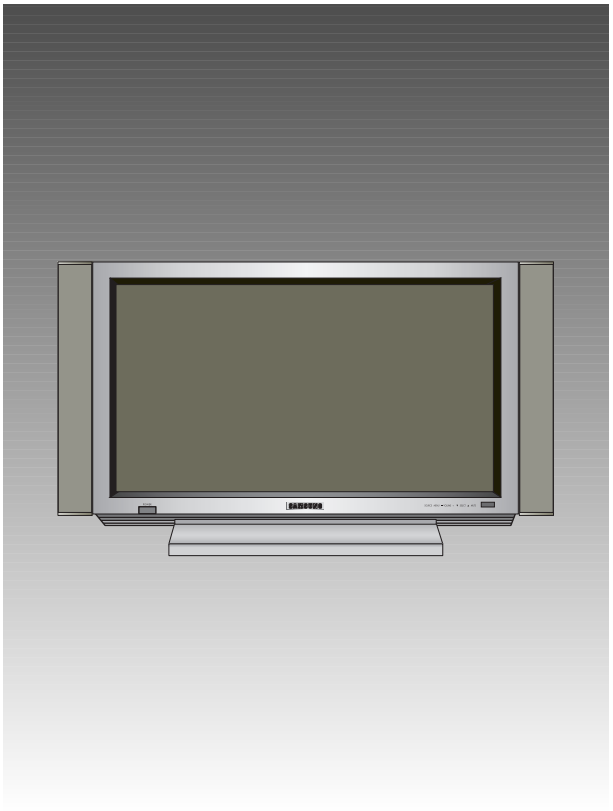
SAMSUNG

PLASMA DISPLAY TV

Chassis : D52A
Model: HPL5025X/XAA
PPM50H2X/XAA

SERVICE Manual

PLASMA DIAPLAY TV



CONTENTS

ELECTRONICS

Printed in Korea
AA68-

1. Precautions

Follow these safety, servicing and ESD precautions to prevent damage and protect against potential hazards such as electrical shock and X-rays.

1-1 Safety Precautions

1. Be sure that all of the built-in protective devices are replaced. Restore any missing protective shields.

2. When reinstalling the chassis and its assemblies, be sure to restore all protective devices, including: nonmetallic control knobs and compartment covers.

3. Make sure that there are no cabinet openings through which people—particularly children—might insert fingers and contact dangerous voltages. Such openings include the spacing between fornt cabinet and back cabinet, excessively wide cabinet ventilation slots, and improperly fitted back covers.

4. Leakage Current Hot Check (Figure 1-1): Warning: Do not use an isolation transformer during this test. Use a leakage-current tester or a metering system that complies with American National Standards Institute (ANSI C101.1, Leakage Current for Appliances), and Underwriters Laboratories (UL Publication UL1950.5.2).

5. With the unit completely reassembled, plug the AC line cord directly into the power outlet. With the unit's AC switch first in the ON position and then OFF, measure the current between a known earth ground (metal water pipe, conduit, etc.) and all exposed metal parts, including: antennas, handle brackets, metal cabinets, screwheads and control shafts. The current measured should not exceed 3.5 milliamp. Reverse the power-plug prongs in the AC outlet and repeat the test.

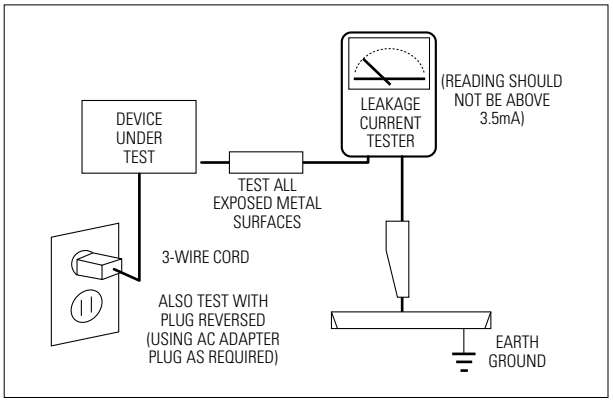


Fig. 1-1 AC Leakage Test

6. Antenna Cold Check:
With the unit's AC plug disconnected from the AC source, connect an electrical jumper across the two AC prongs. Connect one lead of the ohmmeter to an AC prong. Connect the other lead to the coaxial connector.

1-2 Safety Precautions (Continued)

7. High voltage is maintained within specified limits by close-tolerance, safety-related components and adjustments. If the high voltage exceeds the specified limits, check each of the special components.
8. Design Alteration Warning:
   Never alter or add to the mechanical or electrical design of this unit. Example: Do not add auxiliary audio or video connectors. Such alterations might create a safety hazard. Also, any design changes or additions will void the manufacturer's warranty.

9. Hot Chassis Warning:
   Some TV receiver chassis are electrically connected directly to one conductor of the AC power cord. If an isolation transformer is not used, these units may be safely serviced only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC source.

   To confirm that the AC power plug is inserted correctly, do the following: Using an AC voltmeter, measure the voltage between the chassis and a known earth ground. If the reading is greater than 1.0V, remove the AC power plug, reverse its polarity and reinsert. Re-measure the voltage between the chassis and ground.

10. Some TV chassis are designed to operate with 85 volts AC between chassis and ground, regardless of the AC plug polarity. These units can be safely serviced only if an isolation transformer inserted between the receiver and the power source.

11. Some TV chassis have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground systems are electrically separated by insulating material that must not be defeated or altered.

12. Components, parts and wiring that appear to have overheated or that are otherwise damaged should be replaced with parts that meet the original specifications. Always determine the cause of damage or overheating, and correct any potential hazards.

13. Observe the original lead dress, especially near the following areas: Antenna wiring, sharp edges, and especially the AC and high voltage power supplies. Always inspect for pinched, out-of-place, or frayed wiring. Do not change the spacing between components and the printed circuit board. Check the AC power cord for damage. Make sure that leads and components do not touch thermally hot parts.

14. Product Safety Notice:
   Some electrical and mechanical parts have special safety-related characteristics which might not be obvious from visual inspection. These safety features and the protection they give might be lost if the replacement component differs from the original—even if the replacement is rated for higher voltage, wattage, etc.

   Components that are critical for safety are indicated in the circuit diagram by shading, (⚡) or (⚠).
   Use replacement components that have the same ratings, especially for flame resistance and dielectric strength specifications.
   A replacement part that does not have the same safety characteristics as the original might create shock, fire or other hazards.

15. Littum battery replace warning:
   Danger of explosion if battery is incorrectly replaced, Replace only with the same or eqivalent type.

"CAUTION, Double-pole / neutral fusing"

CAUTION

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

1-3 Servicing Precautions

Warning 1 : First read the "Safety Precautions" section of this manual. If some unforeseen circumstance creates a conflict between the servicing and safety precautions, always follow the safety precautions.
Warning 2 : An electrolytic capacitor installed with the wrong polarity might explode.

1. Servicing precautions are printed on the cabinet. Follow them.

2. Always unplug the unit's AC power cord from the AC power source before attempting to: (a) Remove or reinstall any component or assembly, (b) Disconnect an electrical plug or connector, (c) Connect a test component in parallel with an electrolytic capacitor.

3. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring is sometimes clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.

4. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the portion around the serviced part has not been damaged.

5. Check the insulation between the blades of the AC plug and accessible conductive parts (examples: metal panels, input terminals and earphone jacks).

6. Never defeat any of the B+ voltage interlocks. Do not apply AC power to the unit (or any of its assemblies) unless all solid-state heat sinks are correctly installed.

7. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the positive lead; always remove the instrument's ground lead last.

8. Plasma display panels have partial afterimages when a same picture continues to be displayed for a certain time. This happens due to the degradation of brightness caused by a scale-down effect.
   To prevent such afterimages when displaying a same picture for a certain time, be sure to reduce the level of brightness and contrast.
   ex) Contrast : 50 or 75, Brightness : 25

9. Plasma display is an array of pixels(cells). Therefore, if at least 99.9% pixels keep normal, the appropriate panel is judged as 'approved product.' Even though some of pixels keep luminescent or always light off, do not worry because the panel is approved.

1-4 Precautions for Electrostatically Sensitive Devices (ESDs)

1. Some semiconductor ("solid state") devices are easily damaged by static electricity. Such components are called Electrostatically Sensitive Devices (ESDs); examples include integrated circuits and some field-effect transistors. The following techniques will reduce the occurrence of component damage caused by static electricity.

2. Immediately before handling any semicon ductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. (Be sure to remove it prior to applying power—this is an electric shock precaution.)

3. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of electrostatic charge.

4. Do not use freon-propelled chemicals. These can generate electrical charges that damage ESDs.

5. Use only a grounded-tip soldering iron when soldering or unsoldering ESDs.

6. Use only an anti-static solder removal device. Many solder removal devices are not rated as "anti-static"; these can accumulate sufficient electrical charge to damage ESDs.

7. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.

8. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.

9. Minimize body motions when handling unpackaged replacement ESDs. Motions such as brushing clothes together, or lifting a foot from a carpeted floor can generate enough static electricity to damage an ESD.

CAUTION

These servicing instructions are for use by qualified service personnel only.
To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

3. Specifications

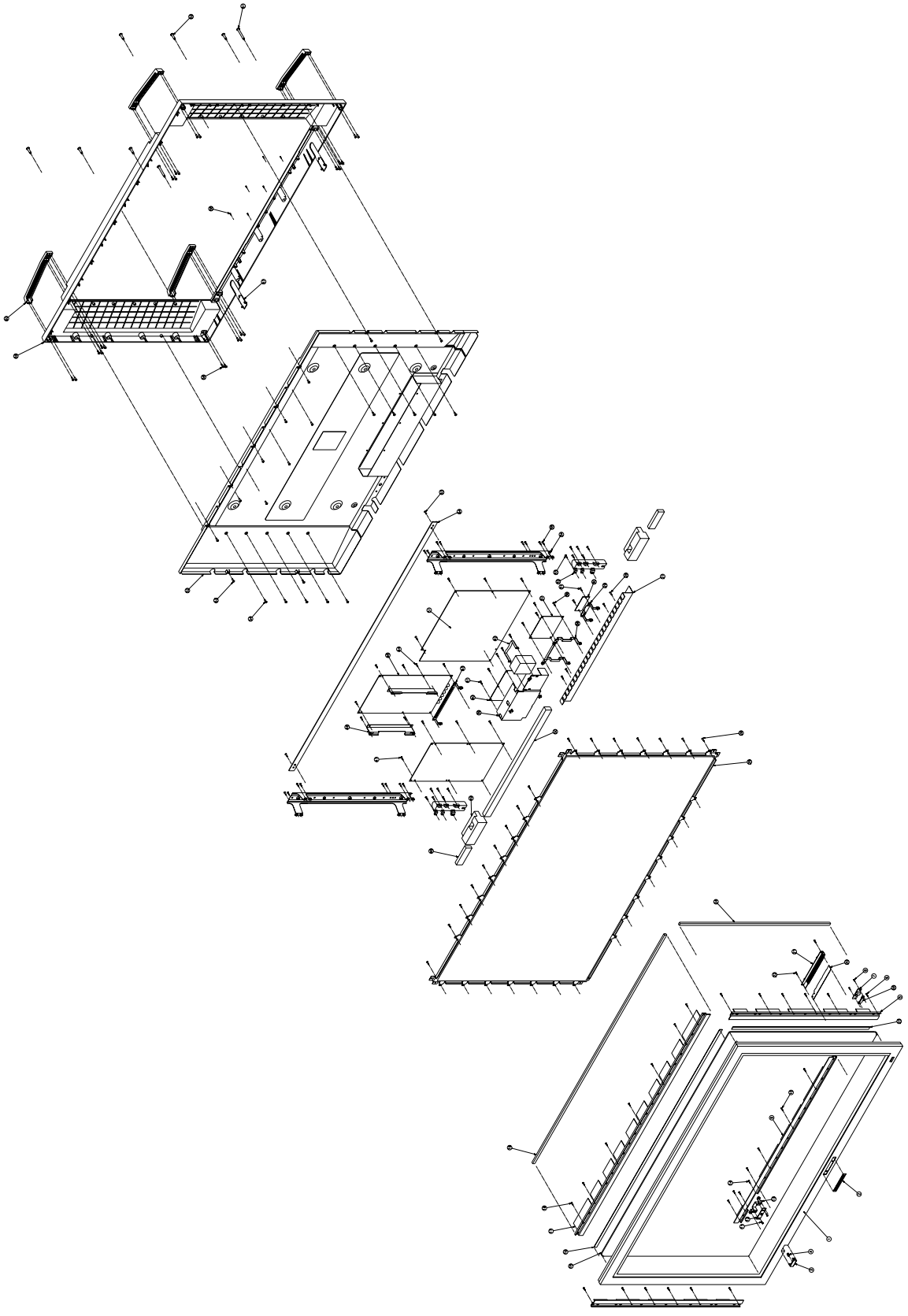
3-1 Display(PDP Monitor)

MODEL		HPL5025/PPM50H2
SCREEN SIZE		16:9
Dimensions (mm/inch)	Display	1208.5(W) x 89(D) x 724(H) mm/47.58(W) x 3.5(D) x 28.50(H) Inches
	Remote Control	54(W) x 31.5(D) x 220(H)mm/2.13(W) x 1.24(D) x 8.66(H) Inches
Terminal	Display	42Kg/92.59lbs
	Remote Control	150g/0.33lbs
In/Out Terminals	Front	POWER Button, SOURCE, MENU, VOLUME, SELECT, MUTE
	Back	Exrernal Speaker Out, RGB1In (mD-Sub 15pin), RGB2 In(BNC jack) SD/HD Cpmponent Video In, VIDEO In, S-VHS In, Audio In(Video, Component, PC), RC-2332C In, RS-232C Out (PPM50H2 Only), AC 120V
Power Supply		AC120V 60Hz
Power Consumption		540W
Screen Size		1106.5(H) x 622(V)/43.56 x 24.49
Adjustment System		Electronic Function Adjustment

MENO

4. Exploded View and Parts List

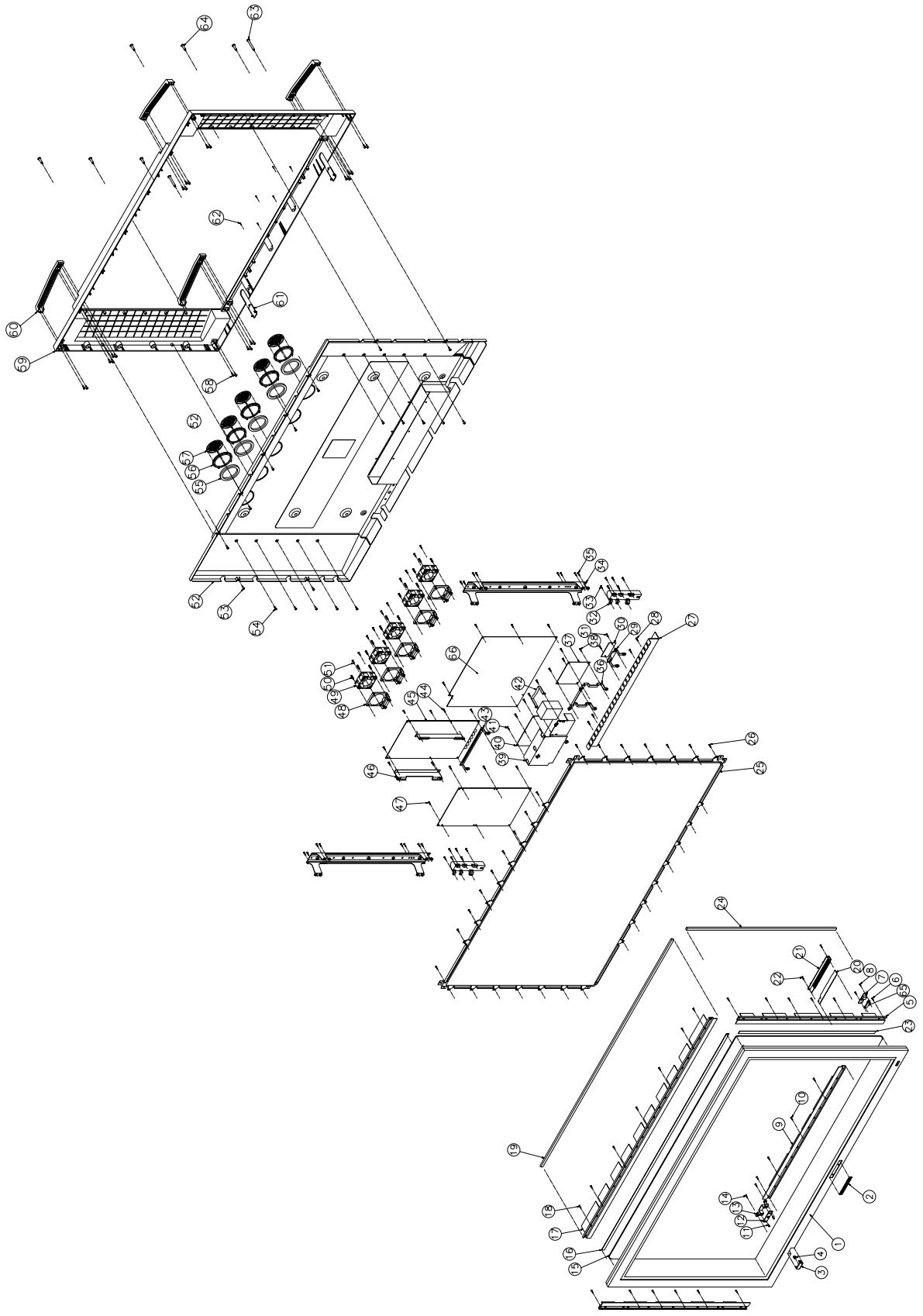
4-1 HPL5025X/XAA



NO	PART DESCRIPTION	CODE NO	SPEC.	Q'Ty	REMARK
1	CABINET- FRONT	AA64- 01548B	HIPS V0 GRAY	1	
2	BADGE- BRAND	AA64- 01560B	AL FORGING,SS	1	
3	KNOB- MASTER	AA64- 01566B	ABS HB BLK	1	
4	SPRING- CS	AA61- 60003J	SUS 304	1	
5	BRACKET- FILTER,SIDE,ASSY	AA61- 01004A	50P2 AL 6063	2	
6	SCREW- TAPTITE	6003- 001020	RH,M4*L10 YEL	12	
7	ASSY- PCB,REMOCON	AA95- 01208A	D52A	1	
8	SCREW- TAPTITE	6003- 001023	M3 * L10 YEL	2	
9	BRACKET- FILTER,BOT,ASSY	AA61- 01005A	50P2 AL 6063	1	
10	SCREW- TAPTITE	6003- 001020	RH,M4*L10 YEL	9	
11	SCREW- ASSY,MACHINE	6006- 001035	WSP,PH,M3*L8YEL	2	
12	ASSY- PCB,POWER ON/OFF	AA95- 01211A	HPL5025M,D52A	1	
13	BRACKET- POWER	AA61- 00716A	SECC T1.0	1	
14	SCREW- TAPTITE	6003- 001026	RH,+ ,B,M4*L15	2	
15	EMI- FILTER	AA95- 01207A	HPL5025M,D52A	1	
16	SPONGE- EMI,FILTER	AA72- 00015A	SHIELD- FORMT1.2	2	
17	BRACKET- FILTER,TOP,ASSY	AA61- 01003A	50P2 AL 6063	1	
18	SCREW- TAPTITE	6003- 001020	RH,M4*L10 YEL	7	
19	SPACER- FILTER	AA60- 00110B	P/U VO	2	
20	ASSY- PCB,CONTROL	AA95- 01210A	HPL5025M,D52A	1	
21	KNOB- CONTROL	AA64- 01565B	ABS HB BAK	1	
22	SCREW- TAPTITE	6003- 001026	RH,+ ,B,M4*L15	2	
23	SPONGE- EMI,FILTER	AA72- 00016A	SHIELD- FORMT1.2	2	
24	SPACER- FILTER	AA60- 00110A	P/U VO	2	
25	ASSY- MODULE- 3	AA98- 00136A	HPL5025M,D52A	1	
26	SCREW- TAPTITE	6003- 001026	RH,+ ,B,M4*L15	31	
27	COVER- TERMINAL	AA63- 00368B	SUS T0.5	1	
28	SCREW- TAPTITE	6003- 001023	M3 * L10 YEL	4	
29	BRACKET- EXTERNAL	AA61- 00578B	SPC T1.0	1	
30	ASSY- PCB,TERMINAL	AA95- 01209A	HPL5025M,D52A	1	
31	SCREW- ASSY,MACHINE	6006- 001035	WSP,PH,M3*L8YEL	2	
32	GUIDE- STAND	AA61- 00584B	AL DIECASTING	2	
33	SCREW- ASSY,MACHINE	6006- 001039	WSP,PH,M4*L12YEL	12	
34	BRACKET- WALL	AA61- 00569A	SECC T2.0	2	
35	SCREW- ASSY,MACHINE	6006- 001039	WSP,PH,M4*L12YEL	16	
36	BRACKET- AV	AA61- 00580B	SPC T1.0	1	
37	ASSY- PCB,SOUND	AA95- 00931A	SPD- 50P2HM,D52A	1	
38	SCREW- ASSY,MACHINE	6006- 001035	WSP,PH,M3*L8YEL	4	
39	BRACKET- LINE,FILTER	AA61- 00582B	SPC T1.0	1	
40	ASSY- PCB,POWER,AC B'd	AA95- 01212A	HPL5025M,D52A	1	

NO	PART DESCRIPTION	CODE NO	SPEC.	Q'Ty	REMARK
41	SCREW- ASSY,MACHINE	6006- 001035	WSP,PH,M3*L8YEL	10	
42	BRACKET- NOISE,FILTER	AA61- 00589B	SUS T0.5	1	
43	BRACKET- SCALER,SUB	AA61- 00581B	SPC T0.5	1	
44	SCREW- ASSY,MACHINE	6006- 001035	WSP,PH,M3*L8YEL	6	
45	ASSY- PCB,MAIN(OPT)	AA94- 05542A	HPL5025M,D52A	1	
46	BRACKET- SCALER,MAIN	AA61- 00573B	SPC T1.0	2	
47	SCREW- ASSY,MACHINE	6006- 001035	WSP,PH,M3*L8YEL	6	
48	BRACKET- FAN,BASE	AA61- 00579B	SECC T1.6	5	
49	FAN				
50	SCREW- ASSY,MACHINE	6006- 001017	WSP,PH,M4*L35YEL	10	
51	SCREW- ASSY,MACHINE	6006- 001035	WSP,PH,M3*L8YEL	10	
52	COVER- BACK	AA63- 00364B	AL 3003- 0 T1.2	1	
53	SCREW- TAPTITE	6003- 001019	M4 * L12 YEL	19	
54	SCREW- TAPTITE	6003- 001020	M4 * L10 YEL	10	
55	SPACER- FAN	AA60- 00109A	P/U FORM V0 BLK	5	
56	HOLDER- FAN	AA61- 00597B	ABS V0 BLK	5	
57	COVER- FAN	AA63- 00366B	SUS T0.5	5	
58	SCREW- TAPTITE	6003- 001026	M4 * L15 YEL	24	
59	CABINET- BACK	AA64- 01550B	HIPS V0 BLK	1	
60	HANDLE- SET	AA64- 01551B	ABS HB BLK	4	
61	COVER- SET	AA63- 00365B	ABS HB BLK	2	
62	SCREW- ASSY,MACHINE	6006- 001035	WSP,PH,M3*L8YEL	6	
63	SCREW- ASSY,MACHINE	6006- 001017	WSP,PH,M4*L35YEL	2	
64	SCREW- ASSY,MACHINE	6006- 001112	WSP,PH,M8*L16YEL	6	
65	WINDOW- REMOCON	AA64- 01549B	ACRYL VIOLET 2:1	1	
66	ASSY- PCB,SMPS,MAIN	AA98- 00149A	HPL5025M,D52A	1	

4-2 PPM50H2/XAA



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1	AA64-01548C	CABINET-FRONT	HIPS V0 GRAY	1	
2	AA64-02526B	BADGE-BRAND	AL FORGING,SS	1	
3	AA64-01566C	KNOB-MASTER	ABS HB BLK	1	
4	AA61-60003J	SPRING-CS	SUS 304	1	
5	AA61-01004A	BRACKET-FILTER,SIDE,ASSY	50P2 AL 6063	2	
6	6003-001020	SCREW-TAPTITE	RH,M4*L10 YEL	12	
7	AA95-01208A	ASSY-PCB,REMOCON	HPL5025M, D52A	1	
8	6003-001023	SCREW-TAPTITE	M3 * L10 YEL	2	
9	AA61-01005A	BRACKET-FILTER,BOT,ASSY	50P2 AL 6063	1	
10	6003-001020	SCREW-TAPTITE	RH,M4*L10 YEL	9	
11	6006-001035	SCREW-ASSY,MACHINE	WSP,PH,M3*L8YEL	2	
12	AA95-01211A	ASSY-PCB,POWER ON/OFF	HPL5025M, D52A	1	
13	AA61-00716A	BRACKET-POWER	SECC T1.0	1	
14	6003-001026	SCREW-TAPTITE	RH,+,B,M4*L15	2	
15	AA67-00110A	EMI-FILTER	SPD50P2H,GLASS	1	
16	AA72-00015A	SPONGE-EMI,FILTER	SHIELD-FORMT1.2	2	
17	AA61-01003A	BRACKET-FILTER,TOP,ASSY	50P2 AL 6063	1	
18	6003-001020	SCREW-TAPTITE	RH,M4*L10 YEL	7	
19	AA60-00110B	SPACER-FILTER	P/U VO	2	
20	AA95-01210A	ASSY-PCB,CONTROL	HPL5025M, D52A	1	
21	AA64-01565B	KNOB-CONTROL	ABS HB BAK	1	
22	6003-001026	SCREW-TAPTITE	RH,+,B,M4*L15	2	
23	AA72-00016A	SPONGE-EMI,FILTER	SHIELD-FORMT1.2	2	
24	AA60-00110A	SPACER-FILTER	P/U VO	2	
25	AA98-00136A	ASSY-MODULE-2	HPL5025M, D52A	1	
26	6003-001026	SCREW-TAPTITE	RH,+,B,M4*L15	31	
27	AA63-00368C	COVER-TERMINAL	SUS T0.5	1	
28	6003-001023	SCREW-TAPTITE	M3 * L10 YEL	4	
29	AA61-00578B	BRACKET-EXTERNAL	SPC T1.0	1	
30	AA95-01209A	ASSY-PCB,TERMINAL	HPL5025M, D52A	1	
31	6006-001035	SCREW-ASSY,MACHINE	WSP,PH,M3*L8YEL	2	
32	AA61-00584B	GUIDE-STAND	AL DIECASTING	2	
33	6006-001039	SCREW-ASSY,MACHINE	WSP,PH,M4*L12YEL	12	
34	AA61-00569A	BRACKET-WALL	SECC T2.0	2	
35	6006-001039	SCREW-ASSY,MACHINE	WSP,PH,M4*L12YEL	16	
36	AA61-00580B	BRACKET-AV	SPC T1.0	1	
37	AA95-00931A	ASSY-PCB,SOUND	SPD-50P2HM, D52A	1	
38	6006-001035	SCREW-ASSY,MACHINE	WSP,PH,M3*L8YEL	4	
39	AA61-00582B	BRACKET-LINE,FILTER	SPC T1.0	1	
40	AA95-01639A	ASSY-PCB,POWER,AC B'd	SPD-50P2H, D52A	1	

NO	CODE NO	PART DESCRIPTION	SPEC.	Q'Ty	REMARK
41	6006-001035	SCREW-ASSY,MACHINE	WSP,PH,M3*L8YEL	10	
42	AA61-00589B	BRACKET-NOISE,FILTER	SUS T0.5	1	
43	AA61-00581B	BRACKET-SCALER,SUB	SPC T0.5	1	
44	6006-001035	SCREW-ASSY,MACHINE	WSP,PH,M3*L8YEL	6	
45	AA98-00150A	ASSY-PCB,MAIN(OPT)	D52A, HPL5025M	1	
46	AA61-00573B	BRACKET-SCALER,MAIN	SPC T1.0	2	
47	6006-001035	SCREW-ASSY,MACHINE	WSP,PH,M3*L8YEL	6	
48	AA72-00023A	SPONGE-EMI,A	SHIELD-FORM	2	
49	AA72-00024A	SPONGE-EMI,B	SHIELD-FORM	2	
50	AA72-00025A	SPONGE-EMI,C	SHIELD-FORM	1	
51	AA98-00149A	ASSY-PCB,SMPS,MAIN	D52A, HPL5025M	1	
52	AA63-30140A	COVER-BACK,ASSY	AL 3003-0 T1.2	1	
53	6003-001019	SCREW-TAPTITE	M4 * L12 YEL	19	
54	6003-001020	SCREW-TAPTITE	M4 * L10 YEL	10	
55	AA64-01549B	WINDOW-REMOCON	ACRYL VIOLET 2:1	1	
56	6003-001026	SCREW-TAPTITE	M4 * L15 YEL	24	
57	AA63-00365B	COVER-SET	ABS HB BLK	2	
58	6006-001035	SCREW-ASSY,MACHINE	WSP,PH,M3*L8YEL	6	
59	AA64-01550B	CABINET-BACK	HIPS V0 BLK	1	
60	AA64-01551B	HANDLE-SET	ABS HB BLK	4	
61	6006-001017	SCREW-ASSY,MACHINE	WSP,PH,M4*L35YEL	2	
62	6006-001112	SCREW-ASSY,MACHINE	WSP,PH,M8*L16BLK	6	
63	6006-001039	SCREW-ASSY,MACHINE	WSP,PH,M4*L12YEL	2	
64	AA61-01114A	BRACKET-WIRE	AL 6063 T1.5	1	

5. Alignment and Adjustments

5-1 Service Mode

5-1-1 SERVICE MODE ENTRY METHOD (General Transmitter)

1. Turn off the power to make the SET STAND-BY mode.
2. In order to enter the Service Mode, select MUTE-1-8-2-POWER.
   Press the 'Screen Display – Factory' button when the system is turned on.

◆ In case entry into SERVICE MODE is unsuccessful, repeat the procedures above.

5-1-2 Initial DISPLAY State in times of SERVICE MODE Switch overs

INITIAL DISPLAY	PW364	SDA9280	VPC3230	SDA9400
1, PW364	Horizontal Size	CTI THRESH	BRIGHT YUV	OUT DELAY
2, SDA9280	Vertical Size	CTI TRAWID	CONT YUV	TNRCLY CLY
3, VPC3230	Horizontal Pos	Y-DELAY	IF COMP	TNRCLC CLY
4, SDA9400	Vertical Pos	LPF GAIN	Chroma Band	STOP MODE
5, CXA2101		BPF GAIN	Luma LPF	
6, AD9884		HPF GAIN	HPLL Speed	
7, OSD POSITION		PHACOM	Luma Delay	
8, OPTION		COR	3230 Bright	
9, RESET			3230 Contrast	
10, AGING			H LPF Y/C	
			H LPF Chroma	
			H Peak Filter	
			Peaking Gain	
			Coaring off/on	

CXA2101		AD9884	OSD POSITION	OPTION
Limit Level	DRIVE	RED Gain	HORIZ	1, BACK GROUND COLOR
System	SUB BRIGHT	GREEN Gain	VERT	2, SHIFT PIXEL
D-Color	SUB CONT	BLUE Gain		3, PIXEL SHIFT MIN
R-DRIVE	SUB COLOR	RED OFFSET		4, PIXEL SHIFT SEC
G-DRIVE	SUB HUE	GREEN OFFSET		5, FAN PROTECT
B-DRIVE	SUB SHP	BLUE OFFSET		6, TEMP PROTECT
R-Cut off	R-Y/R	GAIN DRIVE		7, SHARPNESS
G-Cut off	R-Y/B	OFFSET DIRVE		8, BASE LANGUAGE
B-Cut off	G-Y/R	V CONTRAST		
ABL MODE	G-Y/B	V BRIGHT		
ABL TH	PABL LEVEL	PHASE		
H SEP SEL	SHP FO	CHANGE PUMP		
CONTRAST	PRE/OVER			
BRIGHT	CTI LEVEL			
CR OFFSET1	LTI LEVEL			
CB OFFSET1	DC-TRAN			
	D-PIC			

5-1-3 Buttons Operations within SERVICE MODE

Menu	Entire menu display
Channel UP/DOWN	Cursor move to select items
Volume UP/DOWN	Enable to increase and decrease the data of the selected items

#Notice

The existing service data may be deleted after downloading a program. Be sure to make a backup copy of your data before downloading and then restore the data after completing the download.

5-1-4 White Balance Adjust Method

1. Press MUTE-1-8-2-POWER to enter the factory mode.
2. Enter AD9884
3. Adjust LOW coordinates as R, B OFFSET and HIGH coordinates as R, B GAIN.(GREEN is fixed.)
4. In AD9884, adjust brightness with V CONTRAST / V BRIGHT for VIDEO / DTV, and adjust with GAIN DRIVE / OFFSET DRIVE for PC.

- W/B Adjustment SPEC (Suwom Factory Toshiba PATTERN)

1. VIDEO MODE (SPR-3100, input TOSHIBA PATTERN)

Adjustment Coordinates	Coordinates Value	Adjustment Deviation
H-LIGHT	x : 286 y : 274 Y: 18.7(fL)	±3 ±3 ±3
L-LIGHT	x : 278 y : 272 Y: 0.53(fL)	±5 ±5 ±0.1

2. DTV MODE (SPR-3100, input TOSHIBA PATTERN)

Adjustment Coordinates	Coordinates Value	Adjustment Deviation
H-LIGHT	x : 288 y : 277 Y: 16.1(fL)	±3 ±3 ±3
L-LIGHT	x : 280 y : 277 Y: 0.71	±5 ±5 ±0.1

2. PC MODE (VG828, input TOSHIBA PATTERN)

Adjustment Coordinates	Coordinates Value	Adjustment Deviation
H-LIGHT	x : 287 y : 288 Y : 21.3(fL)	±3 ±3 ±3
L-LIGHT	x : 287 y : 294 Y : 2.17	±5 ±5 ±0.1

5-1-4 SCALAR FACTORY DATA DEFAULT VALUES

PW364

ITEM	VIDEO/S-VHS/dvd	1080I	720P	480P	PC
Horizontal Size	2	60	68	76	N/A
Vertical Size	51	48	46	39	N/A
Horizontal Pos	177	213	174	113	N/A
Vertical Pos	24	11	11	29	N/A

SDA9280

ITEM	VIDEO/S-VHS/DVD	DTV	PC
CTI THRESH	0(Fix)	-	N/A
CTI TRAWID	0(Fix)	-	N/A
Y-DELAY	10	-	N/A
LPF GAIN	7	-	N/A
BPF GAIN	8	-	N/A
HPF GAIN	10	-	N/A
PHACOM	2	-	N/A
COR	0	-	N/A

SDA9400

ITEM	VIDEO/S-VHS/DVD	DTV	PC
OUT DELAY	10	-	N/A
TNRCLY	0	-	N/A
TNRCNC	10	-	N/A
STOP MODE	3	-	N/A

VPC3230

ITEM	VIDEO/S-VHS/DVD	DTV	PC
Bright YUV	195	-	N/A
Cont YUV	29	-	N/A
IF Comp(IFC)	2	-	N/A
Chroma band(CBW)	2	-	N/A
Luma LPF(LOWP)	1	-	N/A
HPLL Speed	0	-	N/A
Luma Delay	5	-	N/A
3230 Bright	147	-	N/A
3230 Contrast	38	-	N/A
H LPF Y/C(LPF2)	0(fix)	-	N/A
H LPF Chroma(CBW2)	0	-	N/A
H Peak Filter(PFS)	(0~3) 2	-	N/A
Peaking Gain(PK)	(0~7) 3	-	N/A
Coaring Off/On	1	-	N/A

SDA2101

ITEM	VIDEO	DTV		VIDEO	DTV
Limit Level	0	-	Sub Bright (Adjustable)	38 (N/A)	40 (N/A)
System	1	2	Sub Cont	7	-
D-Color	31	-	Sub Color	2	8
R Drive	41	-	Sub Hue	7	-
G Drive	41	-	Sub SHP	2	3
B Drive	41	-	R-Y/R	10	-
R Cutoff	31	-	R-Y/B	15	-
G Cutoff	31	-	G-Y/R	7	-
B Cutoff	31	-	G-Y/B	5	-
ABL Mode	0	-	PABL Level	6	-
ABL TH	0	-	SHP F0	2	-
H sep Sel.	0	-	Pre/over	3	-
Contrast	12	-	CTI Level	1	-
Bright	52	-	LTI Level	0	-
Cr Offset1	3	7	DC-Tran	2(fix)	1
Cr Offset1	5	7	D-Pic	2(fix)	1
Drive (Adjustable)	19 (N/A)	12 (N/A)			

AD9884

항 목	VIDEO/S-VHS/DVD	1080i	480p	720p	PC
Red Gain	173	186	Same as left	Same as left	150
Green Gain	130 (Fixed)	130 (Fixed)	Same as left	Same as left	130 (Fixed)
Blue Gain	86	88	Same as left	Same as left	96
Red Offset	188	140	Same as left	Same as left	152
Green Offset	128 (Fixed)	128	Same as left	Same as left	128 (Fixed)
Blue Offset	163	140	Same as left	Same as left	129
Gain Drive	8 (N/A)	128 (N/A)	Same as left	Same as left	200
Offset Drive	128 (N/A)	128 (N/A)	Same as left	Same as left	207
V Contrast	19	12	Same as left	Same as left	19 (N/A)
V Bright	38	40	Same as left	Same as left	38 (N/A)
Phase	15	15	15	15	0 (Not Operational)
Charge Pump	0	3	0	2	0 (Not Operational)

OSD POSITION

ITEM	VIDEO/S-VHS	DTV	PC
Horiz	40	-	-
Vert	16	-	-

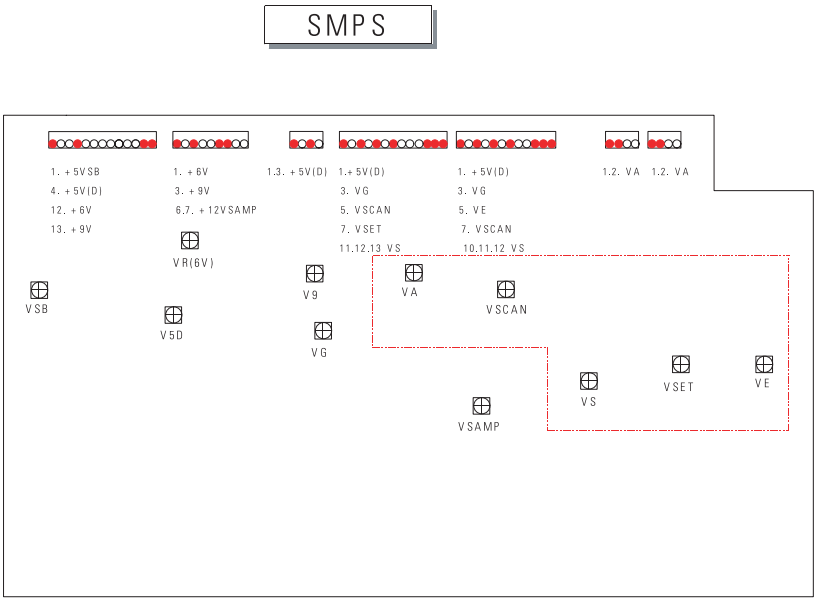
OPTION

ITEM	VIDEO/S-VHS/DVD	DTV	PC
Back Ground Color	BLUE1	-	-
Shift Pixel	4	-	-
Pixel Shift Min	4Min	-	-
Pixel Shift Min	0 Sec	-	-
Fan Protect	Off	-	-
Temp Protect	On	-	-
Sharpness	3	0	0
Base Language	English	-	-

VGA	Video signal	Dot X Line	Vertical Frequency (Hz)	Horizontal Frequency (kHz)	Vertical polarity	Horizontal polarity
1	VGA	640 X 350	70.086	31.469	N	P
2			85.080	37.861	N	P
3		640 X 400	85.080	37.861	P	N
4		720 X 400	70.087	31.469	P	N
5			85.039	37.927	P	N
6		640 X 480	59.940	31.469	N	N
7			72.809	37.861	N	N
8			75.000	37.500	N	N
9			85.008	43.269	N	N
10	WVGA	848 X 480	60.000	29.838	P	N
11			72.000	35.156	P	N
12			75.000	36.072	P	N
13			85.000	37.650	P	N
14	SVGA	800 X 600	56.250	42.925	N/P	N/P
15			60.317	37.879	P	P
16			72.188	48.077	P	P
17			75.000	46.875	P	P
18			85.061	53.674	P	P
19	XGA	1024 X 768	60.004	48.363	N	N
20			70.069	56.476	N	N
21			75.029	60.023	P	P
22			84.997	68.677	P	P
23		1152 X 864	75.000	67.500	P	P
24	WXGA	1280 X 768	60	47.700	P	N
25			75	60.150	P	N
26	SXGA	1280 X 1024	60.020	63.981	P	P
27			75.025	79.976	P	P

5-3 Adjusting the Discharge Voltage Of the Main Unit While Replacing ASS'Y (Body Part)

◆ Turning the variable resistor clockwise reduces voltage except VG, V9, and VR(6).



