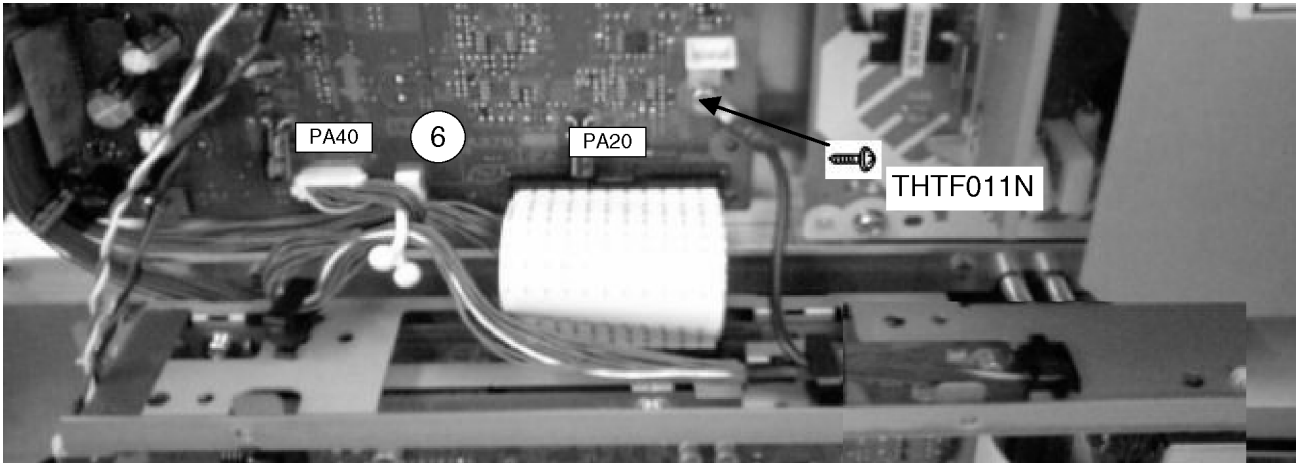


CON:No-CON:No	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	
SC2 - P2	○	○					○	○							
SC23 - P23	○	○					○	○	○	○	○	○	○		
SC20 - D20				○		○									
PA2 - RERAY					○										
PA5 - P5	○						○	○	○	○	○	○	○		
PA10 - P10	○						○	○	○	○	○	○	○		
P11 - SS11									○	○	○	○	○	○	
P12 - SS12													○	○	
P25 - D25	○	○	○	○		○	○	○	○	○	○	○	○		

CON: No (Connector No.)

7.3. Lead of Wiring (3)

The wire is dressed as shown in figure.



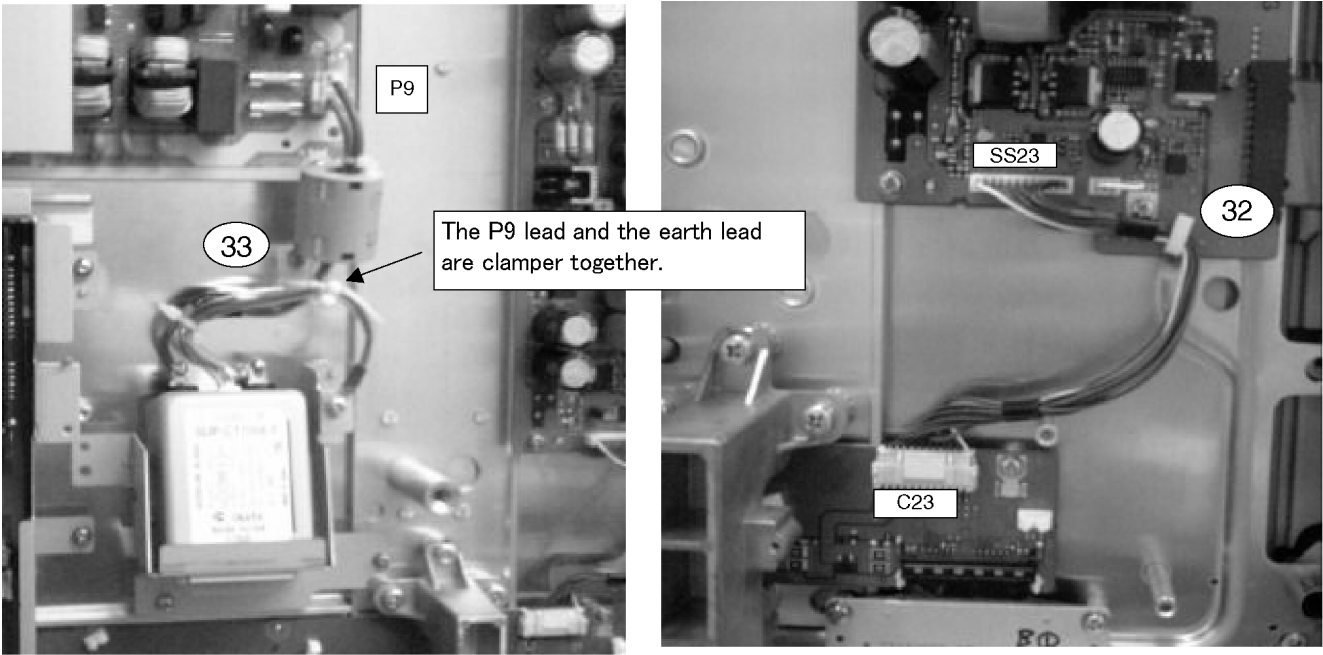
RELAY CONNECTOR

CON:No-CON:No	⑥		⑯	⑰	⑱	
PA40 - H40	Ⅱ					
DG3 - D3						
DG5 - D5						
PA2 - RELAY			○	○	○	
PA20 - DG20						

Ⅱ : Wind up twice

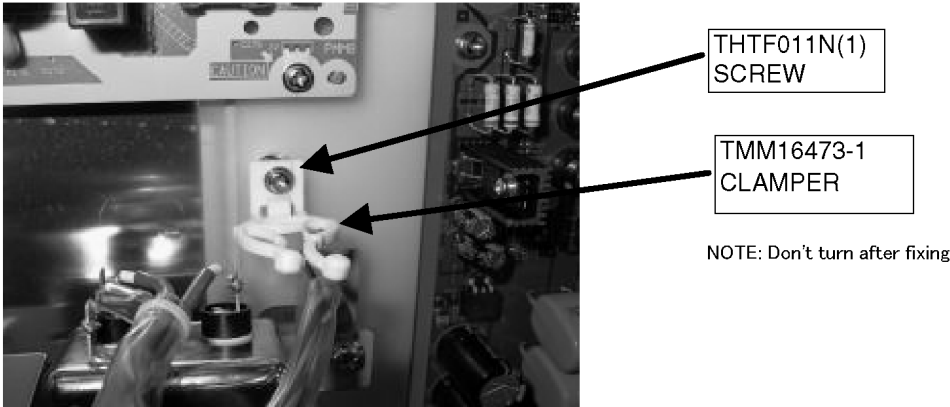
7.4. Lead of Wiring (4)

The wire is dressed as shown in figure.



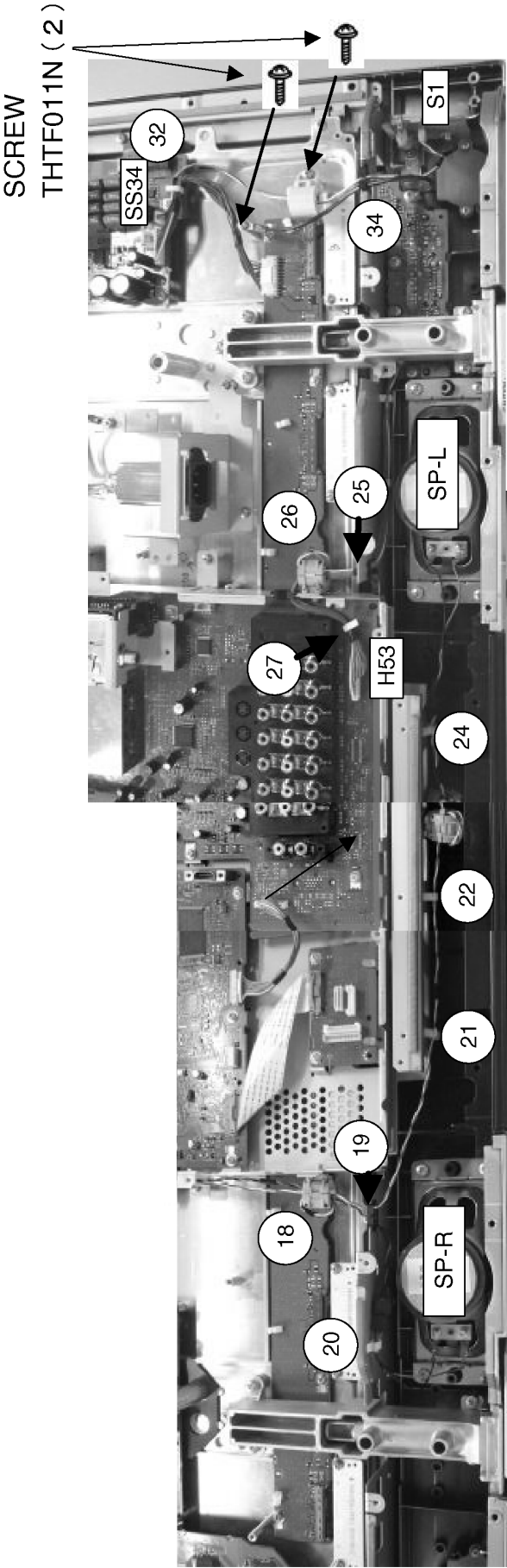
CON:No-CON:No	(32)	(33)							
AC - P9		O							
SS23 - C23	O								

CON: No (Connector No.)



7.5. Lead of Wiring (5)

The wire is dressed as shown in figure.

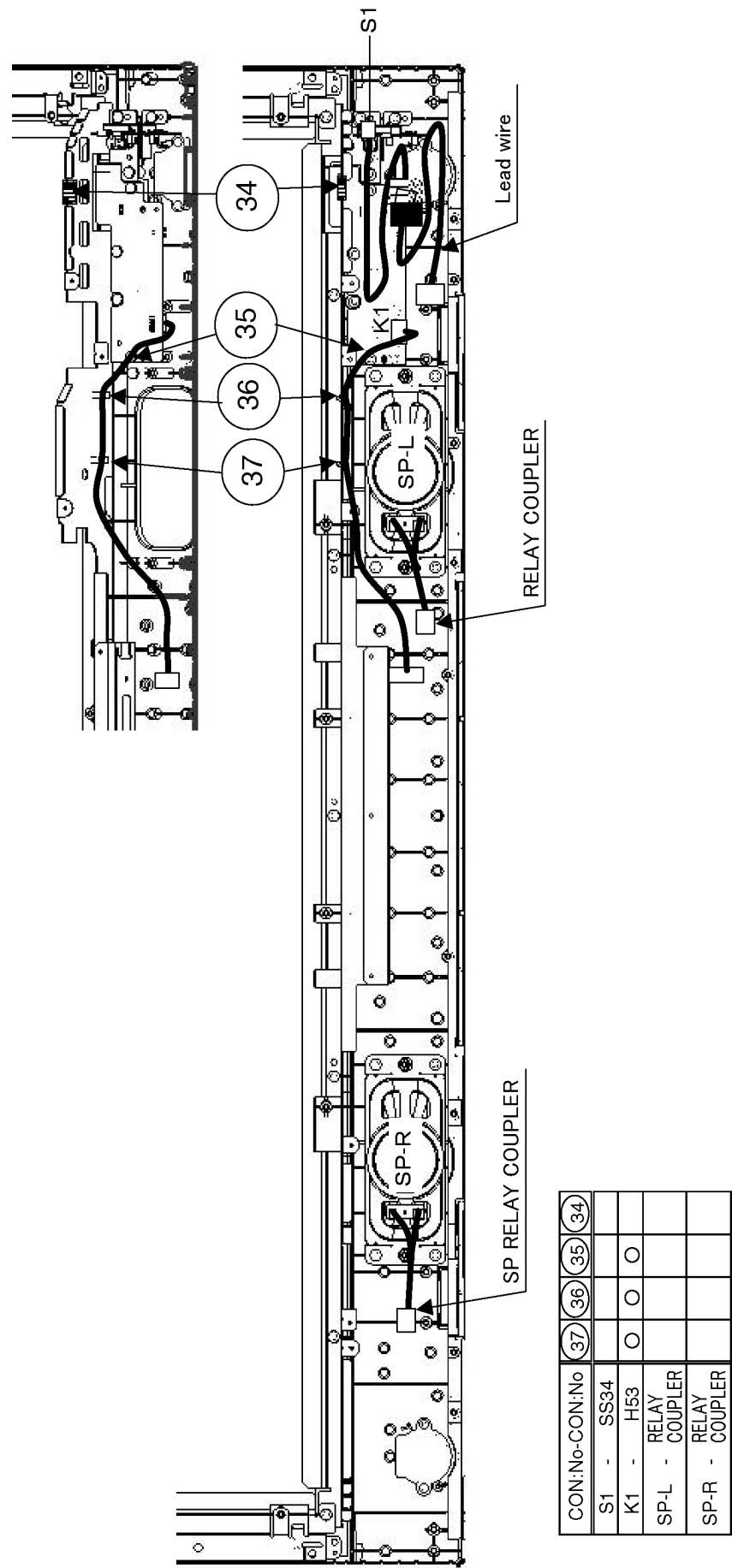


CON:No-CON:No	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(32)	(34)
PA2 - SP-R	O	O	O									
PA2 - SP-L	O	O		O	O	O						
K1 - H53								O	O	O		
S1 - SS34											O	O
C23 - SS23											O	
K-GND - GND												O

CON: No (Connector No.)

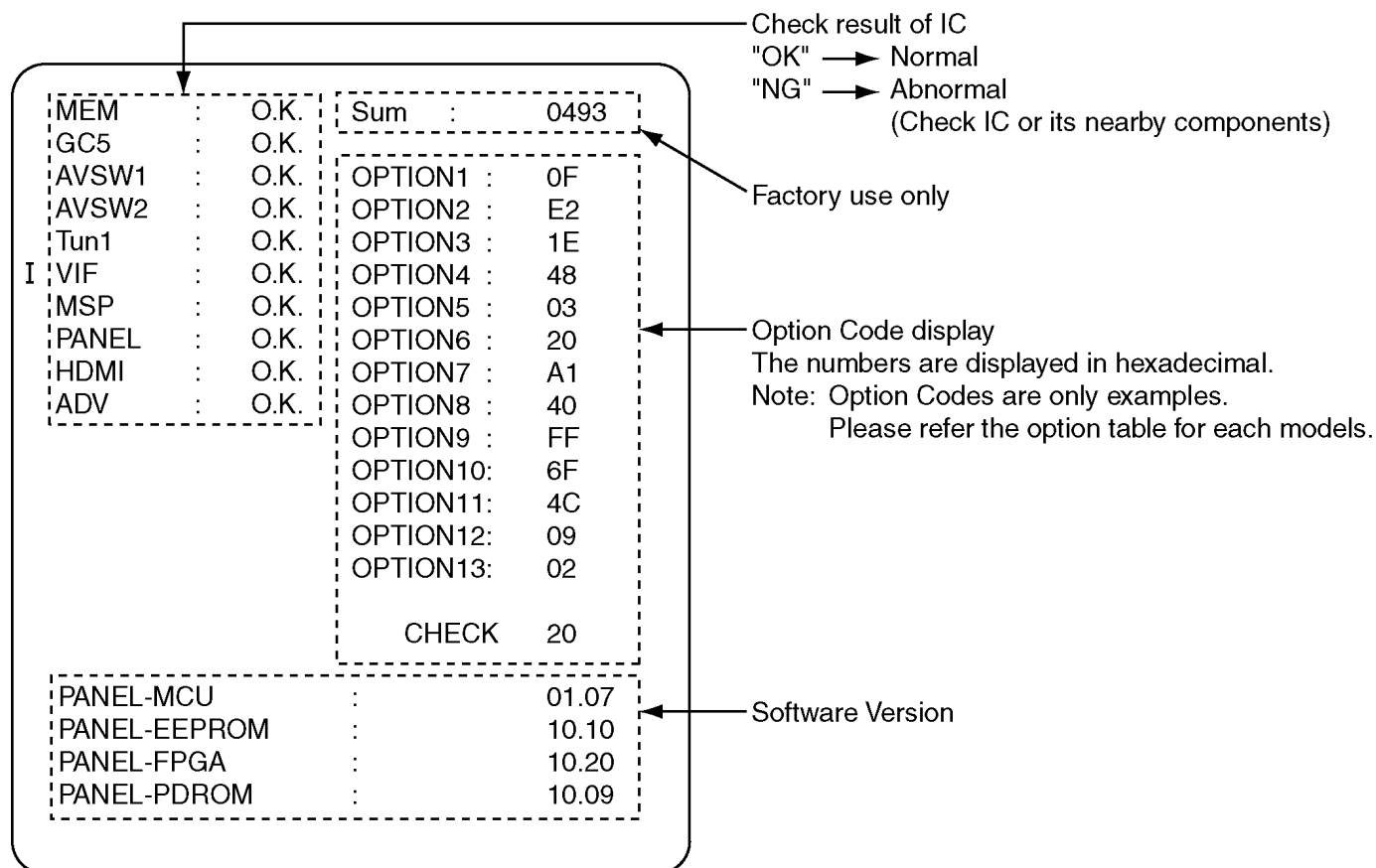
7.6. Lead of Wiring (6)

The wire is dressed as shown in figure.



8 Self Check

1. Self-Check is used to automatically check the bus lines and hexadecimal code of the TV set.
2. To get into the Self -Check mode press the Down (—/√) button on the customer controls at the front of the set, at the same time pressing the Information button on the remote control, and the screen will show :



I : PA60A only

If the CCU ports have been checked and found to be incorrect or not located then "--" will appear in place of "O.K.".

Display	Ref.No.	Description	Board
MEM	IC1102	EEPROM	DG-Board
GC5	IC4037	GC5 Processor	DG-Board
AVSW1	IC3005	Video SW	H-Board
AVSW2	IC2105	Audio SW	H-Board
Tun1	TU001	Tuner	TA-Board
VIF	-	-	-
MSP	IC2106	Multi Sound Processor	H-Board
PANEL	IC9003	Convert Micon	D-Board
HDMI	IC4026	HDMI I/F Receiver	DG-Board
ADV	IC4019	10bit A/D	DG-Board

8.1. Power LED Blinking timing chart

1. Subject

Information of LED Flashing timing chart.

2. Contents

When an abnormality has occurred the unit, the protection circuit operates and reset to the stand by mode. At this time, the defective block can be identified by the number of blinks of the Power LED on the front panel of the unit.

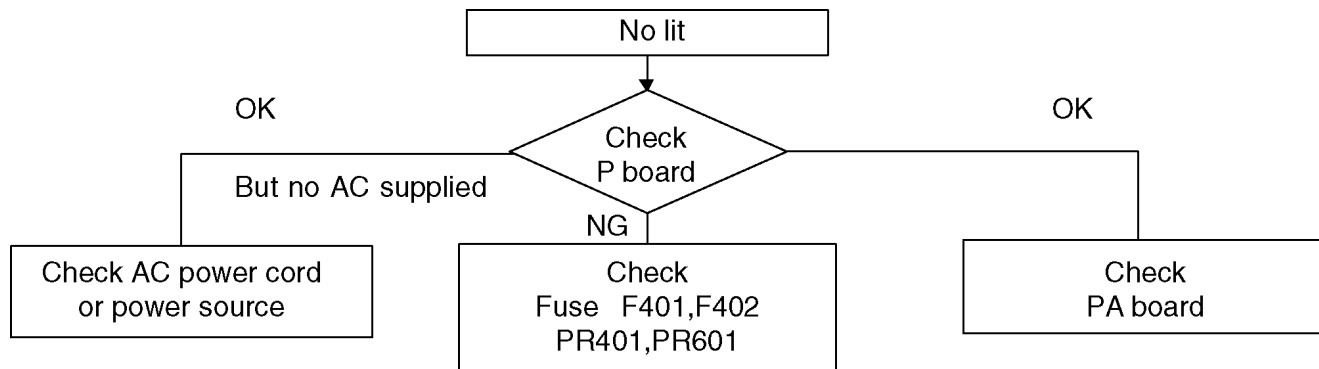
Blinking Times	Blinking timing	Contents	Check point
1		No particular check point	-
2		15V SOS	D-Board
3		3.3V SOS	D-Board
4		Power SOS	P-Board
5		5V SOS	D-Board
6		Driver SOS1 (SC Energy recovery circuit)	SU-Board SD-Board SC-Board
7		Driver SOS2 (SC floating voltage area)	SU-Board SD-Board SS-Board
8		Driver SOS3 (SS Energy recovery circuit)	SS-Board
9		Panel Status	-
10		PA SOS Tuner SOS	PA-Board H-Board
12		Sound SOS	PA-Board

8.2. No Power

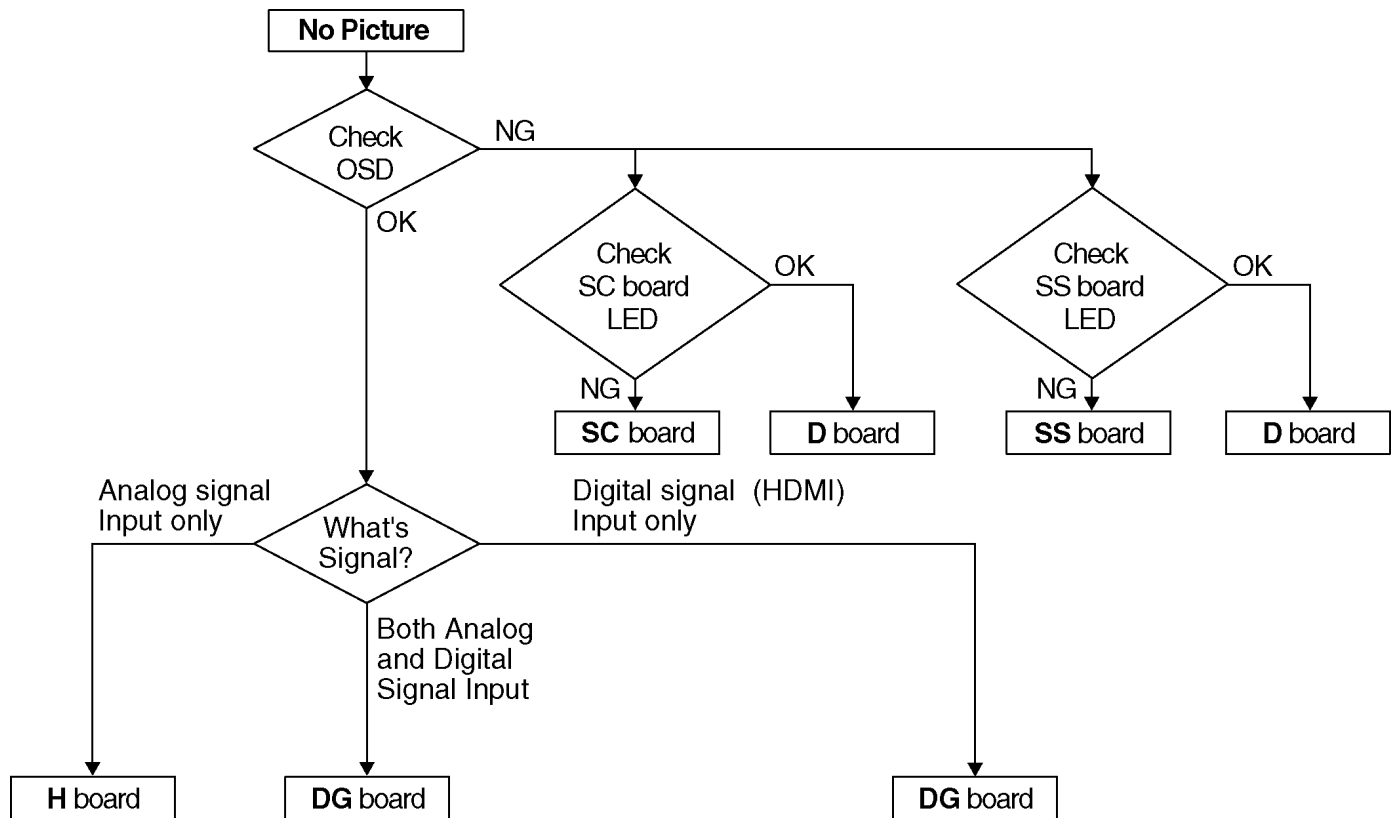
First check point

There are following 3 states of No Power indication by power LED.

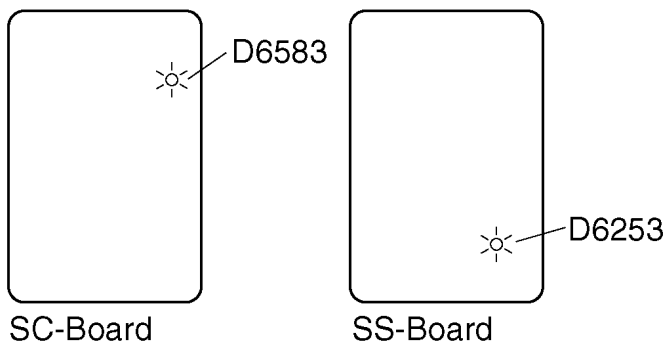
1. No lit
2. Green is lit then turns red blinking a few seconds later.
3. Only red is lit.



8.3. No Picture



Drive circuits LED indicator



8.4. Local screen failure

Plasma display may have local area failure on the screen. Fig-1 is the possible defect P.C.B. for each local area.

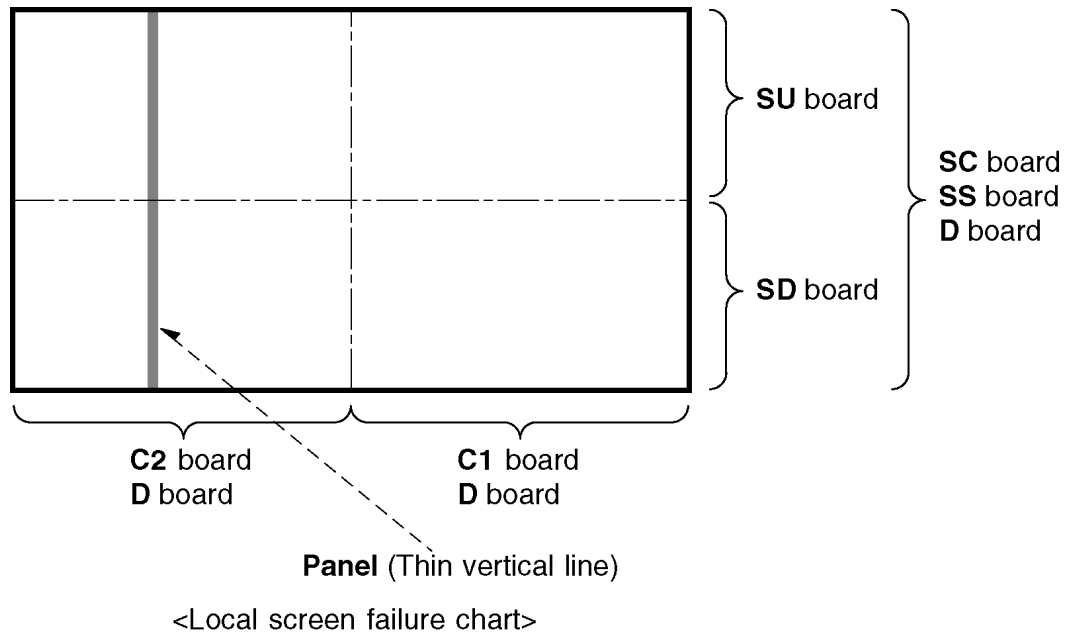



Fig-1

9 Service Mode Function

MPU controls the functions switching for each IICs through IIC bus in this chassis. The following setting and adjustment can be adjusted by remote control in Service Mode.

9.1. How to enter SERVICE 1

1. In sound menu, set BASS to MAXIMUM, and set TREBLE to MINIMUM.
2. Simultaneously press **INDEX** button on remote control and **DOWN** button [] on the TV set.