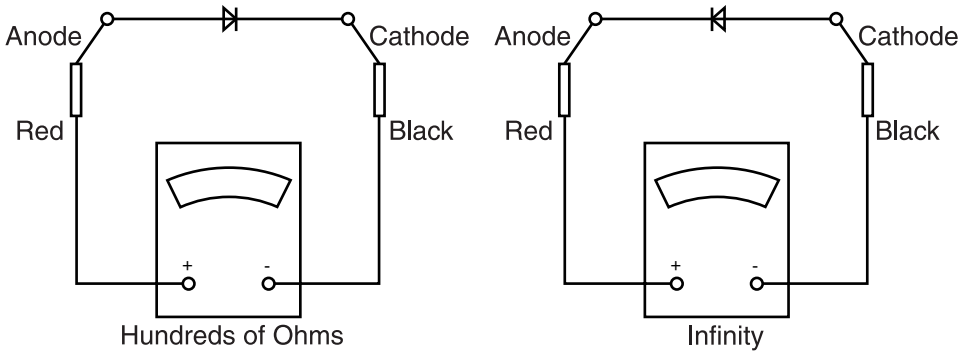
OUTPUT	Voltage(V)
VE	See the labels attached on the base chassis
VSET	
VS	
VSCAN	
VA	
VSAMP	12
VG	18.3
V9	9
V5D	5.3
VR(6)	6
VSB	5.2

Alignment and Adjustments

5-3 Fault Finding Using MULTI METER

Parts defects can be found for DIODE TRANSISTOR IC, using MULTI TEST including Forward / Reverse direction Multi Test. Of course, in case resistance of several ohms and COIL are connected in parallel circuit, the lock out circuit parallel connected to part must be severed.

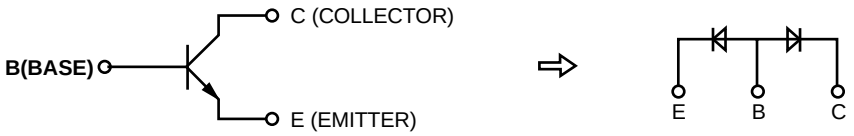
1.DIODE



	Forward Direction	Reverse Direction
Between Anode and Cathode	Hundreds of ohms	Infinity

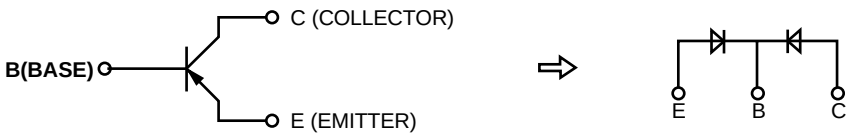
2. TRANSISTOR

l For NPN(KSC815-Y, 2SC2068, 2SC2331-Y)



	Forward Direction	Reverse Direction
Between B and E	Hundreds of ohms	Infinity
Between B and C	Hundreds of ohms	Infinity
Between E and C	Infinity	Infinity

l For PNP(KSA539-Y)



	Forward Direction	Reverse Direction
Between B and E	Hundreds of ohms	Infinity
Between B and C	Hundreds of ohms	Infinity
Between E and C	Infinity	Infinity

Alignment and Adjustments

3. IC (INTEGRATED CIRCUIT)

IC has built in DIODE against overvoltage in PIN. Generally, except for internal circuit defects, IC defects can be found, by measuring the DIODE.

Forward Direction	Hundreds of ohms
Reverse Direction	Varying depending on IC but generally normal
	Infinity in DIODE TEST MODE

- Defects have SHORT(0 ohm) for both forward and reverse direction.

MEMO

6. Circuit Description

6-1 Power supply

6-1-1 Outline(PDP SMPS)

Considering various related conditions, the switching regulator with good efficiency and allowing for its small size and light weight was used as the power supply for PDP 50inch, VS requiring high power consumption used forward converter and 12VSAMP used the simple flyback converter and other high voltage (VSCAN,VSET,VE)used DC/DC converter. To comply with the international harmonics standards and improve the power factor, active PFC(Power Factor Correction) was used to rectify AC input into +400V DC output, which in turns used as input to the switching regulator.

6-1-2 50" SMPS Specification

(1) Input

The power supply shall be capable of supplying full rated output power over free voltage ranges that are rated 100 VAC - 240 VAC RMS nominal. Operating voltage : 90 VAC - 264 VAC.

The power supply must be able to start up under peak loading at 90V AC. The power supply shall automatically recover from AC power loss. (Note that nominal voltages for test purposes are considered to be with +/- 1.0V of nominal).

+5VSB is a SELV standby voltage that is always present when AC mains voltage present.

(2) Output

This power supply is 13output switching power supply for PDP 50inch. The output voltage, and current requirements for continuous operation are stated below. (Table1.)

Table1. Specifications of Output Power Supplies for PDP SMPS

Output Name	Output Voltage	Output Current(Max.)	Using in PDP Driving
Vsustain	+160V ~ 200V (165V)	1.8A	Sustain Voltage of Drive Board
Vaddress	+58V ~ 73V (65V)	0.5A	Address Voltage of Drive Board
Vscan	+60V ~ 78V (70V)	0.05A	
Vset	+195V ~ 230V (215V)	0.05A	
Ve	+180V ~ 210V (185V)	0.05A	
Vg	+1V ~ 20V (18.4V)	0.3A	Driving Voltage of Fet
Vfan	+10V ~ 12V (11V)	0.8A	Driving Voltage of Fan
V9	+1V ~ 10V (9.0V)	0.3A	
V6	+1V ~ 8V (6.0V)	1.0A	IC Driving Voltage of Logic Board
V5(D)	+5.1V ~ 5.9V (5.4V)	3.5A	
Vsb	+4.8V ~ 5.4 V (5.2V)	0.4A	Standby for Remote Control
V12	+10V ~ 12V (11V)	1.2A	
Vsamp	+10V ~ 13V (12V)	1.5A	Amp Voltage of Audio Board

(3) Over voltage Protection

The over voltage sense circuitry and reference shall reside in package that are separate and distinct from the regulator control circuitry and reference. No single point fault shall be able to cause a sustained over voltage condition on any of all outputs. The supply shall provide latch-mode Over Voltage Protection as defined below. (Table2.)

Table2. Over voltage Protection.

Parameter	Min	Unit
VS(169V)	195 ~	V
VA(65V)	90 ~	V
5V(D)	5.5 ~	V

(4) Short Circuit and Over current Protection.

An output short circuit is defined as output impedance of less than 300mohms. The power supply shall shutdown and latch off for shorting VS DC rails to return or any other rail. Shorts between main output rails and 5VSB shall not cause any damages to the power supply. The power supply shall either shut-down and latch off for shorting is removed, the P/S shall recover. The power supply shall be capable of withstanding a continuous shot-circuit to the output without damage or over stress to the unit (components, PCB traces, connectors,etc.) under the input conditions specified in Section2 above.
Current Protection as defined below. (Table3.)

Table3. Over Current Protection.

Parameter	Min	Unit
VS(169V)	3.0 ~	A
VA(65V)	2.0 ~	A
5V(D)	10 ~	A

(5) Function of Board

① REMOTE CONTROL
Using a 250V / 10A relay, the board makes remote control available.

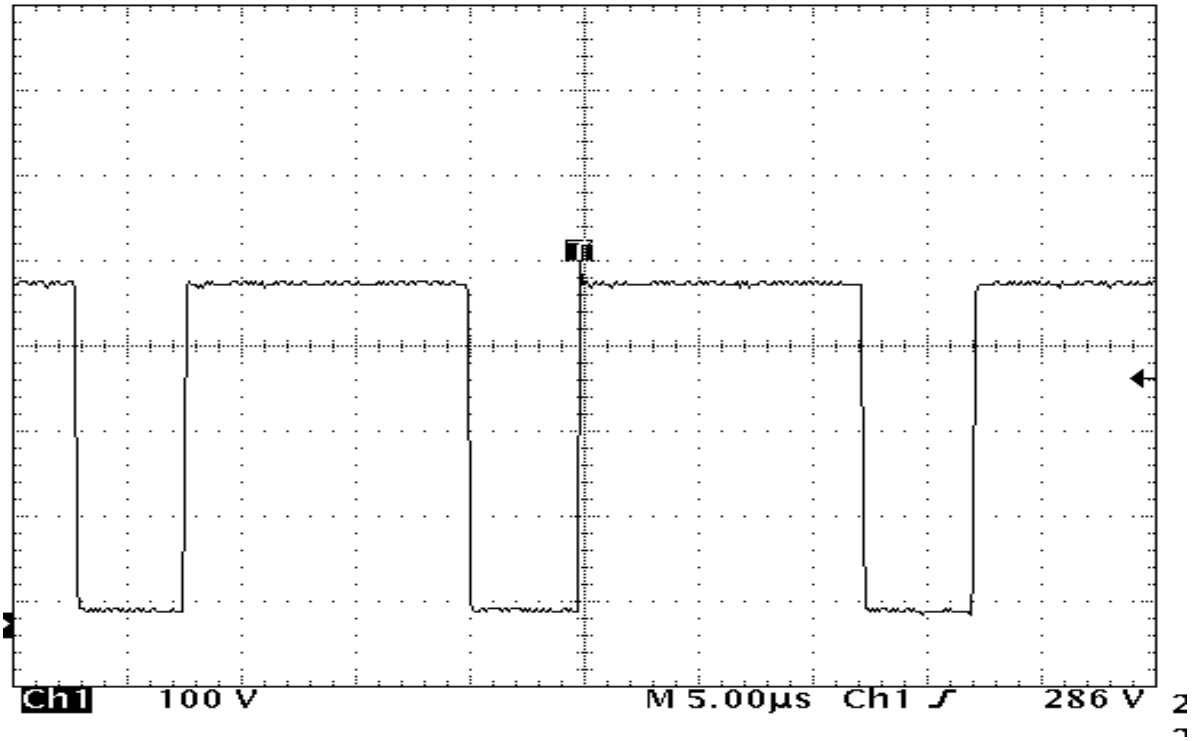
② FREE VOLTAGE
The board is designed so that the input voltage can be used within 90VAC to 264VAC.

③ Improvement of power factor
The board is designed using the active PFC circuit so that the Power Factor can be over 9.0.

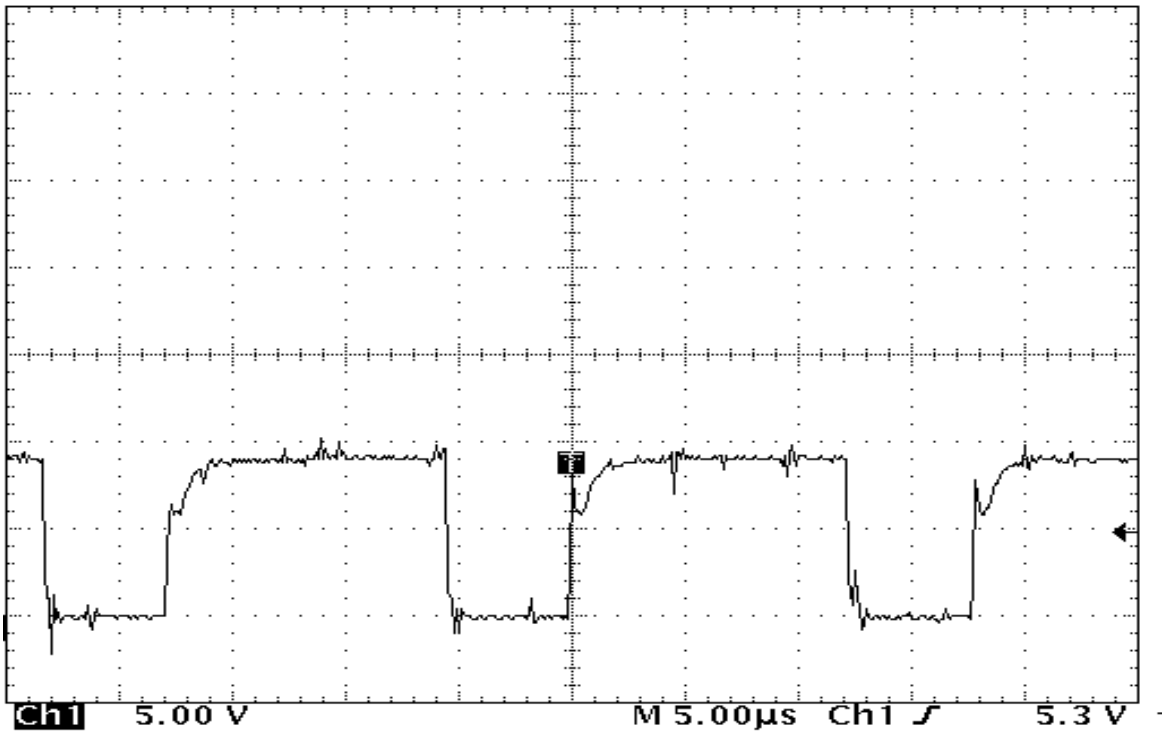
④ Protection
The OCP(Over current Protection), OVP(Over voltage Protection), Short Circuit Protection functions are added against system malfunction.

(6) Part Block Diagram and Part Function.

① AC-DC Converter
The Power supply output +400V DC from the common AC power supply using the active PFC booster converter. This converter is designed for improving the power factor and preventing the noise with high frequency and finally becomes the input power system for the switching regulator on the output side.



Picture1. PFC Drive FET(2SK2372) Drain pulse



Picture2. PFC Drive FET(2SK2372) Gate pulse

- Oscillator Frequency
  Oscillator Frequency is determined by the values of Rt and Ct, which determine the ramp and off-time of the oscillator output clock
  Oscillator Frequency is derived from the following equation

$$f_{osc} = \frac{1}{t_{RAMP}}$$

$$t_{RAMP} = C_t \times R_t \times 0.51$$

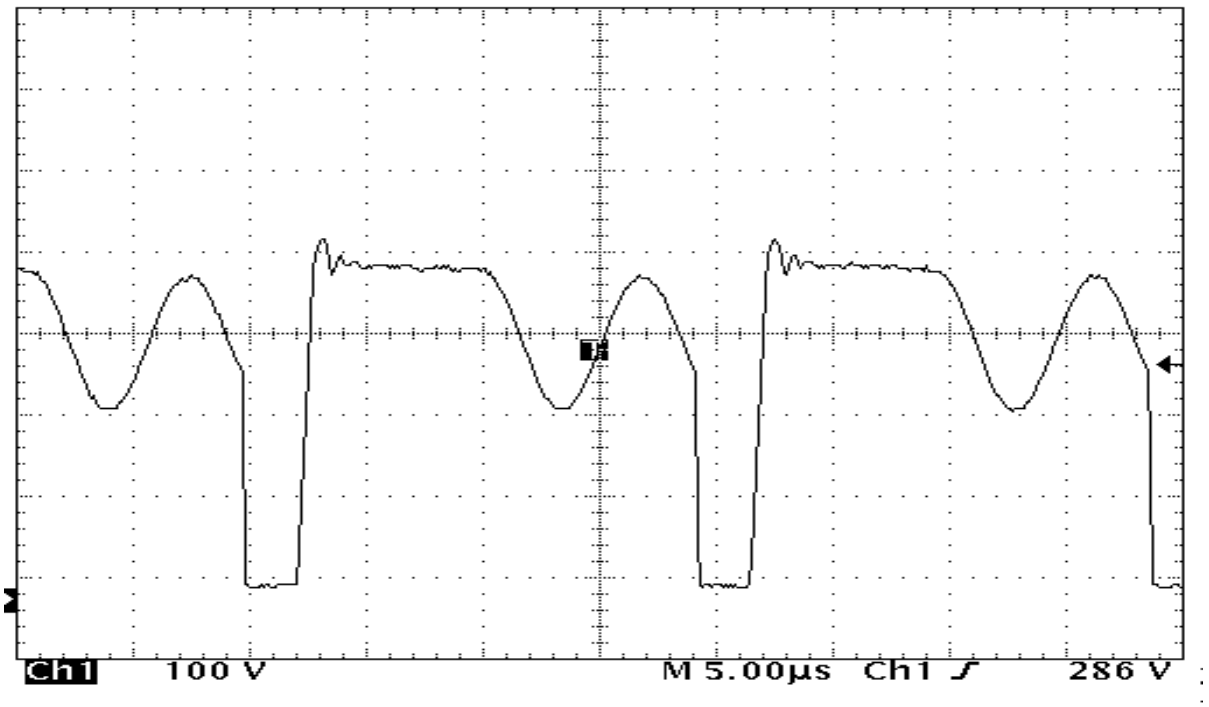
For the circuit shown in the PDP50, with the oscillator running at

$$f_{osc} = \frac{1}{2.2nF * 15k * 0.51} = = 59.417\text{kHz}$$

R_t (R16 : 1/8W 15K) , C_t (C9 : MLCC 222)

② Auxiliary Power Supply

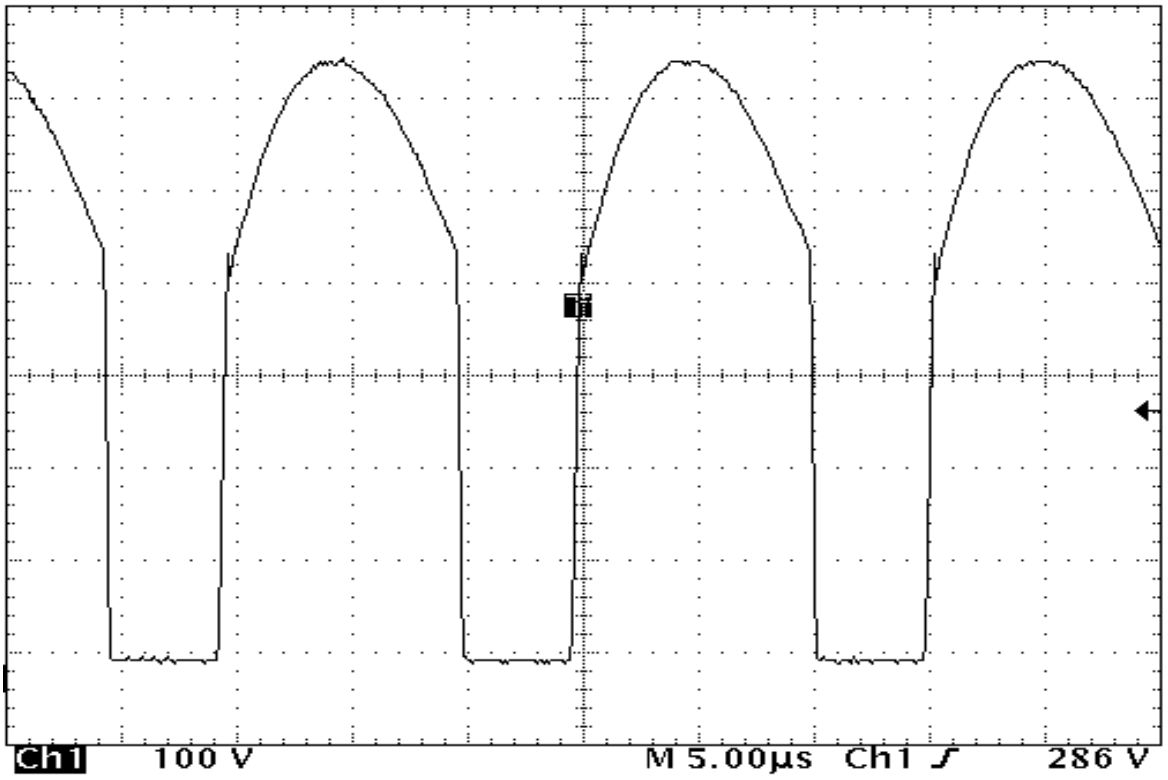
The auxiliary power supply is a block generated power of micom for remote controlling. Once the power plug is inserted, this block always comes into operation, causing micom to get into the standby state for the output. Thus, this output is called the standby voltage. And with the relay ON signal inputted through the remote controller, this block turns the mechanical switch of relay to ON for driving the main power supply.



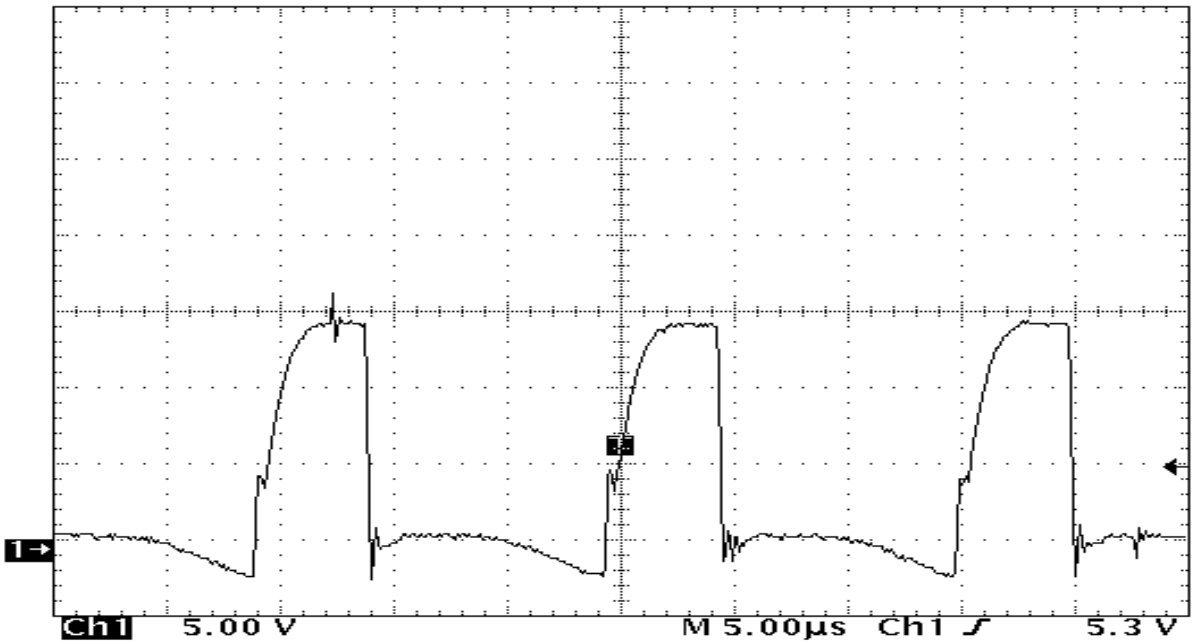
Picture3. Standby flyback Pulse.

③ Implementation of Sustain Voltage

As the main part of a SMPS for PDP, sustain voltage must supply a high power, 180V / 1.8A. To comply with the specification, the forward method was basically used. At the output stage two 90V converters are connected serially for high efficiency and reduction of system size against a single 180V converter.

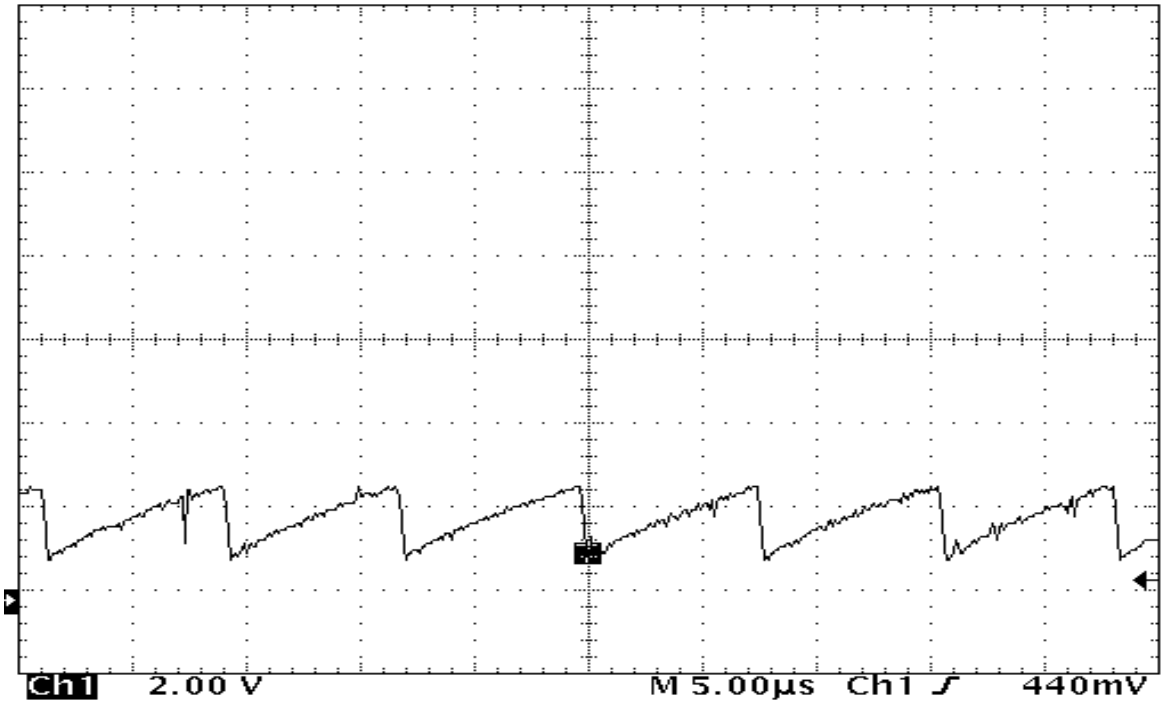


Picture4. VS Driving FET(2SK2968) drain pulse.



Picture5. VS Driving FET(2SK2968) gate pulse.

- PWM SECTION (Pulse Width Modulator)
  PDP SMPS use PWM IC (KA3844) in PWM section. KA3844 is fixed frequency current-mode PWM controller. They are specially designed for Off-Line and DC-to-DC converter applications with minimum external components. These integrated circuits featurea trimmed oscillator for precise dutycycle control, a temperature compensated reference, high gain error amplifier. Current sensing comparator, and a high current totempole output Ideally suited for driving a power MOS-FET. Protection circuity Includes built in under -voltage lockout and current limiting.
  This IC can operate with 50% duty cycle.



Picture6. KA3844 Oscillating Frequency pulse.

Oscillator timing capacitor (Ct) is charged by Vref through Rt and discharged by an internal current source. During the discharge time, the internal clock signal blanks the output to the low state. Selection of Rt and Ct therefore determines both oscillator frequency and maximum duty cycle. Charge and discharge times are determined by the formula.

$$f_{ost} = \frac{1.8}{2RtCt}$$

$$f_{ost} = \frac{1.8}{2 * 1.5nF * 9.1k} = 65.934\text{kHz}$$

R_t (R311 : 1/8W 9.1K) , C_t (C308 : MLCC 152)

④ DC-DC Converter

Input of VSCAN, VSET, VE is Sustain Voltage. This circuit use MA2820.

Maximum output wattage of MA2820 is 60W.

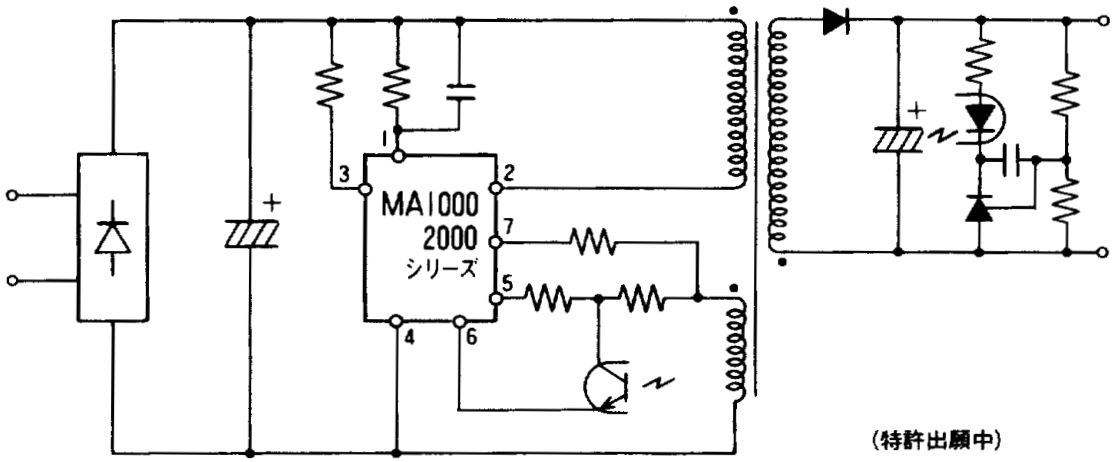
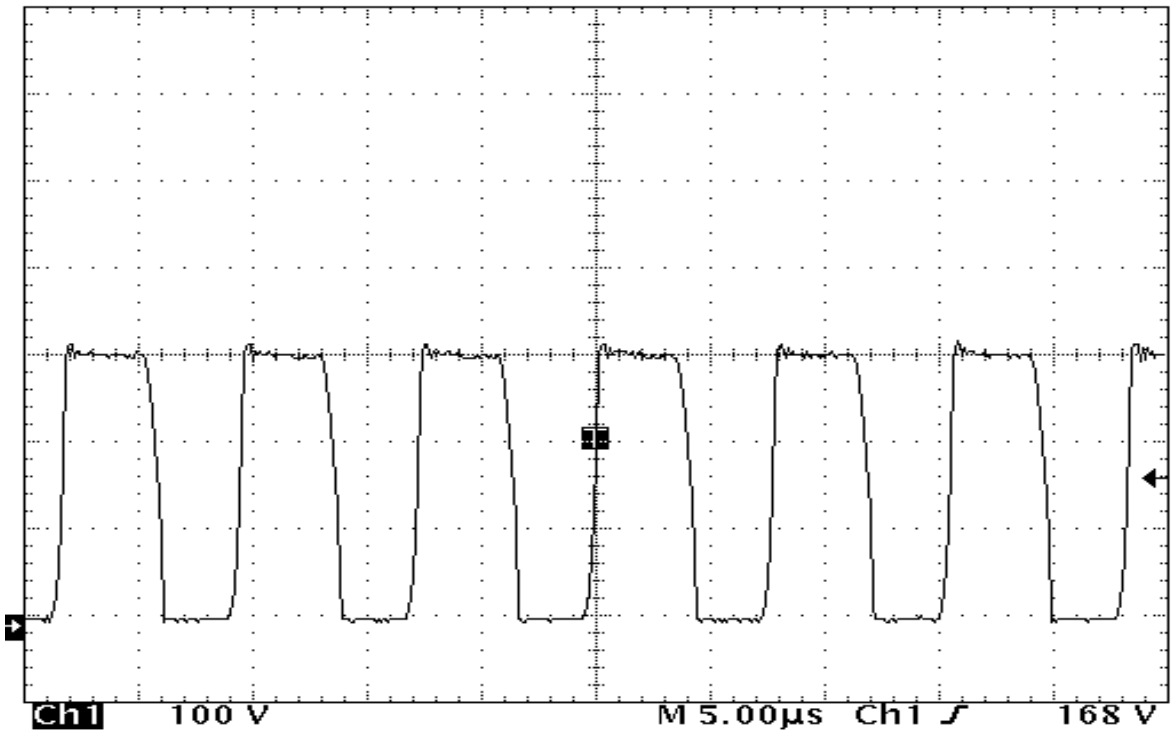


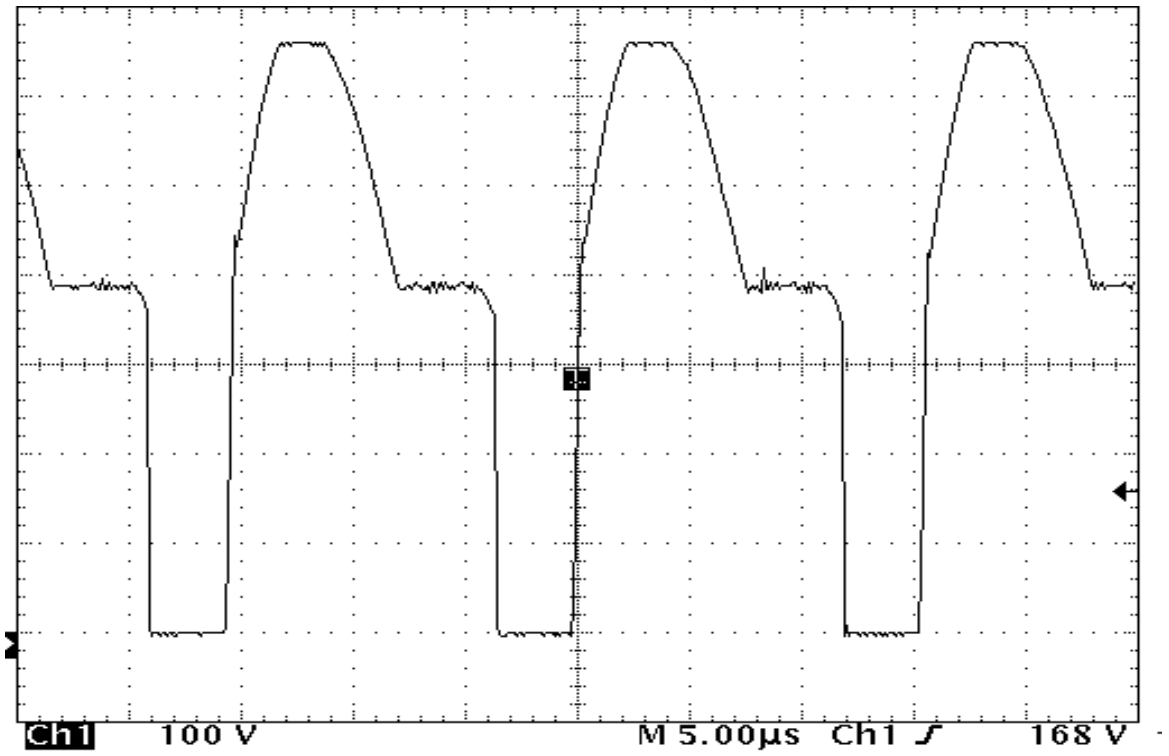
図 2 － 1

Picture7. MA series Block Diagram

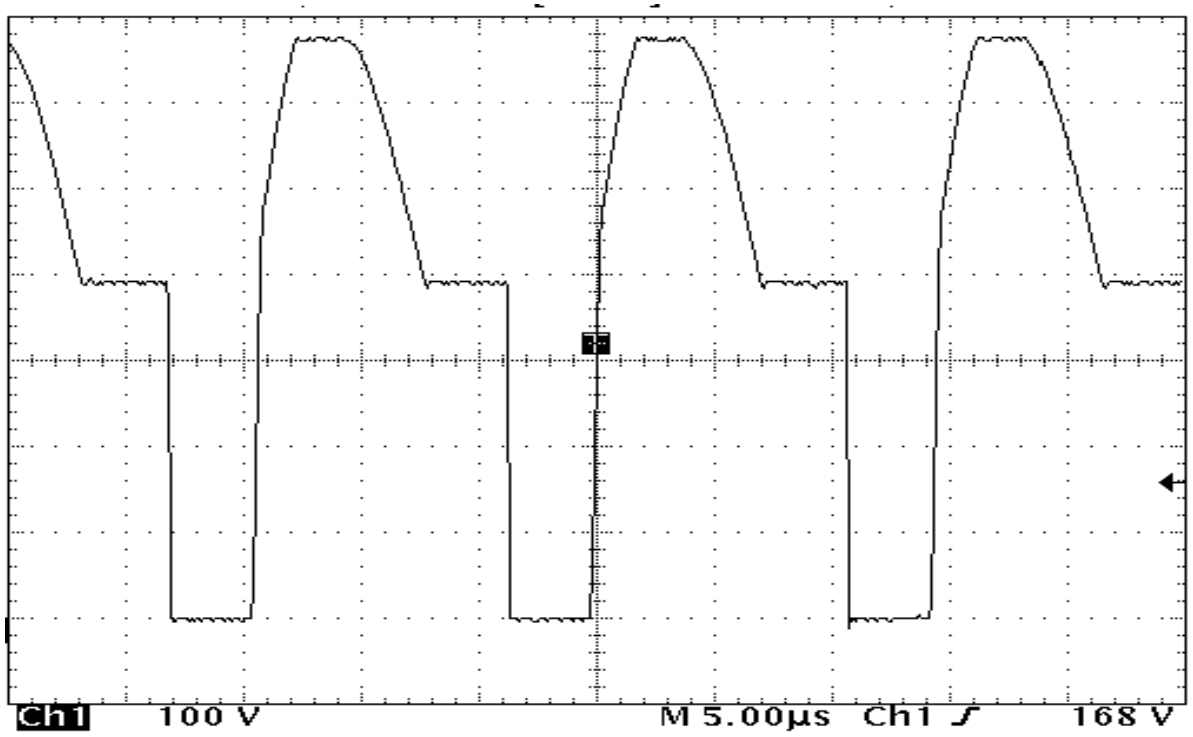


Picture8. MA2820 main pulse.

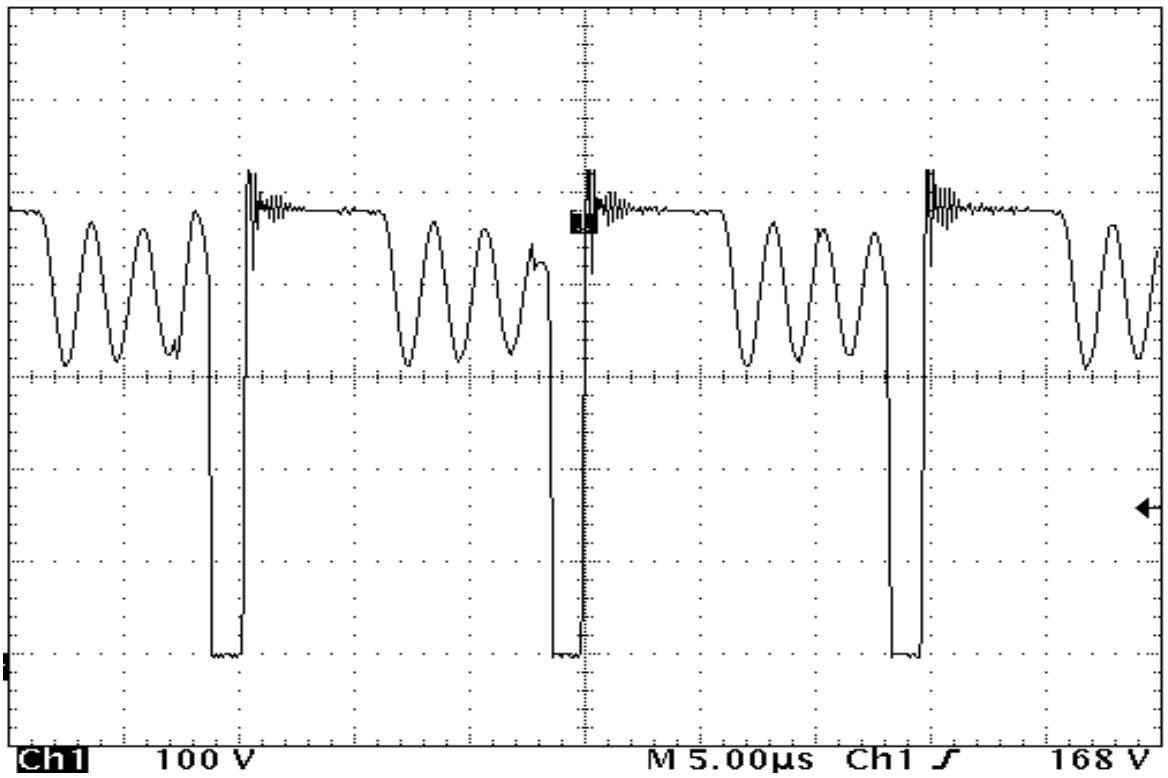
⑤ Output (VA,5V,12VSAMP) Pulse



Picture9. VA main pulse.