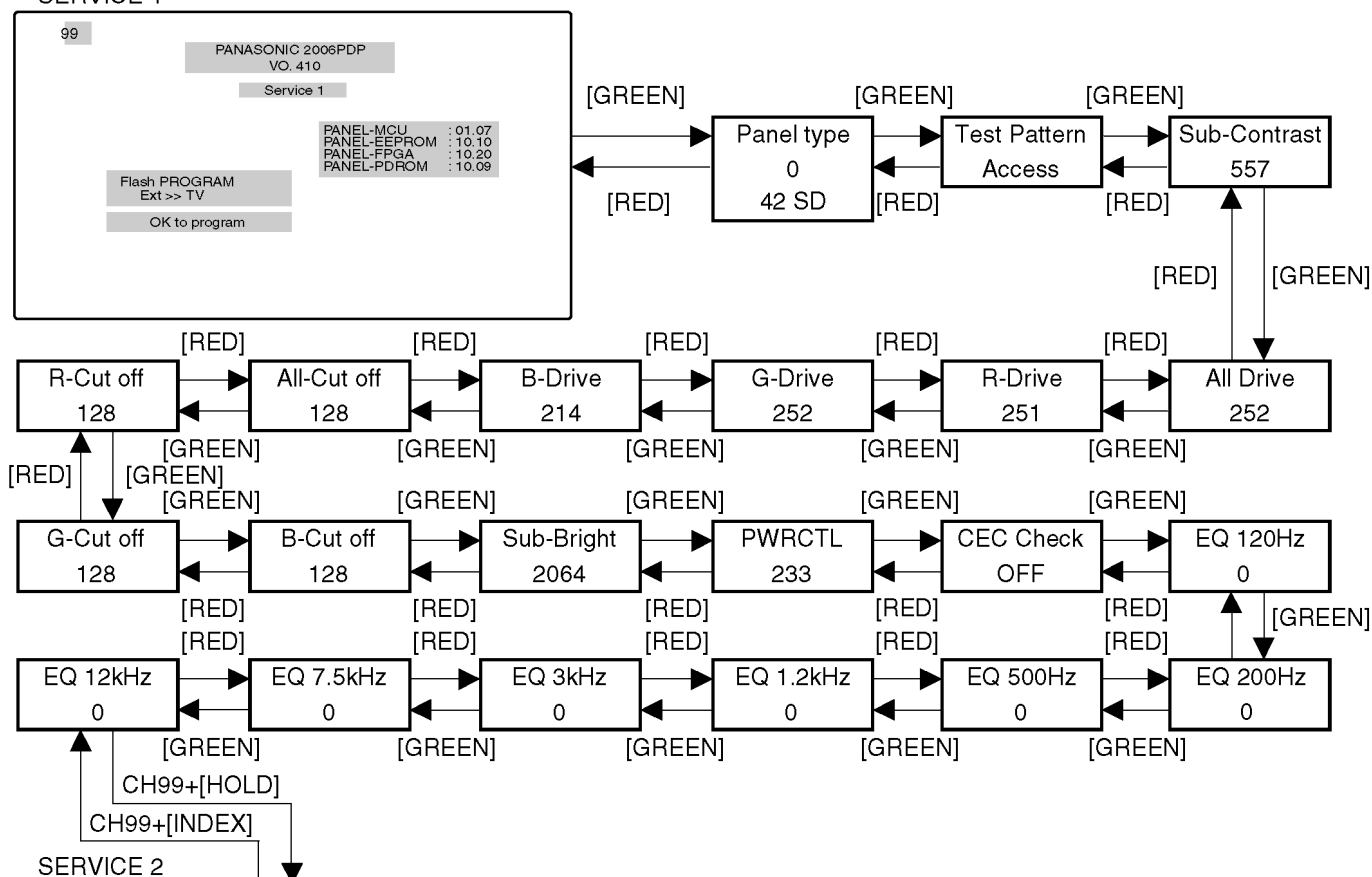
9.2. How to enter SERVICE 2

1. Set the channel to CH99.
2. Select the EQ 12kHz.
3. Press HOLD button on remote control.

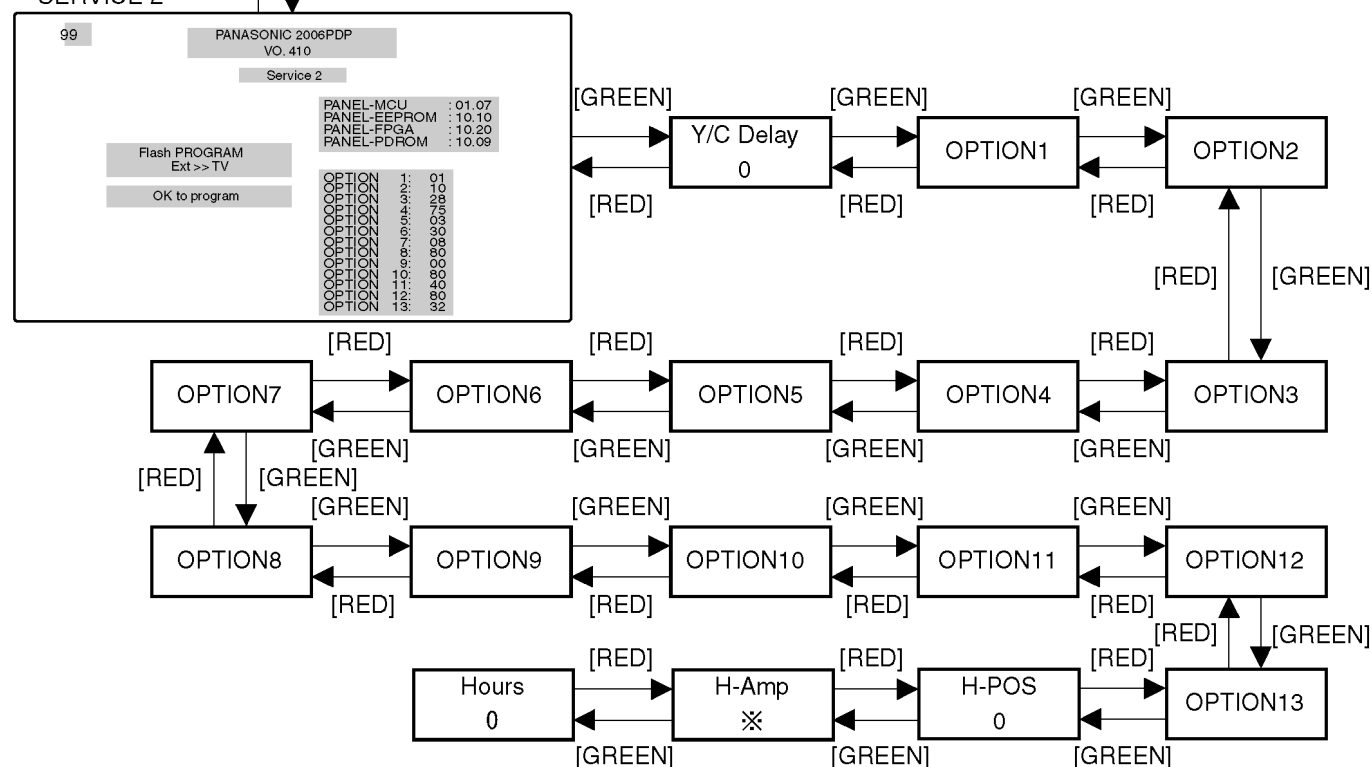
Note:

To exit to Service mode, press EXIT or Power button on remote control.

SERVICE 1



SERVICE 2



※ : This item appears when "component" selecting

Key Command

- Press the **RED/GREEN** button to step up/down through the functions.
- Press the **YELLOW/BLUE** button to change the function values.
- Press the **OK** button after each adjustment has been made to store the required values.

9.3. Option Description

	H	A	MMT		
option1	0F	4D	0F		
b0	1	1	1	Colour system	Auto(1)
b1	1	0	1		SECAM(1)
b2	1	1	1		NTSC(1)
b3	1	1	1		M.NTSC(1)
b4	0	0	0	A2 select 6.5MHz	5.742MHz(0) 6.742MHz(1)
b5	0	0	0	SIF	4.5/5.5/6.0/6.5(0), 5.5/6.0/6.5(1)
b6	0	1	0		5.5/6.5/(2), 6.0/6.5(3)
b7	0	0	0	free	
option2	E2	22	E2		
b0	0	0	0	A2 enable	4.5(1)
b1	1	1	1		5.5(1)
b2	0	0	0		6.0(1)
b3	0	0	0		6.5(1)
b4	0	0	0	NICAM enable	4.5(1)
b5	1	1	1		5.5(1)
b6	1	0	1		6.0(1)
b7	1	0	1		6.5(1)
option3	1E	3A	1B		
b0	0	0	1	SASO enable	SASO enable(1)
b1	1	1	1	Fine tuning	Enable(1)
b2	1	0	0	Search speed	Slow(1) Fast(0)
b3	1	1	1	Tuner	MACO tuner (1), Others (0)
b4	1	1	1	HYPER	UHF only (0), UHF/VHF (1)
b5	0	1	0	IF I2C	I2C controlled Tuner IF module (1)
b6	0	0	0	NICAM C4 bit	enable(1)
b7	0	0	0	Blue Back	BLUE BACK on/off selection in menu(0)
option4	48	D8	48		
b0	0	0	0	Aspect AUTO	enable(1)
b1	0	0	0	S1/S2 enable	enable(1)
b2	0	0	0	ID-1	enable(1)
b3	1	1	1	User aspect Just	enable(1)
b4	0	1	0	User aspect 14:9	enable(1)
b5	0	0	0	ALBD 14:9	14:9 enable, Zoom3 disable at self wide(1)/ Zoom1, Zoom3 enable at self wide (0)
b6	1	1	1	TEXT	enable(1)
b7	0	1	0	TEXT TOP	TOP enable (1)
option5	03	03	03		
b0	1	1	1	CH Blanking	Blanking enable (1)
b1	1	1	1	AV Blanking	Blanking enable (1)
b2	0	0	0	Noise mute	Noise mute enable(0)
b3	0	0	0	sub picture	without sub-picture(0), with sub-picture(1)
b4	0	0	0	2tuner	2tuner(1), 1tuner(0)
b5	0	0	0	AV Input	3rotation(1) / 2rotation without front RCA (0)
b6	0	0	0	Panel (LCD)	Samsung Panel(1)/SHARP Panel(0)
b7	0	0	0	Large size (LCD)	32(1)/26(0) for LCD
option6	20	20	20		
b0	0	0	0	SD module	with SD module (1)
b1	0	0	0	SD module Ext.Rec(PAL)	enable(1)
b2	0	0	0	SD module Ext.Rec(NTSC)	enable(1)
b3	0	0	0	SD module Ext.Rec(SECAM)	enable(1)
b4	0	0	0	IDTV	enable(1)
b5	1	1	1	HDMI	enable(1)
b6	0	0	0	Ext. HV input	without HV input(0) / with HV input(1)
b7	0	0	0	PC	enable(1)
option7	A1	93	B1		
b0	1	1	1	Asia	Asia(1), europe(0)
b1	0	1	0	Australia	Australia(1)
b2	0	0	0	Ireland/India	India(1)
b3	0	0	0	UK/Korea	Korea(1)
b4	0	1	1	Lang1	Large(0)/Small(1)
b5	1	0	1	Lang2	OSD Image:With Arabic(1)
b6	0	0	0	Lower POS	Lower POS enable(1)
b7	1	1	1	Owner ID	Enable(1)

	H	A	M/MT		
option8	40	40	40	Euro option	
b0	0	0	0	ACI all country	ACI enable(1), only Netherlands(0)
b1	0	0	0	ACI auto MP	ACI auto multi package enable (1)
b2	0	0	0	ACI offset	ACI offset for VCR prog. enable(1)
b3	0	0	0	Power up EC-Mode	Power on EC enable (1)
b4	0	0	0	AVLink	Q-Link off selectable in menu (1)
b5	0	0	0	Volume correction	TV Volume coorrection enable (1)
b6	1	1	1	MPX/NICAM display	Display NICAM (0), Display MPX (1)
b7	0	0	0	Albd Reset Off	enable(1)
option9	FF	06	FF		
b0	1	0	1	CH Plan	ASIA / M.E. / HK/UK / CHINA(1)
b1	1	1	1		NZ/INDNES(1)
b2	1	1	1		AUSTRALIA(1)
b3	1	0	1		E.EUROPE(1)
b4	1	0	1		SPECIAL(1)
b5	1	0	1		AMERICA(1)
b6	1	0	1		CATV(1)
b7	1	0	1		JAPAN(1)
option10	6F	08	6F		
b0	1	0	1	NICAM priority	ASIA/M.E.(1)
b1	1	0	1		HK/UK(1)
b2	1	0	1		CHINA(1)
b3	1	1	1		NZ/INDN(1)
b4	0	0	0		AUSTRA(1)
b5	1	0	1		E.EURO(1)
b6	1	0	1		SPECIAL(1)
b7	0	0	0	HDMI AVI Aspect	enable(1)
option11	4C	4C	4C	Additional	
b0	0	0	0	Remocon Type	Delux(1) / Leader(0)
b1	0	0	0	Environment AI (PDP)	enable, with viewing mode auto (1) / disable, without viewing mode auto(0)
b2	1	1	1	WSS14:9 off	WSS 14:9 off (1)
b3	1	1	1	Child lock	Child Lock on:Tuning Menu skip(1)
b4	0	0	0		
b5	0	0	0	Contrast AI	enable(1)
b6	1	1	1	Service H-POS	enable(1)
b7	0	0	0	Service V-VOS	enable(1)
option12	09	09	09	Additional	
b0	1	1	1	last memory of aspect	each source(1) / ALL source(0)
b1	0	0	0	Reserved	
b2	0	0	0	TEXT Ch Refresh	refresh enable(1) / disenable(0)
b3	1	1	1	STILL	1:Disable / 0:Enable
b4	0	0	0	LATIN	Latin:SAP/Fixed SIF4.5MHz/PAL-M,N/CC/Black level/Language
b5	0	0	0	SRS	enable(1)
b6	0	0	0	HDMI Quali TV	enable(0)
b7	0	0	0	HDMI EC function	enable(1)
option13	02	02	02	Additional	
b0	0	0	0	DVB ALBD	enable(1)
b1	1	1	1	HDMI port	enable(0) 2 ports model/(1)1port model (only for TV MCU port setting)
b2	0	0	0	HDMI format error OSD	display(0)/not display(1)
b3	0	0	0	CEC control	enable(0)
b4	0	0	0	Aspect 4:3 FULL	enable(0)
b5	0	0	0	FTZ	enable(1)
b6	0	0	0		
b7	0	0	0		

10 Adjustment Procedure

10.1. Driver Set-up

10.1.1. Item / Preparation

1. Input a white signal to plasma video input.
2. Set the picture controls as follows.

Picture menu : Dynamic
D.PNR : OFF
Aspect : 16:9

Caution

1. First perform Vsus adjustment.
2. Confirmation of Vscn voltage should be performed after confirmation of Vad adjustment.

When Vad=-90V, Voltage of Vscn is 35V \pm 4V.

10.1.2. Adjustments

Adjust driver section voltages referring the panel data on the panel data label.

Check or adjust the following voltages with the multimeter.

Name	Test Point	Voltage	Volume	Remarks
Vsus	TPVSUS (SS)	Vsus \pm 2V	R628 (P)	*
Ve	TPVE (SS)	Ve \pm 2V	VR6000 (SS)	*
Vset	TPVSET (SC)	232V \pm 7V	Fixed	
Vad	TPVAD (SC)	-90V \pm 1V	VR6600 (SC)	
Vscn	TPVSCN (SC)	Vad+125V \pm 4V	Fixed	
Vda	TPVDA (SS)	70V \pm 1V	Fixed	
Vdat	P12-1, 5 (P)	70.2V \pm 0.1V	R665 (P)	
PFC	C446 (+)(-)	396V \pm 0.5V	R443 (P)	

*See the Panel label.

Panel Label information

Panel Label information form with the following fields:

- Serial No. []
- Ve: [] v, Vsus: [] v
- MADE IN JAPAN
- TQF: []

Adjustment voltage

10.2. Initialization Pulse Adjust

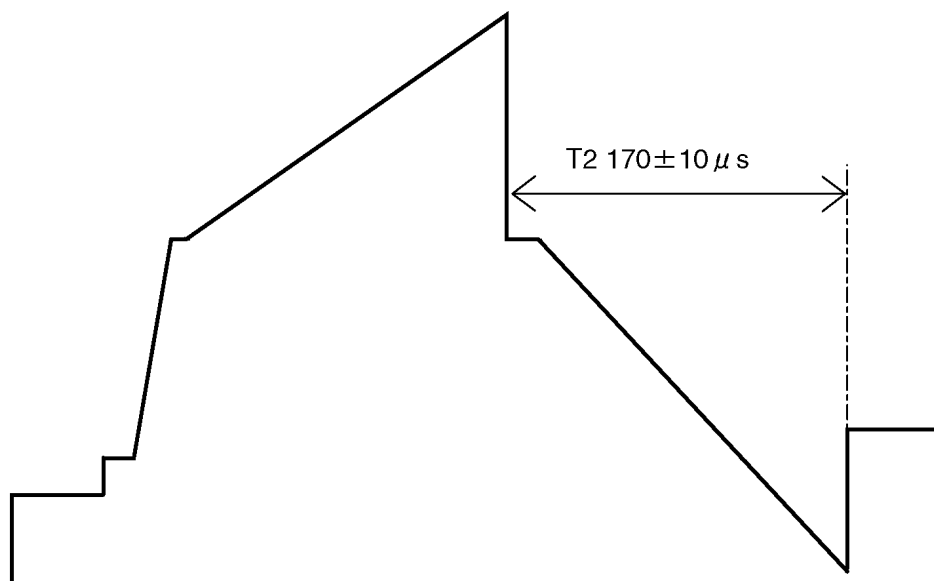
1. Input the White signal to plasma video input.
2. Set the picture controls as follows.

Picture menu: Dynamic
D.PNR: OFF
Aspect: 16:9

3. Connect Oscilloscope to TPSC1 (T2) and adjust VR6602 for $170 \pm 10 \mu\text{Sec}$.

	Test point	Volume	Level
T2	TPSC1 (SC)	VR6602 (SC)	$170 \pm 10 \mu\text{Sec}$

TPSC1



10.3. P.C.B. (Printed Circuit Board) exchange

10.3.1. Caution

1. To remove P.C.B. , wait 1 minute after power was off for discharge from electrolysis capacitors.

10.3.2. Quick adjustment after P.C.B. exchange

Adjust the following voltages with the multimeter.

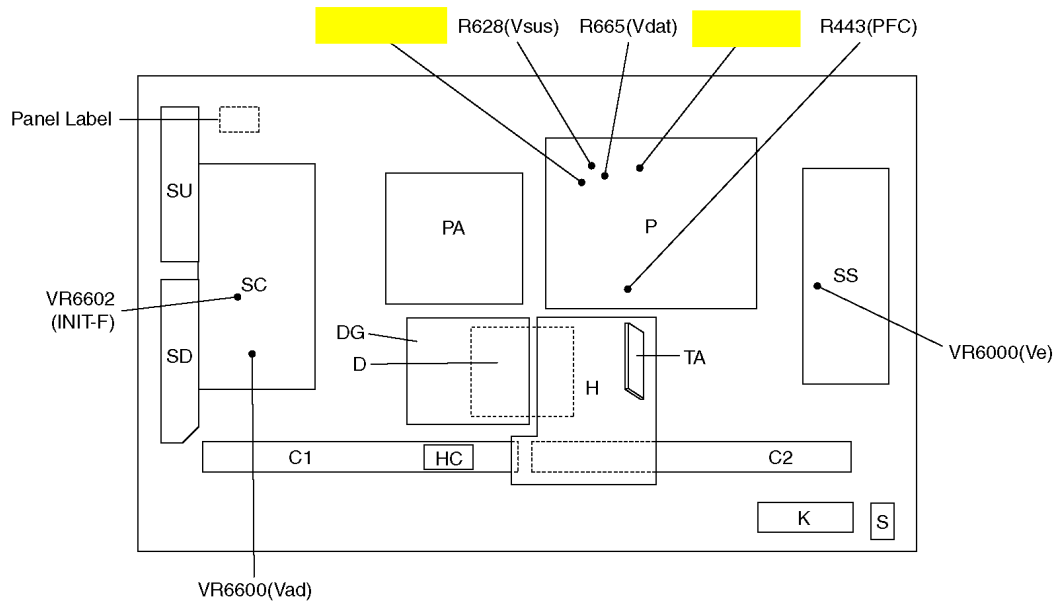
P.C.B.	Name	Test Point	Voltage	Volume	Remarks
P Board	Vsus	TPVSUS (SS)	$V_{\text{sus}} \pm 2\text{V}$	R628 (P)	*
	Vdat	P12-1, 5 (P)	$70.2\text{V} \pm 0.1\text{V}$	R665 (P)	
	PFC	C446 (+) (-) (P)	$396\text{V} \pm 0.5\text{V}$	R443 (P)	
SC Board	Vad	TPVAD (SC)	$-90\text{V} \pm 1\text{V}$	VR6600 (SC)	
SS Board	Ve	TPVE (SS)	$V_e \pm 2\text{V}$	VR6000 (SS)	*
D, DG Board	White blance, Pedestal and Sub brightness for NTSC, PAL, HD, PC and 625i signals				

*See the Panel label.

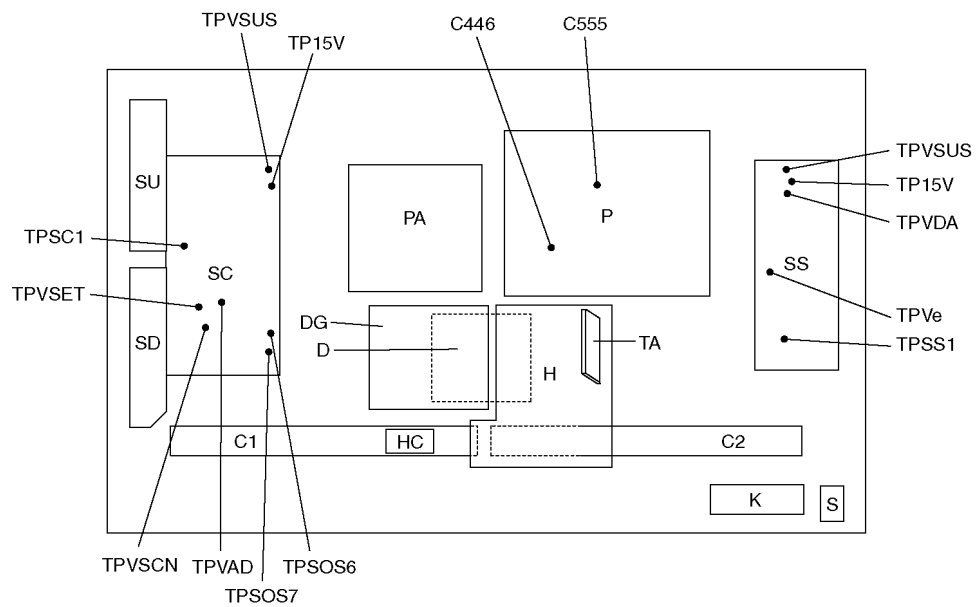
Caution:

Absolutely do not reduce Vsus below Ve not to damage the P.C.B.

10.4. Adjustment Volume Location




10.5. Test Point Location

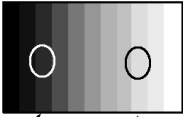


11 Adjustment

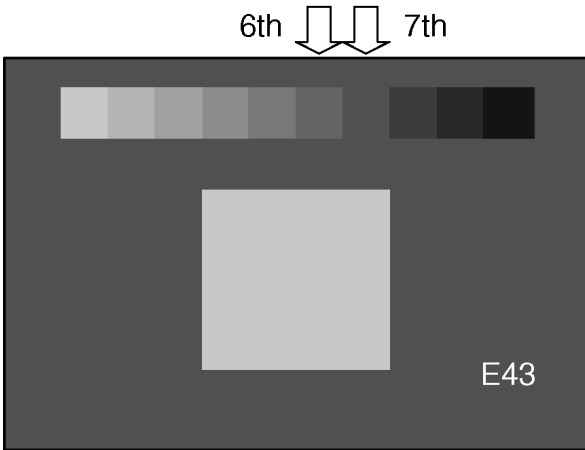
11.1. PAL panel white balance adjustment

Instrument Name	Connection	Remarks												
<ul style="list-style-type: none"> W/B pattern Color analyzer (Minolta CA-100 or equivalent) 	RF input Panel surface	User setting: Normal												
Procedure		Remarks												
<ul style="list-style-type: none"> Asing time is longer than 15min. Make sure the front panel to be used on the final set is fitted. Make sure a color signal is not being shown before adjustment. Put the color analyzer where there is little colour variation. <p>Complete the adjustment within 10 minutes after the turn on electricity.</p> <p>Turn on the power supply again when it is not possible to complete it by aging etc.</p> <ol style="list-style-type: none"> Display the white balance pattern. Check that the color balance is "cool". Enter the <Service1> mode. Select "G-CUTOFF" item, using the color-key "Red" or "Green", and set to "128", using the color-key "Yellow" or "Blue". Also, "B-CUTOFF" and "R-CUTOFF" set to "128". Set "G-DRIVE" at "224". Touch the signal receiver of color analyzer to the highlight window's center, and adjust B drive and R drive so x, y become the "Color balance Cool" in the below table. Set "ALL-DRIVE" to "252". Set colorbalance to "Normal". Fix G cutoff , B cutoff and R cutoff at "128". Fix G drive at "224". Adjust B drive and R drive so the highlight window's x, y become the "Color balance "Normal" in the below table. Set "ALL-DRIVE" to "252". Set color balance to "Warm". Set G cutoff, B cutoff and R cutoff to "128". Set G drive to "224". Adjust B drive and R drive so the highlight window's x, y become the "Color balance Warm" shown in the below table. Set "ALL-DRIVE" to "252". 		<p>Picture menu : Dynamic ASPECT : 16:9</p> <ul style="list-style-type: none"> Highlight section Signal amplitude 75% <p>PAL White Balance Pattern</p>  <p>High light 75% Low light 15%</p>												
<p>Table 1. Color balance target value</p> <table border="1"> <thead> <tr> <th>Color Temperature</th><th>x</th><th>y</th></tr> </thead> <tbody> <tr> <td>Cool</td><td>0.276</td><td>0.276</td></tr> <tr> <td>Normal</td><td>0.288</td><td>0.296</td></tr> <tr> <td>Warm</td><td>0.313</td><td>0.329</td></tr> </tbody> </table>		Color Temperature	x	y	Cool	0.276	0.276	Normal	0.288	0.296	Warm	0.313	0.329	
Color Temperature	x	y												
Cool	0.276	0.276												
Normal	0.288	0.296												
Warm	0.313	0.329												

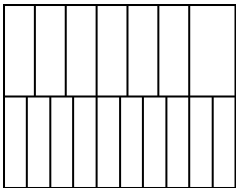
11.2. HD white balance adjustment

Instrument Name	Connection	Remarks												
<ul style="list-style-type: none"> 1080i W/B Pattern Color analyzer(Minolta CA-100 or equivalent) 	<ul style="list-style-type: none"> RF input Panel surface 	User setting: Normal												
Procedure		Remarks												
<ul style="list-style-type: none"> Aging time is longer than 15min. Make sure the front panel to be used on the final set is fitted. Make sure a color signal is not being shown before adjustment. Put the color analyzer where there is little colour variation. <p>Complete the adjustment within 10 minutes after the turn on electricity. Turn on the power supply again when it is not possible to complete it by aging etc.</p> <ol style="list-style-type: none"> Display the white balance pattern. Check that the color balance is "cool". Enter the <Service1> mode. Select "G-CUTOFF" item, using the color-key "Red" or "Green", and set to "128", using the color-key "Yellow" or "Blue". Also, "B-CUTOFF" and "R-CUTOFF" set to "128". Set "G-DRIVE" at "224". Touch the signal receiver of color analyzer to the highlight window's center, and adjust B drive and R drive so x, y become the "Color balance Cool" in the below table. Set "ALL-DRIVE" to "252". Set colorbalance to "Normal". Fix G cutoff , B cutoff and R cutoff at "128". Fix G drive at "224". Adjust B drive and R drive so the highlight window's x, y become the "Color balance "Normal" in the below table. Set "ALL-DRIVE" to "252". Set color balance to "Warm". Set G cutoff, B cutoff and R cutoff to "128". Set G drive to "224". Adjust B drive and R drive so the highlight window's x, y become the "Color balance Warm" shown in the below table. Set "ALL-DRIVE" to "252". 		<p>Picture menu: Dynamic ASPECT:16:9</p> <ul style="list-style-type: none"> Highlight section Signal amplitude 75% <p>1080i White Balance Pattern</p>  <p>High light 75% Low light 15%</p> <p>* The Color balance COOL differs from Japanese model values.</p>												
<p>Table 1. Color balance target value</p> <table border="1"> <thead> <tr> <th>Color Temperature</th><th>x</th><th>y</th></tr> </thead> <tbody> <tr> <td>Cool</td><td>0.276</td><td>0.276</td></tr> <tr> <td>Normal</td><td>0.288</td><td>0.296</td></tr> <tr> <td>Warm</td><td>0.313</td><td>0.329</td></tr> </tbody> </table>			Color Temperature	x	y	Cool	0.276	0.276	Normal	0.288	0.296	Warm	0.313	0.329
Color Temperature	x	y												
Cool	0.276	0.276												
Normal	0.288	0.296												
Warm	0.313	0.329												

11.3. Sub bright adjustment

Instrument Name	Connection	Remarks
1. PAL signal generator (or RF)	Connect to the input terminal	User setting: Normal
Procedure		Remarks
<ul style="list-style-type: none"> White balance adjustment is finished for each signal. Do adjustments in a dark room. Complete the adjustment within 10 minutes after the turn on electricity. <p>Turn on the power supply again when it is not possible to complete it by aging etc.</p> <ol style="list-style-type: none"> Display the 10 step gray-scale pattern for adjusting sub-bright from video input. Use "Sub-Bright" in the <Sevice1> mode to adjust so the 6th section shows up and the 7th fades away. <p>Data</p> <p>Sub-Bright data addresses Sub-Bright (upper) A0-0116 Sub-Bright (lower) A0-0117</p> 		<p>Picture menu: Dynamic Color balance: Normal ASPECT: 16:9</p>

11.4. ABL adjustment

Instrument Name	Connection	Remarks
1. HD signal emitter (or Leader : 1080i/No.9 signal) 2. Wattmeter	COMPONENT input terminal Connect the AC power of the set to the wattmeter.	
Procedure		Remarks
<ul style="list-style-type: none"> Make sure the set is aged for 30 minutes or more before adjustment. (Do not switch off during or after aging.) Voltage 230V 50Hz (variation within 1%) Volume at minimum and screen size at "16:9" <p>Component input, dynamic, standard</p> <ol style="list-style-type: none"> Connect the set's AC power to the wattmeter. Input the signal (top half: color bar, Bottom half :Horizontal 10steps bar). Select the "PWRCTL" item in the <Service1> mode. Adjust PWRCTL so the set's power consumption is <ul style="list-style-type: none"> 37-inch 227 (+5/-10)W 42-inch 289 (+5/-10)W <p>Remarks</p> <ol style="list-style-type: none"> The initial data are <ul style="list-style-type: none"> Data address : A2-0102 Default data : 0x00 The power and data are in reverse relationship. Data is displayed by 2'C. (Lower the data to raise the power.) <ul style="list-style-type: none"> Raising direction (↑): 0→255, 254, 253..... Lowering direction (↓):0→1, 2, 3..... There is a possibility that the adjustment value can do two places, adjust it in that case, that the value of PWRCTL is large. <div style="display: flex; align-items: center; margin-top: 20px;">  <div style="margin-left: 20px;"> <p>No.9 Signal</p> <p>Top half: Full color bar</p> <p>Bottom half: Horizontal 10 steps bar</p> </div> </div>		