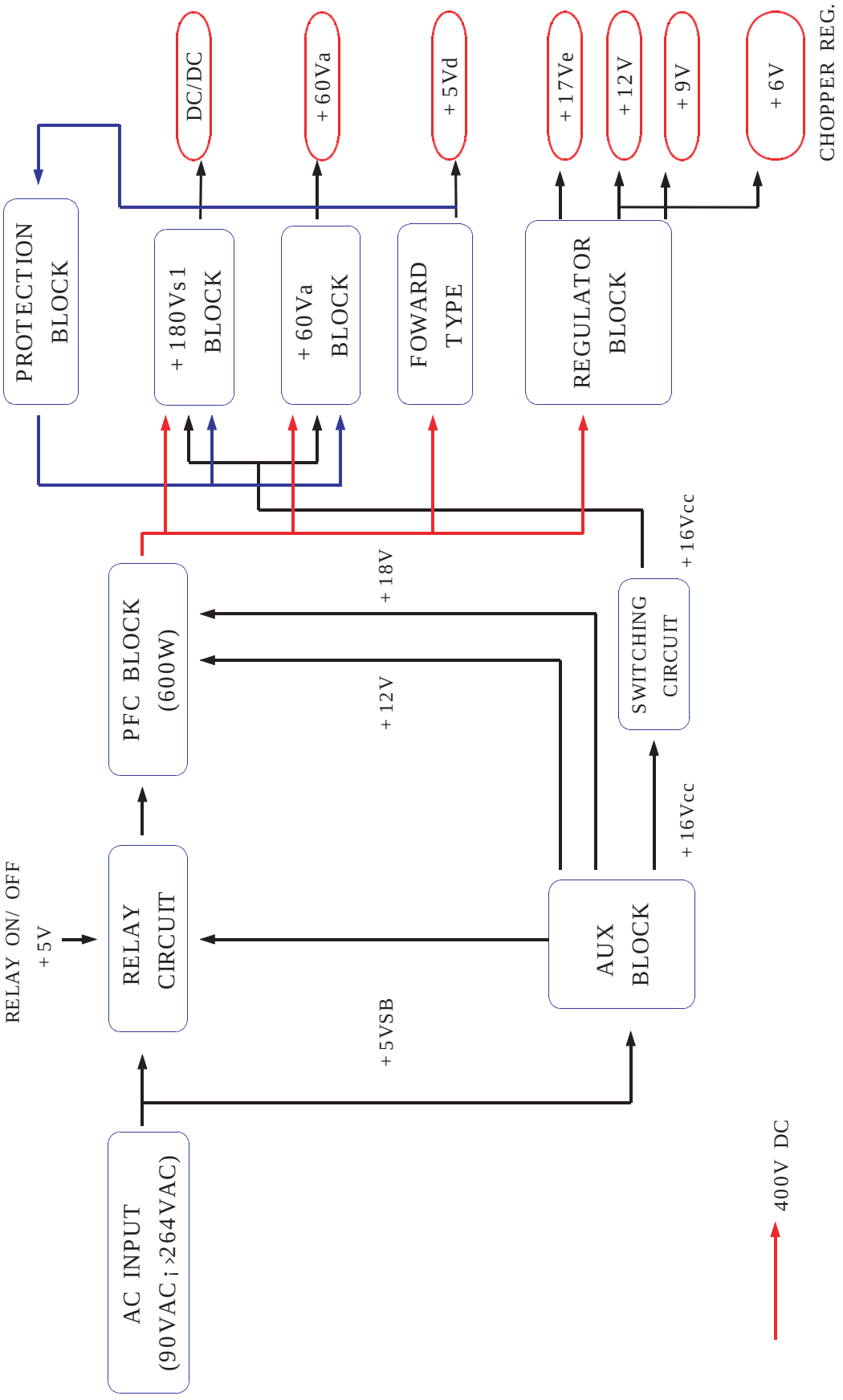


Picture10. 5V main pulse.



Picture11. 12VSAMP main pulse.

6-1-3 Block diagram



6-1-4 Connector Pin Assignmentt

SA(Image Board)

NO	OUTPUT	SYM
1	+ 5.3V	VSB
2	USER Specification	
3		
4		
5	RELAY (INPUT)	5V/0.3A MAX
6	USER Specification	
7		
8		
9		
10		
11		
12		
13		

SY(Drive)

NO	OUTPUT	SYM
1	+ 5.3V	Vcc
2	GND	
3	+ 18.3V	Vdd
4	GND	
5	80V	Vscan
6	GND	
7	205V	Vset
8	N.C	
9	GND	
10	GND	
11	163V	Vs
12	163V	Vs
13	163V	Vs

SX(Drive)

NO	OUTPUT	SYM
1	+ 5.3V	Vcc
2	GND	
3	+ 18.3	Vdd
4	GND	
5	190V	Ve
6	GND	
7	80V	Vscan
8	GND	
9	GND	
10	163V	Vs
11	163V	Vs
12	163V	Vs

SPEAKER

NO	OUTPUT	SYM
1	+ 6.0V	+ 6V(A)
2	GND(A)	
3	+ 9V	V9
4	+ 12V	V12
5	GND(A)	
6	+ 12V	VSAMP
7	+ 12V	VSAMP
8	GND(AMP)	
9	GND(AMP)	

SL(LOGIC)

NO	OUTPUT	SYM
1	+ 5.3V	Vcc
2	GND(D)	
3	+ 5.3V	Vcc
4	GND(D)	

BUFFER

NO	OUTPUT	SYM
1	+ 70V	Va
2	+ 70V	Va
3	GND	
4	GND	

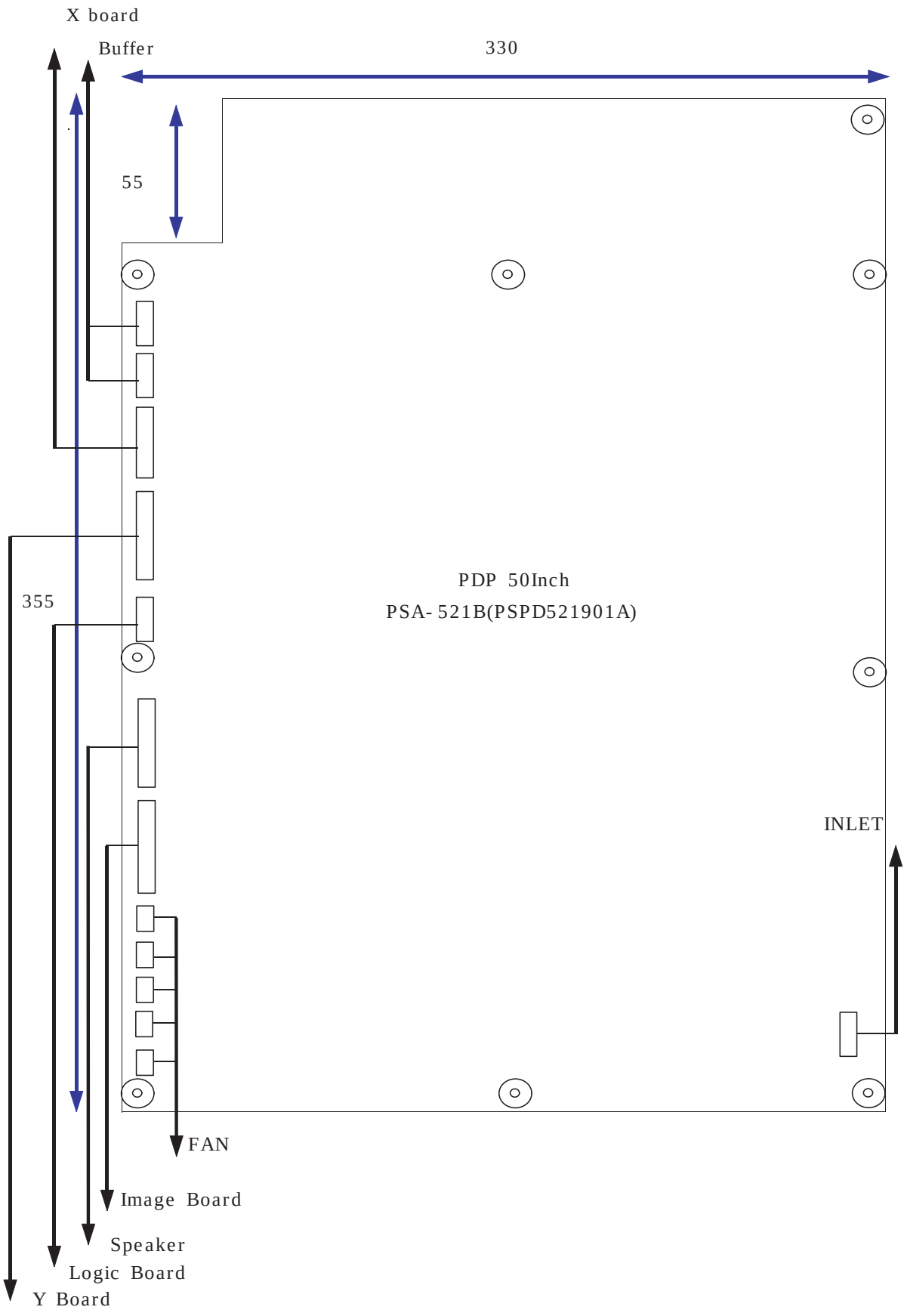
AC(INPUT)

NO	INPUT	SYM
1	AC	-
2	NC	-
3	AC	-

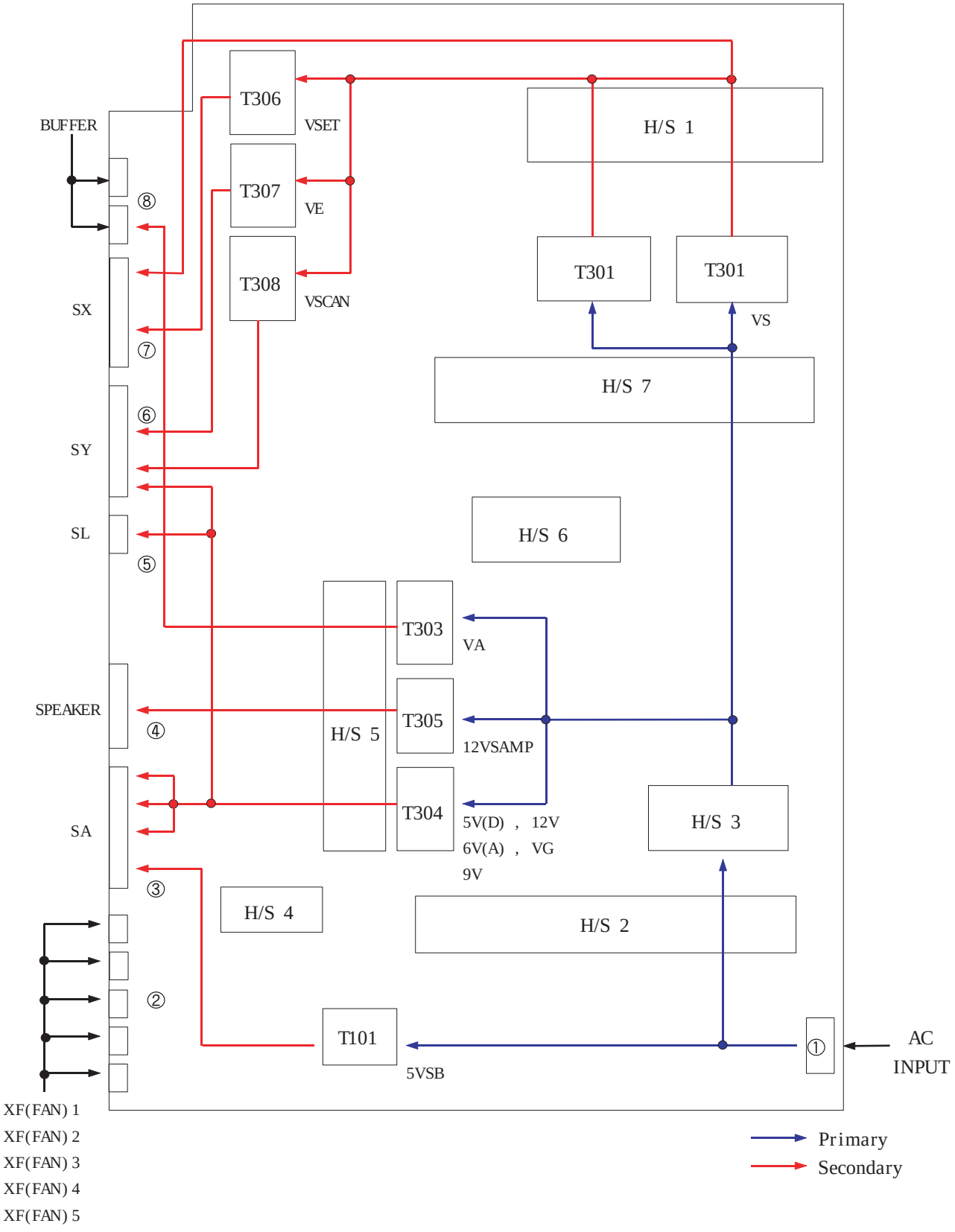
FAN(4EA)

NO	OUTPUT	SYM
1	+ 12V	VFAN
2	GND	
3	FAN SIGNAL	

6-1-5 Power Supply Systematic Diagram & Wiring Diagram



6-1-6 Power Supply Layout



6-2 Driver circuit

6-2-1 Driver circuit overview

6-2-1(A) WHAT IS THE DRIVER CIRCUIT

It is a circuit generating an appropriate pulse (High voltage pulse) and then driving the panel to implement images in the external terminals (X electrode group, Y electrode group and address electrode), and this high voltage switching pulse is generated by a combination of MOSFETs.

6-2-1(B) PANEL DRIVING PRINCIPLES AND TYPES OF DISCHARGE BY DRIVE PULSE

In PDP, images are implemented by impressing voltage on the X electrode, Y electrode and address electrode, components of each pixel on the panel, under appropriate conditions. Currently, ADS (Address & Display Separate: Driving is made by separating address and sustaining sections) is most widely used to generate the drive pulse. Discharges conducted within PDP pixels using this method can largely be classified into 3 types, as follows:

① Address discharge: This functions to generate wall voltage within pixels to be lighted by addressing information to them (i.e., impressing data voltage)

② Sustaining discharge: This means a display section where only pixels with wall voltage by the address discharge display self-sustaining discharge by the support of such wall voltage. (Optic outputs realizing images are generated.)

③ Ramp reset discharge: To have address discharge occur selectively in pixels, all pixels in the panel must have the same conditions (i.e., the same state of wall and space electric discharges). The ramp reset discharge section, therefore, is important to secure the drive margin, and methods most widely used to date include wall voltage controlling by ramp pulse.

6-2-1(C) Discharge of Drive

① Sustaining discharge

1(C). Kinds and detailed descriptions of driving discharge
Sustaining discharge means a self-sustaining discharge generated by the total of the sustaining pulse voltage (usually, 160~180V) alternately given to X and Y electrodes during the sustaining period and the wall voltage which varies depending upon pixels' previous discharge status. It is operated by the memory function (through this, the current status is defined by previous operation conditions) AC PDP basically possesses. That is, when there is existing wall voltage in pixels (in other words, when pixels remain ON), the total of wall voltage and a sustaining voltage to be impressed subsequently impresses a voltage equal to or above the discharge start voltage, thereby generating discharge again, but when there is no existing wall voltage in pixels (in other words, when pixels remain OFF), the sustaining voltage only does not reach the discharge start voltage, thus causing no discharge. The sustaining discharge is a section generating actual optic outputs used in displaying images.

② Address discharge

This means a discharge type generated by the difference between positive voltage of the address electrode (usually, 60~70V) and GND of the Y electrode. The address discharge serves to generate wall voltage in pixels where images are to be displayed (that is, discharge is to be generated) prior to the sustaining discharge section. Namely, pixels with wall voltage by the address discharge will generate sustaining discharge by the following sustaining pulses.

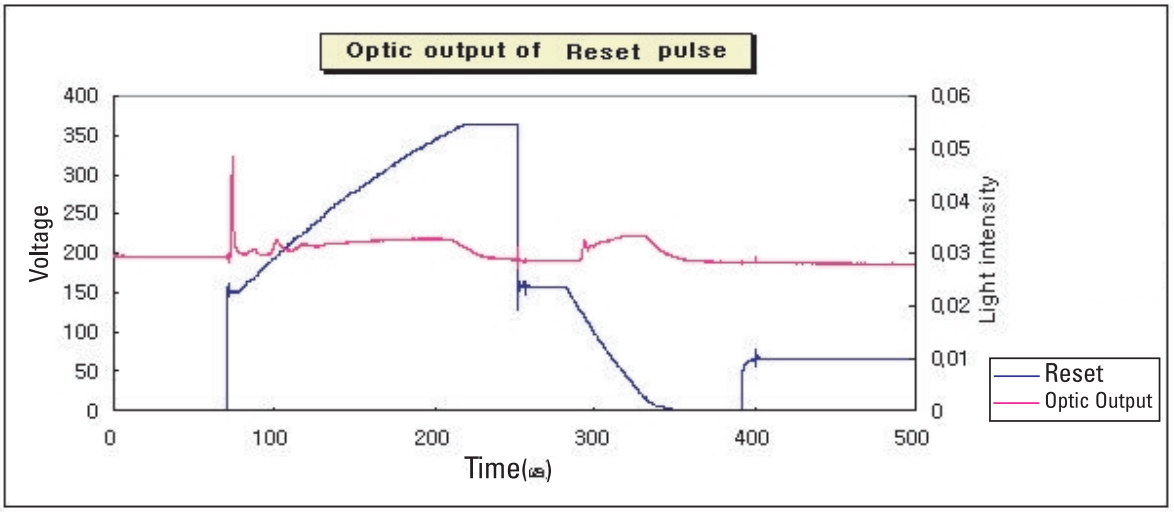
③ Weak erasing discharge

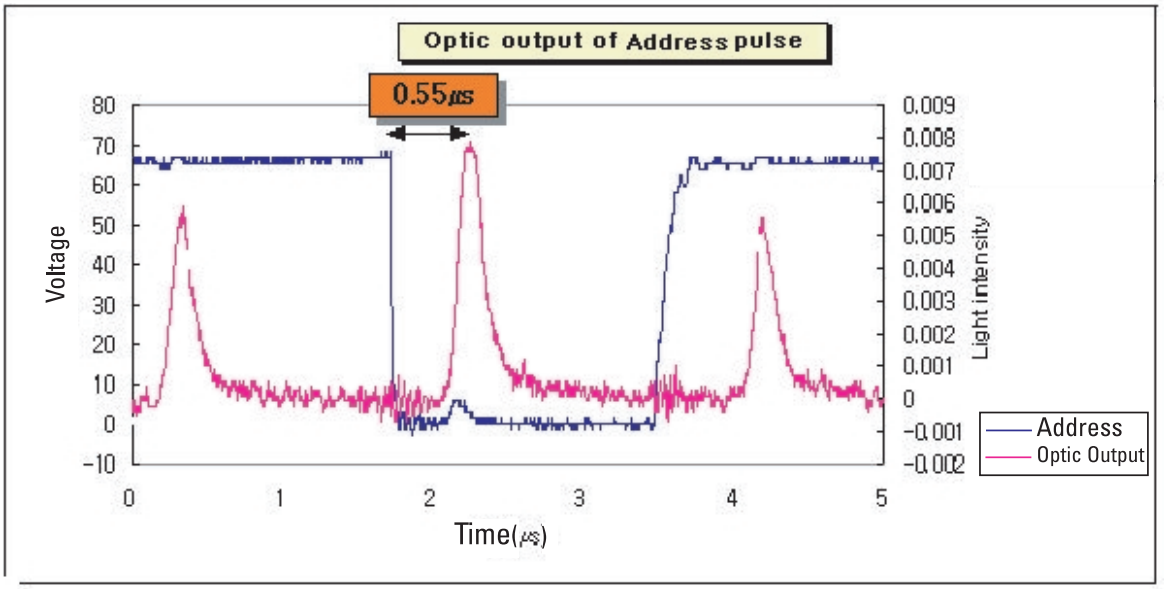
The purpose of resetting discharge is to make even wall voltage in all pixels on the panel.
Wall voltage which may vary depending upon the previous sustaining discharge status must be made even. That is, wall voltage generated by the sustaining discharge must surely be removed, by making discharges and then supplying ions or electrons. Wall voltage can be removed by making discharges and then setting a limitation on time for opposite polarity charging of the wall voltage or generating weak discharge (Low voltage erasing) to supply an appropriate quantity of ions or electrons and keep polarities from being charged oppositely. The weak discharge (Low voltage erasing) methods which have been known to date can largely be into two types:

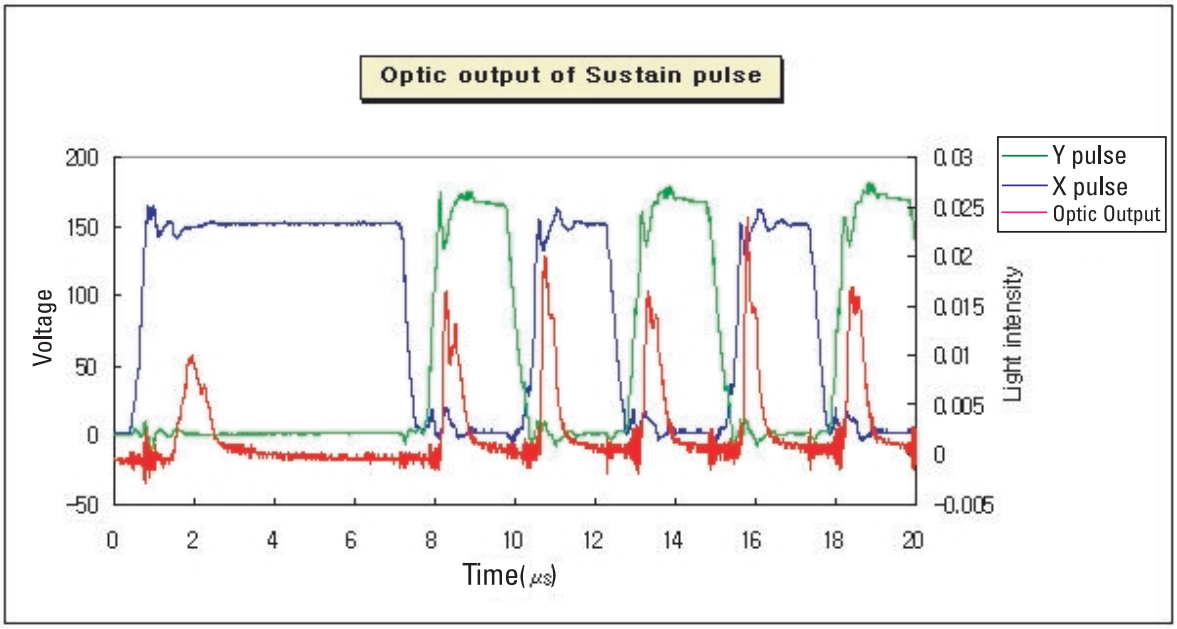
1) the log pulse adopted by most companies including F Company, and
2) the ramp pulse adopted by Matsushita.

In both two methods, impression is made with a slow rising slope of the erasing pulse. Because the total of the existing wall voltage and a voltage on the rising pulse must be at least the drive start voltage to generate discharges, external impressed voltage is adjusted based on the difference in wall voltage between pixels.
And, weak discharge is generated because of a small impressed voltage.

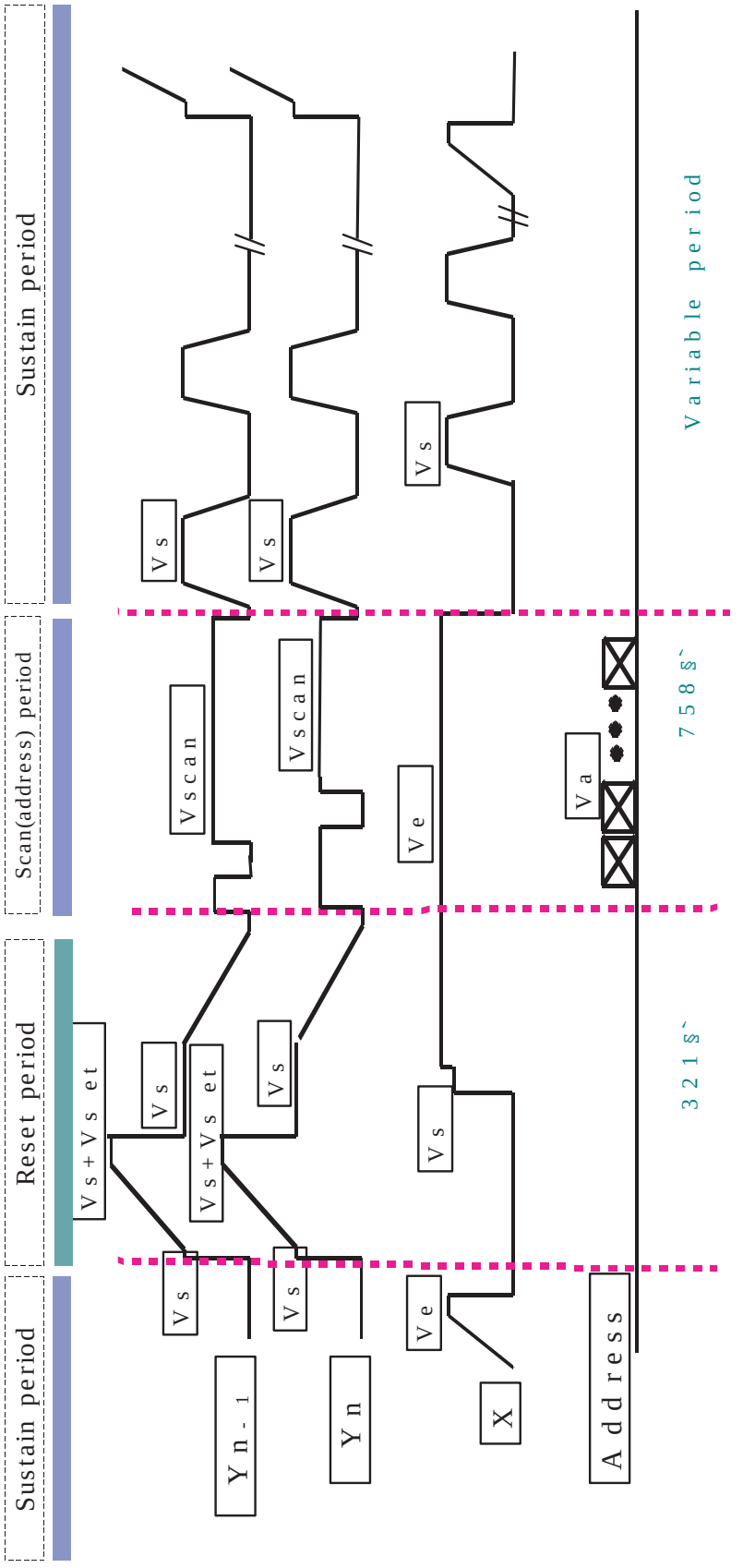
6-2-1(D) Pulse of Reset, Address and Sustain period and optic output







6-2-2 Drive pulse and functions (ADS-driven method)



Vs	Refer to Power Board	Vset	Refer to Power Board	Va	Refer to Power Board		
Vscan	Refer to Power Board			Vg	Refer to Power Board		
Ve	Refer to Power Board			V5d	Refer to Power Board		

A1,2.....	Address(= Data) Electrode	
X	Common & Sustain Electrode	
Y1,2.....	Scan & Sustain Electrode	

6-2-2(A) FUNCTIONS OF PULSES

① **Narrow-width erasing pulse**

X Narrow-width erasing pulse
Pulses in the sustaining section always begin with Y electrode pulse and end with X electrode pulse. Especially, the last of the X electrode has a narrow width, which serves as erasing discharge to remove the wall electric charge on electrodes by setting a limitation on time for generating such electric charge, as explained above. This method removes wall voltage on pixels which remained ON in the sustaining section, thereby making even all pixels.

② **Ramp rising pulse**

The purpose of ramp rising pulse is to make wall voltage to some level for low voltage address drive (includig low level sustain) in all pixels on the panel.

③ **Ramp falling pulse and X Ve level**

Ramp falling pulse and Ve pulse are using to keep the wall charges safely which were generater by ramp rising pulse to next steps.

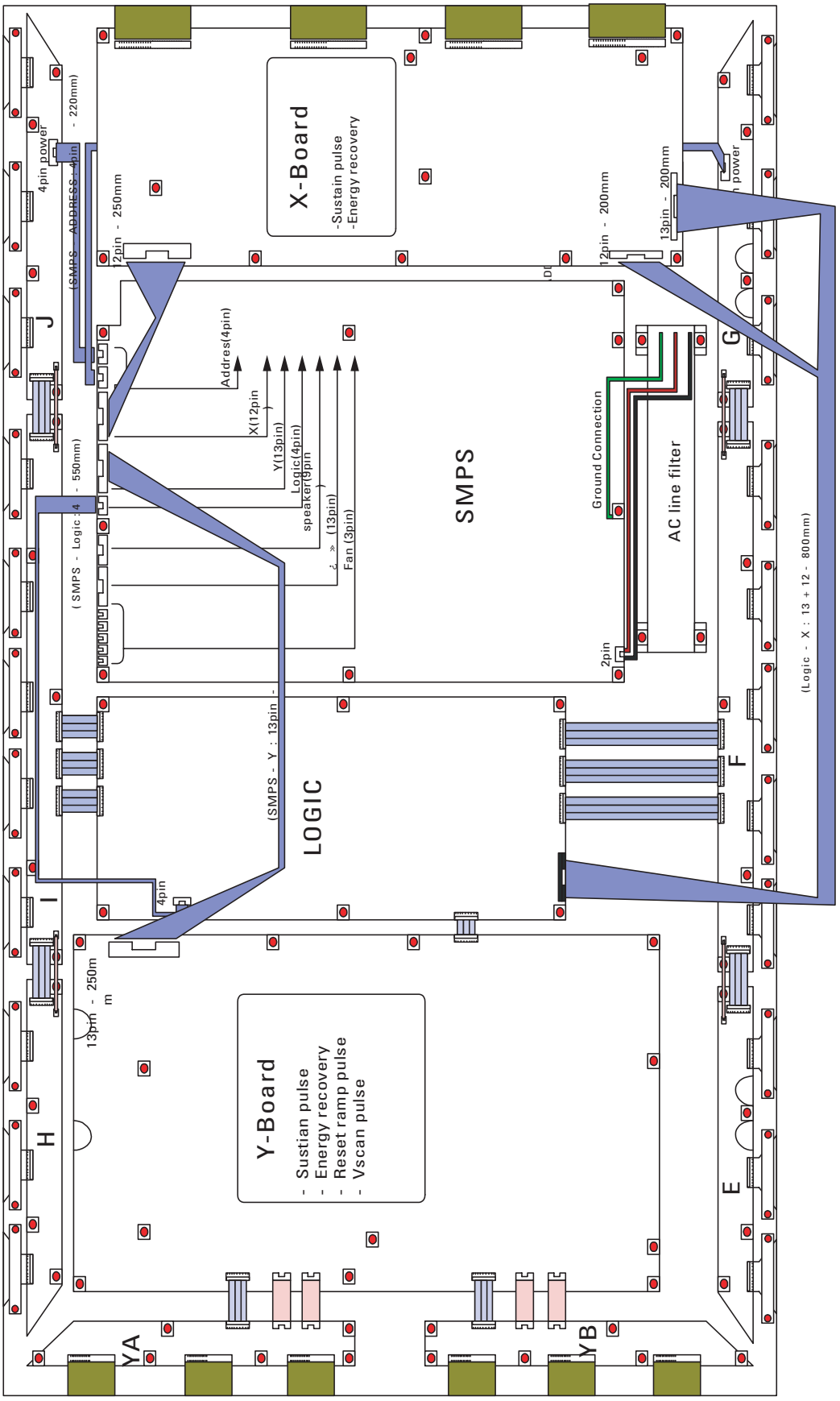
④ **scan pulse**

This is called the scan pulse, selecting each of Y electrodes on a one-line-at-a-time basis. In this case, Vscan means the scan bias voltage, functioning to lower switching voltage of the drive IC (by switching Vscan into ground). Ground is impressed on electrode lines with ground impressed on, and 75V (Vscac) is impressed on other lines, so that only pixels with data voltage (usually, 65V) impressed on electrodes have the discharge start voltage (65V) or higher for address discharge. Thus, because scan pulse and data pulse are impressed line by line, very long time is taken for PDP addressing.

⑤ **1st sustaining pulse**

The sustaining pulse always begins with the Y electrode. This is because when address discharge [positive (+) voltage on ADD electrode and negative (-) voltage on Y electrode] is generated, positive (+) wall voltage is generated on the Y electrodes. Because wall electric charge generated by address discharge is generally smaller than wall voltage generated by sustaining discharge, initial discharges have small discharge strength, and stabilization is usually obtained after 5~6 times discharges, subject to variations depending on the structure and environment of electrodes. The purpose of impressing the initial sustaining pulses long is to obtain stable initial discharges and generate wall electric charges as much as possible.

6-2-3 Configuration and operation principles of driver circuit



6-2-3(A) DESCRIPTIONS OF EACH BOARD'S FUNCTIONS

① X-Bd

- Main PCB

Connected to the panel's X terminal, generating sustaining voltage pulse (including ERC), and whole erasing pulse.

② Y-Bd

- Main PCB

Connected to the panel's Y terminal, generating sustaining voltage pulse (including ERC), and log erasing pulse.

③ Y-buffer

- Upper part + lower part

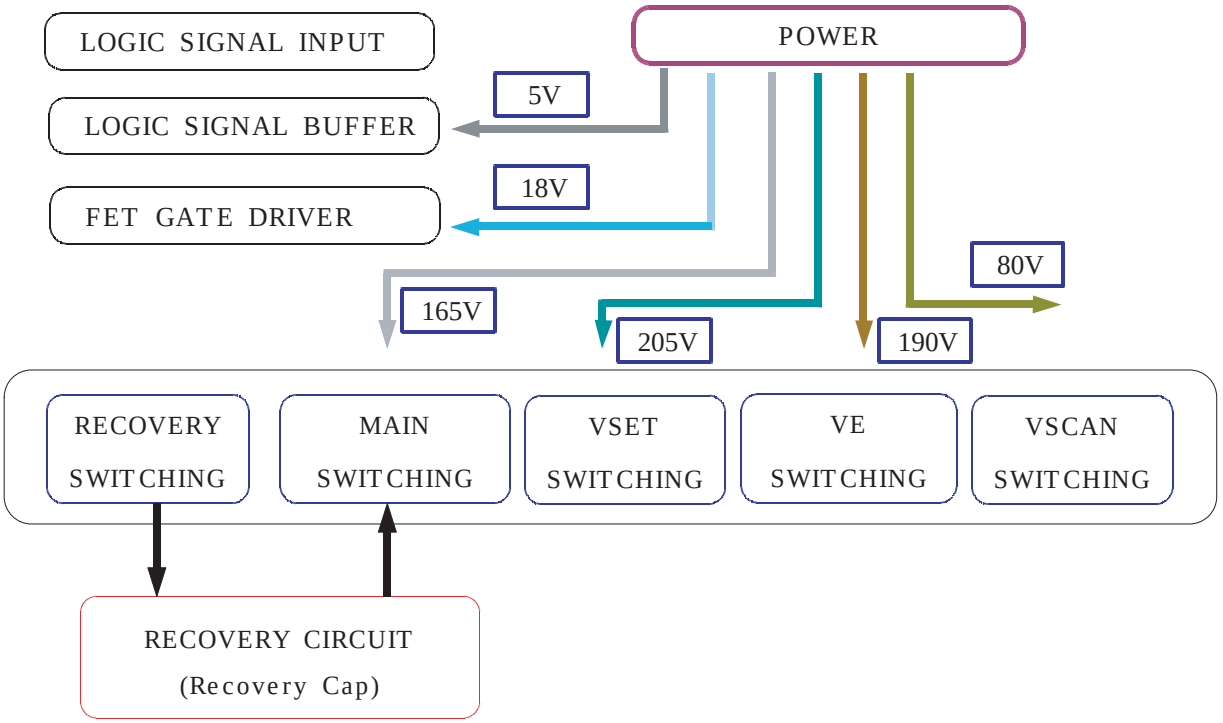
Board impressing scan pulse on Y terminals, consisting of the upper and lower sub-boards.
With wide VGA, one board is equipped with 4 scan driver ICs (SN755858: 64 outputs).

④ COF

- Upper part + lower part

Impresses Va pulse on address electrodes in the address section and generates address discharge based on a difference between such Va pulse and scan pulse impressed on Y electrodes.

6-2-3(B) DRIVING BOARD'S BLOCK DIAGRAM



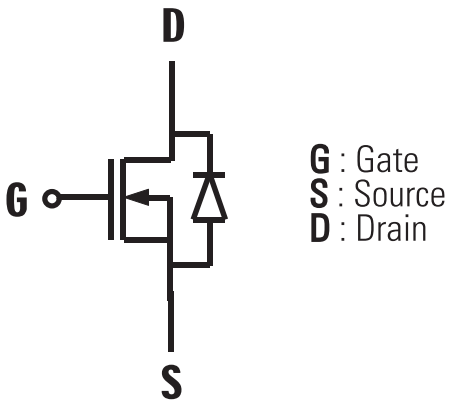
► Components of driving board's operations

1. Power supply
   1) Supplied from the power supply board
      - For sustaining discharge: 155V ~ 170V
      - For Ramp rising voltage,Vset: 200V ~ 235V
      - For X Ve level: 185V ~ 195V
      - For scan: 85V;
      - For addressing discharge: 63V ~ 73V
      - For logic signaling buffer: 5V
      - For gate driver IC: 15V.

2. Logic signal
   1) Supplied from the logic board
      - Gate signals for FETs.

6-2-3(C) PRINCIPLES OF FET'S OPERATION AND HIGH VOLTAGE SWITCHING

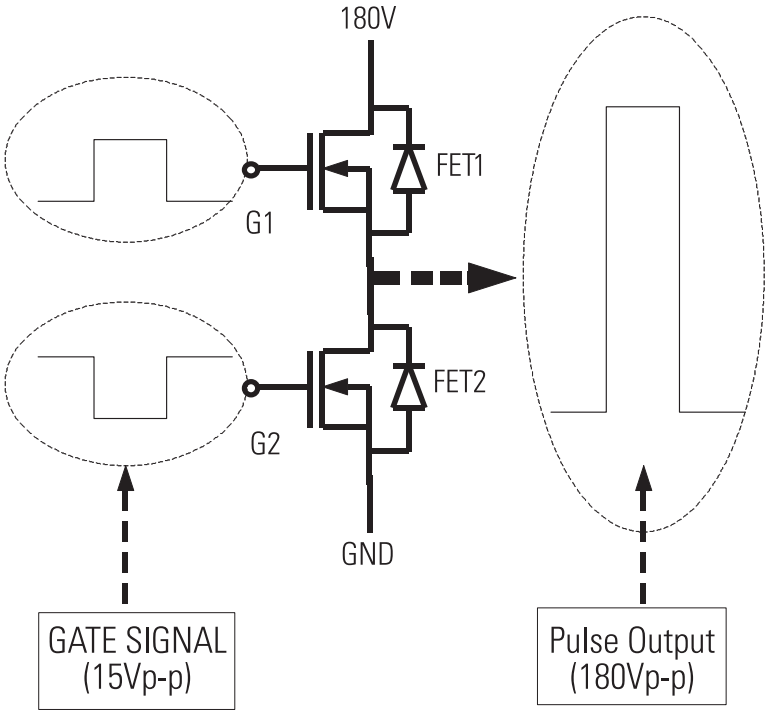
■ FET's operation principles



1) With signal impressed on the gate(Positive voltage) , FET gets short-circuited (a conducting wire of zero (0) resistance); and

2) With no signal impressed on the gate (GND), FET gets open-circuited (a non-conducting wire of ∞ resistance).