11.5. Sub-Contrast adjustment

Name of measuring instrument	Connection	Remarks														
RF generator Base Band generator																
Adjustment of AV system		Remarks														
<div>1. Receive AV1 (PAL 100% Full White or Split Colour bar shown as below).</div> <div><table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td colspan="3">100% White</td><td></td><td></td></tr></table></div> <div>2. Goes into service mode, choose Sub-Contrast, and it checks that data value is 512. (It checks that an initial value is a default)</div> <div>3. The colour key yellow button of remote control is pushed.</div> <div>4. The OSD character of sub-contrast becomes red. (Inside under automatic adjustment)</div> <div>5. The OSD character of sub-contrast returns to white.</div> <div>6. End.</div>											100% White					
		100% White														
Adjustment of RF system		Remarks														
<div>1. Receive a RF. (PAL 100% Full White or Split Colour bar shown as below).</div> <div><table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td colspan="3">100% White</td><td></td><td></td></tr></table></div> <div>2. Goes into service mode, choose Sub-Contrast, and it checks that data value is 512. (It checks that an initial value is a default)</div> <div>3. The colour key yellow button of remote control is pushed.</div> <div>4. The OSD character of sub-contrast becomes red. (Inside under automatic adjustment)</div> <div>5. The OSD character of sub-contrast returns to white.</div> <div>6. End.</div>											100% White					
		100% White														
Adjustment of HD system		Remarks														
<div>1. Recieve Component (1080i/ 60Hz or 1080i/ 50Hz, 100% Full White or Split colour bar as shown below).</div> <div><table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td colspan="3">100% White</td><td></td><td></td></tr></table></div> <div>2. Goes into service mode, choose Sub-Contrast, and it checks that data value is 384. (It checks that an initial value is a default)</div> <div>3. The colour key yellow button of remote control is pushed.</div> <div>4. The OSD character of sub-contrast becomes red. (Inside under automatic adjustment)</div> <div>5. The OSD character of sub-contrast returns to white.</div> <div>6. End.</div>											100% White					
		100% White														

12 Hotel mode

1. Purpose

Restrict a function for hotels.

2. Access command

- Enter to the Service 2 Mode.
- Press Information button on remote control and entry to the EEPROM EDITOR Mode.
- Press the RED/GREEN button to step up/down through the address.
- Press the YELLOW/BLUE button to step left/right through the address.
- Press the PROGRAMME UP/DOWN button to step up/down through the page.
- Press the VOLUME UP/DOWN button to change the function values.
- Set the data of EEPROM(ADDRESS 0BAF) to 01.
- Press the OK button to memorize the data.



Push the Power switch(button) off/on the set(the remote control) to turn the set off/on.

It can be made Hotel mode.

3. Exit command

- First, set the data of EEPROM(ADDRESS 0BAF) to 00.
- Next, Push the Power switch(button) off/on the set(the remote control) to turn the set off/on.
- Then, it is no longer hotel mode.

4. Access command to the Hotel mode setup menu

- Prerequisite : It is conditions that the data of EEPROM(ADDRESS 0BAF) is 01.

In order to display the Hotel mode setup menu, please enter the following command (**within 2 second**).

[TV]:down + [REMOTE]:TV/AV(3 times)

Then, the Hotel mode setup menu is displayed.



5. Explain the Hotel mode setup menu

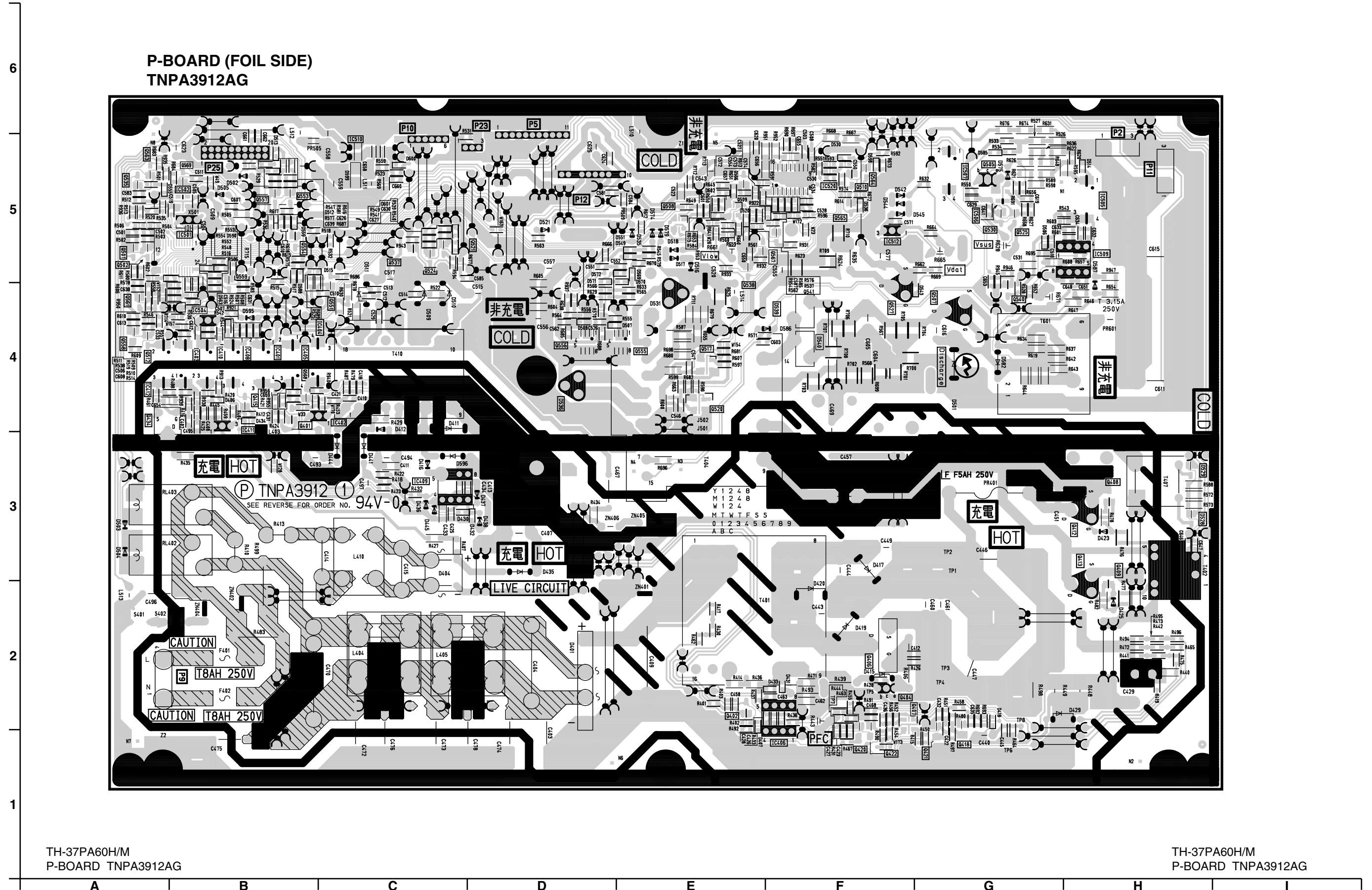
item	Function
Initial INPUT	Select input signal modes. Set the input, when each time power is switched on. Selection : Off/TV/AV1/AV2/AV2S/AV3/AV3S/ Component HDMI • Off: give priority to a last memory. However, Euro model is compulsorily set to TV. • AVnS/AVnC: only Euro model selectable
Initial VOL level	Adjust the volume when each time power is switched on. Selection/Range : Off/0 to 63 • Off: give priority to a last memory
Maximum VOL level	Adjust maximum volume. Range : 0 to 63
Initial POS	Select programme number. Selection : Off/0 to 99 • Off: give priority to a last memory
Button lock	Select local key conditions. Selection : Off/SETUP/MENU/All • Off: altogether valid • SETUP: only F-key is invalid (Tuning guide(menu) can not be selected.) • MENU: only F-key is invalid (only Volume/Mute can be selected.) • All: altogether invalid.
Remote lock	Select remote control key conditions. Selection : Off/SETUP/MENU • Off: altogether valid • SETUP: only Setup menu is invalid • MENU: Picture/Sound/Setup menu are invalid

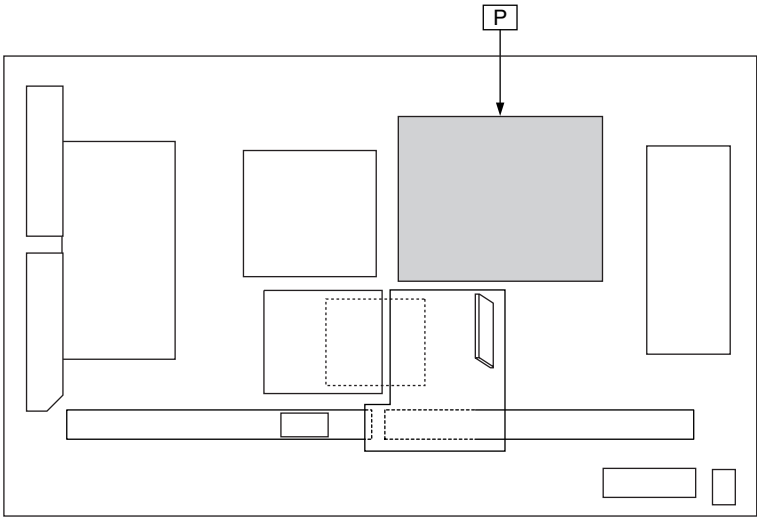
6. To exit the Hotel mode

Disconnect AC power cord from wall outlet

13 Conductor Views

13.1. P-Board (37inch)





Parts Location

P-BOARD (FOIL SIDE)					
IC		TRANSISTOR			
IC401	B-4	Q401	B-4	Q535	A-5
IC402	C-4	Q402	E-2	Q537	C-5
IC403	B-4	Q404	F-1	Q538	E-4
IC404	C-4	Q406	F-2	Q540	G-4
IC405	B-4	Q407	F-1	Q541	F-5
IC406	F-1	Q408	H-3	Q551	C-4
IC408	B-4	Q409	H-3	Q553	B-5
IC409	C-3	Q412	H-3	Q554	B-5
IC410	B-4	Q413	H-3	Q555	E-4
IC411	B-4	Q415	B-4	Q556	D-4
IC412	A-4	Q418	G-1	Q557	B-5
IC501	B-5	Q420	F-1	Q558	A-4
IC502	B-5	Q421	G-1	Q559	B-5
IC504	B-4	Q422	F-1	Q561	A-4
IC505	H-5	Q434	A-4	Q563	A-5
IC506	G-5	Q501	A-5	Q564	F-5
IC507	G-5	Q502	A-5	Q565	F-5
IC509	H-5	Q505	G-5	Q566	E-5
IC510	C-5	Q507	G-4	Q567	F-5
IC512	F-5	Q508	E-5	Q568	B-4
IC520	F-5	Q509	E-5	Q569	B-5
				VOLUME	
				R443	F-2
				R628	G-5
				R661	E-5
				R665	G-5
				R671	G-4
		Q510	F-5		
		Q512	A-4		
		Q517	E-4		
		Q520	E-4		
		Q521	D-5		
		Q524	C-5		
		Q525	G-5		
		Q527	F-4		
		Q530	G-5		

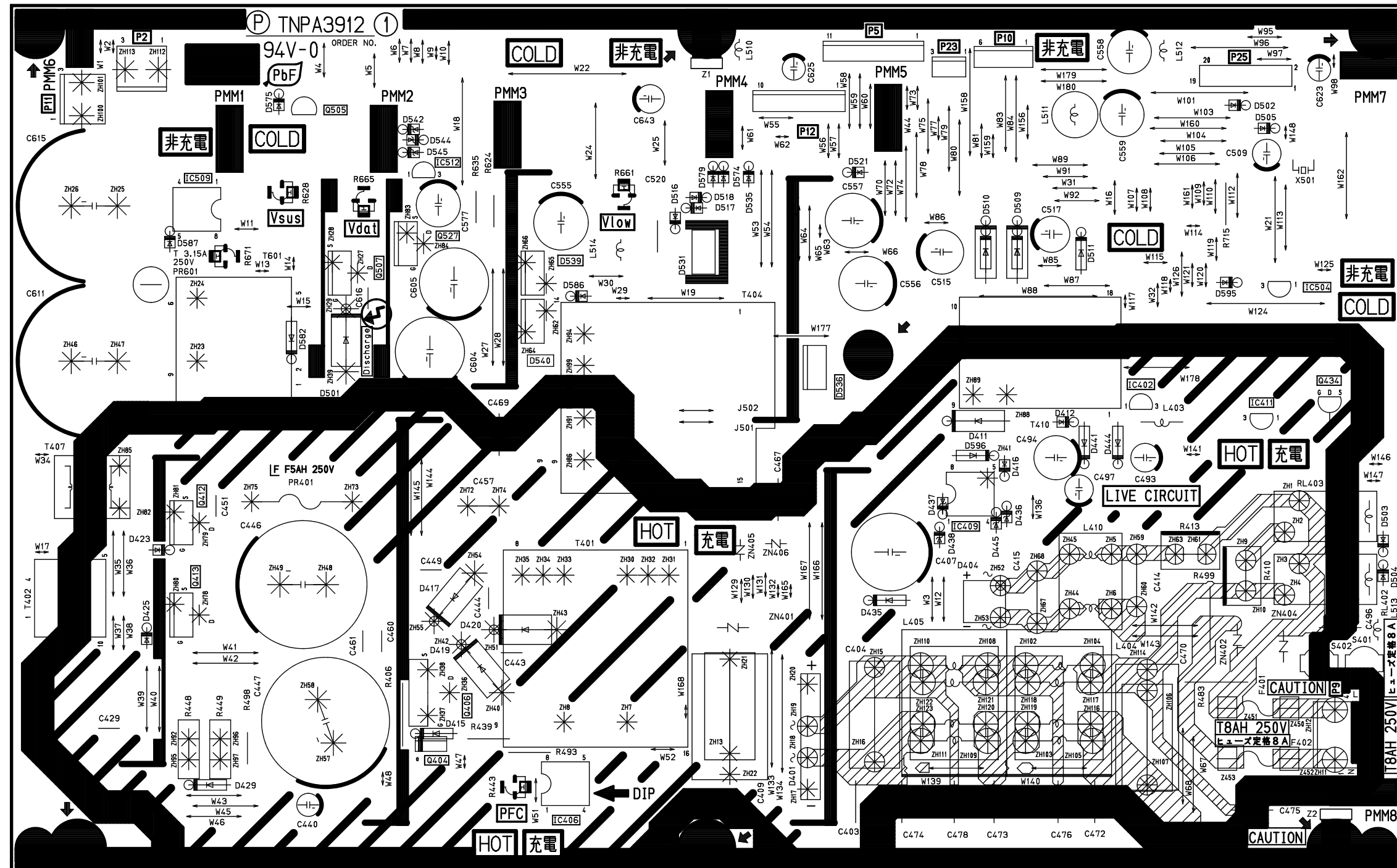
TH-37PA60H/M
P-BOARD PARTS LOCATION

Parts Location

P-BOARD (COMPONENT SIDE)					
IC		TRANSITOR		VOLUME	
IC402	G-4	Q404	C-2	R443	D-2
IC406	D-1	Q406	D-2	R628	C-5
IC409	F-3	Q412	B-3	R661	D-5
IC411	H-4	Q413	B-3	R665	C-5
IC504	H-4	Q434	H-4	R671	B-4
IC509	B-5	Q505	C-5		
IC512	C-5	Q507	C-4		
		Q527	C-5		

TH-37PA60H/M
P-BOARD PARTS LOCATION

P-BOARD (COMPONENT SIDE)
TNPA3912AG

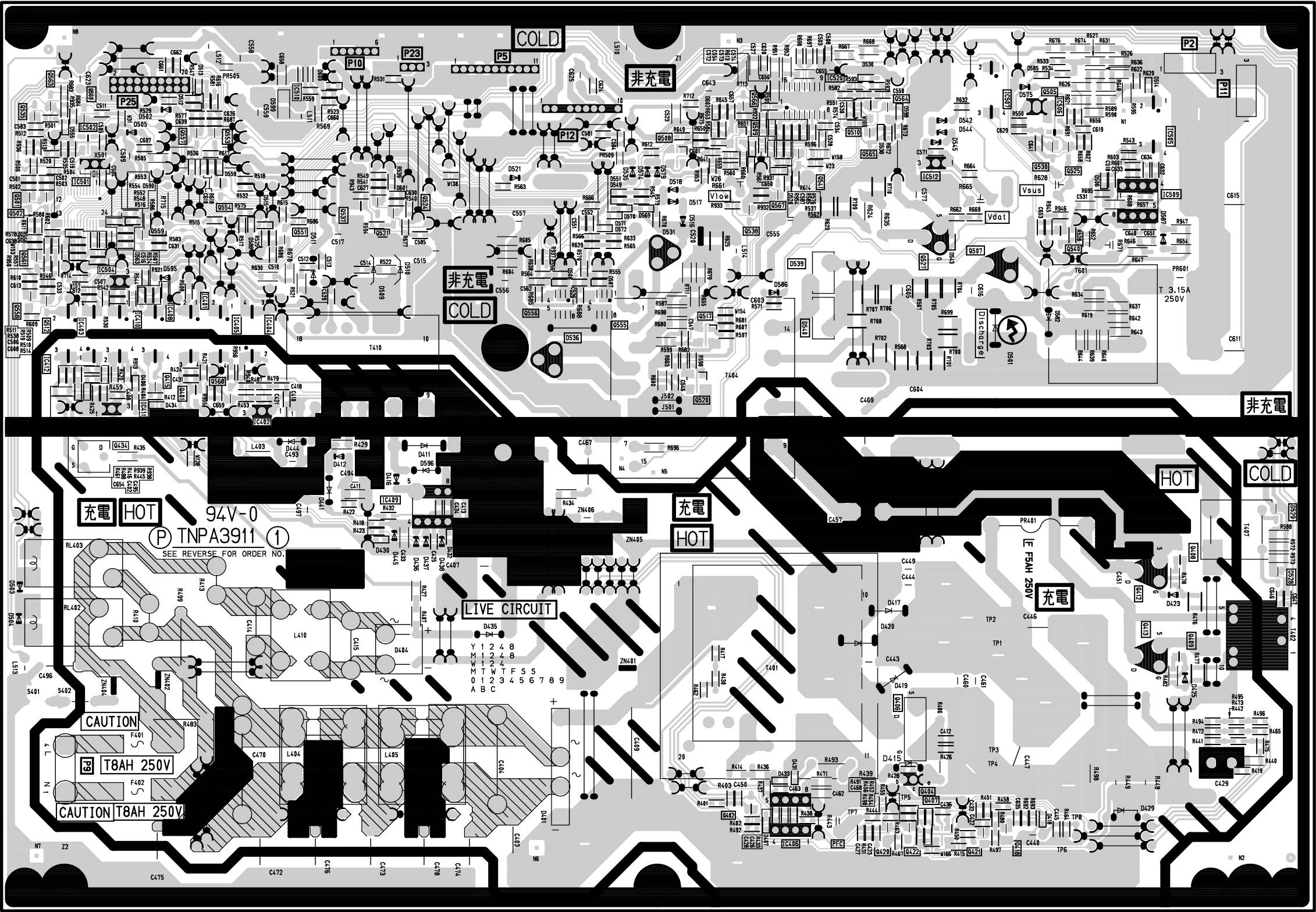


TH-37PA60H/M
P-BOARD TNPA3912AG

TH-37PA60H/M
P-BOARD TNPA3912AG

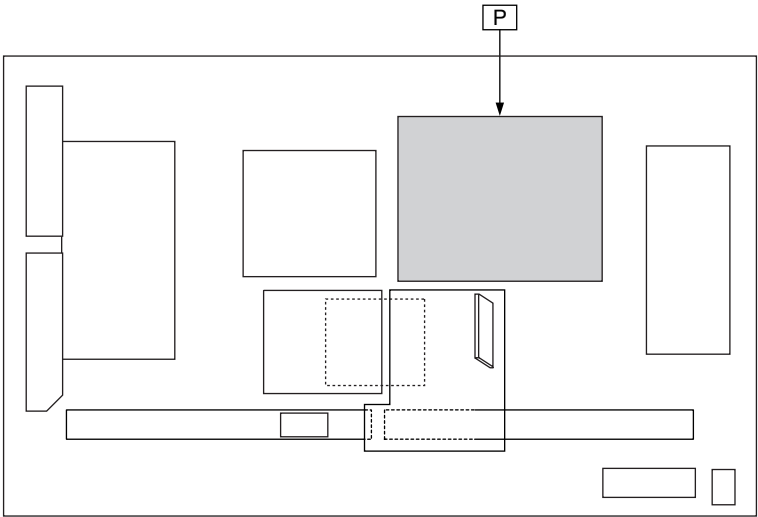
13.2. P-Board (42inch)

P-BOARD (FOIL SIDE)
TNPA3911AG



TH-42PA60A/H/M/MT
P-BOARD TNPA3911AG

TH-42PA60A/H/M/MT
P-BOARD TNPA3911AG



Parts Location

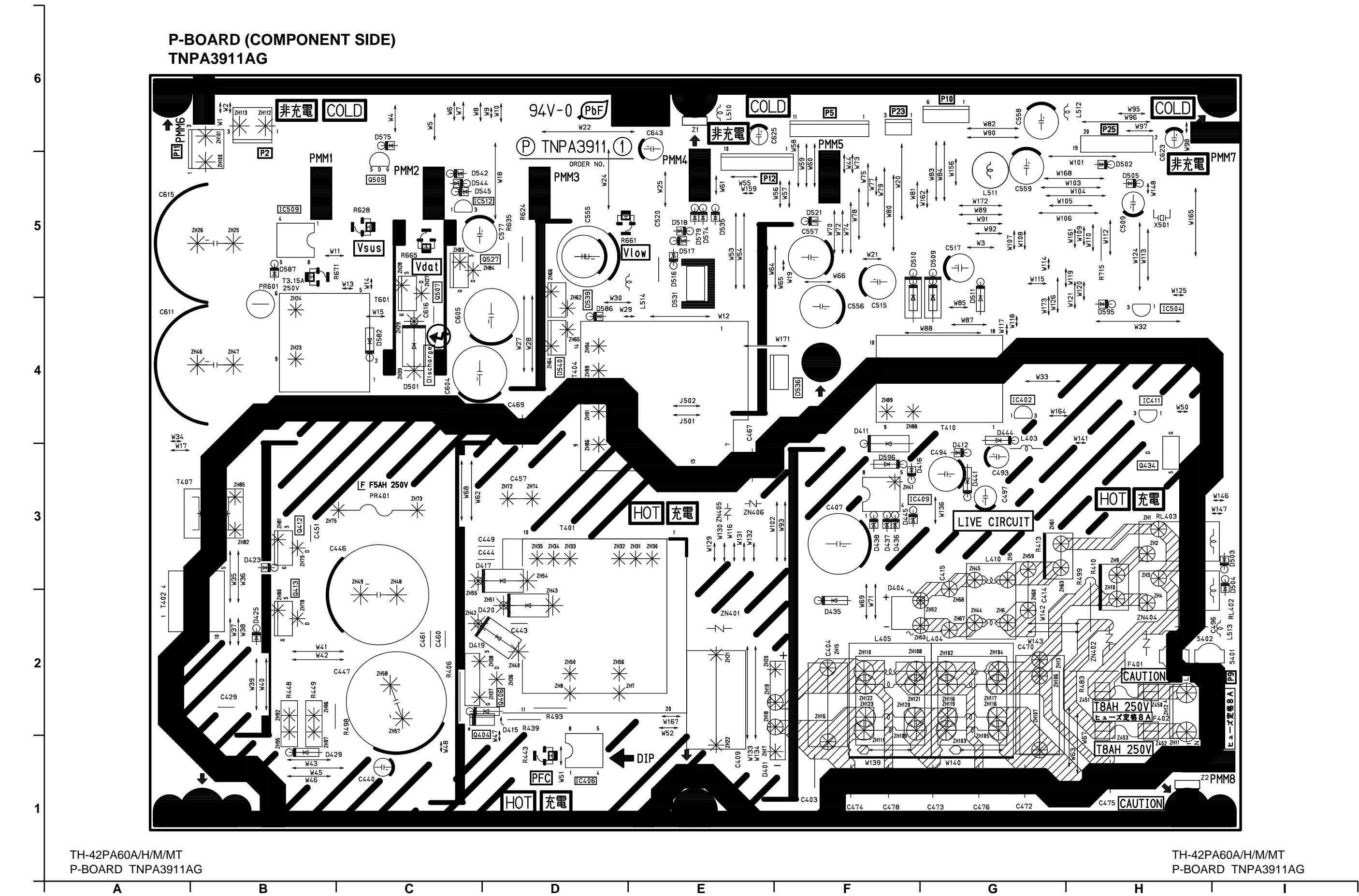
P-BOARD (FOIL SIDE)					
IC		TRANSISTOR			
IC401	B-4	Q401	B-4	Q535	A-5
IC402	C-4	Q402	E-1	Q537	C-5
IC403	B-4	Q404	F-1	Q538	E-5
IC404	C-4	Q406	F-2	Q540	G-5
IC405	C-4	Q407	F-1	Q541	F-5
IC406	F-1	Q408	H-3	Q551	C-5
IC408	B-4	Q409	H-2	Q553	B-5
IC409	C-3	Q412	H-3	Q554	B-5
IC410	B-4	Q413	H-2	Q555	E-4
IC411	B-4	Q415	B-4	Q556	D-4
IC412	A-4	Q418	G-1	Q557	B-5
IC501	B-5	Q420	F-1	Q558	A-4
IC502	B-5	Q421	G-1	Q559	B-5
IC504	B-4	Q422	F-1	Q561	A-5
IC505	H-5	Q434	B-4	Q563	A-6
IC506	G-5	Q501	A-5	Q564	F-6
IC507	G-6	Q502	A-5	Q565	F-5
IC509	H-5	Q505	G-6	Q566	E-6
IC510	C-6	Q507	G-5	Q567	F-5
IC512	F-5	Q508	E-5	Q568	B-4
IC520	F-6	Q509	E-5	Q569	B-6
		Q510	F-5	VOLUME	
		Q512	A-4	R443	F-1
		Q517	E-4	R628	G-5
		Q520	E-4	R661	E-5
		Q521	C-5	R665	G-5
		Q524	D-5	R671	G-4
		Q525	G-5		
		Q527	F-5		
		Q530	G-5		

TH-42PA60A/H/M/MT
P-BOARD PARTS LOCATION

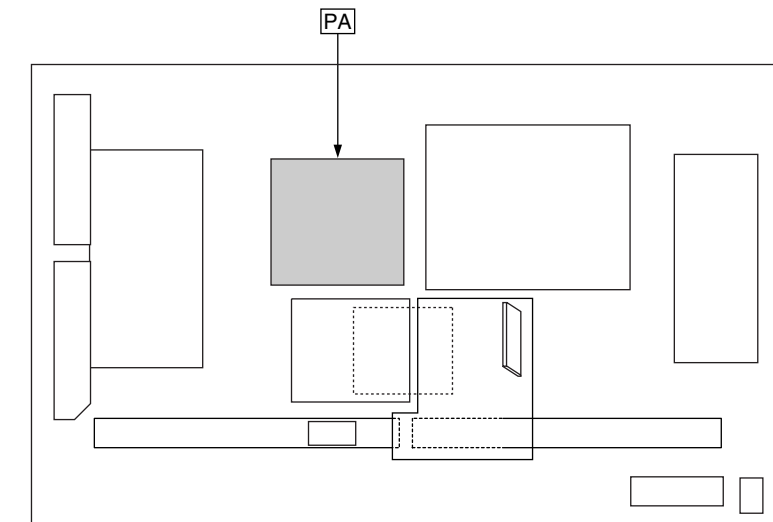
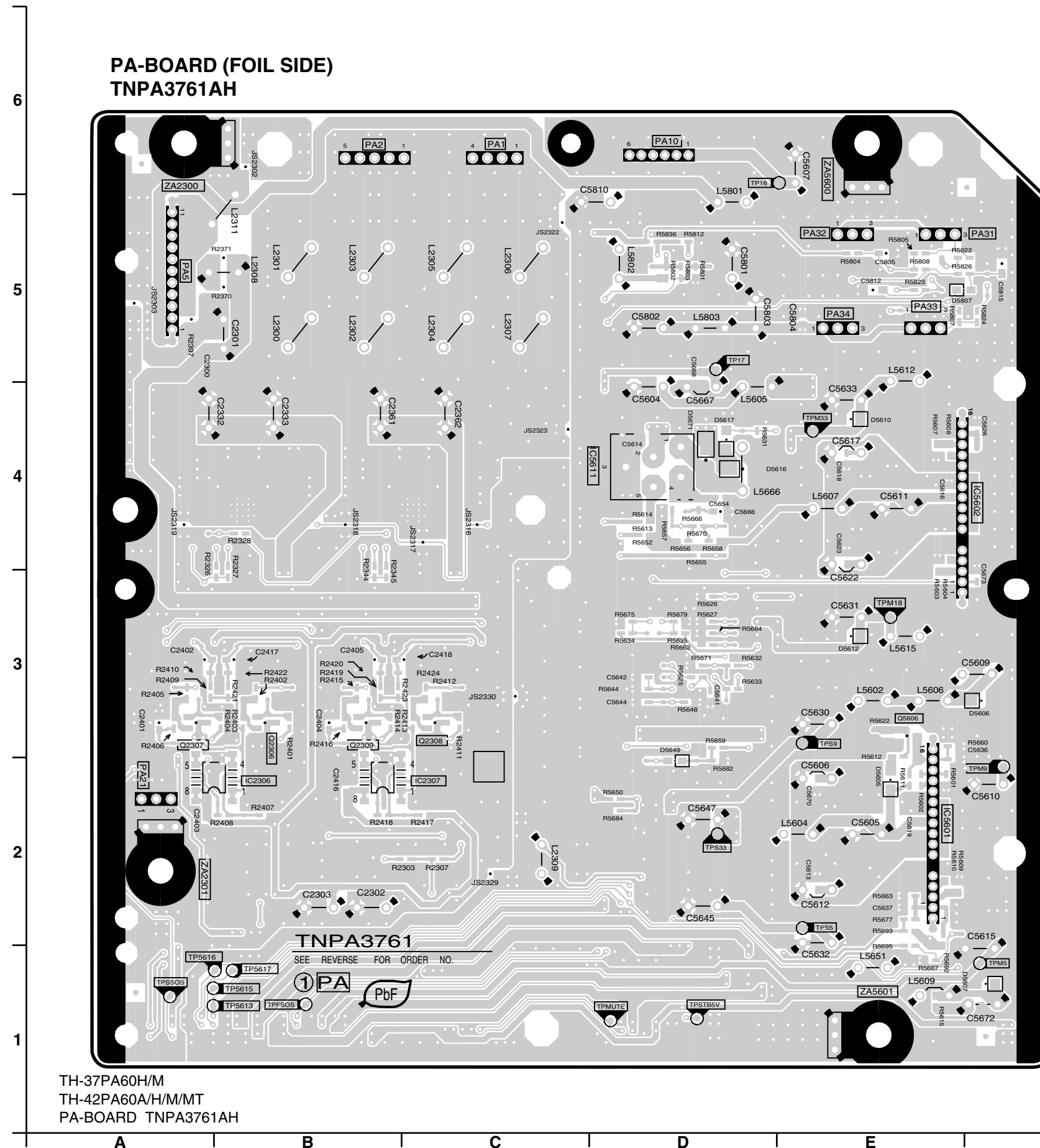
Parts Location