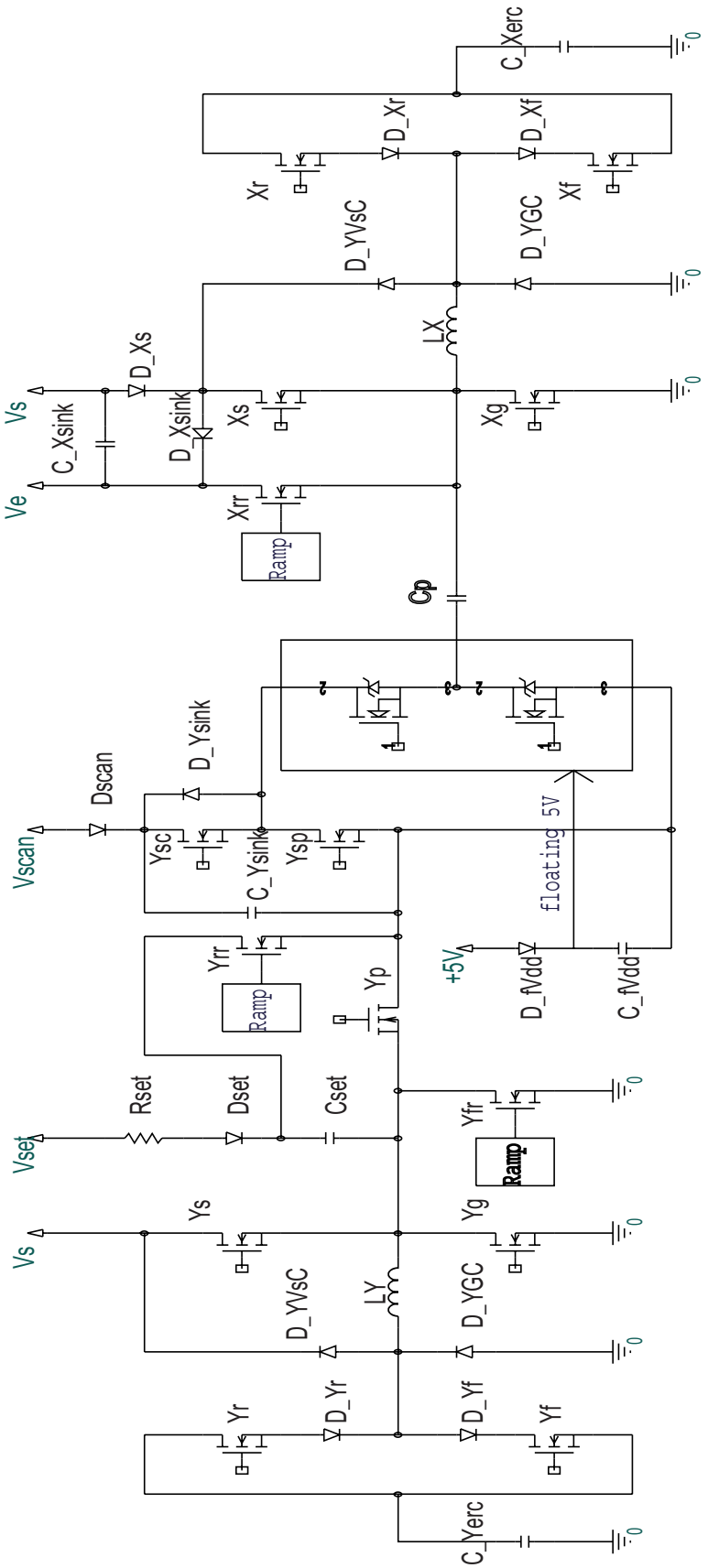
■ FET's high voltage switching principles



1) With no signal impressed on G1, FET1 gets open-circuited, and with signal impressed on G2, FET2 gets short-circuited, thereby causing GND to be outputted to output terminals.

2) With signal impressed on G1, FET1 gets short-circuited, and with no signal impressed on G2, FET2 gets open-circuited, thereby causing 180V to be outputted to output terminals.

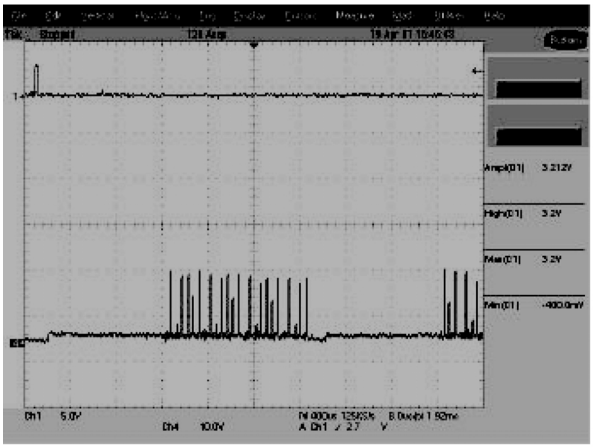
6-2-3(D) DRIVER CIRCUIT DIAGRAM



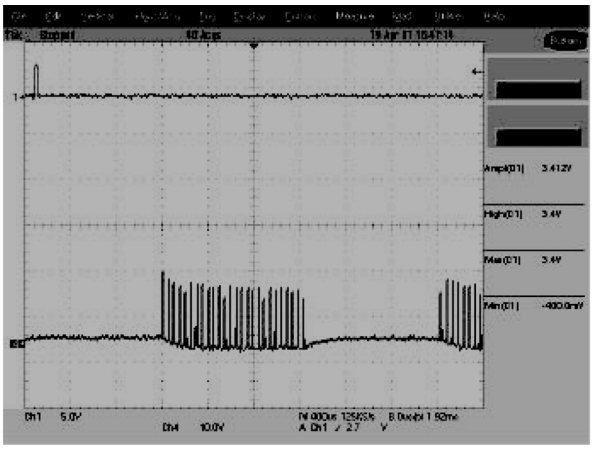
6-2-4(E) X BOARD TEST: ASSEMBLE LOGIC AND POWER INPUT JACK.

6-2-4(E)-1 Gate Signal Test

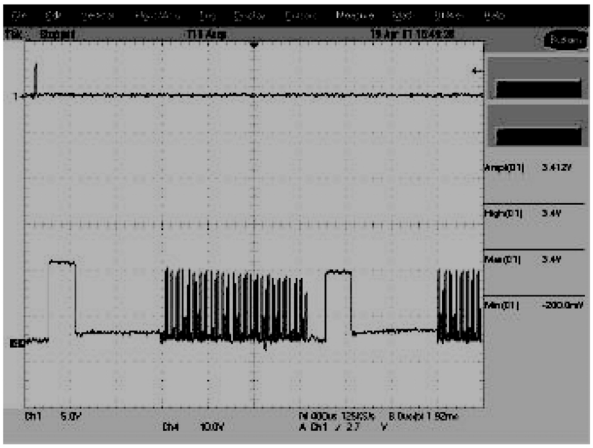
Condition) Connect 5V, GND, 17V to power connectors 1, 2, 3, respectively and then check each TP shows like figures below.



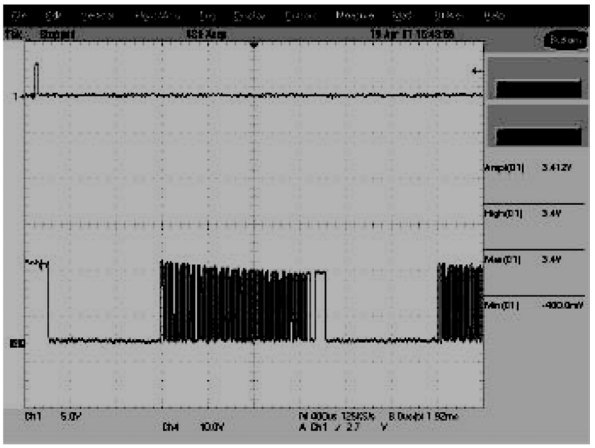
① R4001



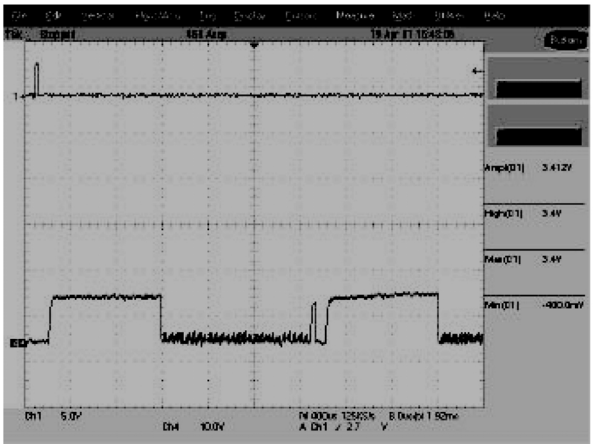
② R4004



③ R4015



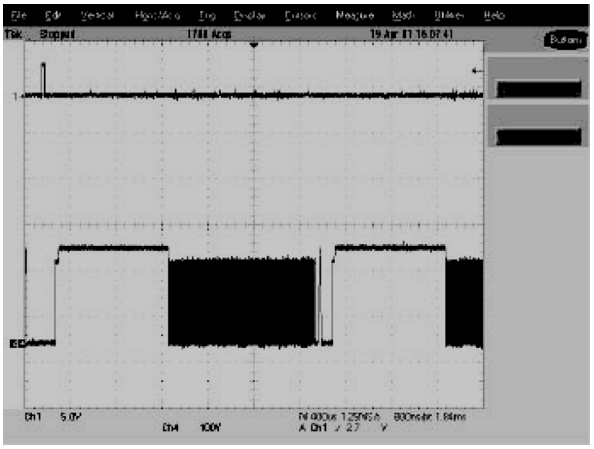
④ R4035



⑤ R4031

6-2-4(E)-2 X Output Waveform Test

Condition) After applying 5V, 17V, 168V, 190V successively, use a probe to check #6 (connector), and then check the following waveform shows at an oscilloscope.

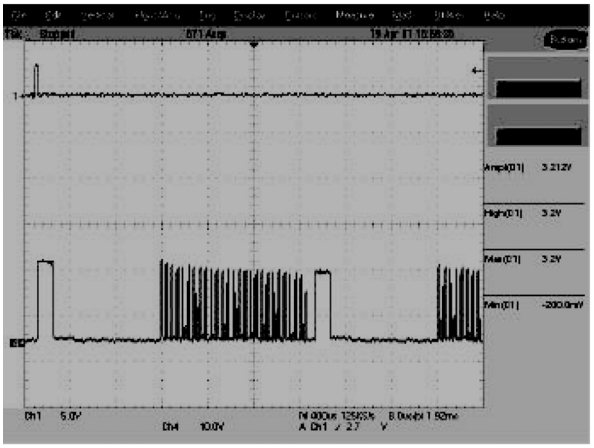


⑥ CONNECTOR

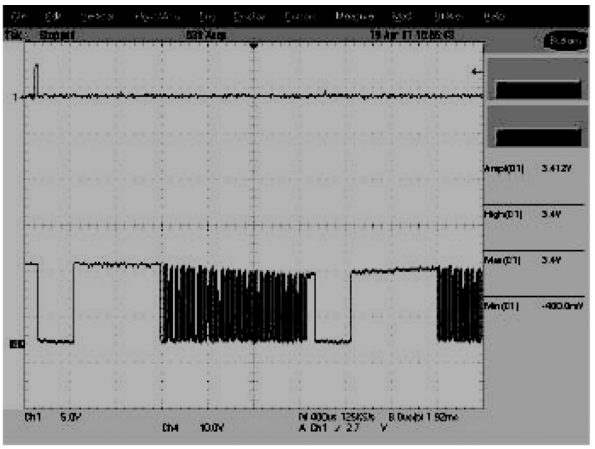
6-2-4(F) Y BOARD TEST: CONNECT A CABLE TO Y BUFFER AND ASSEMBLE A LOGIC AND POWER INPUT JACK.

6-2-4(F)-1 Gate Signal Test

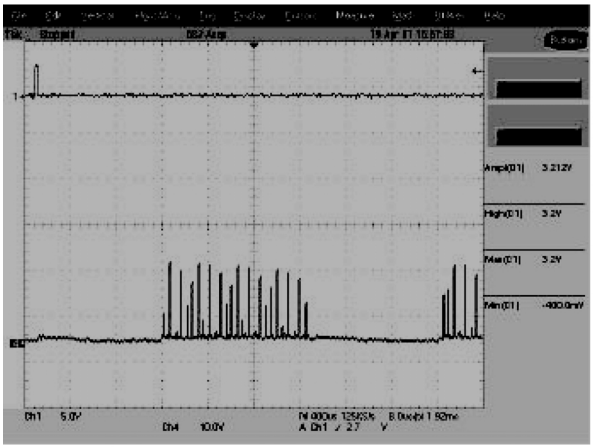
Condition) Connect 5V, GND, 17V to Y power connectors 1, 2, 3, respectively and then check each TP shows like figures below.



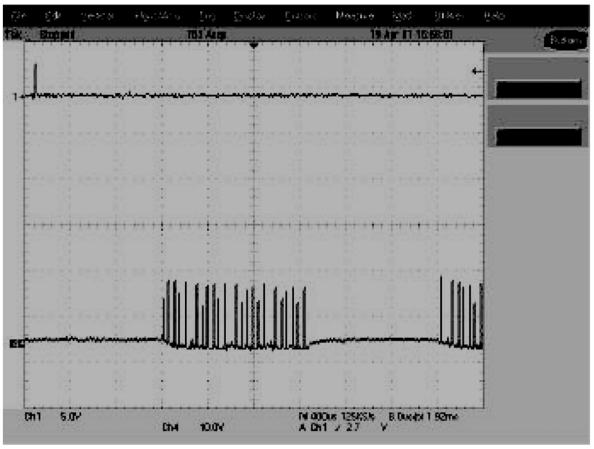
① R5029



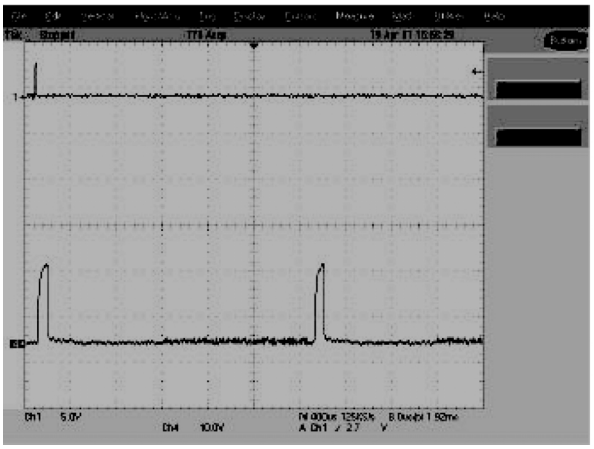
② R5052



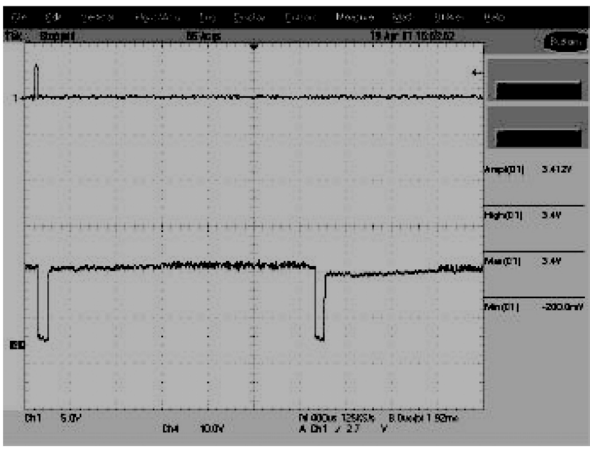
③ R5001



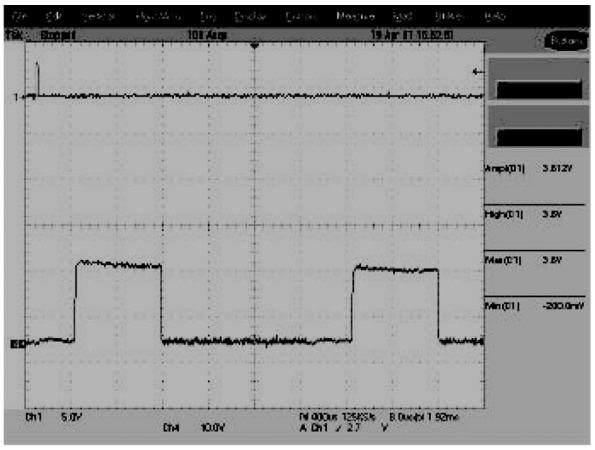
④ R5083



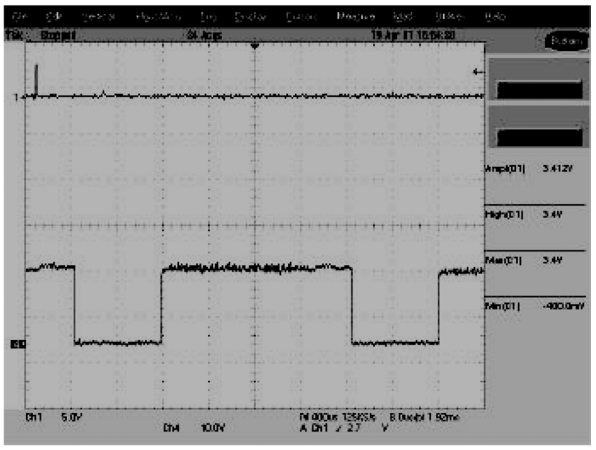
⑤ R5035



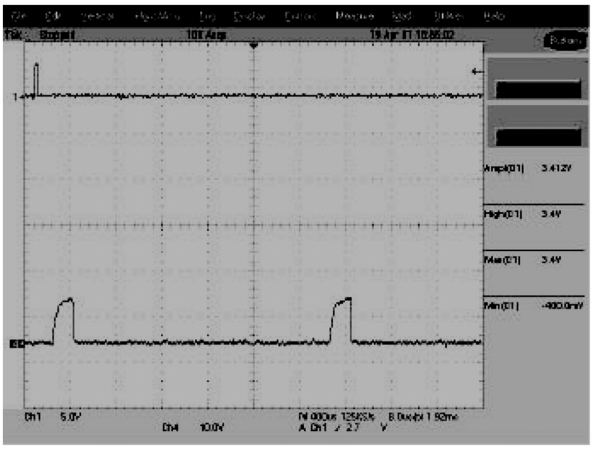
⑥ ZD5002



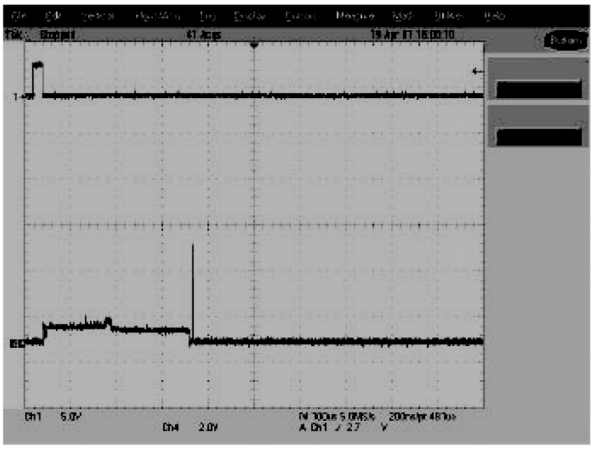
⑦ M5014



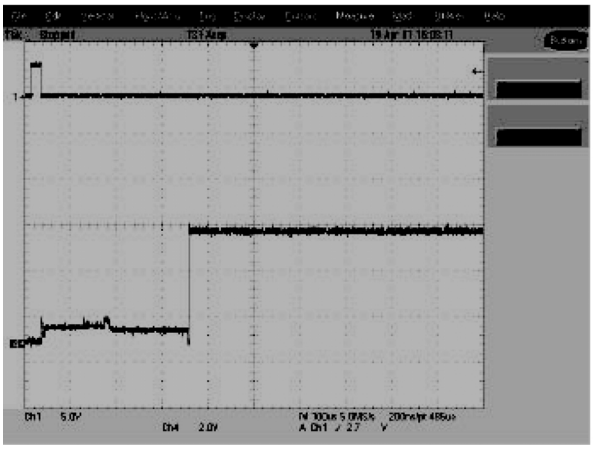
⑧ M5037



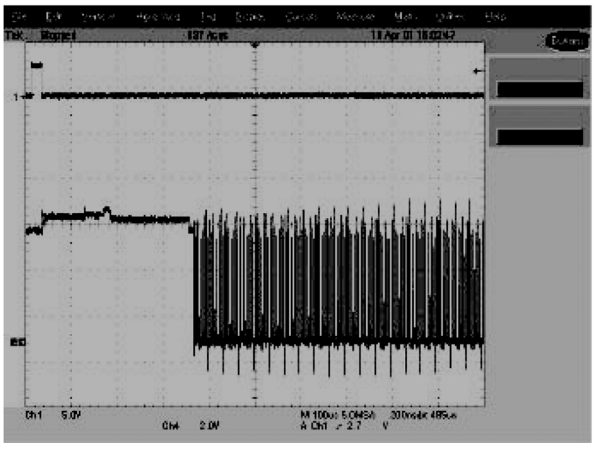
⑨ R5077



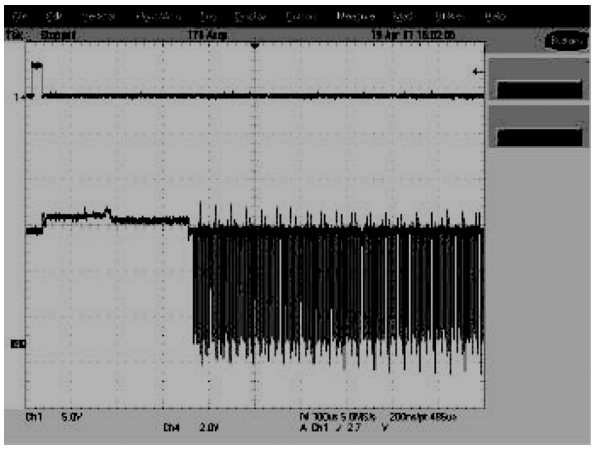
⑩ TPSI



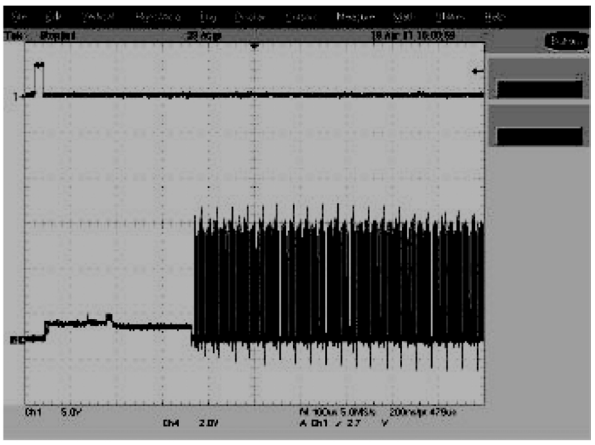
⑪ TPPOL



⑫ TPBLK



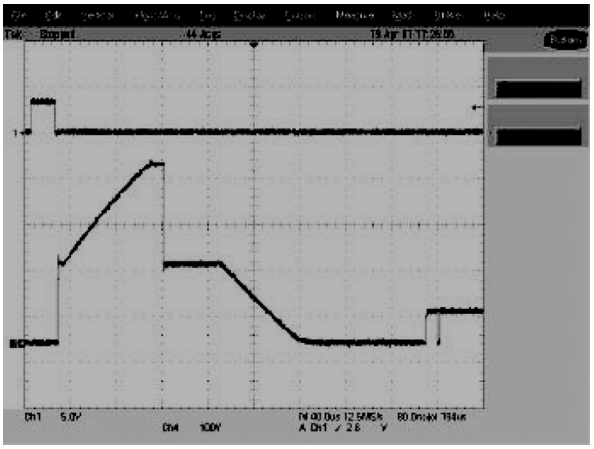
⑬ TPSTB



⑭ TPCLK

6-2-4(F)-2 Y Output Waveform Test

Condition) After applying 5V, 17V, 168V, 70V, 210V successively, use a probe to check #15 (TPOUT1), and then check the following waveform shows at an oscilloscope.

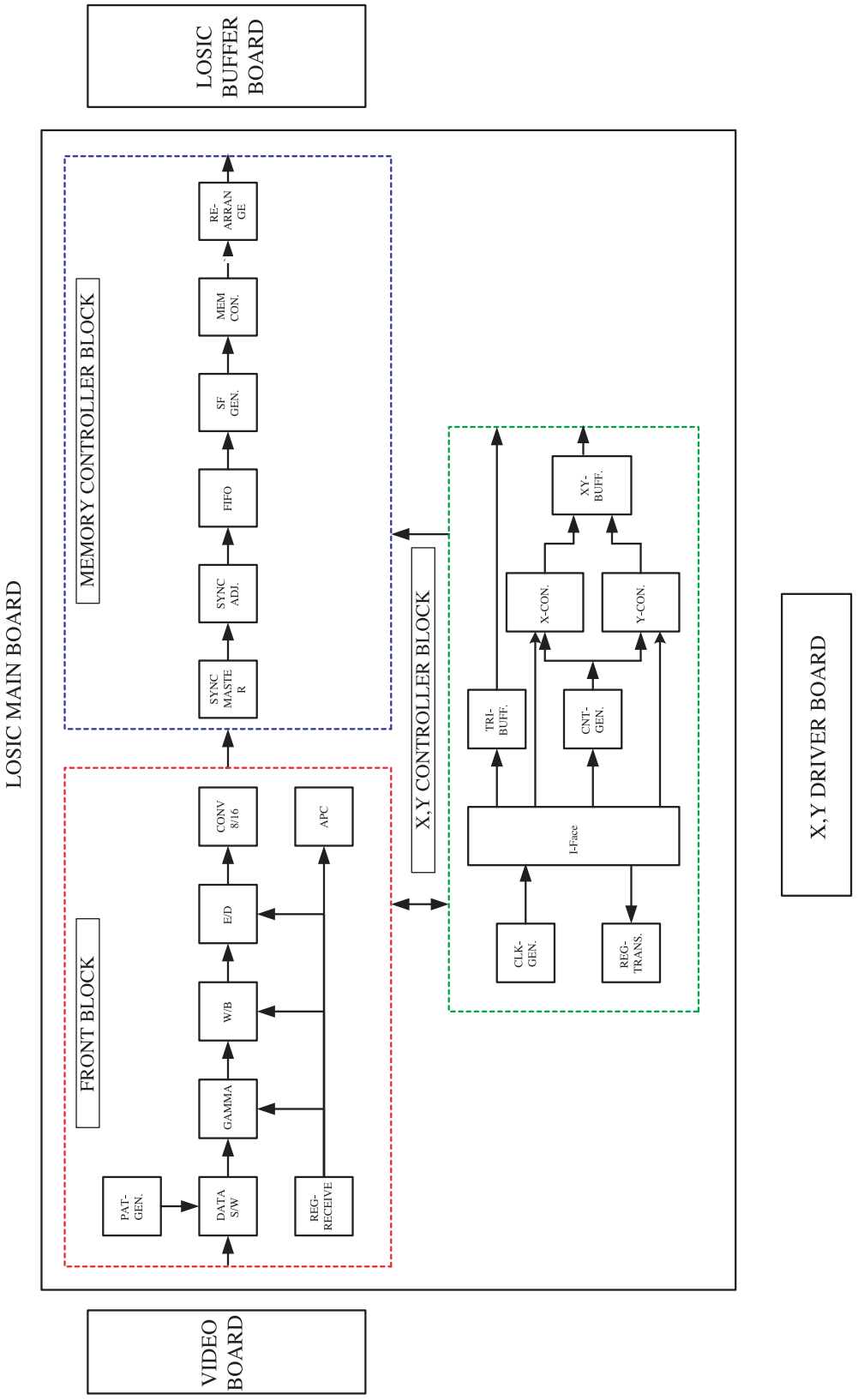


⑮ TPOUT1

6-3 Logic part

6-3-1 Front Block

1) FRONT BLOCK DIAGRAM



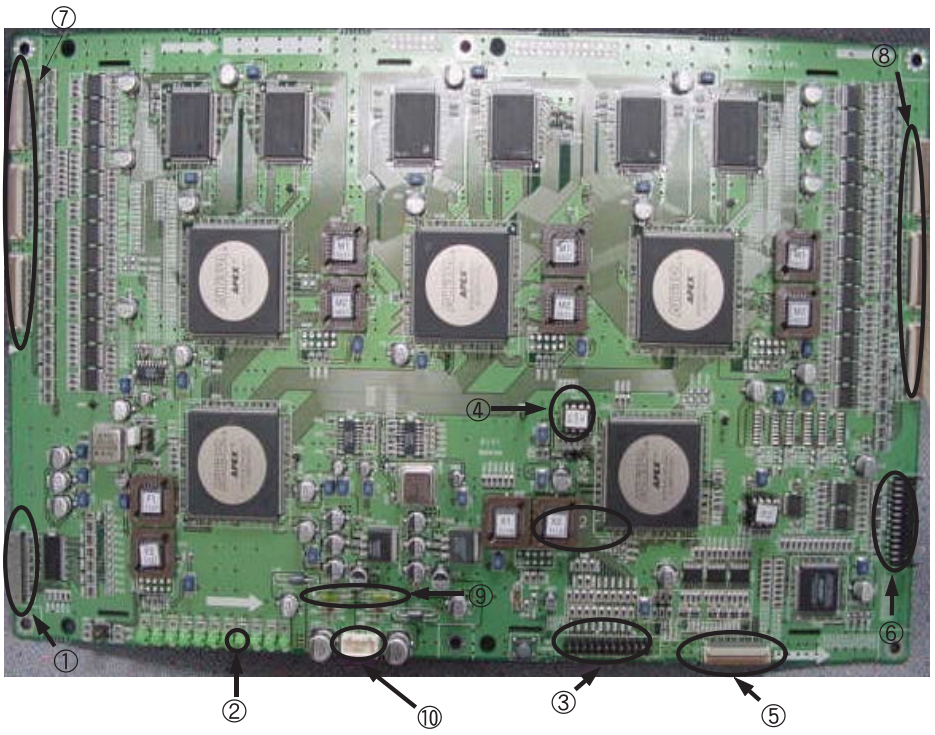
6-3-2 The Description of the Logic Board

6-3-2(A) THE DESCRIPTION OF THE LOGIC BOARD

The logic board consists of the logic main board and the buffer board. The logic main board processes the video signal, and generates the output address driver output signal, as well as XY drive signal.
The buffer board stores the address driver output signal, and sends the signal to the address driver IC (COF module).

LOSIC BOARD		FUNCTION
LOSIC MAIN		- Video signal processing (W/L, Error diffusion, APC) - Outputs address driver control and data signal. - Outputs XY drive board control signal.
LOSIC BUFFER BOARD	E Buffer Board	Sends data and control signals to three COFs at the left bottom part.
	F Buffer Board	Sends data and control signals to five COFs at the middle bottom part.
	G Buffer Board	Sends data and control signals to three COFs at the right bottom part.
	H Buffer Board	Sends data and control signals to three COFs at the left top part.
	I Buffer Board	Sends data and control signals to three COFs at the middle top part.
	J Buffer Board	Sends data and control signals to three COFs at the right top part.

6-3-2(B) THE NAME AND DESCRIPTION OF THE MAJOR COMPONENTS OF THE LOGIC BOARD



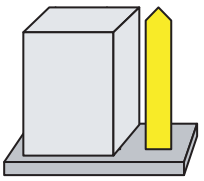
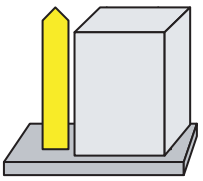
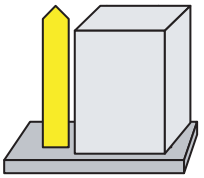
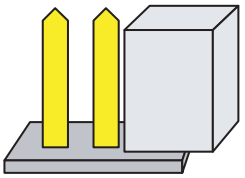
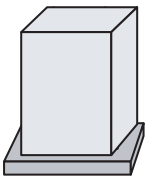
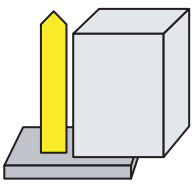
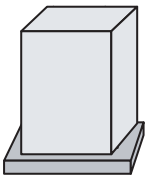
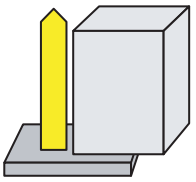
Logic Main Board

NO	NAME	FUNCTION
①	LVDS Connector	An input connector that receives LVDS encoded RGB, H, V, DATAEN, and DCLK signals from the video board.
②	Operation LED	Indicates if the logic board properly receives Sync and clock signal. In normal state, it flickers every one second.
③	Key Scan Connector	A connector that connects to the Key Scan board in order to check and adjust 24C16 data.
④	24C16(128APC)	An EEPROM for saving the gamma table, the APC table, the drive signal timing and other options.
⑤	Y Connector	A connector that connects to the Y output drive board control signal.
⑥	X Connector	A connector that connects to the X output drive board control signal.
⑦	LE01,LE02, and LE03 (Address Buffer Connector)	A connector that connects to the output address data, and control signals to the E F and G buffer board.
⑧	LG01,LG02, and LG03 (Address Buffer Connector)	A connector that connects to the output address data, and control signals to the E F and G buffer board.
⑨	Power Fuse	A fuse connected to the power source (5V) line of the logic board.
⑩	Power Connector	A connector to supply power (5V) to the logic board.

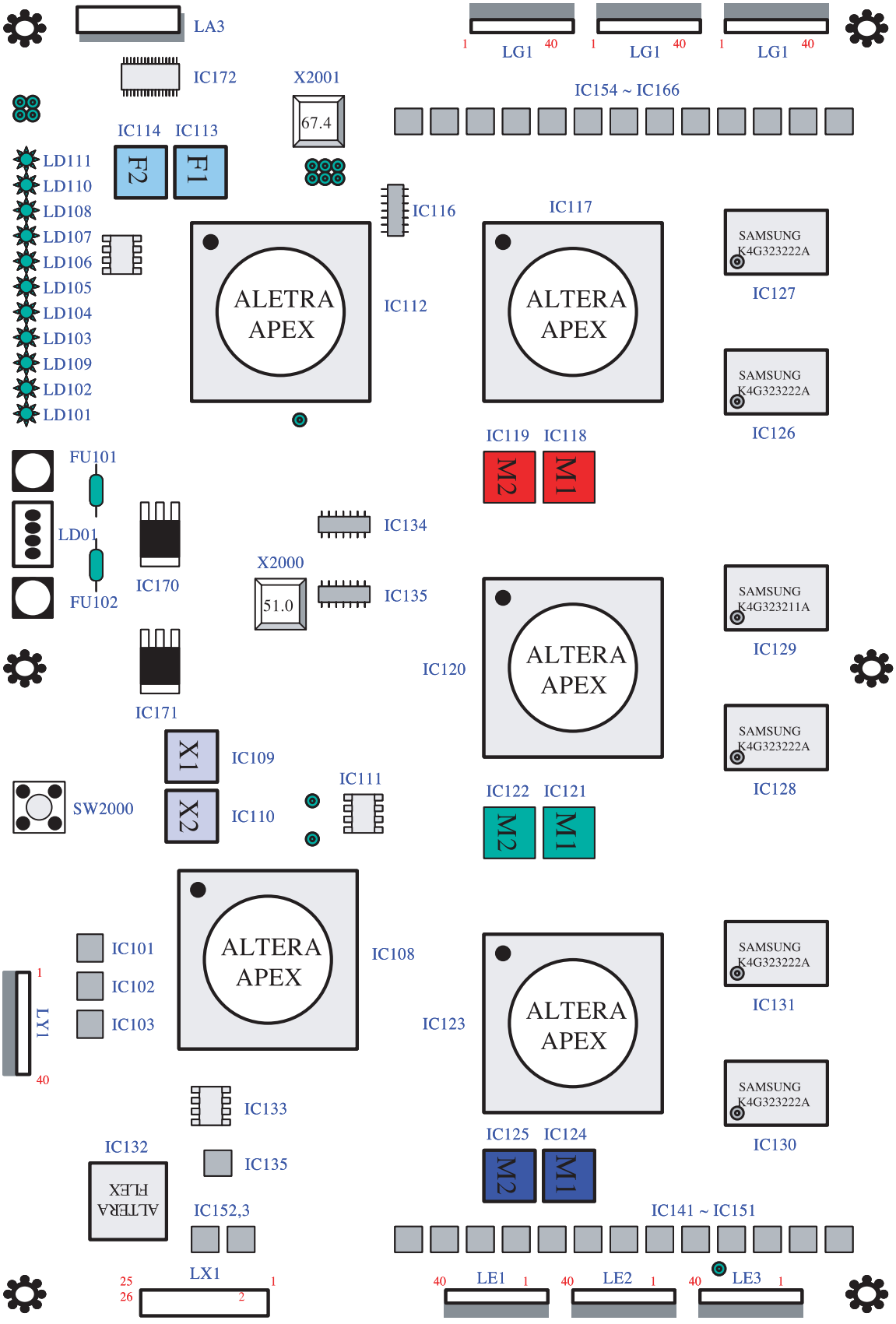
6-3-2(C) JUMPER SETTINGS TO SELECT INTERNAL OR EXTERNAL CLOCK.

The option jumpers CN101, CN102, CN103, and CN104 are located on the top of the logic main board. These allow switching internal/external clock. While T/S, set it to internal clock as the following figure shows.

- It is set to external clock in normal status. Set it to internal clock while T/S, and set it to external clock again after examination.

REF NO	EXTERNAL	INTERNAL
CN101		
CN102		
CN103		
CN104		

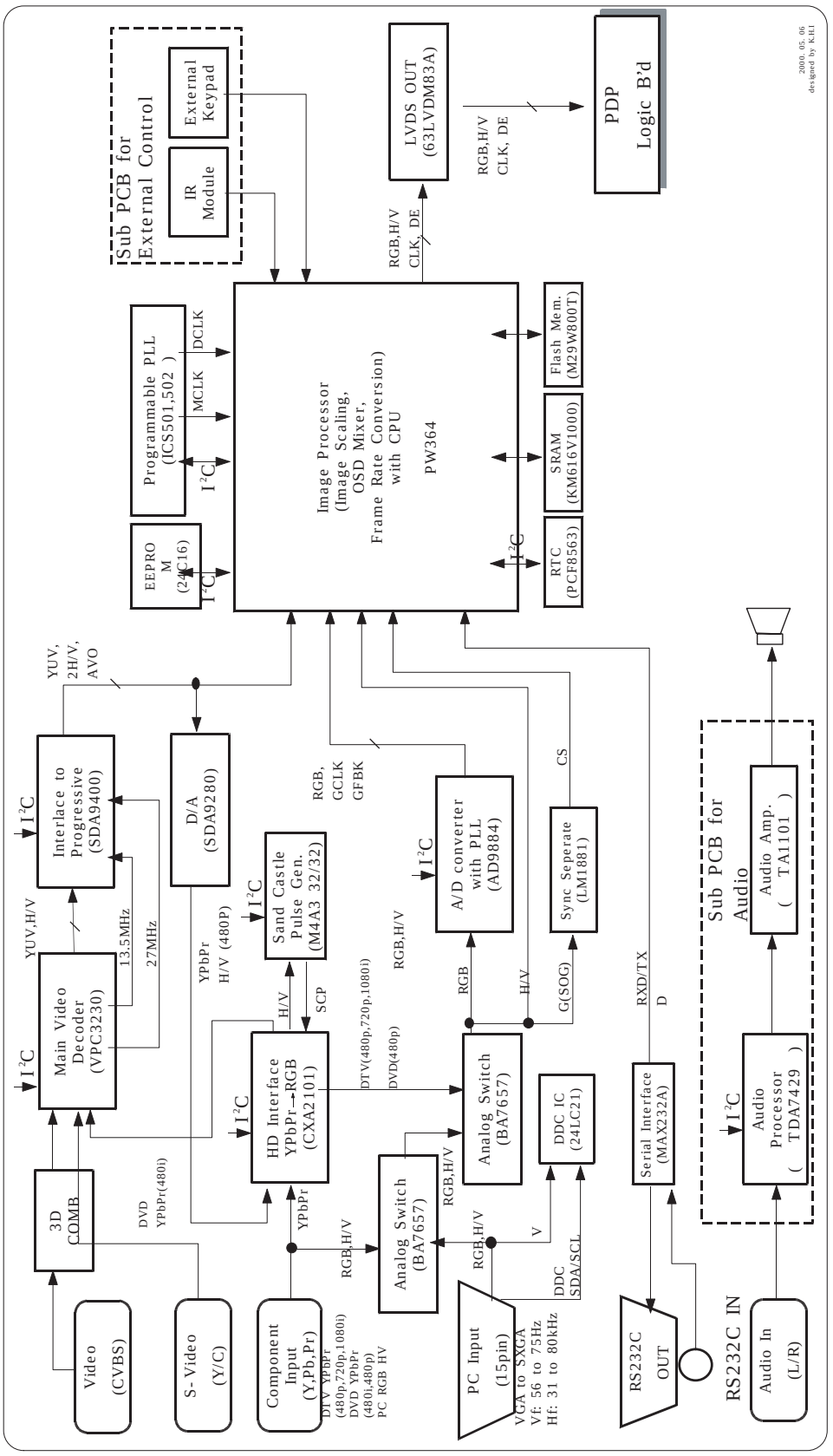
Internal/External Clock Setting



Losic Main Board

6-4 Scaler Board Block Diagram & Description

6-4-1 General Signal Process B/D



6-4-2 Description in Signal Process Block

► 3D COMB FILTER : This 3D Comb Filter is used to improve noise and picture quality by three-dimensionally adjusting the signal from the Input Video jack. The input signal is received from CVBS and the picture is digitally improved via A/D Conversion and FIELD MEMORY. And then the signal is output as the ANALOG YC signal.

► VPC3230 : This functions as a video decoder, which can receive all of the YC, YUV, CVBS inputs.
In addition, this converts Y/C into YUV after receiving 3D Comb Output Y/C, S-Vido Y/C, and DVD YUV.

► VIDEO DOUBLER : Usually, the current video image adopts the INTERLACE Scanning system and it has poor video because of Flicking on the screen. Using the SDA9400 , INTERLACE is converted into PROGRESSIVE in order to improve the quality of video.

► VIDEO PROCESSOR : Since the HD modes like 1920*1080I have higher video bandwidth than the existing video signals, the ordinary decoder like VPC3230 can't handle those modes. PC has higher bandwidth of video signal than TV and the RGB video format.
Therefore, if the HD signal can be converted into the RGB signals, the TV video signal can have the same processing as the PC VIDEO signal. CXA2101 developed by SONY is used to convert YPbPr into RGB.
CXA2101 converts both DTV signals and all the SD signals processed in the sequence of SDA9400 then SDA9280 into RGB.
This processor performs some user control functions, such as tint, color, and sharpness.
Also, it controls high light gains low light offsets when doing white balance adjustments.

► ANALOG SWITCH : The video decoder like VPC3230 has a built-in video switch that assigns one signal out of various received inputs, though most of ICs for PC are designed so that they support only one source because of less necessity of simultaneously processing the multi inputs. To process the input source of MULTI (PC&HD), therefore, a function of selecting an input should be externally added; as is performed by ROHM's BA7657F. PW364 transmits a signal determining which input is selected.

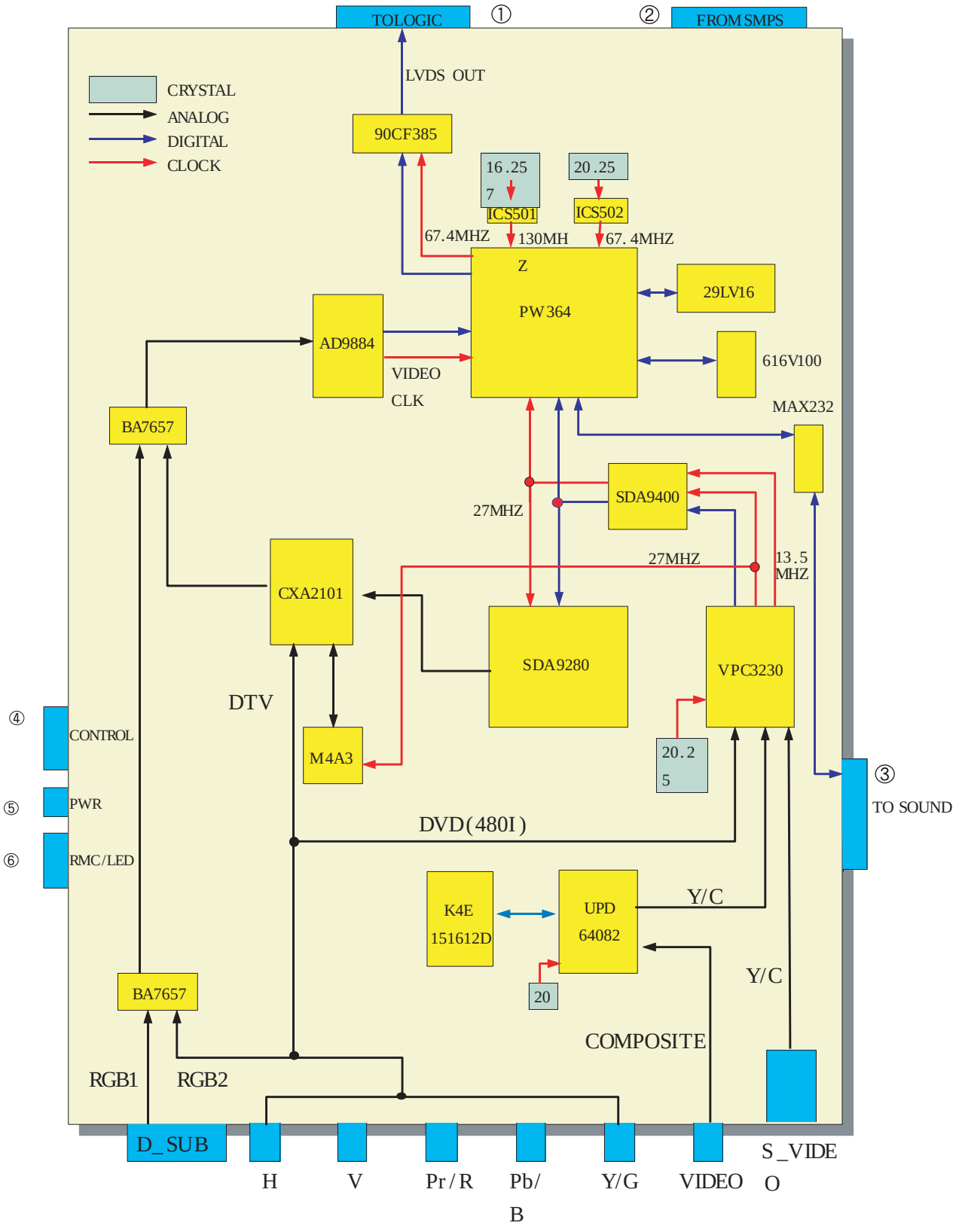
► ADC : A device that converts the input RGB signals into the 8bit DIGITAL RGB signals.
In case of white balance adjustments, this device sets the color temperature by controlling R/B gains and R/B offsets.

► PW364 : PW364 is a multi-functional scaler which one chip has video signal scaling, 8086 CPU, 4M BYTE VIDEO MEMORY functions. The PC and Video input signals are received from GRAPHIC PORT and VIDEO PORT, respectively.Its main functions include UP/DOWN SCALING, PIP, ZOOM, GAMMA CORRECTION, Compensation of GEOMETRIC DISTORTION, powerful GRAPHIC OSD.

► FIRMWARE : Mounted is a software that is used for system control by operating 8086 built in PW364. A 4MBIT FLASH ROM is mainly used, but one up to 8MBIT can be used according to PROGRAM and capacity of OSD DATA. The system is easy to maintain because programming can be re-done at any yime using the FLASH ROM.

6-5 IC Line-Up

6-5-1 IC LINE UP

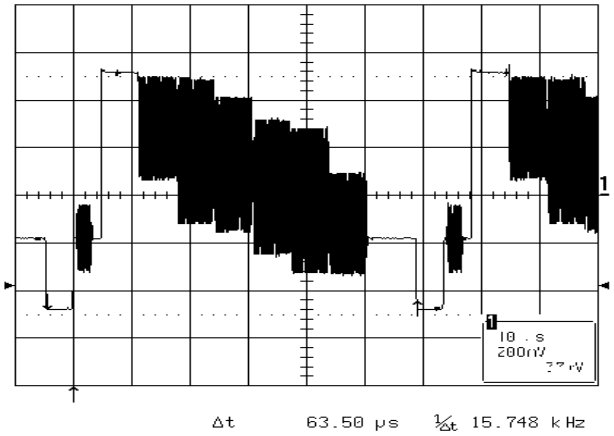


6-5-20 PIN Description

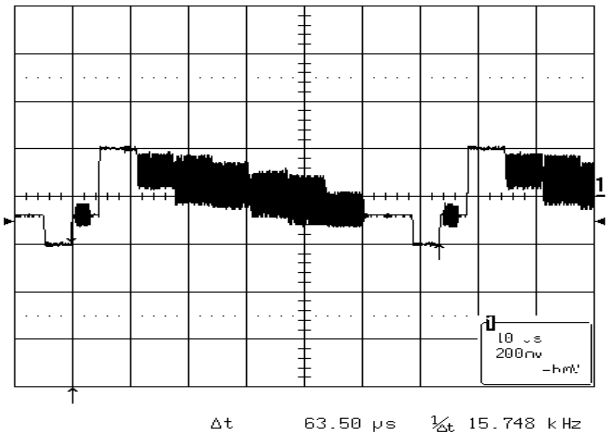
	①	②	③	④	⑤	⑥
Pin No.	Pin Name	Pin Name	Pin Name	Pin Name	Pin Name	Pin Name
1	DGND	ST5V	SDA	GND	KEY4	ST5V
2	DGND	GND	SCL	KEY1	GND	GND
3	TxOUT0-/RxIN0	GND		KEY1	KEY4	RMC SIG
4	TxOUT0+/RxIN0	D5V	T1	KEY1		LED R
5	DGND	REL_SW	R1	KEY4		LED G
6	DGND	TEMP DET	T2	GND		
7	TxOUT1-/RxIN1	FAN DET	R2			
8	TxOUT1+/RxIN1	GND	GND			
9	DGND	GND	AMP MUTE1			
10	DGND	12V	GND			
11	TxOUT1-/RxIN1	12V				
12	TxOUT1+/RxIN1	A6V				
13	DGND	GND				
14	DGND					
15	TxCLKOUT-/RxCLKIN-					
16	TxCLKOUT-/RxCLKIN					
17	DGND					
18	DGND					
19	TxOUT3-/RxIN3-					
20	TxOUT3+/RxIN3+					
21	NC					
22	NC					
23	NC					
24	NC					
25	NC					
26	NC					
27	NC					
28	NC					
29	NC					
30	NC					
31	NC					

6-6 Main I/O signal pules and voltages

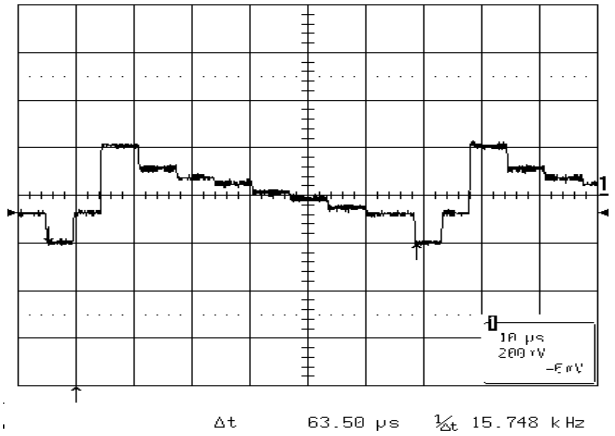
6-6-1 Signal Pulses of Image Board(Input Signal Conditions : 7 Color bar)



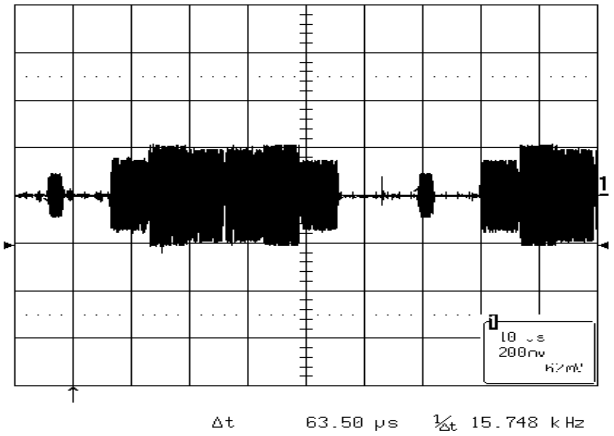
* 9C55 VIDEO INPUT



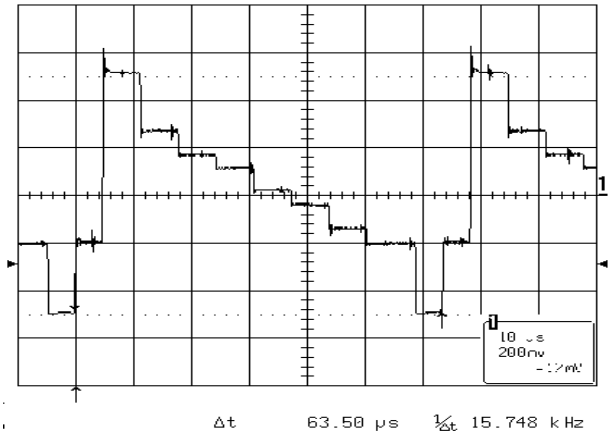
*3D COMB P88 VIDEO INPUT



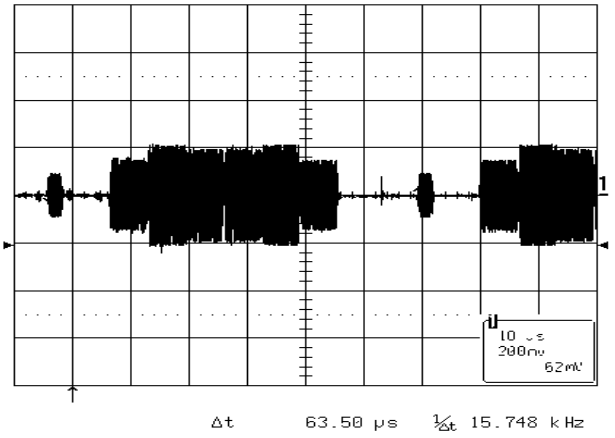
* 3D COMB P84 Y OUTPUT



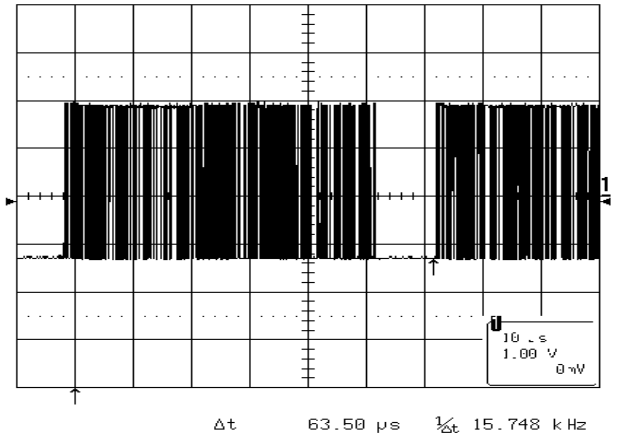
*3D COMB P83 C OUTPUT



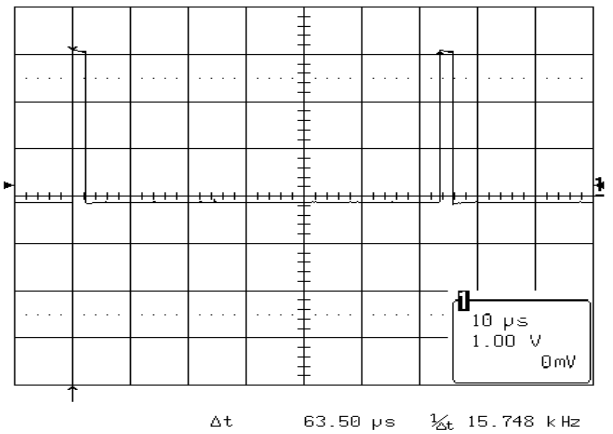
* 3U1(VPC3230) PIN75 Y_IN



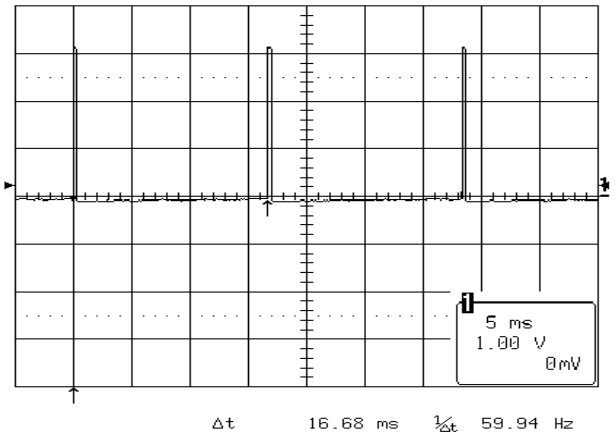
* 3U1(VPC3230) PIN72 C_IN



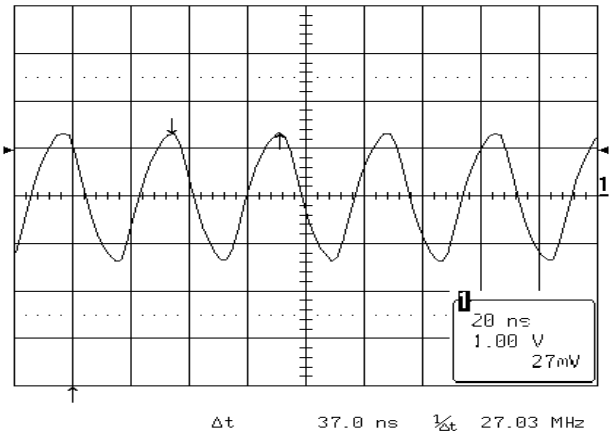
* 3U1(VPC3230) PIN40 Yo_OUT



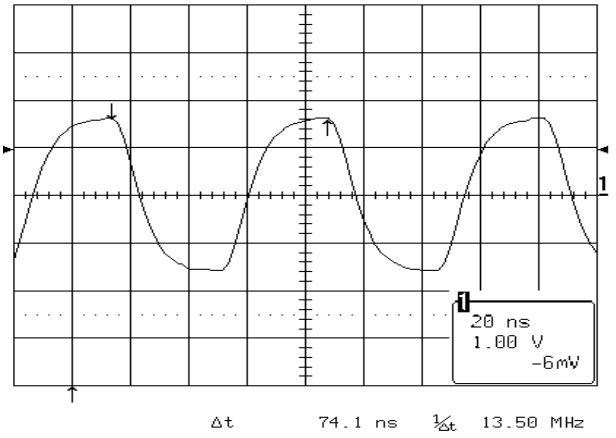
* 3U1U(VPC3230) PIN56 HS_OUT



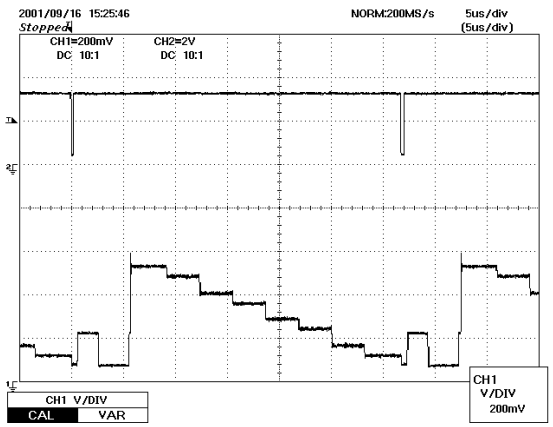
* 3U1(VPC3230) PIN57 VS_OUT



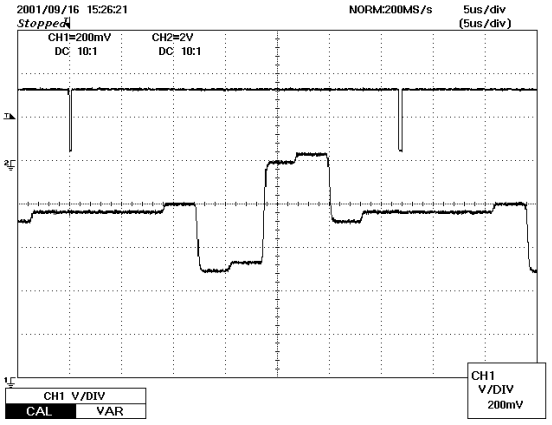
* 3U1(VPC3230) PIN27 LLC2_OUT



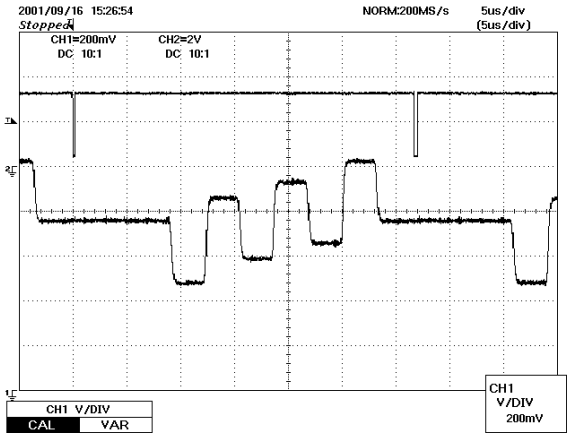
* 3U1(VPC3230) PIN28 LLC1_OUT



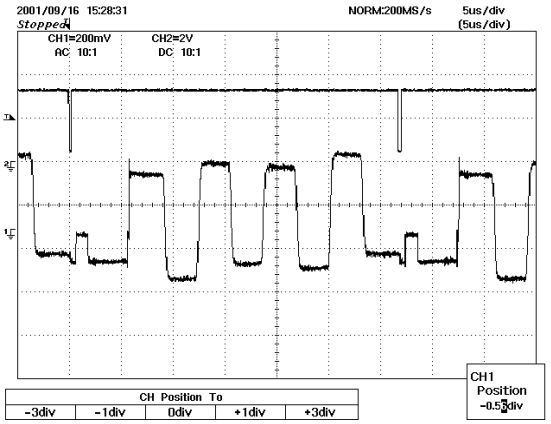
* 3U2(SDA9280) PIN47 V_Y_OUT



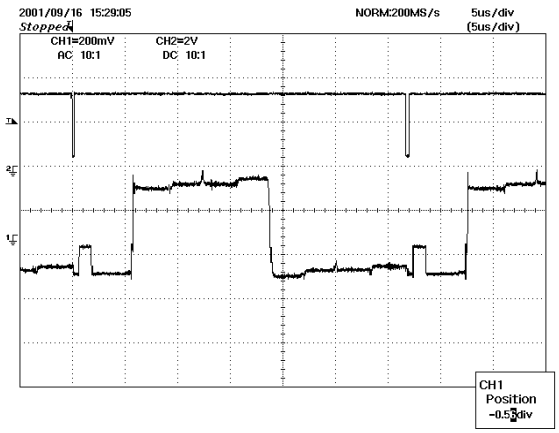
* 3U2(SDA9280) PIN51 V_Pr_OUT



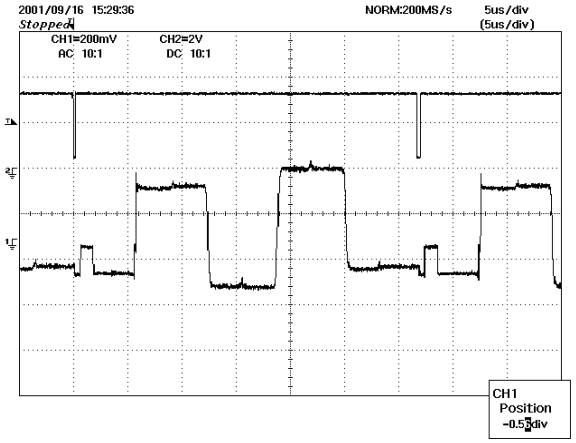
* 3U2(SDA9280) PIN54 V_Pb_OUT



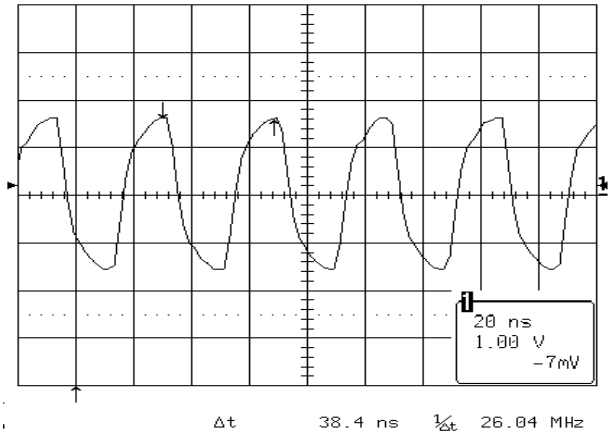
* 2U2(CXA2101) PIN39 B_OUT



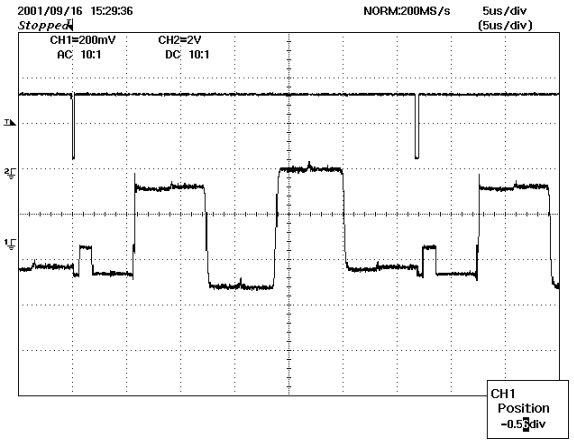
* 2U2(CXA2101) PIN37 G_OUT



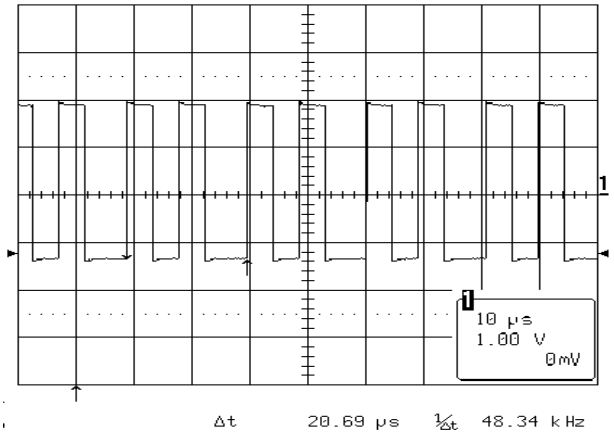
* 2U2(CXA2101) PIN35 R_OUT



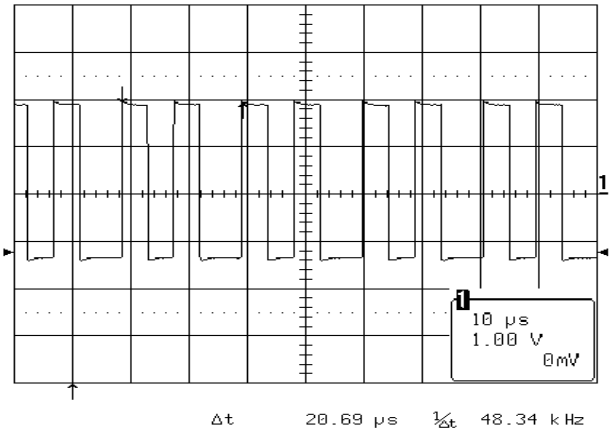
* 1U1(AD9884) PIN:115 PCLK_OUT



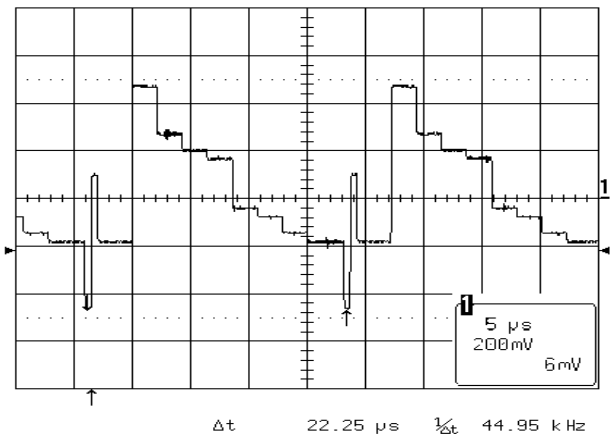
* U29(AD9884) PIN7 R_IN



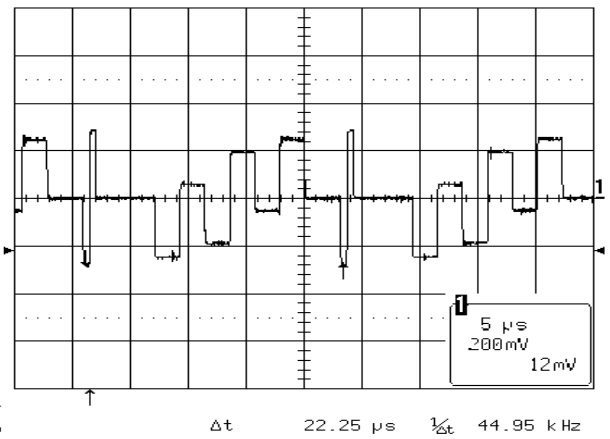
* U29(AD9884) PIN95 ROUT_ODD



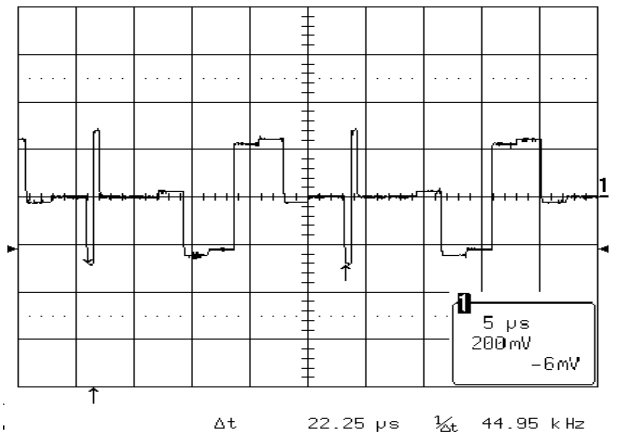
* U29(AD9884) PIN105 ROUT_EVEN



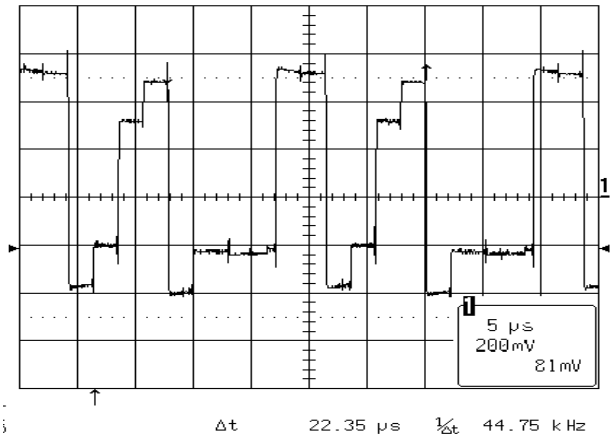
* 2U2(CXA2101AQ) PIN5 DTV.Y_IN



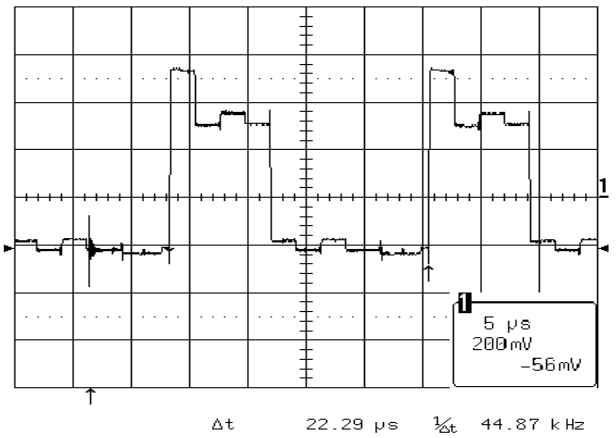
* 2U2(CXA2101AQ) PIN4DTV.Pb_IN



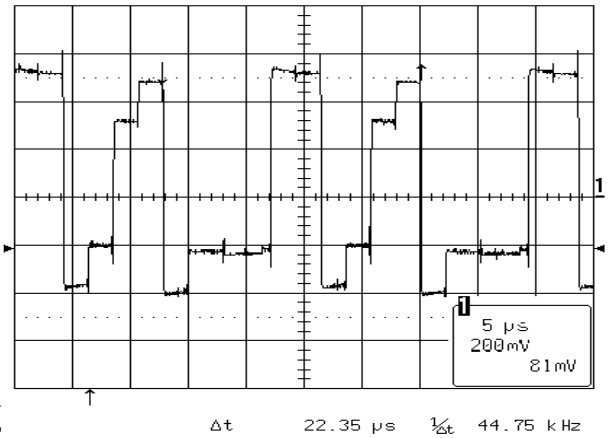
* 2U2(CXA2101AQ) PIN3 DTV.Pr_IN



* 2U2(CXA2101AQ) PIN35 DTV.R_OUT



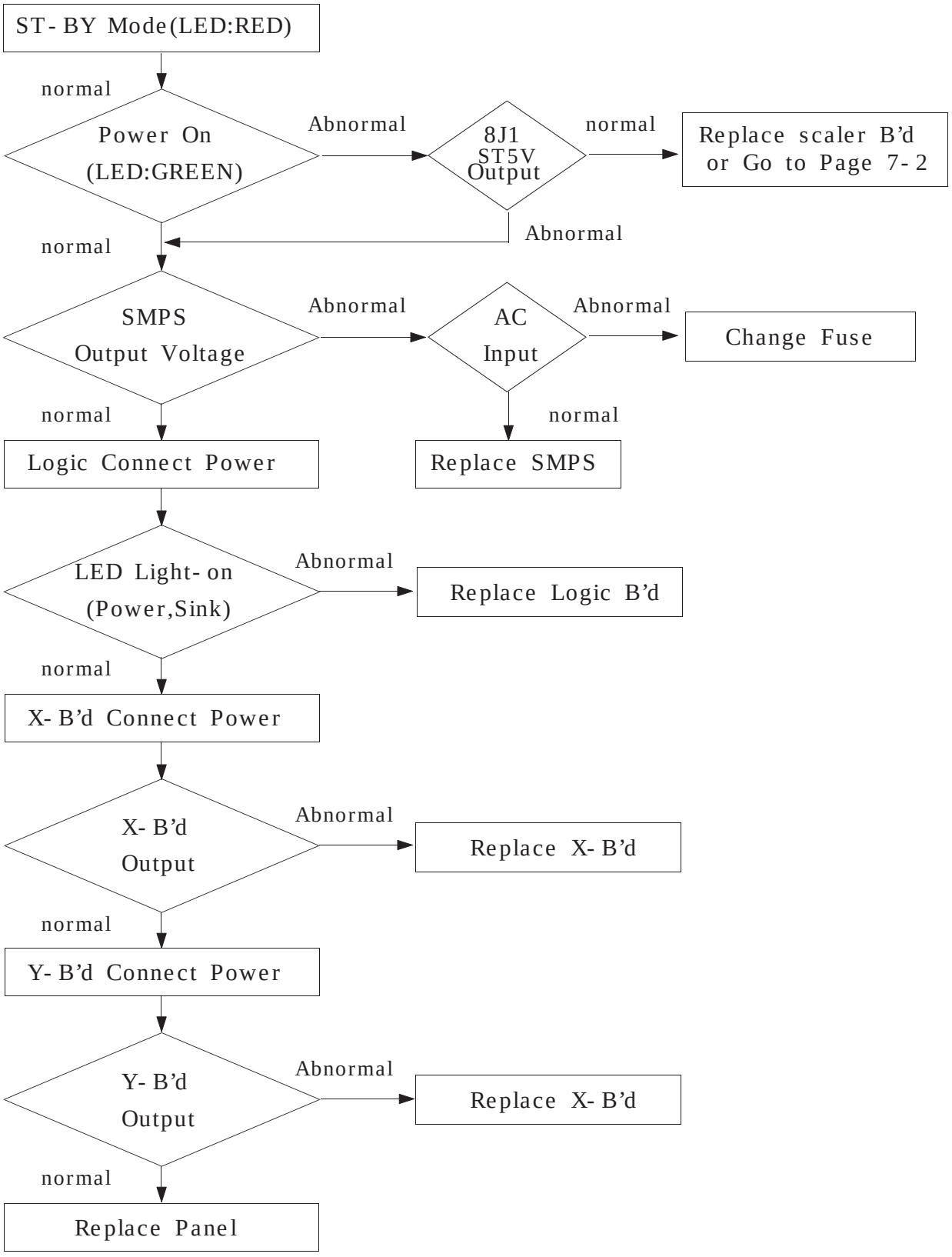
* 2U2(CXA2101AQ) PIN37 DTV.G_OUT



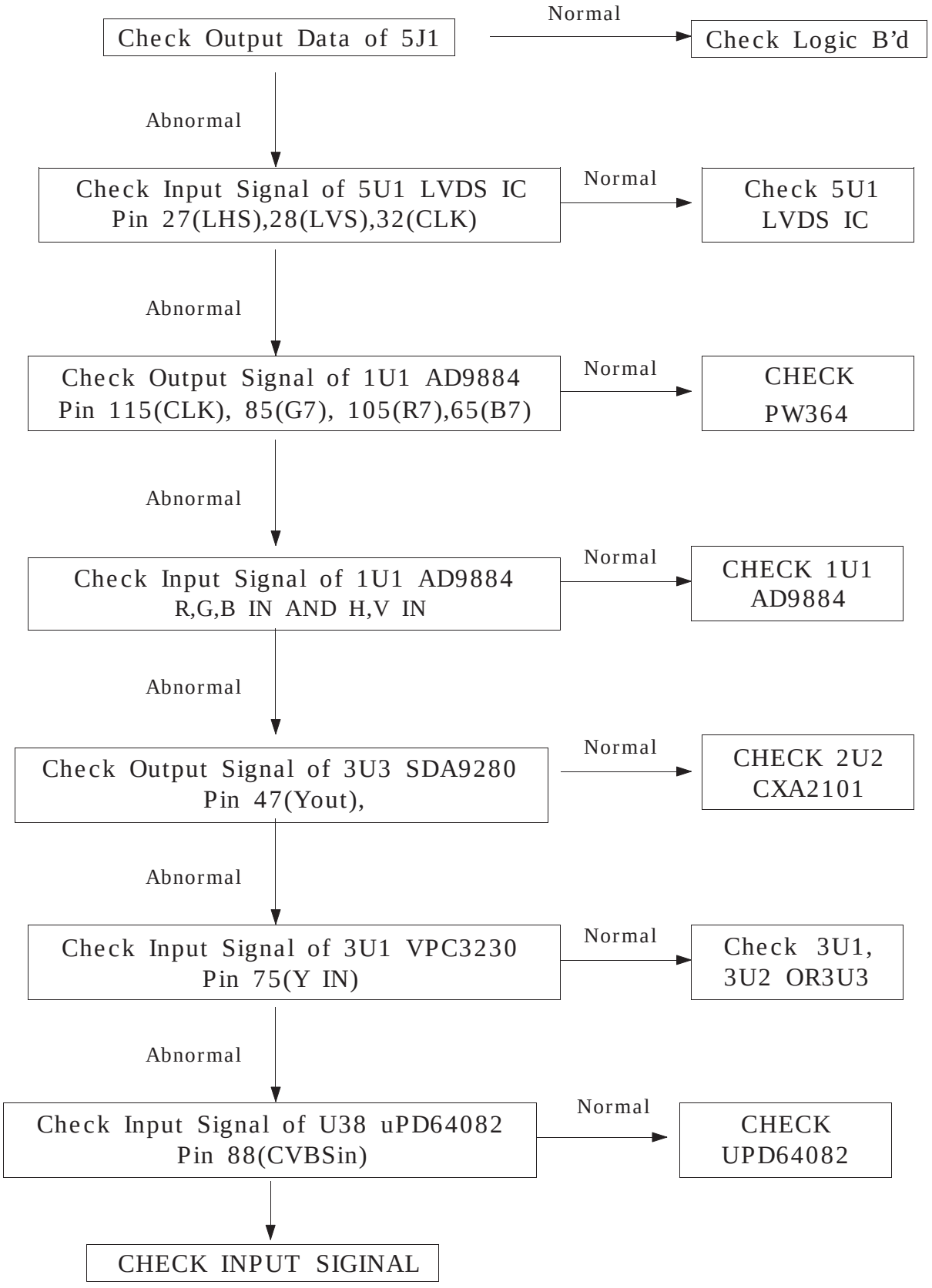
* 2U2(CXA2101AQ) PIN39 DTV.B_OUT a

7. Troubleshooting

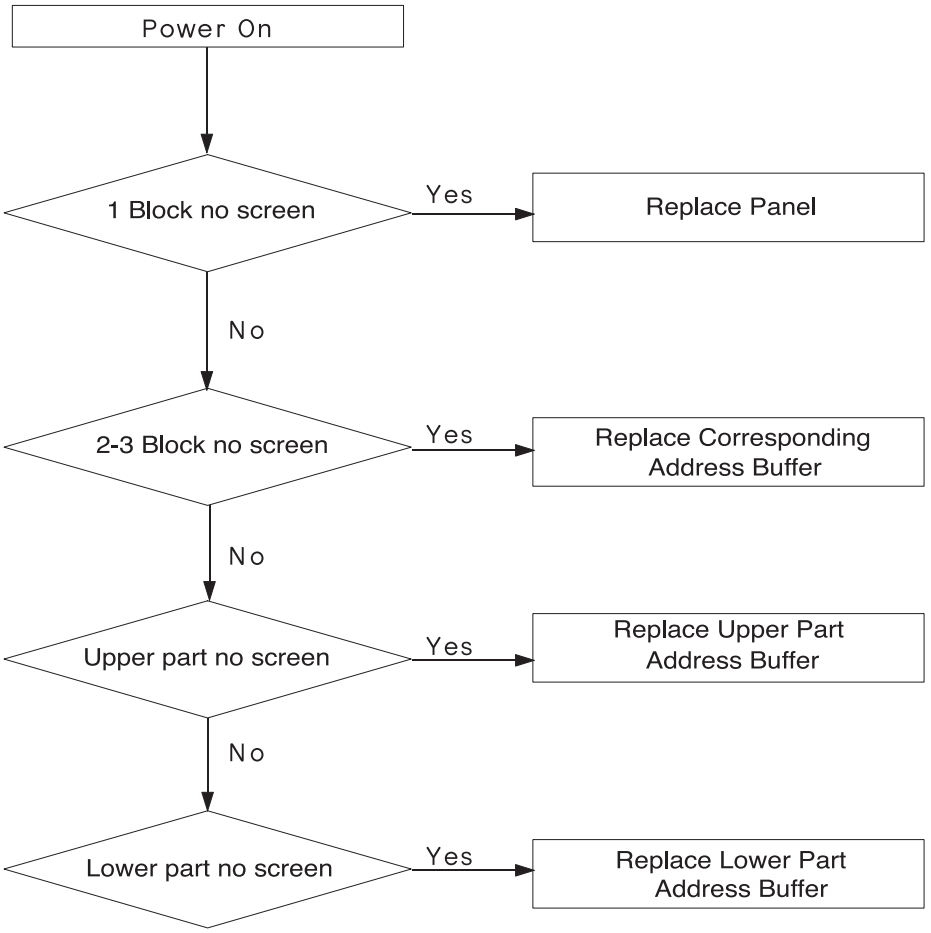
7-1 No Raster(Board Change in PDP Monitor)



7-2 No Raster in Scaler Board



7-3 Partly no screen



7-4 50"HD D1.0 Logic Main Board T/S

If the PDP unit and the logic board operates properly, the operation LED of Figure 1 would blink at about 1 second interval.