P-BOARD (COMPONENT SIDE)					
IC		TRANSITOR		VOLUME	
IC402	G-4	Q404	C-2	R443	D-1
IC406	D-1	Q406	D-2	R628	C-5
IC409	F-3	Q412	B-3	R661	D-5
IC411	H-4	Q413	B-2	R665	C-5
IC504	H-4	Q434	H-3	R671	B-5
IC509	B-5	Q505	C-5		
IC512	C-5	Q507	C-5		
		Q527	C-5		

TH-42PA60A/H/M/MT
P-BOARD PARTS LOCATION



13.3. PA-Board

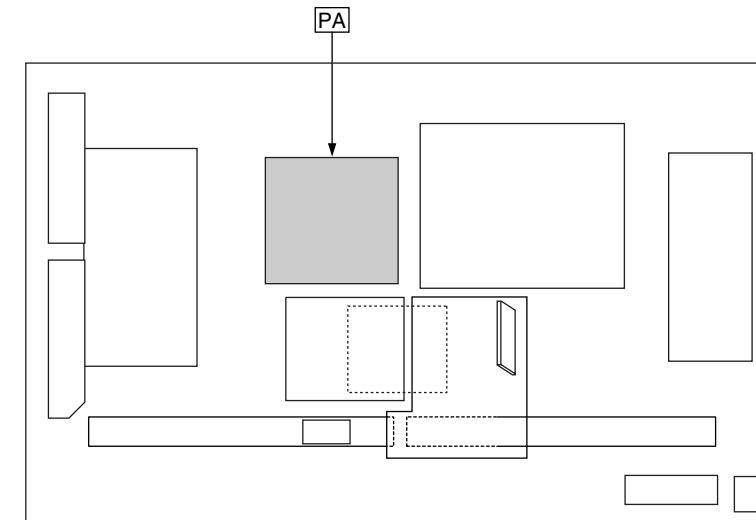
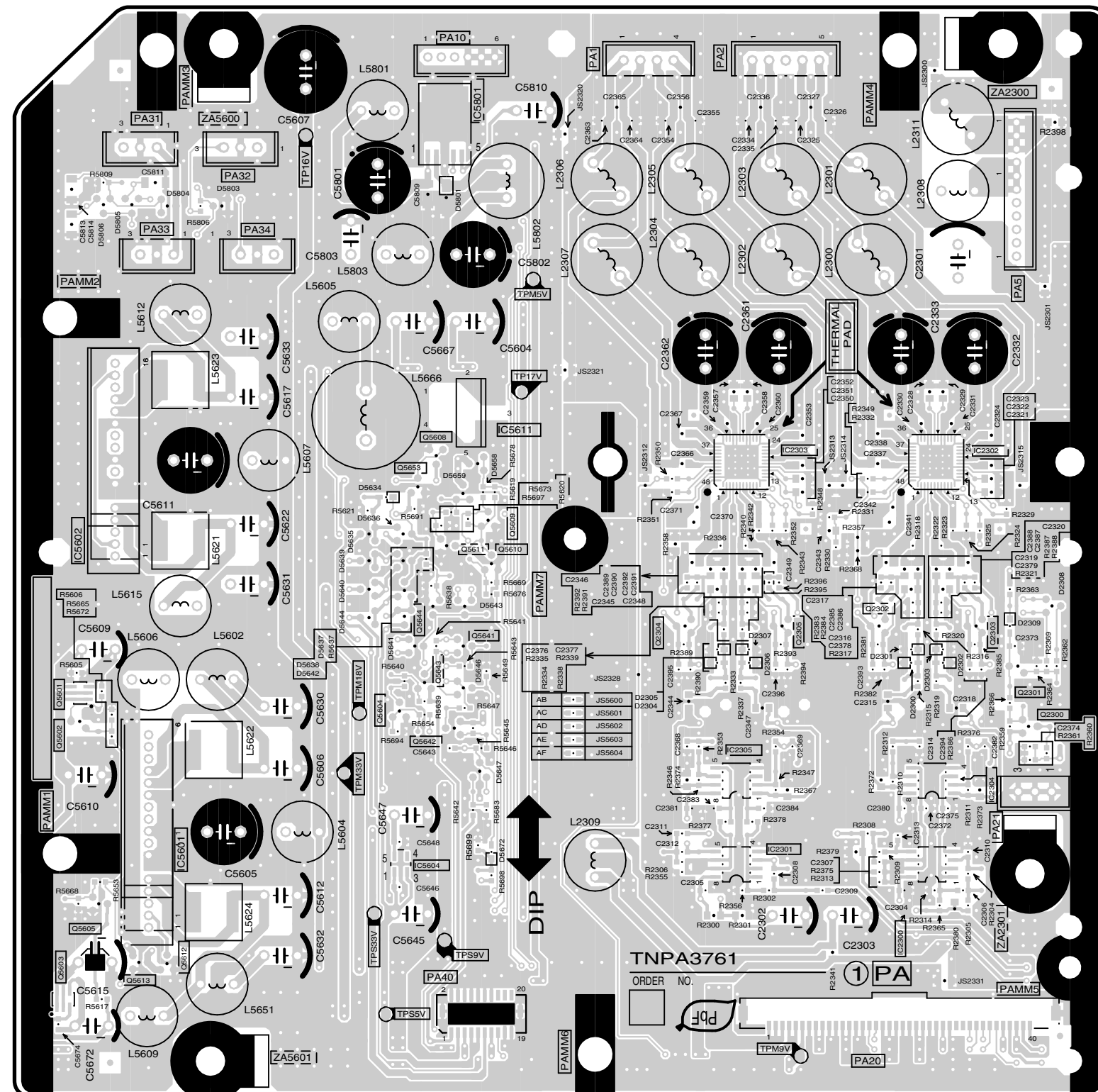


Parts Location

PA-BOARD (FOIL SIDE)					
IC		TRANSISTOR		TP	
IC2306	B-2	Q2306	B-3	TP16	D-6
IC2307	C-2	Q2307	A-2	TP17	D-5
IC5601	E-2	Q2308	C-3	TP5613	B-1
IC5602	F-4	Q2309	B-3	TP5615	B-1
IC5611	D-4	Q5606	E-3	TP5616	A-1
				TP5617	B-1
				TPFSOS	B-1
				TPM5	F-2
				TPM9	F-2
				TPM18	E-3
				TPM33	E-4
				TPMUTE	D-1
				TPS5	E-2
				TPS9	E-3
				TPS33	D-2
				TPSSOS	A-1
				TPSTB5V	D-1

TH-37PA60H/M
TH-42PA60A/H/M/MT
PA-BOARD TNPA3761AH

PA-BOARD (COMPONENT SIDE)
TNPA3761AH



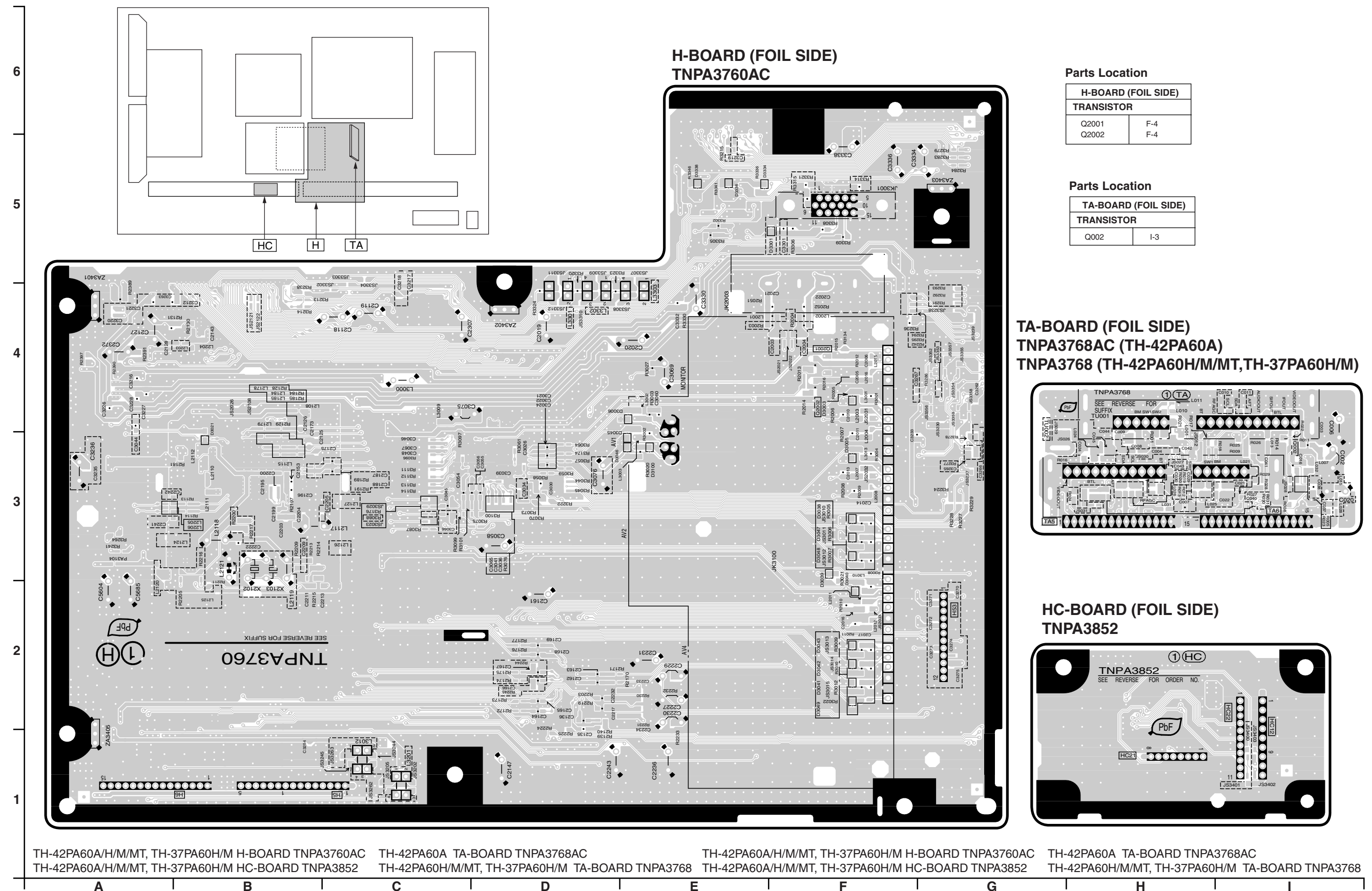
Parts Location

PA-BOARD (COMPONENT SIDE)					
IC		TRANSISTOR		TP	
IC2300	E-2	Q2300	F-3	TP16V	B-5
IC2301	D-2	Q2301	F-3	TP17V	C-4
IC2302	E-4	Q2302	E-3	TPM5V	C-5
IC2303	E-4	Q2303	E-3	TPM18V	B-3
IC2304	E-2	Q2304	D-3	TPM33V	B-2
IC2305	D-3	Q2305	E-3	TPS5V	C-1
IC5601	B-2	Q5601	A-3	TPS9V	C-2
IC5602	A-3	Q5602	A-3	TPS33V	C-2
IC5604	C-2	Q5603	A-1		
IC5611	C-4	Q5604	C-3		
IC5801	C-5	Q5605	A-2		
		Q5608	C-4		
		Q5609	C-4		
		Q5610	C-3		
		Q5611	C-3		
		Q5612	B-1		
		Q5613	A-1		
		Q5641	C-3		
		Q5642	C-3		
		Q5643	C-3		
		Q5644	C-3		
		Q5653	C-4		

TH-37PA60H/M
TH-42PA60A/H/M/MT
PA-BOARD TNPA3761AH

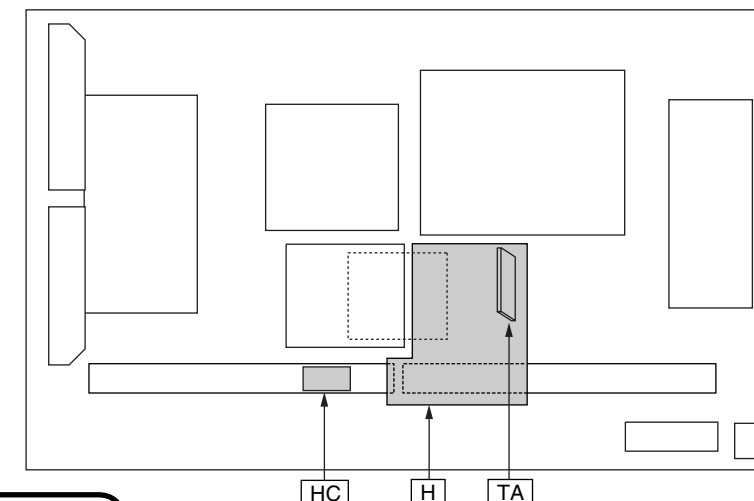
TH-37PA60H/M
TH-42PA60A/H/M/MT
PA-BOARD TNPA3761AH