If the unit is out of order, check the status of the operation LED through eye-inspection first.

If the behavior of the operation LED is different from that of normal state, you have to replace the board.

To check the trouble on the board, complete the following logic board test procedures described below.

Required testing equipment	:	- Oscilloscope (digital 400 MHz with more than 3 channels)
		- Multi-meter
Other equipment	:	- DC power supply (5V: 1EA)
		- Sub-PCB ASS'Y for JIG: 1 EA

① First, perform eye-inspection and short-circuit inspection for the power stage of the target logic board. Then, perform the following tests on the board in sequence if no problem has been found.

② Replace the IC111 (Serial EEPROM) on the logic board with the Test EERPOM.
Change the clock setting of the logic board to internal.
(Refer to the configuration procedures in the next page)
◆ If the Test EEPROM is not available, perform the tests by installing key scan and set the address number 9F to 00.

③ Implement 5V to the LD1, and check if the LED on the left-top of the board blinks at about one second intervals.

④ If the LED blinks too fast or the LED is not turned on, it means that the LOGIC board is not operating properly.

⑤ If no problem is found in the above step, connect sub-PCB to check the logic output. Then measure the output waveform of the sub-PCB, and compare it with the appended waveform in normal state. Record the test result (OK or NG).

⑥ Check drive Y s/w , drive X s/w , and address signals in that order.

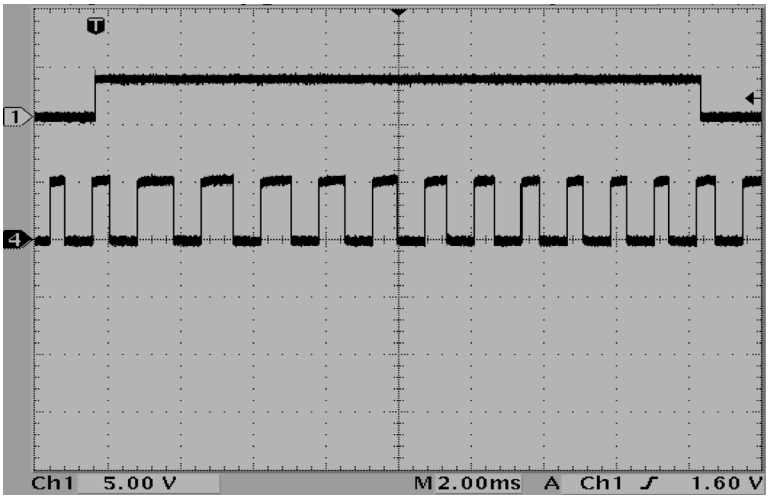
⑦ Set probe 1 of the oscilloscope to the trigger signal, and connect it to TP105 on the logic board.

⑧ Set the oscilloscope to 2ms/div. After adjusting probe 2 to 5V/div, check the output signal.

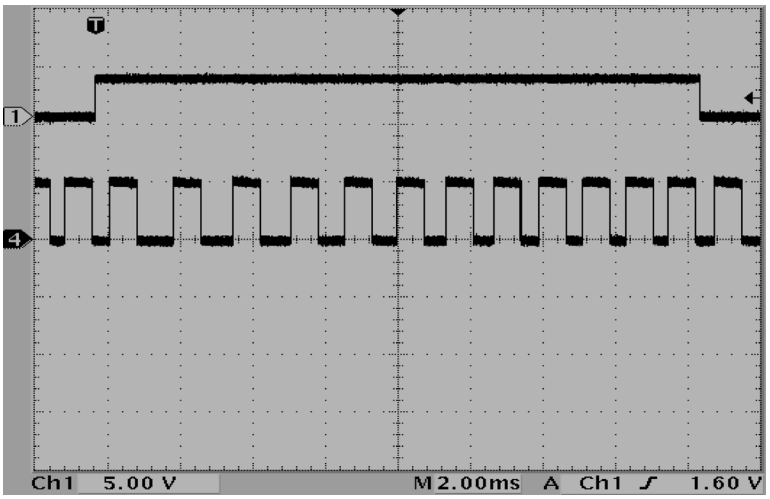
⑨ After T/S, turn off the power supply, and disconnect the connector.

⑩ Record the test result on the test sheet.

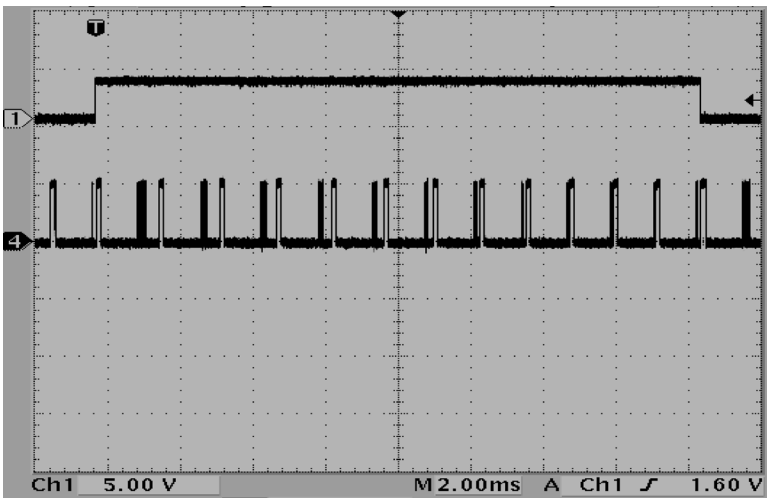
7-4-1 Y S/W CHECK



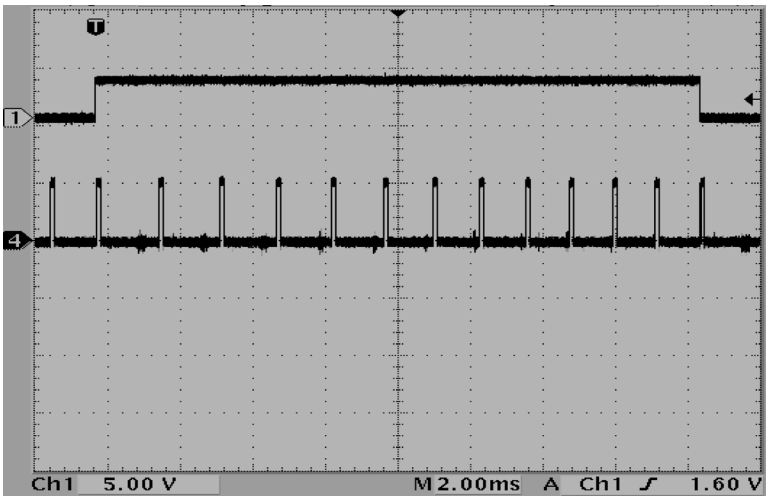
Ysp(LY1-19)



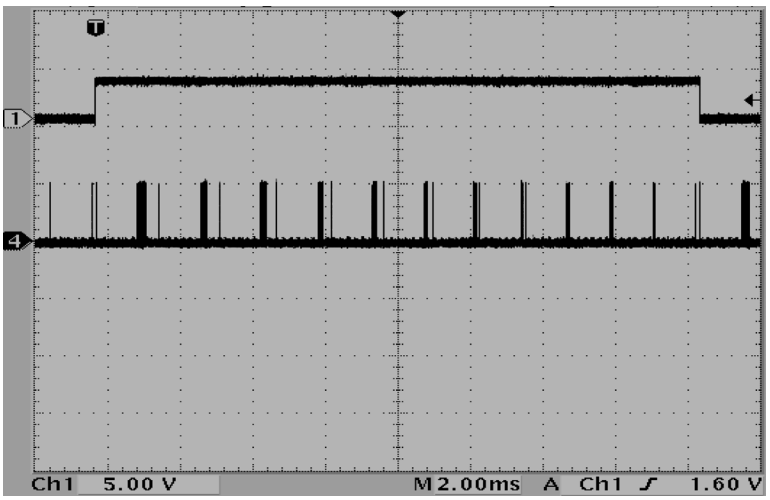
Ysc(LY1-21)



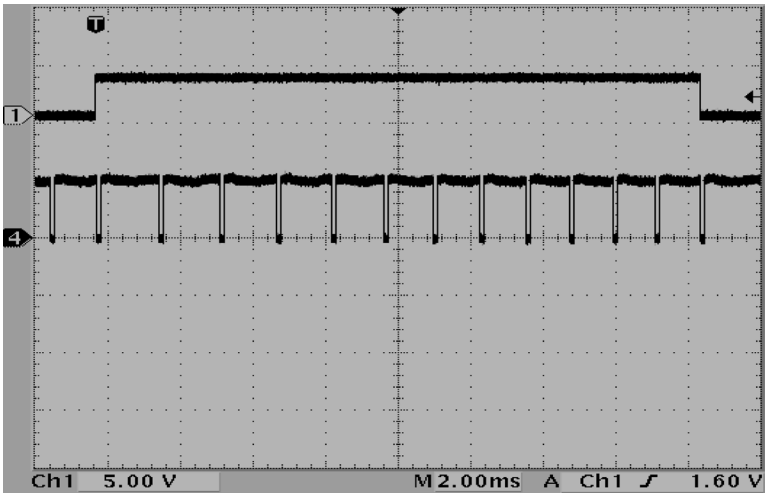
Ys(LY1-7)



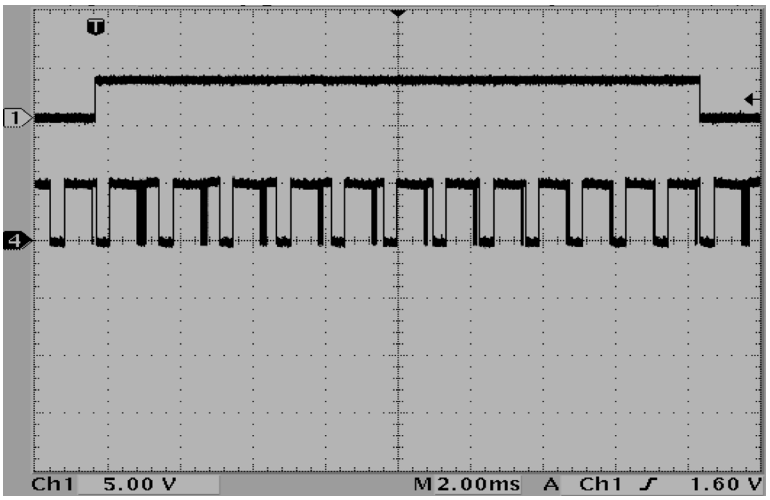
Yrr(LY1-13)



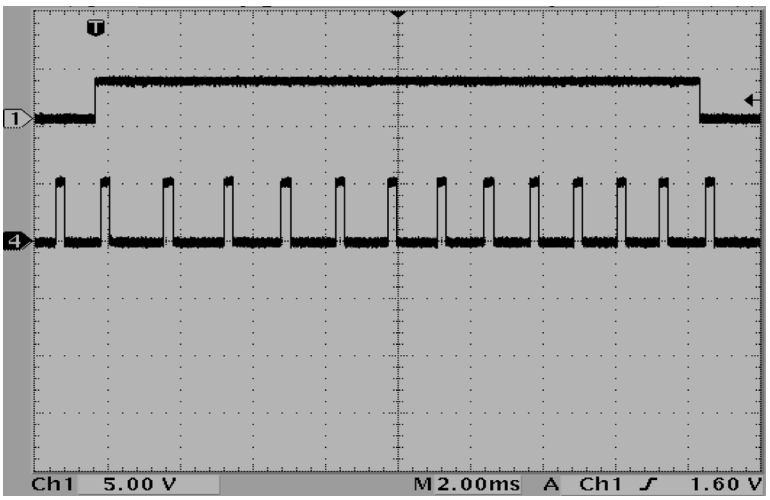
Yr(LY1-5)



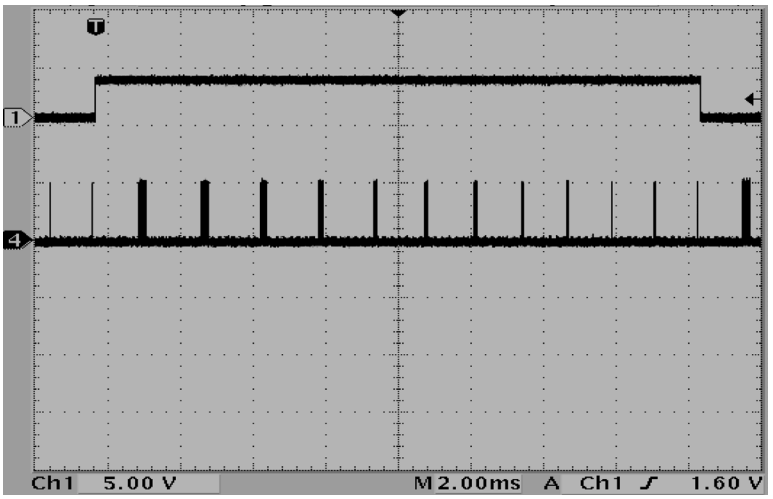
Yp(LY1-17)



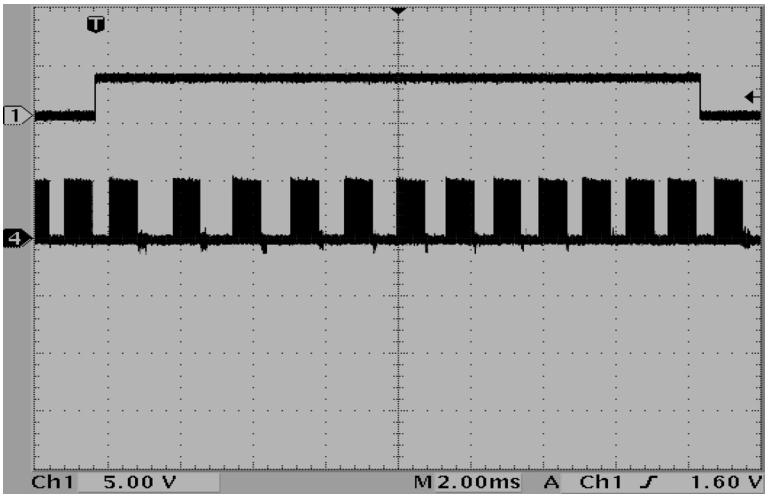
Yg(LY1-11)



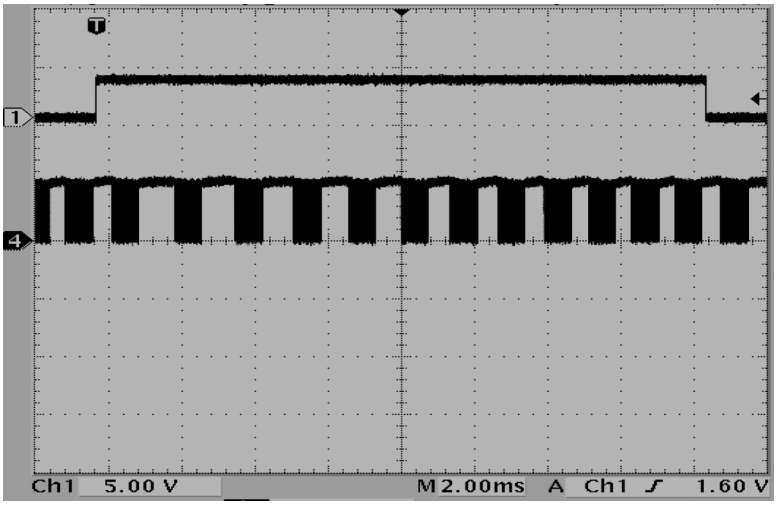
Yfr(LY1-15)



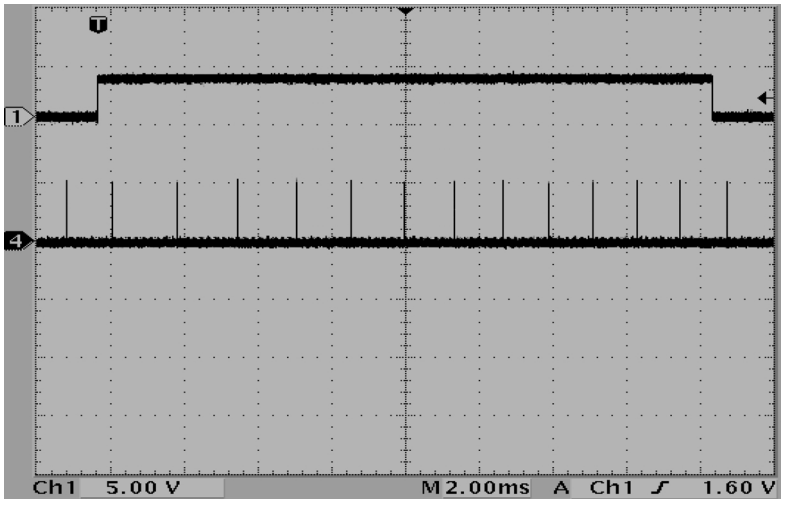
Yf(LY1-9)



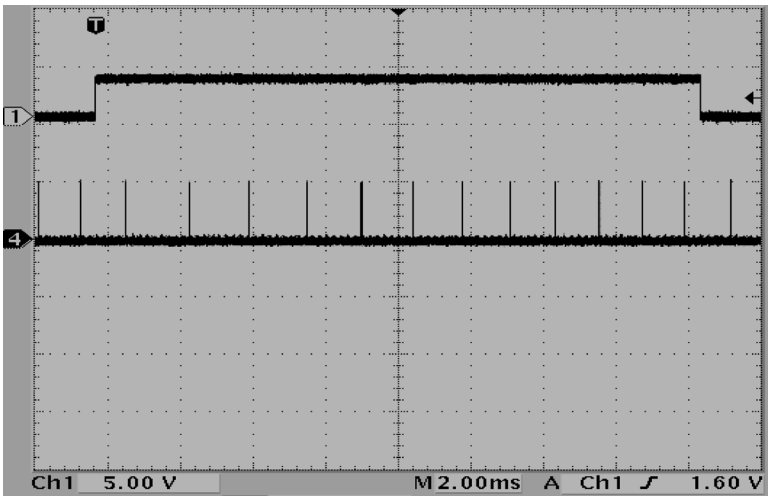
CLK(LY1-25)



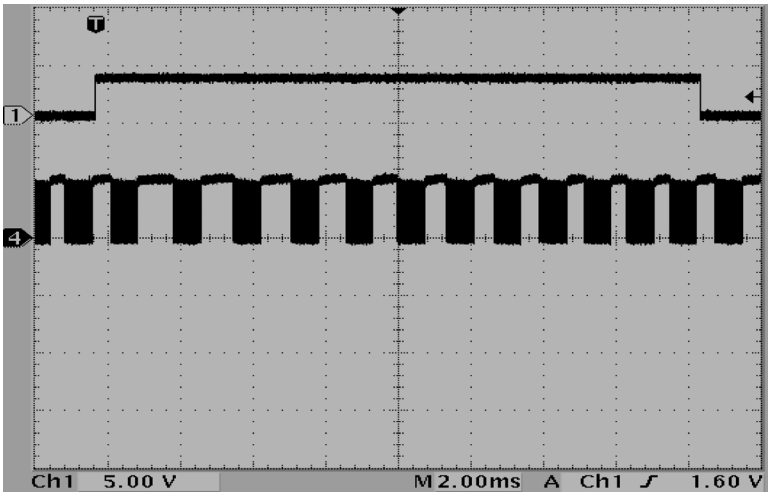
LE(LY1-30)



SIA(LY1-23)

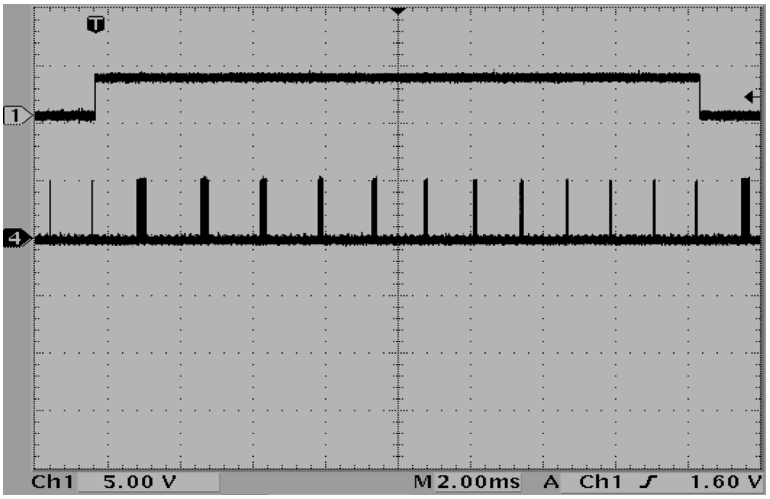


SIB(LY1-28)

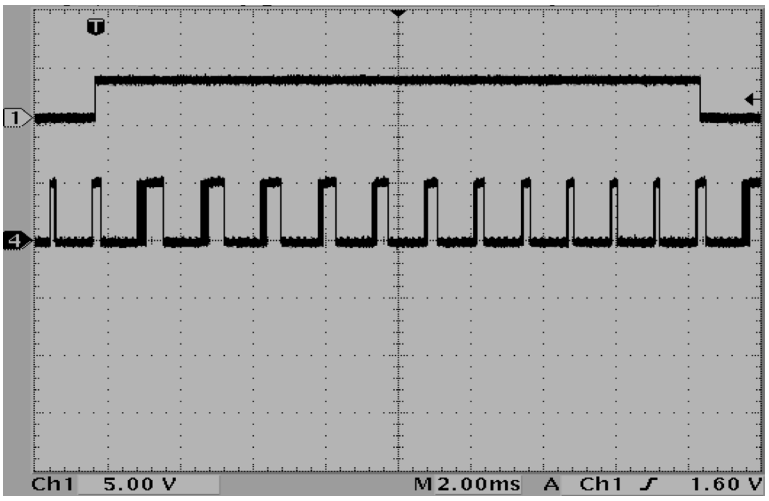


STB(LY1-34)

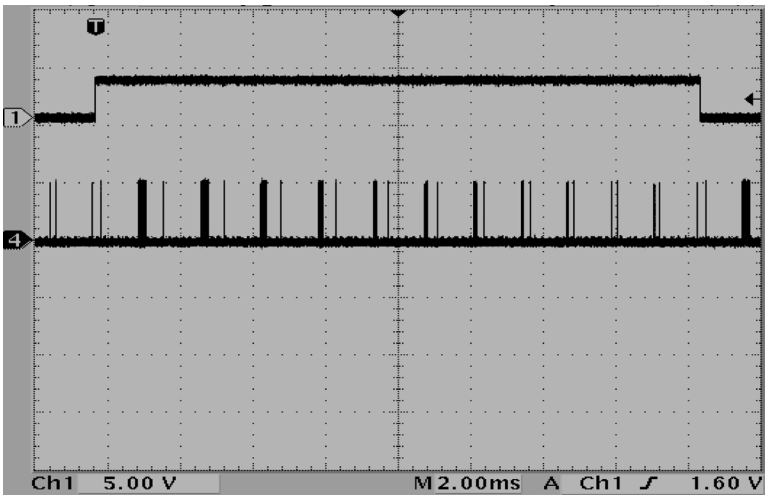
7-4-1 Y S/W CHECK



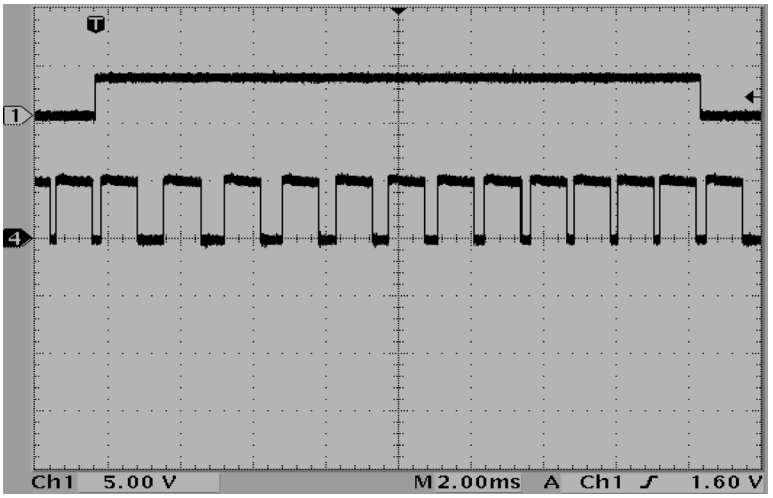
Xf(LX1-8)



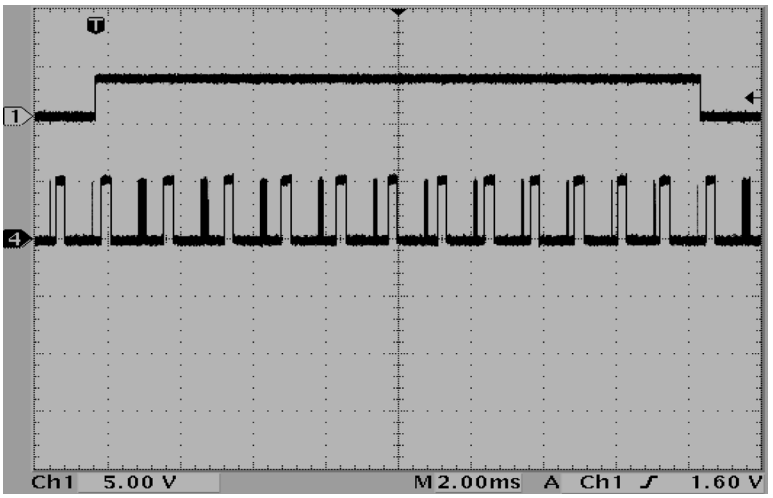
Xg(LX1-10)



Yr(LX1-4)

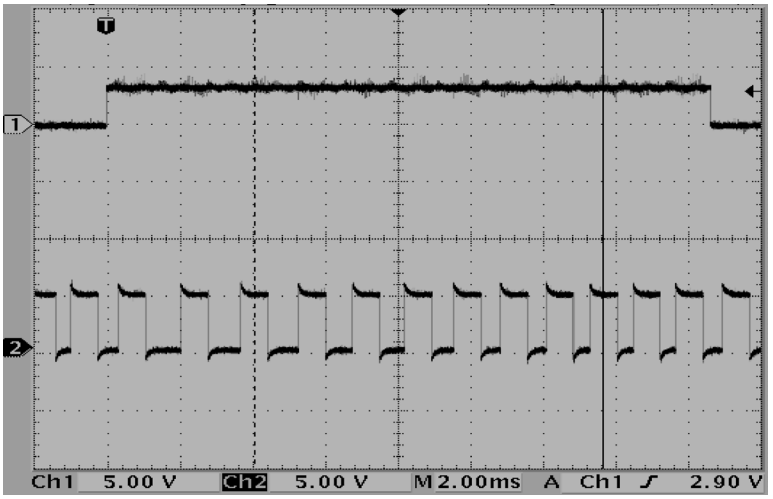


Xrr(LX1-2)

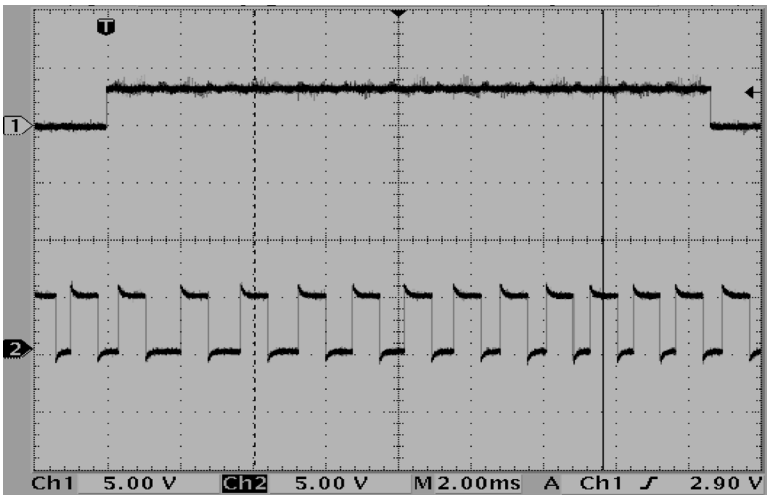


Xs(LX1-6)

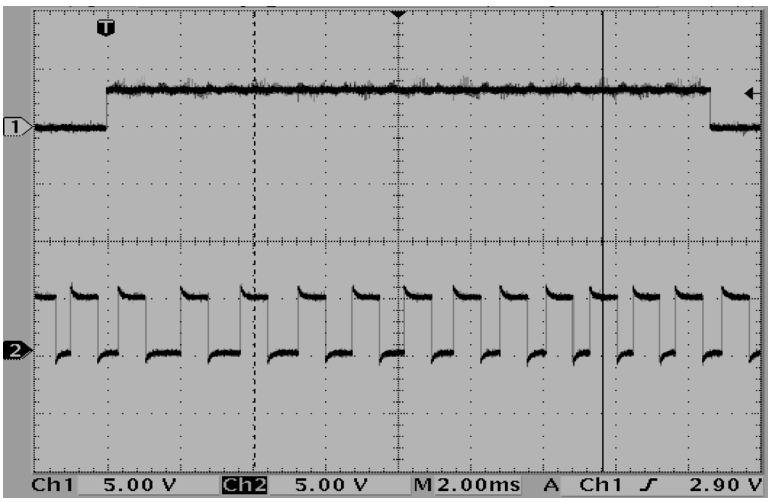
7-4-3 DATA & CONTROL SIGNAL



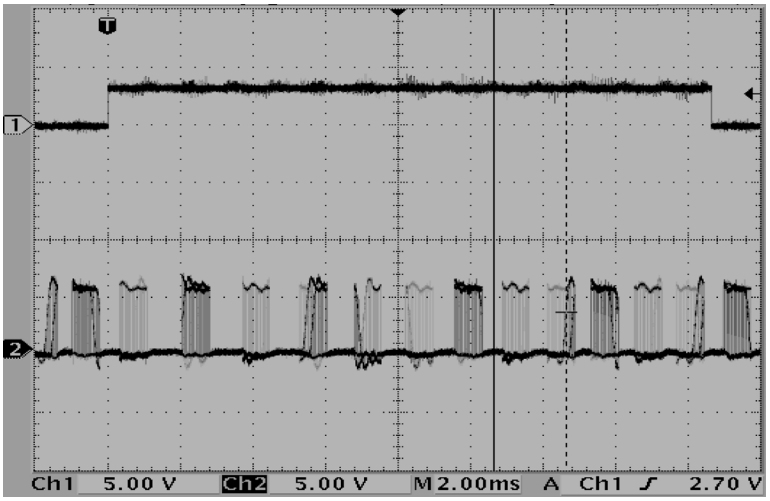
DATA(LE1, LE2, LE3, LG1, LG2, LG3)



POL(LE1, LE2, LE3, LG1, LG2, LG3-25)



STB(LE1, LE2, LE3, LG1, LG2, LG3-24)



CLK(LE1, LE2, LE3, LG1, LG2, LG3-13,22))

7-5 50"HD Logic Buffer Board T/S

Required testing equipment	:	- Oscilloscope (digital 400 MHz with more than 2 channels)
Other equipment	:	- DC power supply (5V: 1EA)
		- Multi-meter
		- Logic board: 1EA
		- Sub-PCB ASS'Y for JIG: 1 EA

① First perform eye-inspection and short-circuit inspection for the power stage of the logic board to test. Then, perform the following tests on the board in sequence if no problem has been found.

② If no problem was found in step ① connect the buffer board as [Figure2.3] shows. Then connect the sub-PCB to check COF data and replace the serial EEPROM with the Test EEPROM so the output pattern of the logic board becomes a full-white pattern.

③ If the Test EEPROM is not available, then perform the tests by installing key scan, and setting the address number 9F to 00.

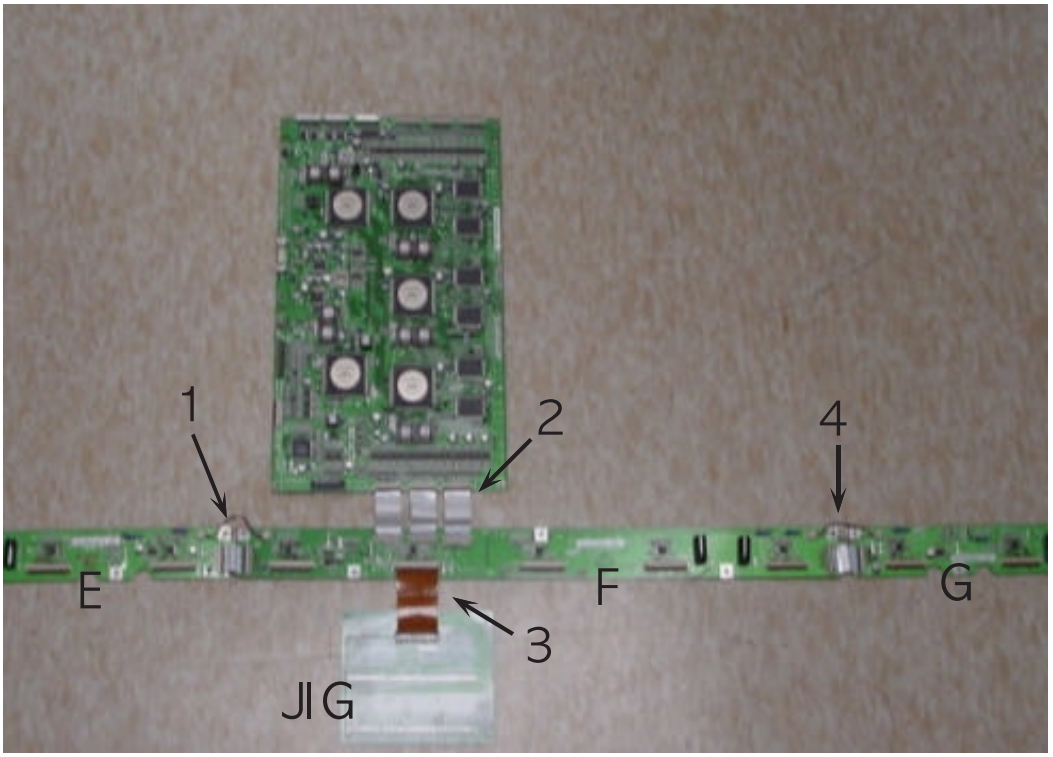
④ Supply 5V to the logic board, and check that the LED on the left-top of the board blinks at about 1 second intervals. If no problem is found, measure the output waveform of the sub-PCB, and compare it with the appended waveform of normal state.

⑤ Checking order; ECN3001, ECN3002, ECN3003, FCN3104, FCN3105, FCN3106,FCN3107, FCN3108, GCN3209, GCN3210, GCN3211, HCN3312, HCN3313, HCN3314, ICN3415, ICN3416, ICN3417, ICN3418, ICN3419, JCN3520, JCN3521, and JCN3522. You can also check only the doubtable waveforms selectively.

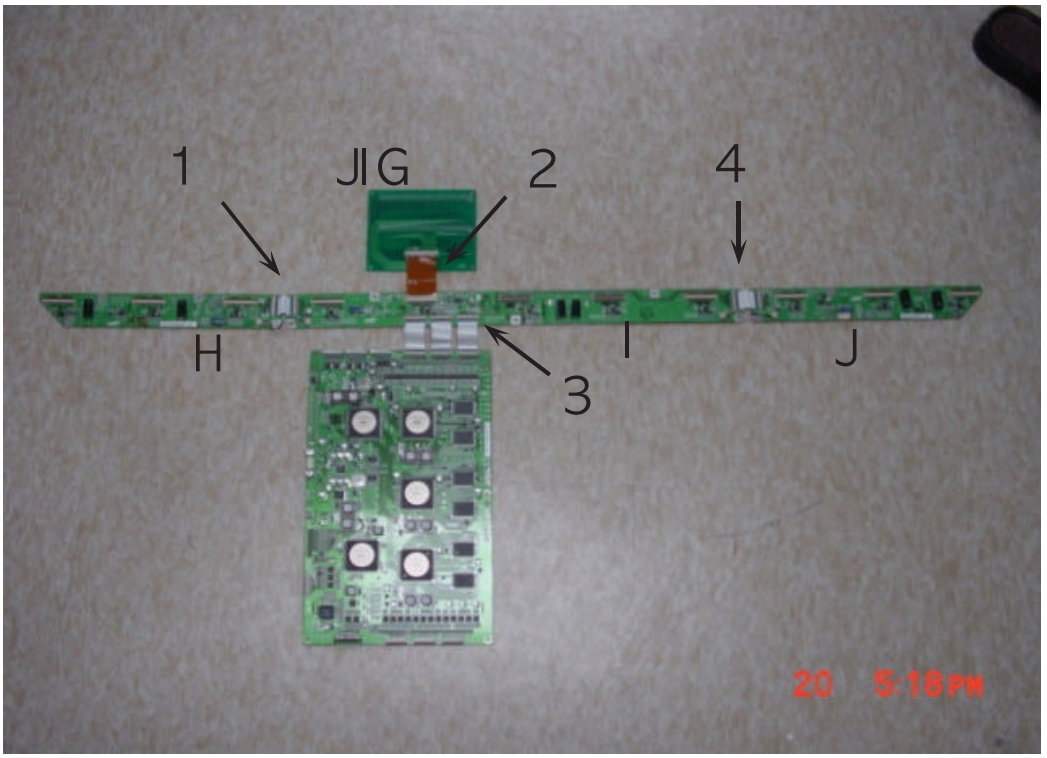
⑥ Set probe 1 of the oscilloscope to trigger signal, and connect it to the TP105 of the logic board. Set the oscilloscope to 2ms/div. You can magnify the important points to check in details. After adjusting probe 2 to 5V/div, check the output signal.

⑦ The appended waveform is when a full-white input pattern is implemented.

⑧ After T/S, turn off the power supply and disconnect the connector. Then record the result on the examination sheet.

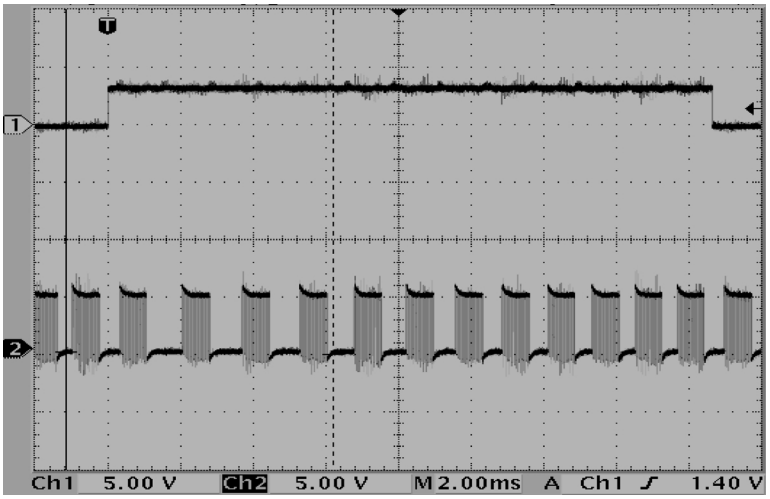


LOSIC MAIN BOARD & LOSIC BUFFER BOARD (E, F, G) CONECTION

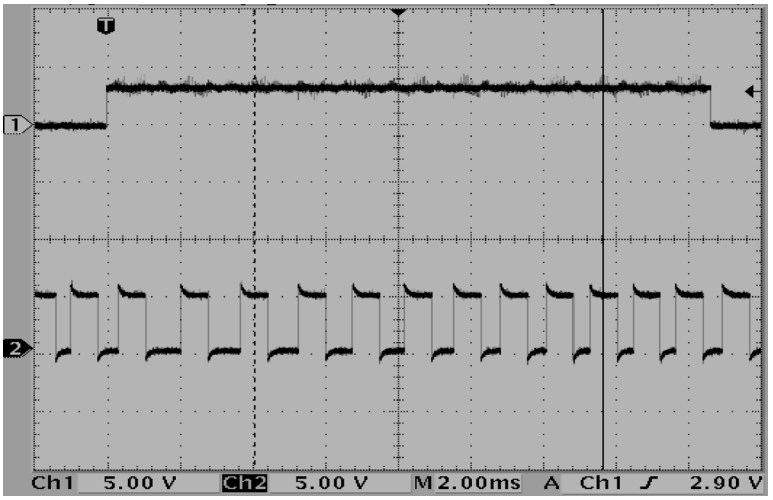


LOSIC MAIN BOARD & LOSIC BUFFER BOARD(H, I, J) CONECTION

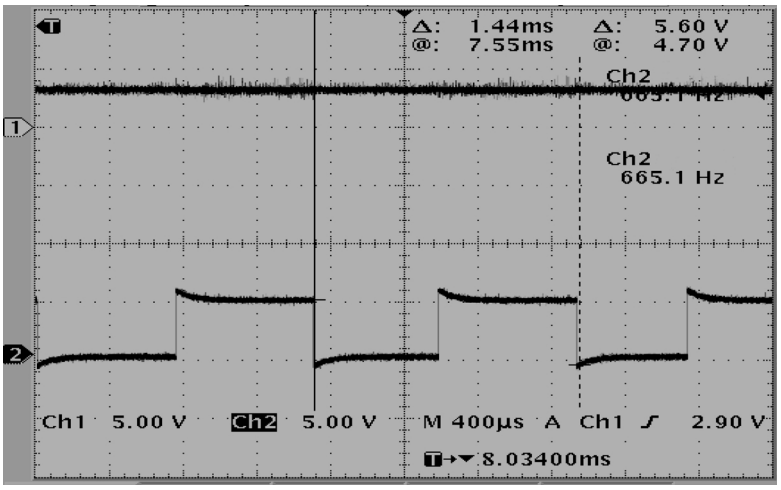
7-5-1 Buffer Data And Control Signal



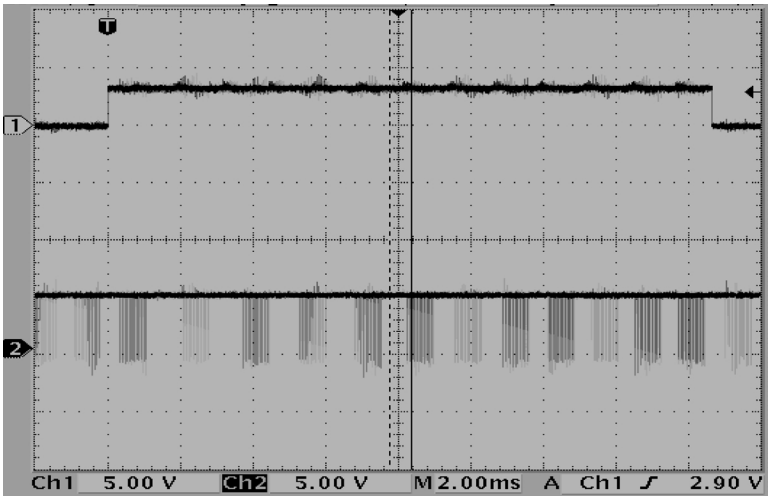
DATA-JIG NO(13~18, 49~54)



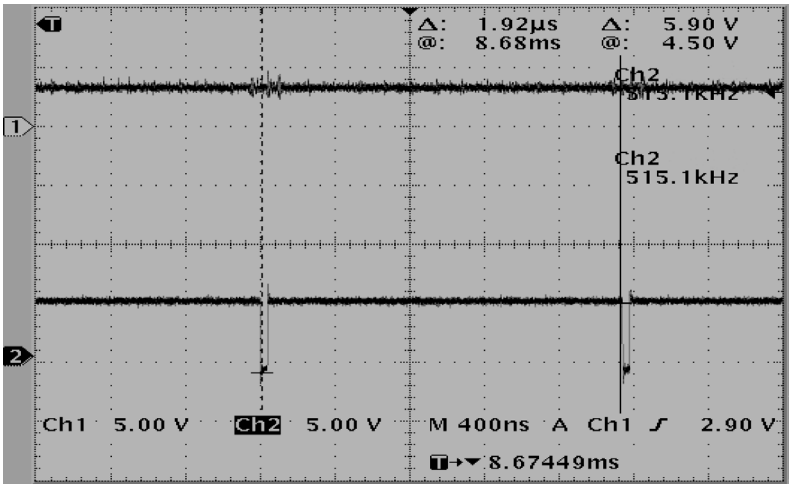
POL Signal-JIG NO (20,27,56,63)



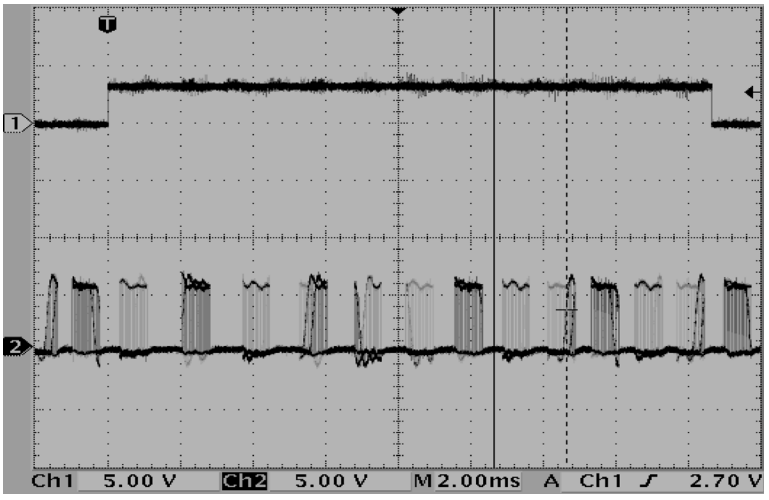
Magnified POL (Magnifying the Above Signal)



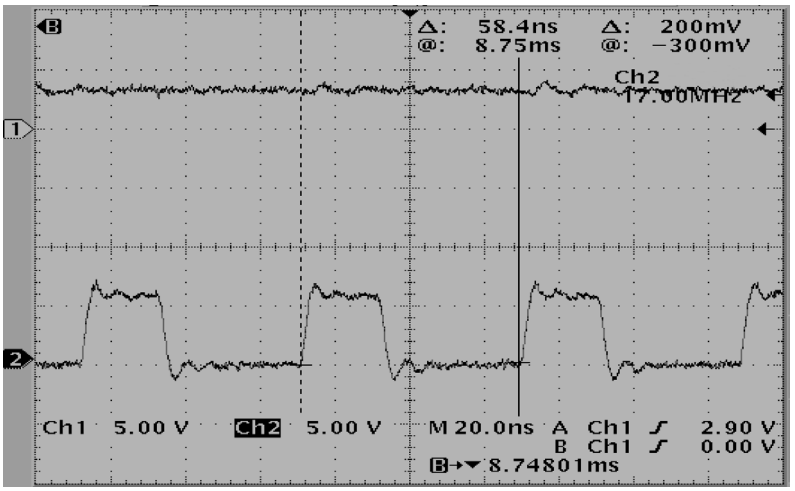
STB-JIG NO(25, 32, 61, 68)



Magnified STB (Magnifying the Above Signal)



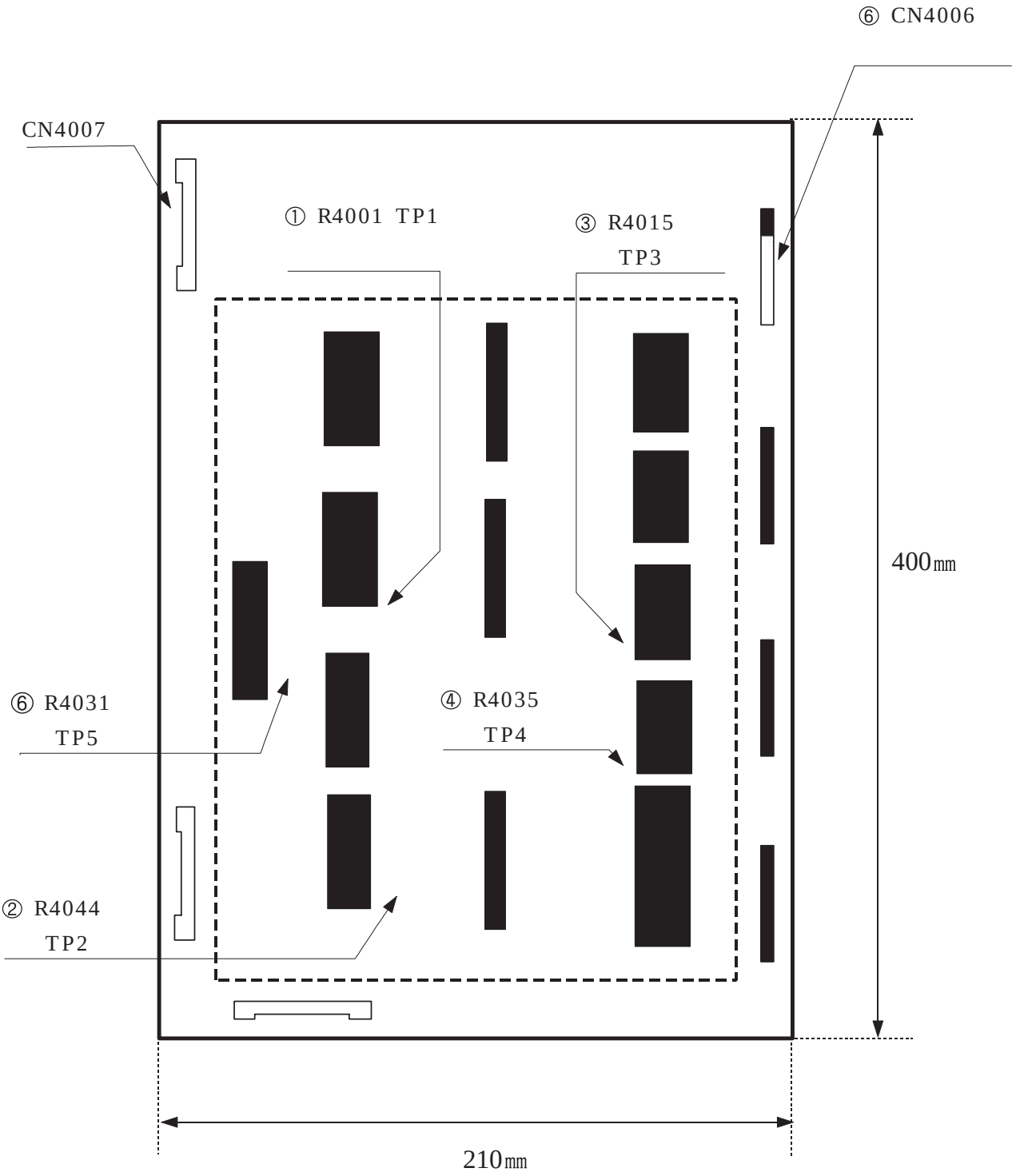
CLK-JIG NO(24, 31, 60, 67)



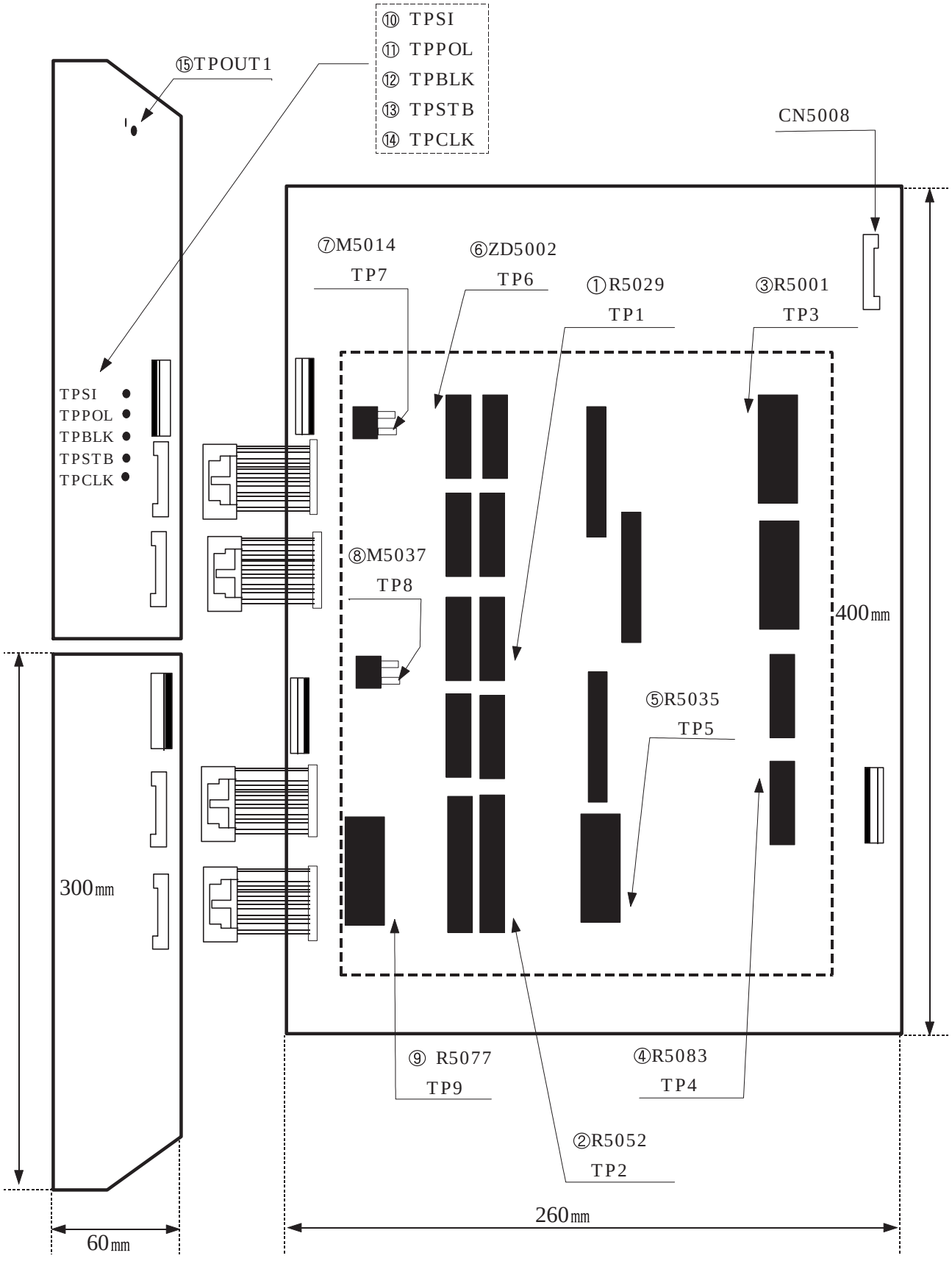
Magnified CLK

7-6 Driver Board T/S

7-6-1 Main X Board Layout and T/S TP Point



7-6-2 Main Y board layout and T/S TP Point



7-6-3 INPUT POWER

CN4007	
Pin #	Voltage Source
1	Vcc1=5V
2	GND
3	Vcc2=17V
4	GND
5	Ve = 0V
6	GND
7	NC
8	GND
9	GND
10	Vs = 168V
11	Vs = 168V
12	Vs = 168V

CN5008	
Pin #	Voltage Source
1	Vcc1 = 5V
2	GND
3	Vcc2 = 17V
4	GND
5	Vscan =70V
6	GND
7	Vset = 210V
8	NC
9	GND
10	GND
11	Vs = 168V
12	Vs = 168V
13	Vs = 168V

7-6-4 Drive Board Troubleshooting

;The following measures are troubleshooting procedures in case of SET troubles, due to the drive board problem.

► If SMPS shutdown is blocked.
- Find out which board is faulty by connecting the power ports of the X/Y board one by one.
  ; Check the resistance between the drain and the source of the FET on the faulty board. In case of a short, replace the corresponding FET.
  ; Check for a short between the input voltage ports (CN4007 and CN5008) and the GND of the faulty board.

► If the discharge screen is in trouble (Discharge trouble):
- Check that the Scan output voltage of the power output port is between 70V and 85V.
- Check the resistance between the drain and the source of the FET (M5014) on the Y board. If they are short, replace the FET.
- Checking the operation of the drive buffer board:
  ; Check the resistance between the Test Points [OUT_L ~ OUT_H]. In case of a short, replace the buffer board.
- Checking the connectors:
  ; Check CN5002 (Y board), and CN4008 (X board) to ensure if they are connected properly.

► When driving screen, horizontally adjacent 2 lines are emitting.
- Check if there is extraneous substance or inappropriate soldering, which may occur a short around the IC output lines in question on the drive buffer board.

► When the drive board does not operate
(The LED of the logic board blinks, but nothing appears on the screen):
- Check that the drive board input stage is installed in the connector properly.
- Check if the fuses (F4001, F4002, F5001, and F5002) are blown.

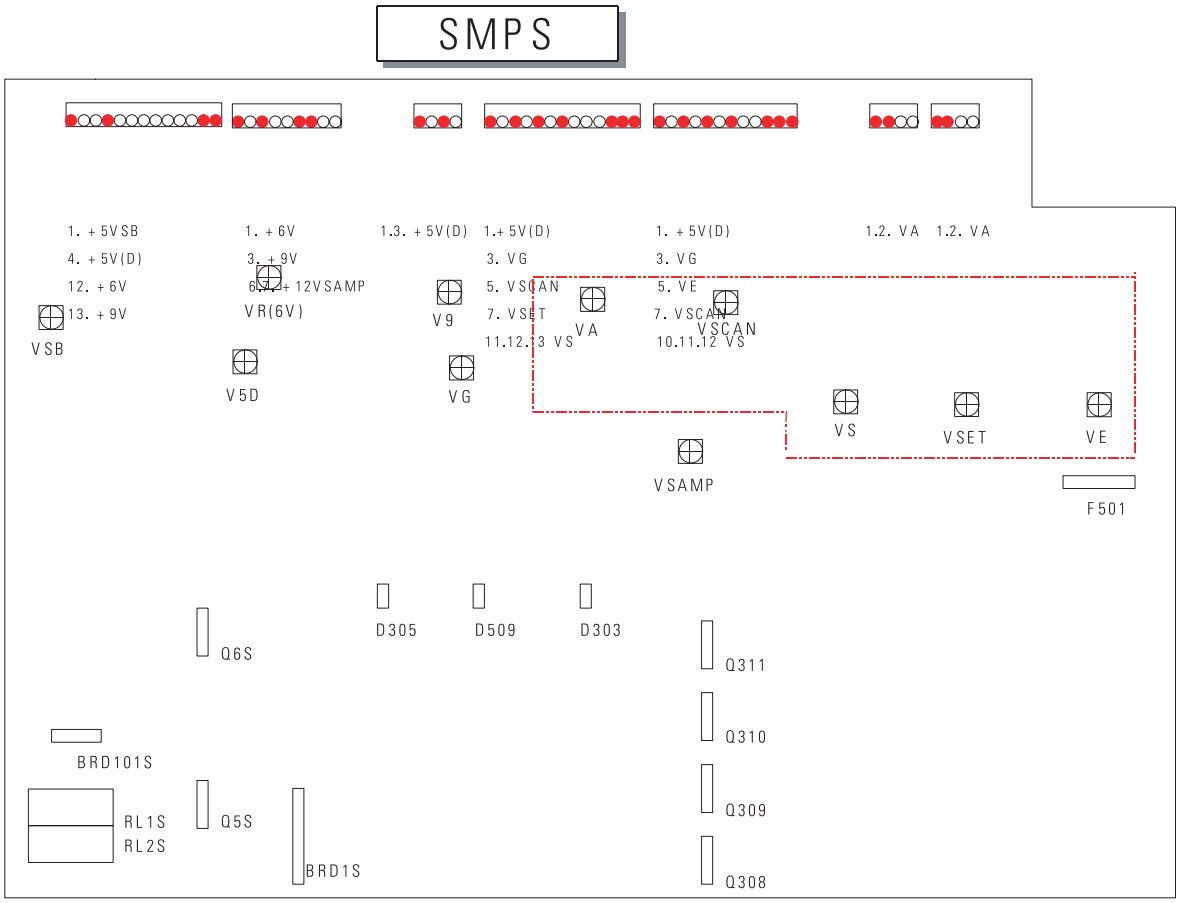
7-7 Troubleshooting when the SMPS is out of order

1. Check that auxiliary power (5VSB) is detected.
   1.1 If auxiliary power is not detected, check if BRD101S is a short.

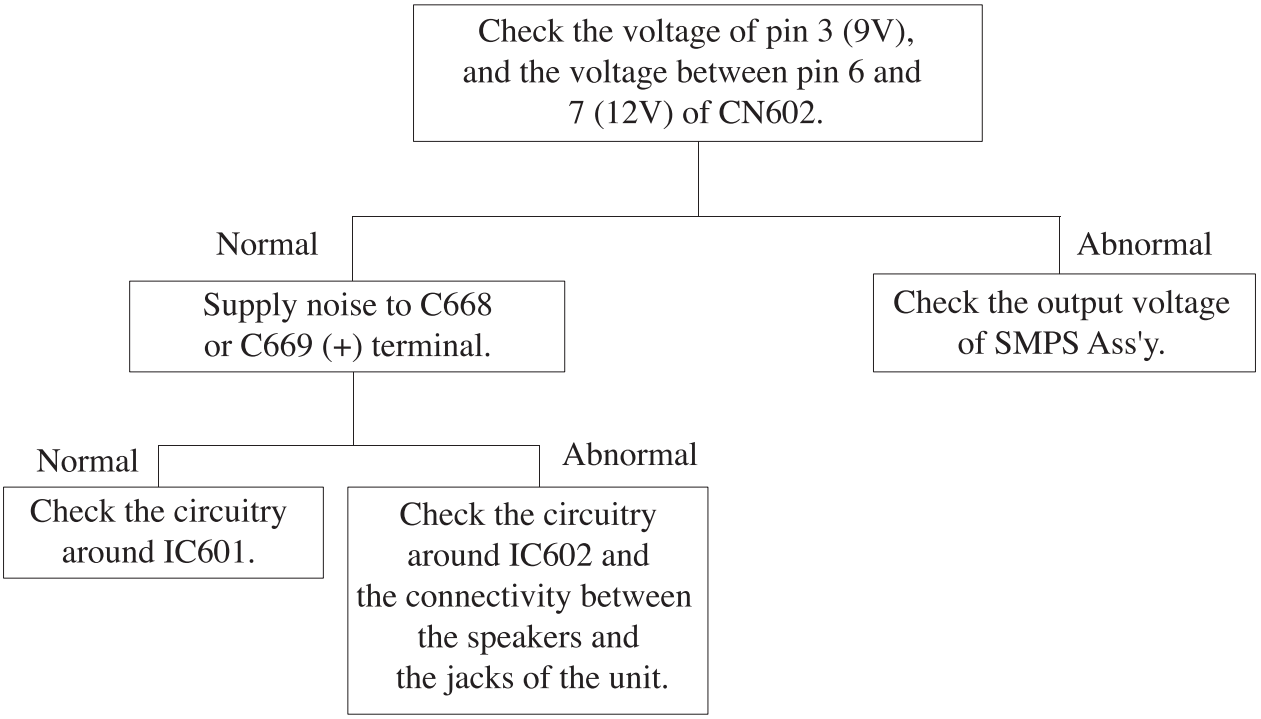
2. If it is in shutdown state;
   2.1 Check that each output is a short.
   2.2 Check if the protection circuit has a problem.

3. If output voltage (except auxiliary power) is not detected, check as follows.

   3.1. If VS voltage is not detected
      3.1.1 When the FUSE is blown --> Check that FET (Q5S and Q6S) is a short.
      Check that FET (Q308 ~ Q311) is a short.
      Check that BRD1S is a short.
      3.1.2 If DC5V RELAY (RL1S, RL2S) does not operate, check that auxiliary power (5VSB) is detected.
      3.1.3 If DC24V RELAY (RL3S) does not operate, check if F1 is blown.
   3.2 In case of +5V (D), check if D305 is short.
   3.3 In case of VSAMP, check if D509 is short.
   3.4 In case of VA, check if D303 is short.
   3.5 In case of VSET, VE, and VSCAN, check if VS voltage is detected and if F501 is blown.



7-8 No audio is sounded and video is displayed properly



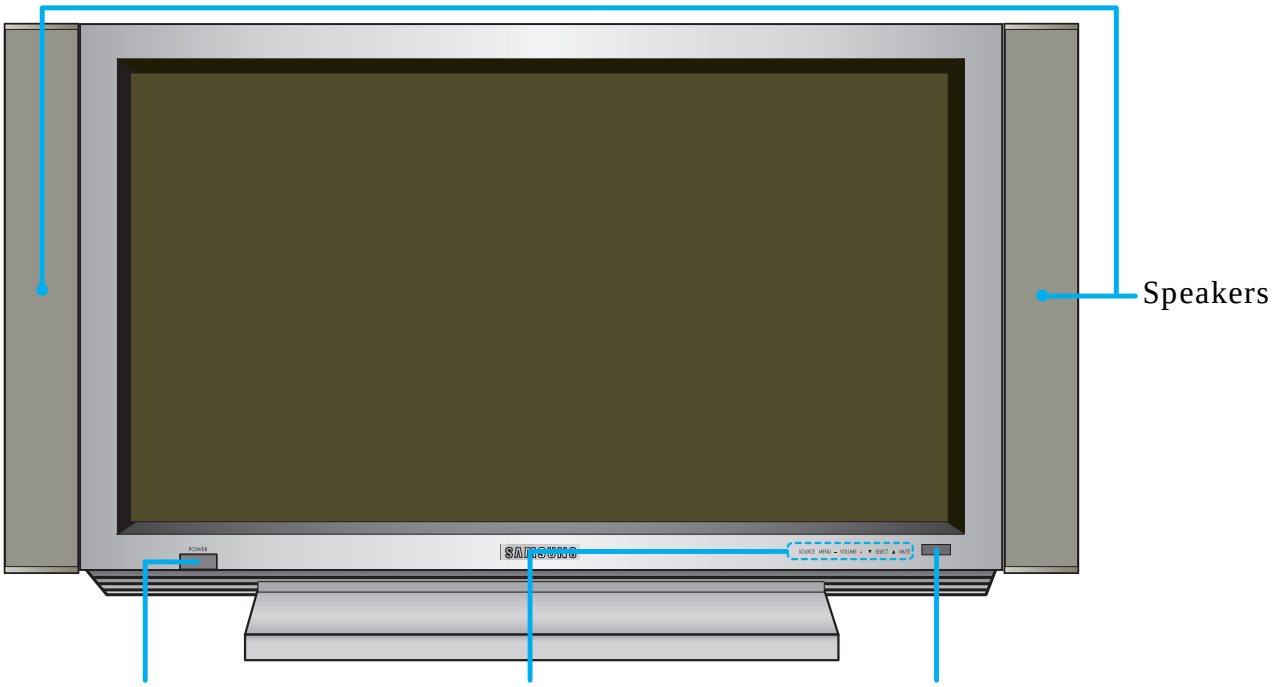
8. Handling Description

8-1 Basic Description

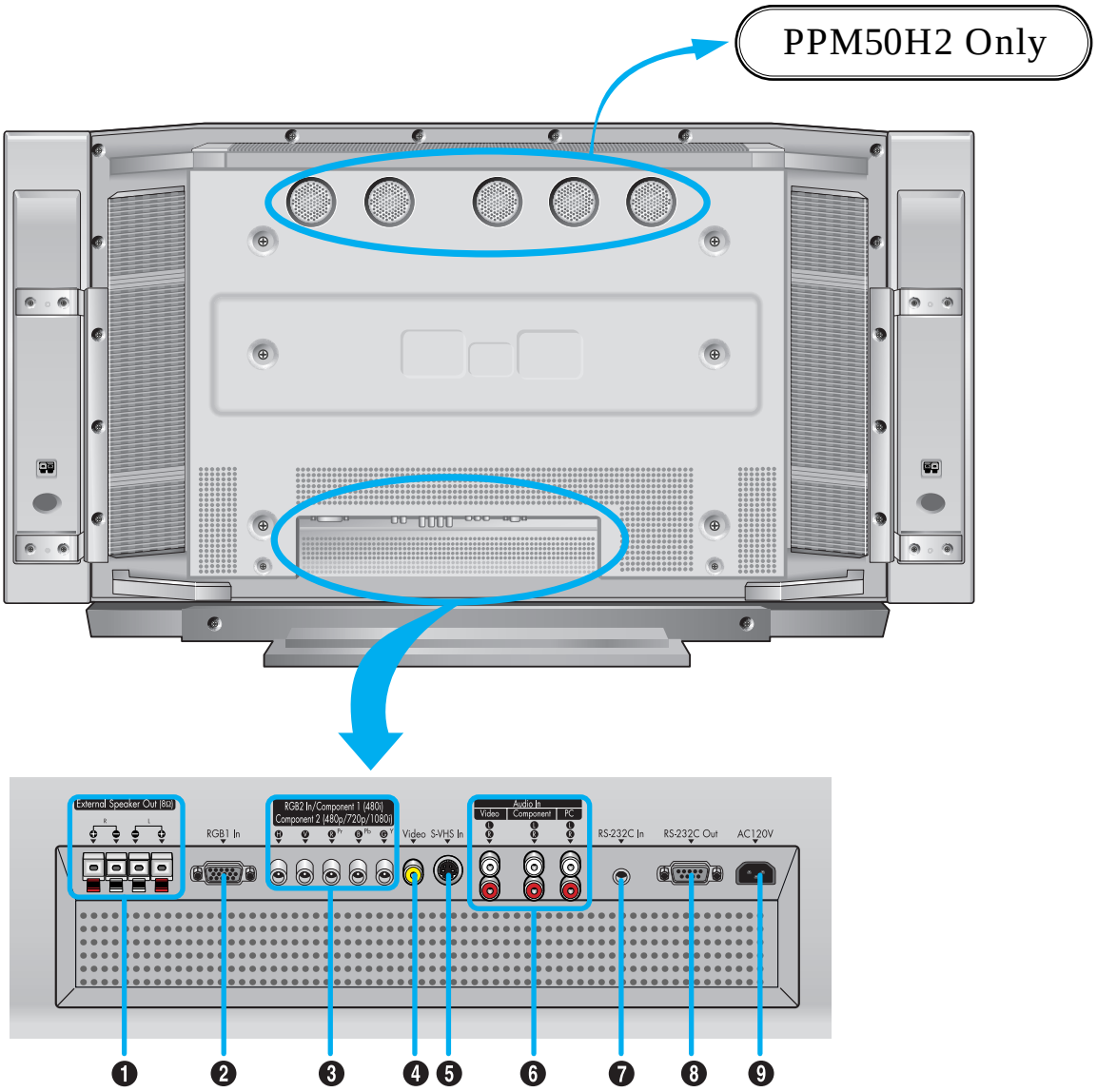
8-1-1 The Name of Each Part

8-1-1(A) PDP(Plasma Disply Panel)

Front Panel



Real Panel



❶ External Speaker Out jacks

Connect external speakers.

❷ RGB Input 1 jack (15pin)

Connect to the video output jack on your PC.

❸ RGB Input 2 / Component Video Input jacks (H / V / R / G / B, Y / P_b / P_r)

Connect to the digital RGB signal, HD receiver or DVD players.

❹ Video Input jack

Connect a video signal from external sources like VCRs or DVD players.

❺ S-VHS Input jack

Connect a S-Video signal from an S-VHS VCRs or DVD players.

❻ Audio Input (Video / Component / PC) jacks

Connect a audio signal from external sources like VCRs, PC or DVD players.

❼ RS-232C Input jack

Connect the input jack on RS-232C to your PC.

❽ RS-232C Output jack

Connect the output jack on RS-232C to another PDP. (PPM50H2 Only)

❾ Power Input jack

Connect the included power cord.

8-1-1(B) REMOTE CONTROL BUTTONS

Remote Control

Filp the cover open in the arrow direction.

❶ **Power button**
Turns the PDP on and off.

❷ **Number buttons**

❸ **Display button**
Press to display information on the PDP screen.

❹ **Menu button**
Displays the main on-screen menu.

❺ **CH (Channel) and VOL (Volume) buttons**
Controls volume, channel selection.

❻ **Mute button**
Press to mute the PDP sound.

❼ **P.Mode button**
Adjust the PDP picture by selecting on of the preset factory settings (or select your personal, customized picture settings.)

❽ **Aspect button**
Press to change the screen size.

❾ **Mode button**
Selects a target device to be controlled by the samsung remote control (ie., VCR, Cable, or DVD players).

❿ **Clock Display button**
Press to display clock on the PDP screen.

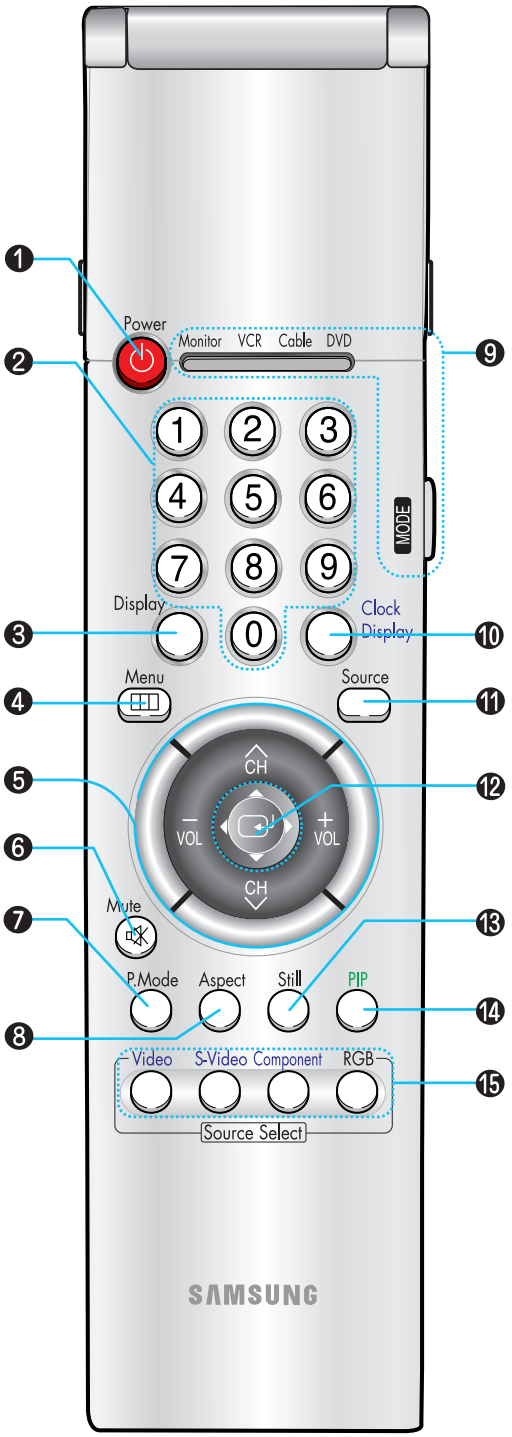
⓫ **Source button**
Press to display all of the available video sources (ie., Video, S-Video, Component1, Component2, PC).