13.4. H, HC and TA-Board

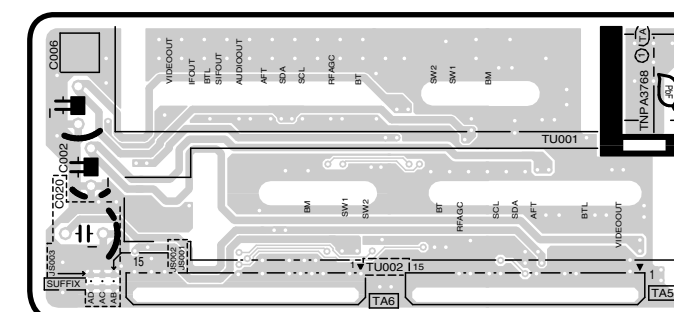


H-BOARD (COMPONENT SIDE)

IC		TRANSISTOR		Q2300	E-5	Q3018	C-4
IC2103	F-4	Q2011	D-4	Q2301	E-4	Q3023	D-4
IC2104	F-4	Q2012	D-4	Q2302	E-4	Q3203	F-2
IC2105	D-2	Q2013	D-4	Q2314	G-4	Q3204	E-2
IC2106	E-4	Q2102	E-4	Q2315	G-4	Q3205	E-2
IC2107	F-3	Q2103	E-4	Q2316	G-4	Q3206	G-3
IC2108	F-2	Q2104	F-4	Q2317	G-4	Q3207	G-3
IC2109	C-2	Q2105	F-4	Q3002	C-4	Q3209	E-2
IC2210	C-1	Q2106	E-2	Q3008	G-3	Q3210	E-2
IC3005	D-3	Q2107	F-2	Q3011	C-4	Q3331	B-5
IC3200	F-2	Q2108	E-2	Q3012	C-4	Q3332	C-5
IC3301	C-5	Q2109	F-2	Q3013	C-4	Q3333	C-5
IC5603	G-2	Q2113	G-4	Q3014	C-4	Q5614	F-2
		Q2114	G-3	Q3015	C-4		
				Q3017	C-4		

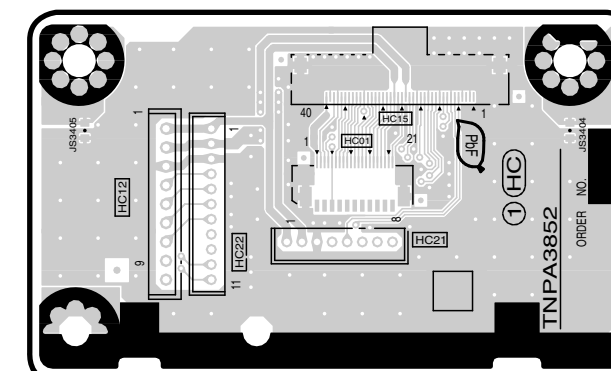


TA-BOARD (COMPONENT SIDE)
TNPA3768AC (TH-42PA60A)
TNPA3768 (TH-42PA60H/M/MT,TH-37PA60H/M)



HC-BOARD (COMPONENT SIDE)

TNPA3852



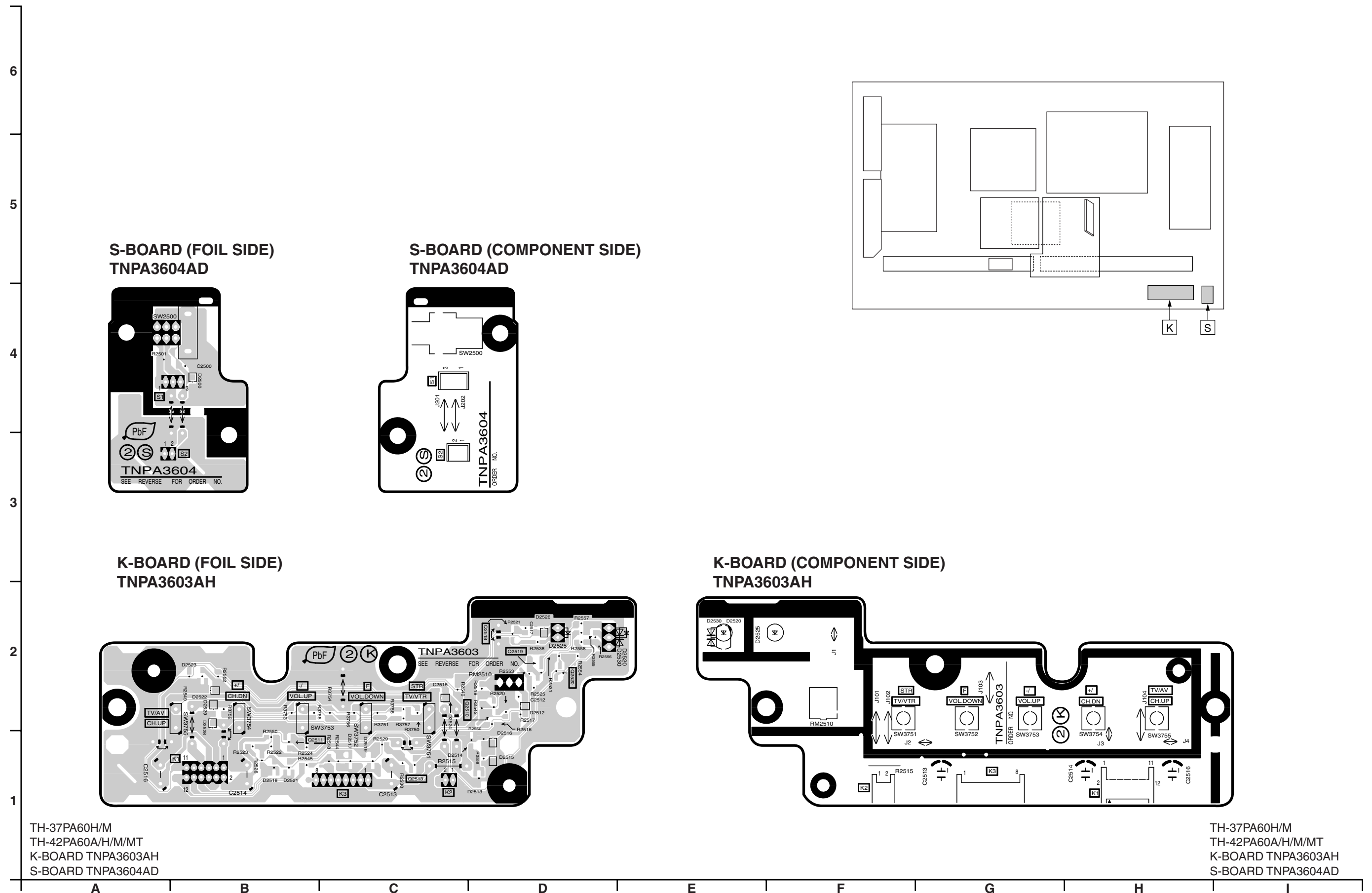
TH-42PA60A/H/M/MT, TH-37PA60H/M H-BOARD TNPA3760AC
TH-42PA60A/H/M/MT, TH-37PA60H/M HC-BOARD TNPA3852

TH-42PA60A TA-BOARD TNPA3768AC
TH-42PA60H/M/MT, TH-37PA60H/M TA-BOARD TNPA3768

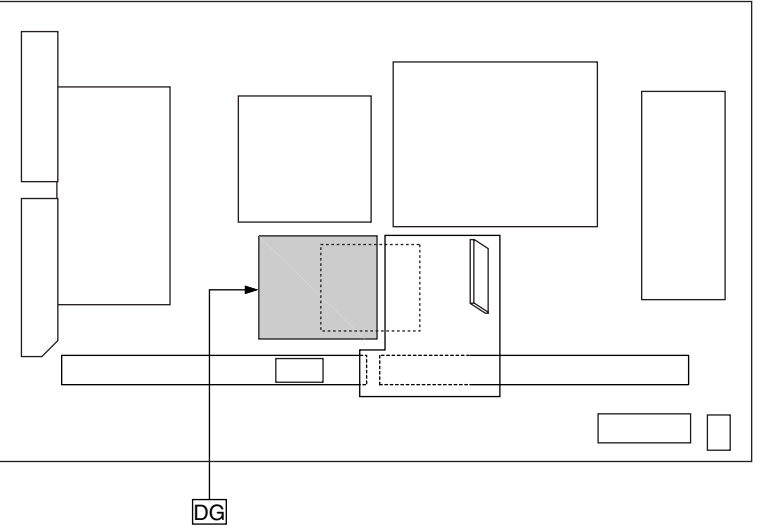
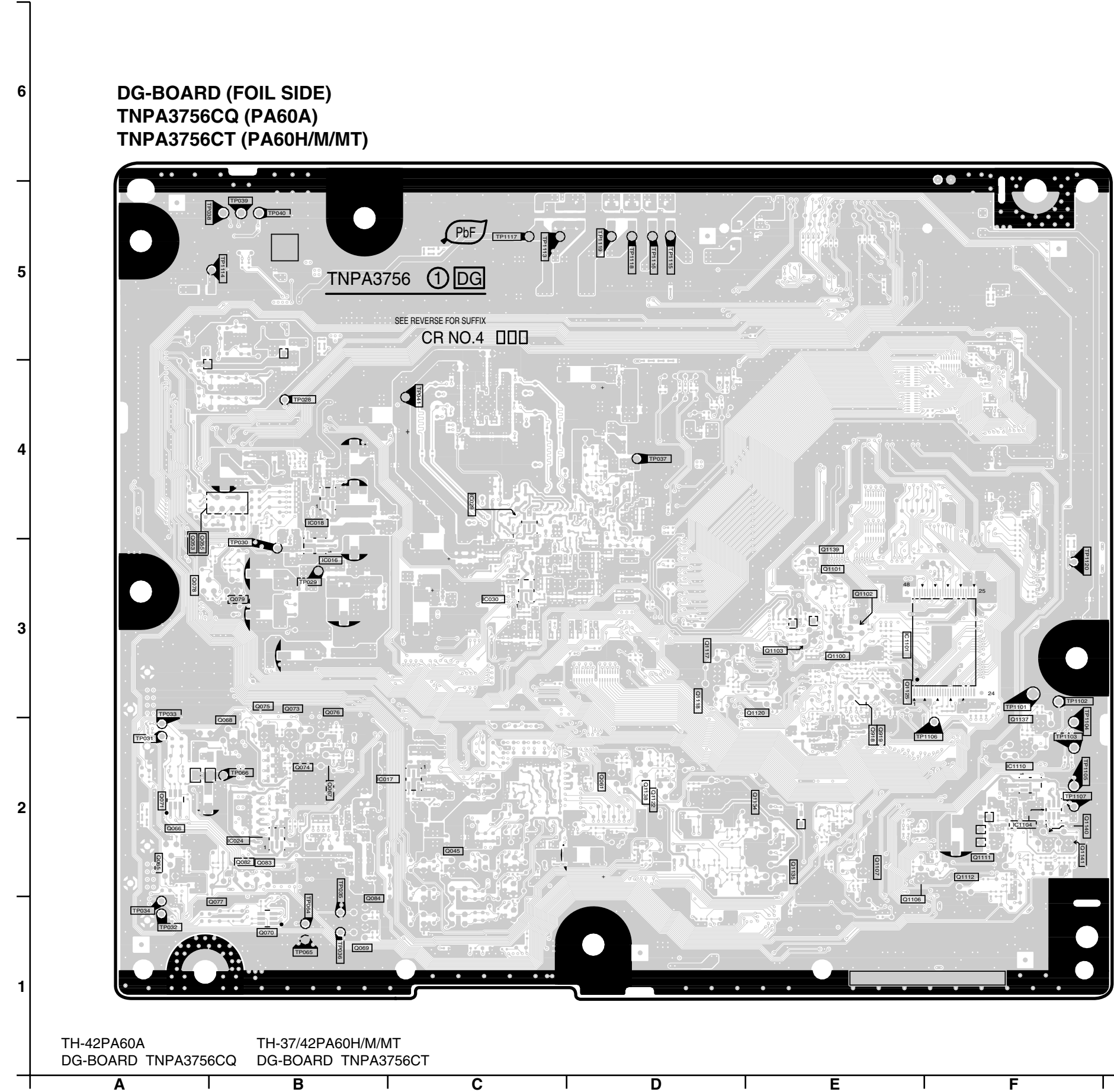
TH-42PA60A/H/M/MT, TH-37PA60H/M H-BOARD TNPA3760AC
TH-42PA60A/H/M/MT, TH-37PA60H/M HC-BOARD TNPA3852

TH-42PA60A TA-BOARD TNPA3768AC
TH-42PA60H/M/MT, TH-37PA60H/M TA-BOARD TNPA3768

13.5. K and S-Board



13.6. DG-Board



Parts Location

DG-BOARD (FOIL SIDE)					
IC		C-2		TP	
IC1101	E-3	Q4045	A-3	TP1101	F-3
IC1104	F-2	Q4053	A-3	TP1102	F-3
IC1110	F-2	Q4055	A-3	TP1103	F-2
IC4016	B-3	Q4061	D-2	TP1104	F-2
IC4017	B-2	Q4065	A-2	TP1105	F-2
IC4018	B-4	Q4066	A-2	TP1106	F-2
IC4024	B-2	Q4067	B-2	TP1107	F-2
IC4029	C-4	Q4068	B-2	TP1108	F-2
IC4030	C-3	Q4069	B-1	TP1109	F-2
TRANSISTOR		Q4070	B-1	TP1110	F-2
Q1100	E-3	Q4071	A-2	TP1111	C-5
Q1101	E-3	Q4072	A-2	TP1112	B-5
Q1102	E-3	Q4073	B-3	TP1113	D-5
Q1103	E-3	Q4074	B-2	TP1114	D-5
Q1106	E-1	Q4075	B-3	TP1115	D-5
Q1107	E-2	Q4076	B-3	TP1116	C-5
Q1111	F-2	Q4077	B-1	TP1117	D-5
Q1112	F-2	Q4078	A-3	TP1118	D-5
Q1117	D-3	Q4079	B-3	TP1119	F-3
Q1118	D-3	Q4082	B-2	TP1120	B-4
Q1120	E-3	Q4083	B-2	TP4028	B-3
Q1122	D-2	Q4084	B-1	TP4029	B-3
Q1125	E-3	Q4918	E-2	TP4030	A-2
Q1134	E-2	Q4919	E-2	TP4031	A-4
Q1135	E-2			TP4032	A-3
Q1137	F-2			TP4033	A-1
Q1138	D-2			TP4034	B-1
Q1139	E-3			TP4035	B-1
Q1140	F-2			TP4036	D-4
Q1141	F-2			TP4037	B-5
				TP4038	B-5
				TP4039	B-5
				TP4040	C-4
				TP4041	B-1
				TP4064	B-1
				TP4065	B-1
				TP4066	B-2

TH-42PA60A
DG-BOARD TNPA3756CQ

TH-37/42PA60H/M/MT
DG-BOARD TNPA3756CT

TH-42PA60A
DG-BOARD TNPA3756CQ

TH-37/42PA60H/M/MT
DG-BOARD TNPA3756CT

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