⓬ **Joystick button**
Use to highlight on-screen menu items and change menu values.

⓭ **Still button**
Press to pause the current screen.

⓮ **PIP button**
Activates picture in picture.

⓯ **Source selection buttons**
Press to directly select Video, S-Video, Component1, Component2 or PC.



⑯ VCR control buttons
Controls VCR tape functions: Stop, Rewind, Play / Pause, Fast Forward.

⑰ SET button
Use during setting up of this remote control, so that it will work compatibly with other devices (VCR, cable box, DVD, etc.)

⑱ Clock set button
Press to clock setting.

⑲ PIP control buttons
Source : Press to select one of the available signal sources for the PIP window.
S.Sel : Press to select the Audio (PIP or Main).
Locate : Press to move the PIP window to any of the screen.

⑳ PC control buttons
Auto Adjust
Scaling
Zoom / Pan

㉑ S.Mode button
Adjust the PDP sound by selecting one of the preset factory settings (or select your personal, customized sound settings.)

㉒ Sleep button
Press to select a preset time interval for automatic shutoff.

8-2 Wall Mount

8-2-1 Notice for installing

1. Do not install the PDP on any place other than veritical walls.

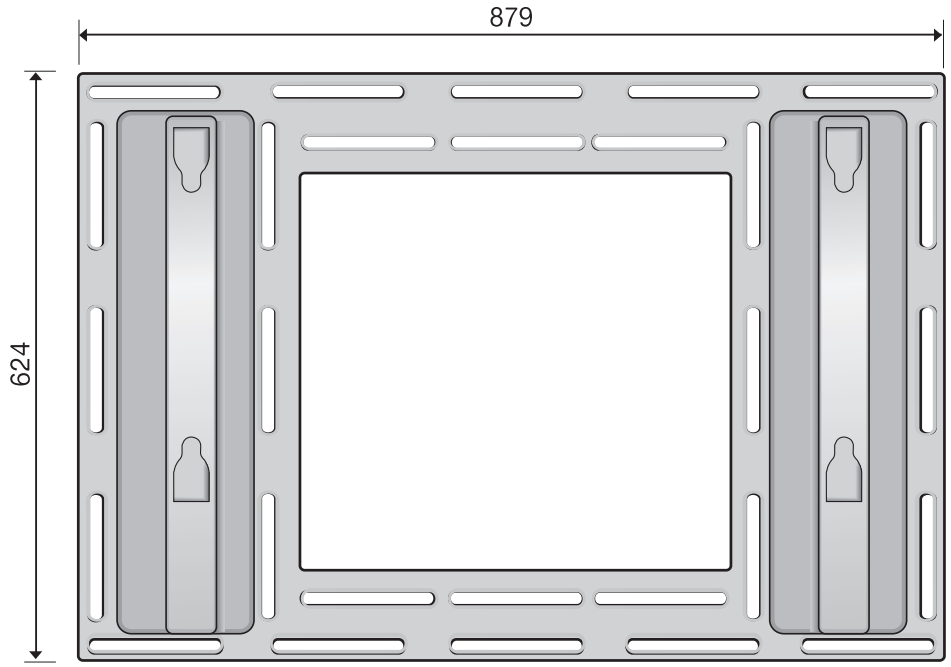
2. To protect the performance of the PDP and prevent problems, avoid the following place :

   lNext to spring coloer detectors.
   lPlaces subject to vibration or shock.
   lNear high voltage cables.
   lAround heating apparatus.

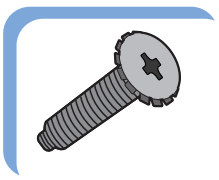
3. Install the PDP considering the construction of the wall.

4. Use only recommended parts and components for installation.

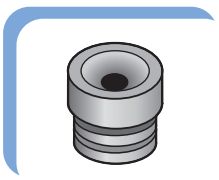
8-2-2 Parts(wall attachment panel is sold separately.)



Wall attachment panel(mm)



bolt

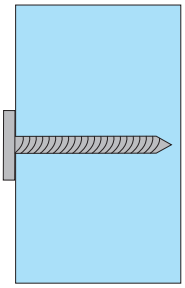


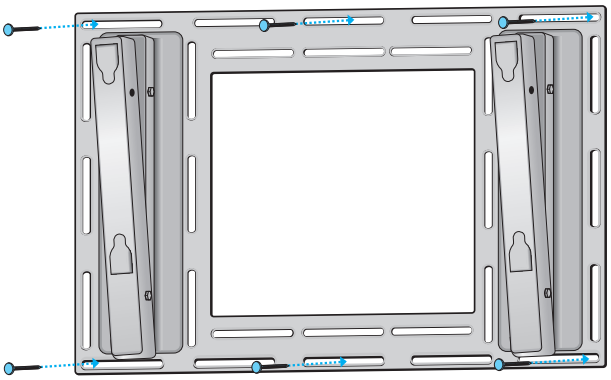
Insulation rubber

8-2-3 Installing the Display on the Wall Attachment Panel :

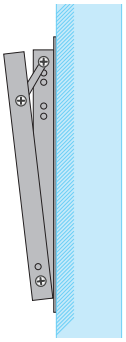
1. See the drawing of the wall attachment panel shown in page 13 to check for the stability of the wall where the PDP is to be installed. If the wall is not enough strong to support the PDP, strengthen the wall before installation.

2. Fix the wall attachment panel on the wall using bolts as shown in the following figure.

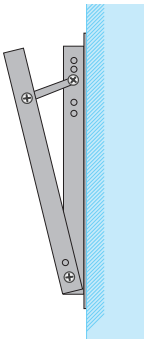




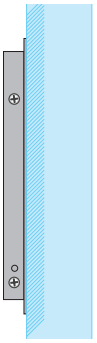
3. Using the wall attachment panel, you may adjust the angle of the display from 0 to 20 degrees. The angle can be set in 5 degrees with 5 degrees of distance each using the angle control holes on the sides of the panel.



When the angle has been set to 5 degrees.

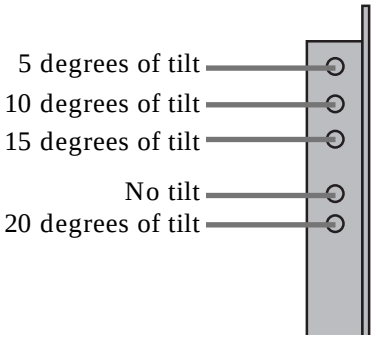


When the angle has been set to 15 degrees.

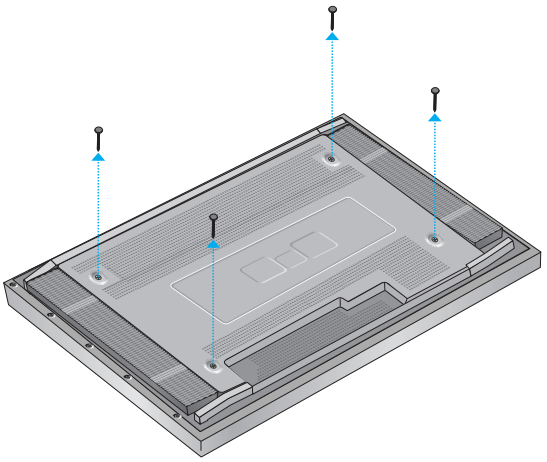


When the panel hasn't been tilted.

Angle control holes



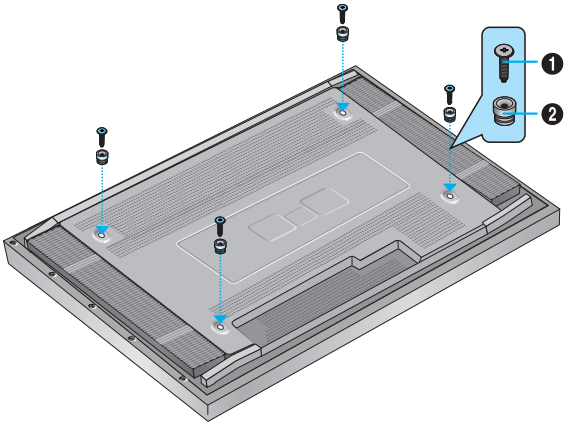
4. Remove four large screws from the rear side of the display.



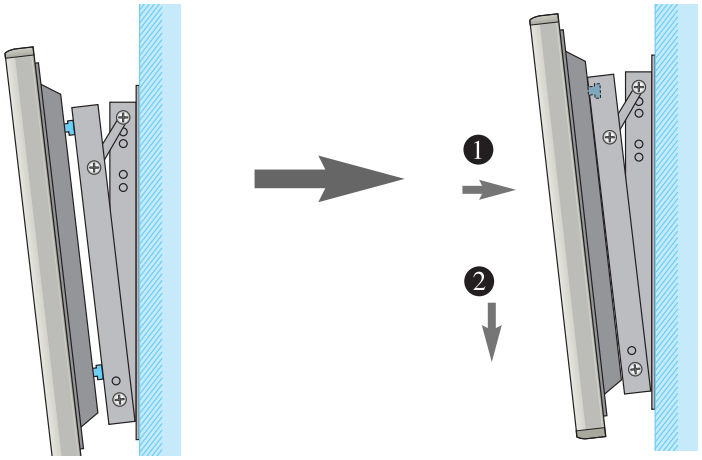
5. Insetr the hexagonal bolts, dish-type washers, and insulation rubber into the place from which the four large screws have been removed as shown in the following figure :

❶ Bolt

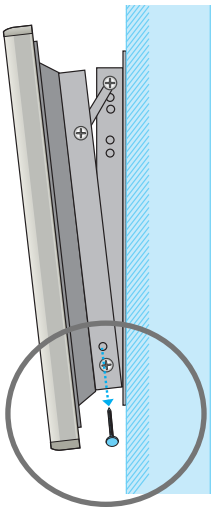
❷ Insulation rubber



6. Put the insulation rubber point protruding from the rear top of the display in the groove on the top of the wall attachment panel. Lift up the display a little bit so that the insulation rubber point at the bottom of the rear side of the display is put in the groove at the bottom of the wall attachment panel.(Do not lift the display with any pressure. The insulation rubber at the top may be taken off.)

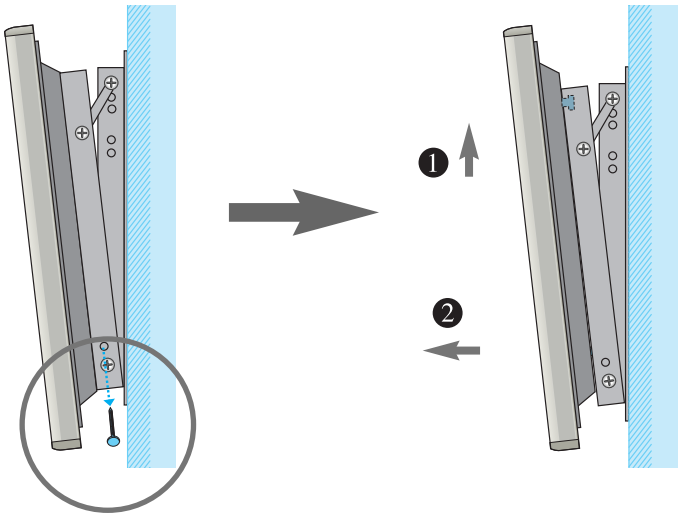


7. Insert the fixing bolts into the boltholes on both sides(left and right) of the wall fixing panel. Keep the fixing bolts tight to prevent the display from separating from the panel, and falling to the floor.



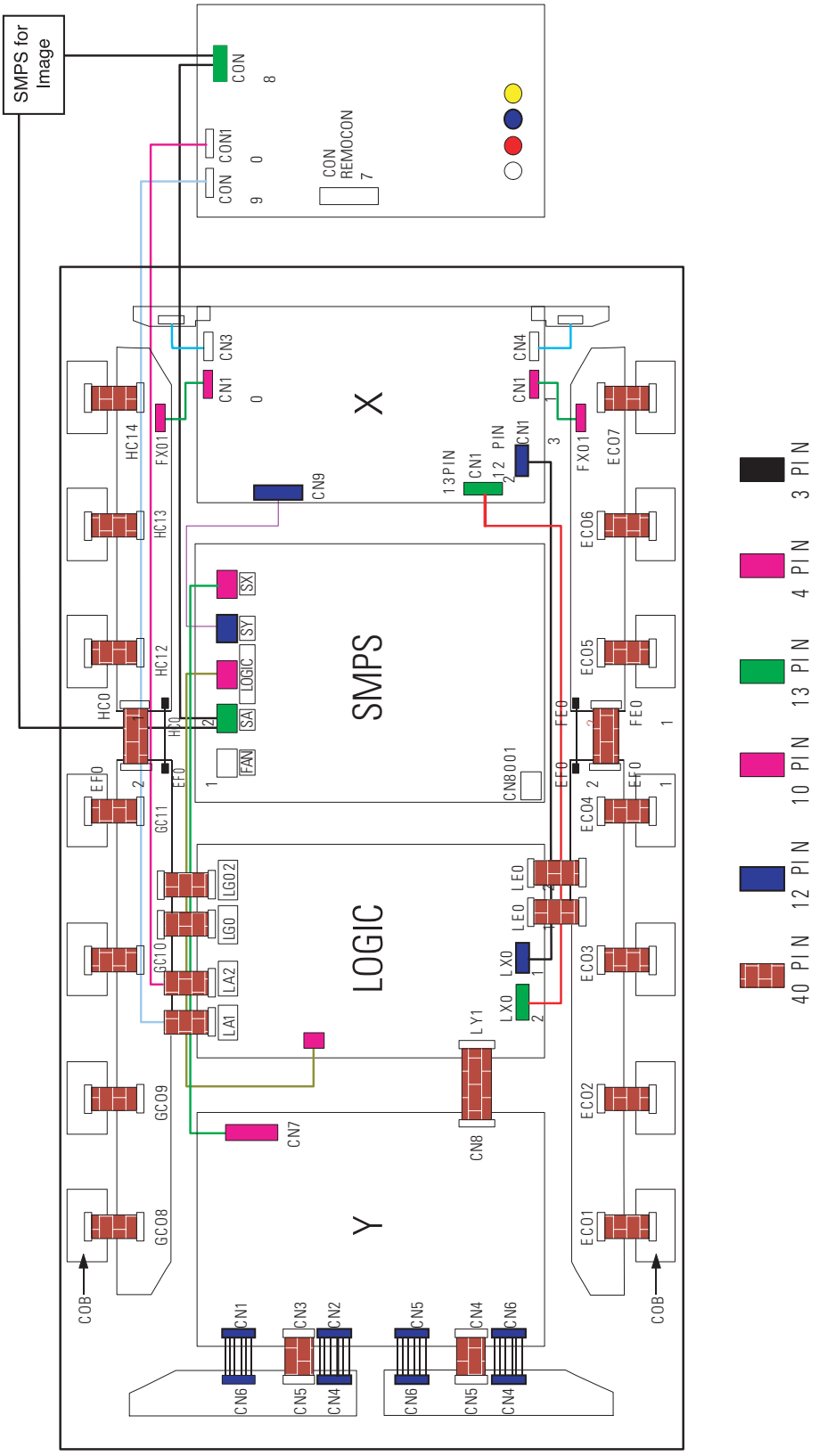
8-2-4 Separating the Display from the Wall Attachment Panel :

Remove the fixing bolts from both sides(left and right) of the wall attachment panel. Lift and pull the-bottom of the display a small amount, to separate the insulation rubber point from the bottom of the wall attachment panel.
Lift the display and separate the insulation rubber point from the groove on top of the wall attachment panel.



9. Wiring Diagram

9-1 Display Wiring Diagram



MENO

10. Electrical Parts List

10-1 HPL5025X/XAA

Loc. No.	Code No.	Description ; Specification	Remark

ASSY MISC-PDP PBA

1	*	BN91-00399A	ASSY MISC-PDP PBA;HPL5025X/XAA,D52A	S.N.A
..2		AA95-01833B	ASSY SUB-PCB,POWER AC BOARD;HPL5025M,D52	S.N.A
...3	CN812	3711-000203	CONNECTOR-HEADER;1WALL,3P,1R,3.96MM,STRA	
⚠ ...3	CX811S	2306-000321	C-FILM,MPPF;470NF,5%,275V,TP,-,22.5	
⚠ ...3	CX812S	2306-000321	C-FILM,MPPF;470NF,5%,275V,TP,-,22.5	
⚠ ...3	CX813S	2306-000321	C-FILM,MPPF;470NF,5%,275V,TP,-,22.5	
⚠ ...3	CY811S	2201-000987	C-CERAMIC,DISC;2.2nF,20%,400V,Y5U,TP,12.	
⚠ ...3	CY812S	2201-000987	C-CERAMIC,DISC;2.2nF,20%,400V,Y5U,TP,12.	
⚠ ...3	CY813S	2201-000987	C-CERAMIC,DISC;2.2nF,20%,400V,Y5U,TP,12.	
⚠ ...3	CY814S	2201-000446	C-CERAMIC,DISC;3.3nF,20%,400V,Y5U,TP,15x	
⚠ ...3	CY815S	2201-000446	C-CERAMIC,DISC;3.3nF,20%,400V,Y5U,TP,15x	
⚠ ...3	CY816S	2201-000446	C-CERAMIC,DISC;3.3nF,20%,400V,Y5U,TP,15x	
...3	EMI	2901-001206	FILTER-EMI AC LINE;250V,10A,UL/CSA(etc),	
...3	FS811A	3602-000149	FUSE-CLIP;125V,30A,0.004ohm	
...3	FS811B	3602-000149	FUSE-CLIP;125V,30A,0.004ohm	
⚠ ...3	FS811S	3601-001019	FUSE-CARTRIDGE;250V,12A,SLOW-BLOW,CERAMI	
...3	LINEMI	AA39-00296A	LEAD CONNECTOR ASSY;PDP,UL1617#18,UL/CSA	
...3	LINPWR	AA39-00295A	LEAD CONNECTOR ASSY;PDP,UL1617#18,UL/CSA	
⚠ ...3	LS812S	AA27-00189A	COIL CHOKE;-,HPL5025M,20UH,10%,0.03OHM,7	
⚠ ...3	LS813S	AA27-00189A	COIL CHOKE;-,HPL5025M,20UH,10%,0.03OHM,7	
⚠ ...3	LX811S	AA29-00017A	FILTER LINE NOISE;,25-4MH 7A,0.1OHM,1.5K	
⚠ ...3	LX812S	AA29-00017A	FILTER LINE NOISE;,25-4MH 7A,0.1OHM,1.5K	
⚠ ...3	PD811S	3711-000203	CONNECTOR-HEADER;1WALL,3P,1R,3.96MM,STRA	
⚠ ...3	RX811S	2002-001021	R-COMPOSITION;560KOHM,10%,1/2W,AA,TP,3.7	
⚠ ...3	VX811S	1405-000152	VARISTOR;560V,2500A,14x8.5mm,TP	
...3		AA61-00589B	BRACKET-NOISE,FILTER;SPD-50P2H,SUS,T0.5	S.N.A
...3		AA64-02554A	INLAY-SHIELD;50P2H,PS SHEET V0,T1.0,BLK	
...3		AA65-30105B	CLAMP-WIRE;ALL MODEL,NYLON 66,V2,-,NTR,2	S.N.A
...3		AA97-05467A	ASSY AUTO-SUB;HPL5025M,D52A	S.N.A
....4	EL819	AA60-40011B	EYELET;ID2.2,OD3.2,-,-,BSP,-	S.N.A
....4	EL820	AA60-40011B	EYELET;ID2.2,OD3.2,-,-,BSP,-	S.N.A
....4	EL827	AA60-40011B	EYELET;ID2.2,OD3.2,-,-,BSP,-	S.N.A
....4	EL828	AA60-40011B	EYELET;ID2.2,OD3.2,-,-,BSP,-	S.N.A
....4	EY811	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY812	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY813	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY814	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY815	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY816	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY817	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY818	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY821	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY822	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY823	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY824	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY825	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY826	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	PCB	AA41-00391A	PCB-LINE FILTER;SPD-50P2HM,CEM-1,1L,A,1.	S.N.A
...3		AA61-00582B	BRACKET-LINE,FILTER;SPD-50P2H,SPC,T1.0,N	S.N.A
...3		0202-000187	SOLDER-WIRE FLUX;-,RS60S,D1.2,63Sn/37Pb	S.N.A
...3		6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2		AA95-01833C	ASSY SUB-PCB,POWER ON/OFF;HPL5025M,D52A,	S.N.A
...3	PCB+BP	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
...3	R01	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
...3	SW01	3404-001006	SWITCH-TACT;12V,50mA,160gf,6x6mm,SPST	
...3		AA41-00494A	PCB-POWER S/W;HPL5025M,FR-4,2L,A,1.6T,24	S.N.A
...3		AA61-00716B	BRACKET-POWER;,SECC,T1.0	
...3		0202-000187	SOLDER-WIRE FLUX;-,RS60S,D1.2,63Sn/37Pb	S.N.A
...3		3301-001201	CORE-FERRITE;AE,21x11x32mm,1500,280G	
..2		AA95-01837A	ASSY SUB-PCB,REMOCON;HPL5025M,D52A,AA95-	
...3	C21	2401-000922	C-AL;22uF,20%,16V,GP,TP,5x5,5	
...3	CN21	AA39-00275B	LEAD CONNECTOR ASSY;PDP,UL1007,2547#26,U	
...3	D21	0601-001381	LED;ROUND,RED/GRN,5.0MM,650/563NM	
...3	MD21	AA59-60002B	MODULE-REMOCON;-,ORC-50HF,38KHz,940mm,ME	
...3		AA97-05465A	ASSY AUTO-SUB;HPL5025M,D52A	S.N.A

Loc. No.	Code No.	Description ; Specification	Remark

....4	PCB	AA41-00371A	PCB-REMOCON;SPD-50P2HM,FR-4,2L,A,1.6T,24	S.N.A
....4	R21	2001-000734	R-CARBON;4.7KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
....4	R22	2001-000793	R-CARBON;47OHM,5%,1/8W,AA,TP,1.8X3.2MM	
....4	ZD1	0403-000510	DIODE-ZENER;MTZJ6.2B,6.2V,5.96-6.27V,500	
...3		AA61-00583B	HOLDER-LED;SPD-50P2H,ABS,BLK	S.N.A
...3		0202-000187	SOLDER-WIRE FLUX;-,RS60S,D1.2,63Sn/37Pb	S.N.A
..2		AA95-01844N	ASSY SUB-PCB,SOUND;SPD-50P2HM,D52A,AA95-	S.N.A
...3	AMPMAI	AA39-00112D	LEAD CONNECTOR ASSY;PDP,UL1007#26,UL/CSA	
...3	CN601	3711-003052	CONNECTOR-HEADER;BOX,10P,1R,2.5MM,STRAIG	
...3	CN602	3711-003046	CONNECTOR-HEADER;BOX,9P,1R,2.5mm,STRAIGH	
...3	CN603	3711-003043	CONNECTOR-HEADER;BOX,4P,1R,2.5mm,STRAIGH	
...3	IC601	1204-001222	IC-AUDIO PROCESSOR;TDA7429S,DIP,42P,-,PL	
...3	JK601	3722-001707	JACK-PIN;6P(6P),3.5MM,NI,WH/WH/WH/RD/RD/	
...3	JK603	3722-000143	JACK-PHONE;1P(VER),3.4PI,AG,BLK,NO	
...3	L682	AA27-00119A	COIL CHOKE;10uH,-,10uH,10%,0.07,0.1ohm M	
...3	L683	AA27-00119A	COIL CHOKE;10uH,-,10uH,10%,0.07,0.1ohm M	
...3	L684	AA27-00119A	COIL CHOKE;10uH,-,10uH,10%,0.07,0.1ohm M	
...3	L685	AA27-00119A	COIL CHOKE;10uH,-,10uH,10%,0.07,0.1ohm M	
...3	PWRAMP	AA39-00293A	LEAD CONNECTOR ASSY;PDP,UL1007#26,UL/CSA	
....4		3301-001201	CORE-FERRITE;AE,21x11x32mm,1500,280G	
...3		AA61-00580B	BRACKET-A/V;SPD-50P2H,SPC,T1.0,NI	S.N.A
...3		AA97-05302A	ASSY AUTO-SUB;SPD-50P2HM,D52A	S.N.A
....4	C601	2401-000426	C-AL;10uF,20%,16V,GP,TP,3.5x5,5	
....4	C602	2301-000224	C-FILM,PEF;22nF,5%,50V,TP,7.4x3.9x13mm,5	
....4	C603	2301-000224	C-FILM,PEF;22nF,5%,50V,TP,7.4x3.9x13mm,5	
....4	C604	2301-000445	C-FILM,PEF;4.7nF,5%,50V,TP,5.5x7x3mm,5mm	
....4	C605	2305-000665	C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0m	
....4	C606	2301-000104	C-FILM,PEF;1.2NF,5%,50V,TP,6.5X3.0X5.5MM	
....4	C607	2301-000289	C-FILM,PEF;5.6nF,5%,50V,TP,7x6x3,5	
....4	C608	2305-001023	C-FILM,MPEF;680nF,10%,63V,TP,7.5x5.5x14.	
....4	C609	2401-000647	C-AL;2.2uF,20%,50V,BP,TP,5x11,5	
....4	C610	2401-000647	C-AL;2.2uF,20%,50V,BP,TP,5x11,5	
....4	C611	2401-000647	C-AL;2.2uF,20%,50V,BP,TP,5x11,5	
....4	C612	2305-000665	C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0m	
....4	C613	2305-000665	C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0m	
....4	C615	2305-000665	C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0m	
....4	C616	2305-000665	C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0m	
....4	C617	2301-000224	C-FILM,PEF;22nF,5%,50V,TP,7.4x3.9x13mm,5	
....4	C618	2301-000395	C-FILM,PEF;18NF,5%,50V,TP,6.5X12.5X3.5MM	
....4	C619	2301-000224	C-FILM,PEF;22nF,5%,50V,TP,7.4x3.9x13mm,5	
....4	C620	2301-000395	C-FILM,PEF;18NF,5%,50V,TP,6.5X12.5X3.5MM	
....4	C621	2301-000289	C-FILM,PEF;5.6nF,5%,50V,TP,7x6x3,5	
....4	C622	2301-000289	C-FILM,PEF;5.6nF,5%,50V,TP,7x6x3,5	
....4	C632	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C633	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C634	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C635	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C636	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C637	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C662	2401-002463	C-AL;470uF,20%,16V,GP,TP,8x11.5,5	
....4	C664	2401-002463	C-AL;470uF,20%,16V,GP,TP,8x11.5,5	
....4	C667	2401-000603	C-AL;1uF,20%,50V,GP,TP,5x11,5	
....4	C668	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C669	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C681	2401-000603	C-AL;1uF,20%,50V,GP,TP,5x11,5	
....4	C689	2401-002009	C-AL;100uF,20%,16V,GP,TP,6.3x7,5	
....4	C691	2401-002009	C-AL;100uF,20%,16V,GP,TP,6.3x7,5	
....4	L602	2702-001094	INDUCTOR-RADIAL;10uH,10%,6x4mm	
....4	L681	2702-001094	INDUCTOR-RADIAL;10uH,10%,6x4mm	
....4	R600	2003-000664	R-METAL OXIDE(S);33ohm,5%,2W,AF,TP,4x12m	
....4		AA97-06178A	ASSY SMD-SUB;SPD-50P2HM,D52A	S.N.A
.....5	C629	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5	C661	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5	C663	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5	C665	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5	C666	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5	C670	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5	C682	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5	C683	2203-005809	C-CERAMIC,CHIP;1000nF,10%,16V,X7R,TP,201	

Loc. No.		Code No.	Description ; Specification	Remark
.....5C685		2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5C686		2203-000239	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,2012	
.....5C687		2203-005809	C-CERAMIC,CHIP;1000nF,10%,16V,X7R,TP,201	
.....5C688		2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5C690		2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5C692		2203-005809	C-CERAMIC,CHIP;1000nF,10%,16V,X7R,TP,201	
.....5C694		2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5C695		2203-000239	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,2012	
.....5C696		2203-005809	C-CERAMIC,CHIP;1000nF,10%,16V,X7R,TP,201	
.....5C698		2203-000239	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,2012	
.....5C699		2203-000239	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,2012	
.....5DZ681		0403-001117	DIODE-ZENER;RLZ12B,5%,500mW,LL-34,TP	
.....5DZ682		0403-001117	DIODE-ZENER;RLZ12B,5%,500mW,LL-34,TP	
.....5DZ683		0403-001117	DIODE-ZENER;RLZ12B,5%,500mW,LL-34,TP	
.....5DZ684		0403-001117	DIODE-ZENER;RLZ12B,5%,500mW,LL-34,TP	
.....5IC602		1201-001681	IC-AUDIO AMP;1101,SOP,30P,433MIL,-,-,PLA	
.....5PCB		AA41-00369A	PCB-SOUND;SPD-50P2HM,FR-4,2L,A,1.6T,-,D5	S.N.A
.....5R601		2007-000981	R-CHIP;5.6KOHM,5%,1/10W,DA,TP,2012	
.....5R602		2007-000981	R-CHIP;5.6KOHM,5%,1/10W,DA,TP,2012	
.....5R603		2007-000518	R-CHIP;2.7KOHM,5%,1/10W,DA,TP,2012	
.....5R604		2007-000518	R-CHIP;2.7KOHM,5%,1/10W,DA,TP,2012	
.....5R605		2007-000572	R-CHIP;220OHM,5%,1/10W,DA,TP,2012	
.....5R606		2007-000572	R-CHIP;220OHM,5%,1/10W,DA,TP,2012	
.....5R611		2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
.....5R612		2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
.....5R613		2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
.....5R614		2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
.....5R615		2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
.....5R616		2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
.....5R617		2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
.....5R618		2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
.....5R619		2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
.....5R620		2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
.....5R621		2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
.....5R622		2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
.....5R661		2007-001177	R-CHIP;8.2KOHM,5%,1/10W,DA,TP,2012	
.....5R662		2007-000546	R-CHIP;20KOHM,5%,1/10W,DA,TP,2012	
.....5R663		2007-000738	R-CHIP;30KOHM,5%,1/10W,DA,TP,2012	
.....5R664		2007-000546	R-CHIP;20KOHM,5%,1/10W,DA,TP,2012	
.....5R665		2007-000738	R-CHIP;30KOHM,5%,1/10W,DA,TP,2012	
.....5R666		2007-000210	R-CHIP;1.1KOHM,5%,1/10W,DA,TP,2012	
.....5R682		2007-000308	R-CHIP;10OHM,5%,1/10W,DA,TP,2012	
.....5R683		2007-000308	R-CHIP;10OHM,5%,1/10W,DA,TP,2012	
.....5R690		2007-001177	R-CHIP;8.2KOHM,5%,1/10W,DA,TP,2012	
.....5R691		2007-001177	R-CHIP;8.2KOHM,5%,1/10W,DA,TP,2012	
...3		0202-000187	SOLDER-WIRE FLUX;-,RS60S,D1.2,63Sn/37Pb	S.N.A
...3		6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
...3		0202-001167	SOLDER-CREAM;RX3603-2330HO,S45A,PASTE,SN	S.N.A
..2		AA95-01849B	ASSY SUB-PCB,TERMINAL;HPL5025M,D52A,AA95	S.N.A
...3	CN603A	3711-003043	CONNECTOR-HEADER;BOX,4P,1R,2.5mm,STRAIGH	
...3	JK603	AA63-40258A	TERMINAL-SPEAKER;4P,ABS,4,-,-,-,BLK	S.N.A
...3	PCB	AA41-00373A	PCB-SPK TERMINAL;SPD-50P2HM,CEM-1,1L,A,1	S.N.A
...3	SPKAMP	AA39-00294B	LEAD CONNECTOR ASSY;PDP,UL1007#22,UL/CSA	
....4		3301-001201	CORE-FERRITE;AE,21x11x32mm,1500,280G	
...3		AA61-00578B	BRACKET-EXTERNAL;SPD-50P2H,SPC,T1.0,NI	S.N.A
...3		6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
...3		0202-000187	SOLDER-WIRE FLUX;-,RS60S,D1.2,63Sn/37Pb	S.N.A
..2		AA98-00136A	ASSY PDP P-MODULE;M-II,HPL5025M,D52A,D1.	
...3		AA98-00143A	ASSY-PBA,L-BUFF(E);,LJ92-00409A,D52A,HPL	
...3		AA98-00144A	ASSY-PBA,L-BUFF(F);,LJ92-00410A,D52A,HPL	
...3		AA98-00145A	ASSY-PBA,L-BUFF(G);,LJ92-00411A,D52A,HPL	
...3		AA98-00146A	ASSY-PBA,L-BUFF(H);,LJ92-00412A,D52A,HPL	
...3		AA98-00147A	ASSY-PBA,L-BUFF(I);,LJ92-00413A,D52A,HPL	
...3		AA98-00148A	ASSY-PBA,L-BUFF(J);,LJ92-00414A,D52A,HPL	
...3		AA98-00137A	ASSY-PANEL;,HPL5025M,D52A,S50HW01A	
...3		AA98-00138A	ASSY-PBA,X-MAIN;,LJ92-00404A,D52A,HPL502	
...3		AA98-00139A	ASSY-PBA,Y-MAIN;,LJ92-00405A,D52A,HPL502	
...3		AA98-00140A	ASSY-PBA,L-MAIN;,LJ92-00408A,D52A,HPL502	
...3		AA98-00141A	ASSY-PBA,Y-BUFF(YA-A1);,LJ92-00406A,D52A	
...3		AA98-00142A	ASSY-PBA,Y-BUFF(YB-A1);,LJ92-00406B,D52A	
..2		AA98-00149A	ASSY-SMPS,MAIN;,LJ44-00024A,D52A,HPL5025	
..2		AA95-01797L	ASSY SUB-PCB,CONTROL;HPL5025M,D52A,AA95-	S.N.A
...3	CN11	AA39-00273A	LEAD CONNECTOR ASSY;HPL5025M,UL1007#26,U	
...3	SW11	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3	SW12	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3	SW13	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3	SW14	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3	SW15	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3	SW16	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3	SW17	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3		AA97-05466A	ASSY AUTO-SUB;HPL5025M,D52A	S.N.A
....4	PCB	AA41-00370A	PCB-CONTROL;SPD-50P2HM,FR-1,1L,A,1.6T,-,	S.N.A
....4	R11	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
....4	R12	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
....4	R13	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
....4	R14	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
...3		0202-000187	SOLDER-WIRE FLUX;-,RS60S,D1.2,63Sn/37Pb	S.N.A
..2		3301-001201	CORE-FERRITE;AE,21x11x32mm,1500,280G	
..2		AA39-00037A	LEAD CONNECTOR-ASSY;PDP,UL1007#22,UL/CSA	
...3		3301-001305	CORE-FERRITE;AE,30X15X34(39)MM,1500,2800	
..2		AA39-00161A	LEAD CONNECTOR ASSY;PDP,UL1007#22,UL/CSA	
...3		3301-001305	CORE-FERRITE;AE,30X15X34(39)MM,1500,2800	
..2		AA39-00274A	LEAD CONNECTOR ASSY;PDP,UL2835#28,UL/CSA	
..2		AA39-00297A	LEAD CONNECTOR ASSY;PDP,UL1007#26,UL/CSA	
...3		3301-001305	CORE-FERRITE;AE,30X15X34(39)MM,1500,2800	

ASSY COVER REAR

1	*	BN90-00283A	ASSY COVER REAR;HPL5025X/XAA	S.N.A
..2		AA60-00110A	SPACER-FILTER;50P2H,P/U V0,L643,BLK	
..2		AA60-00110B	SPACER-FILTER;50P2H,P/U V0,L1127.5,BLK	
..2		AA91-00865C	ASSY CABINET BACK;,HIPS V0 BLK,MIJU(TV),	
...3	COB+CB	6003-001020	SCREW-TAPTITE;RH,+,B,M4,L10,ZPC(YEL),SWR	S.N.A
...3		AA72-00020A	SPONGE-EMI,A;PDP,SHIELD-FORM,T16,D20,L10	
...3		AA64-01551B	HANDLE-SET;PDP,ABS,HB,BLK	
...3		AA64-01550B	CABINET-BACK;50P2,HIPS,V0,BLK,WP1000	
...3		AA63-30140B	COVER-BACK,ASSY;HPL5025,AL 30003-0,T1.2,	
....4		AA63-00526B	COVER-BOT,LEFT;50P2,AL 3003-0,T1.2	S.N.A
....4		AA72-00007A	SPONGE-EMI;PDP,SHELD FROM,D10,T2,L50	S.N.A
....4		AA72-00007C	SPONGE-EMI;,SPONGE,T2,W10,L75	
....4		AA72-00007D	SPONGE-EMI;,SPONGE,T2,W10,L180	
....4		AA72-00007E	SPONGE-EMI;,SPONGE,T2,W10,L100	
....4		AA63-00364D	COVER-BACK;HPL5025,AL 3003-0,T1.2	
....4		AA63-00373B	COVER-BACK,BOTTOM;SPD-50P2H,AL 3003-0,T1	
....4		AA63-00523B	COVER-TOP,RIGHT;50P2,AL 3003-0,T1.2	S.N.A
....4		AA63-00524B	COVER-TOP,LEFT;50P2,AL 3003-0,T1.2	S.N.A
....4		AA63-00525B	COVER-BOT,RIGHT;50P2,AL 3003-0,T1.2	S.N.A
...3		6003-001026	SCREW-TAPTITE;RH,+,B,M4,L15,ZPC(BLK),SWR	S.N.A
...3		6003-001019	SCREW-TAPTITE;RH,+,B,M4,L12,ZPC(BLK),SWR	S.N.A

ASSY COVER FRONT

1	*	BN90-00282A	ASSY COVER FRONT;HPL5025X/XAA	
..2	BA+PA	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2	BE+PA	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2	BFB+CF	6003-001020	SCREW-TAPTITE;RH,+,B,M4,L10,ZPC(YEL),SWR	S.N.A
..2	BFB+CF	6003-001023	SCREW-TAPTITE;RWH,+,B,M3,L10,ZPC(YEL),SW	S.N.A
..2	BFB+PA	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2	BFS+CF	6003-001020	SCREW-TAPTITE;RH,+,B,M4,L10,ZPC(YEL),SWR	S.N.A
..2	BFT+CF	6003-001020	SCREW-TAPTITE;RH,+,B,M4,L10,ZPC(YEL),SWR	S.N.A
..2	BLF+PA	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2	BP+CF	6003-001026	SCREW-TAPTITE;RH,+,B,M4,L15,ZPC(BLK),SWR	S.N.A
..2	BSM+PA	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2	BSS+PA	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2	BW+BW	6006-001039	SCREW-ASS'Y MACH;WSP,PH,+,M4,L12,ZPC(YEL	
..2	CB+BW	6006-001112	SCREW-ASS'Y MACH;WP,PH,+,M8,L16,ZPC(BLK)	
..2	CB+CF	AA60-10050T	SCREW-TAPPING;-,SWRCH18A,M4,L20,RH,+,2S,	S.N.A
..2	CB+CT	6001-000578	SCREW-MACHINE;TH,+,M3,L8,ZPC(YEL),SWRCH1	
..2	CT+JA	6003-001025	SCREW-TAPTITE;RH,+,B,M4,L20,ZPC(BLK),SWR	S.N.A
..2	CT+JA	6003-001023	SCREW-TAPTITE;RWH,+,B,M3,L10,ZPC(YEL),SW	S.N.A
..2	CT+LF	6001-000578	SCREW-MACHINE;TH,+,M3,L8,ZPC(YEL),SWRCH1	
..2	KC+CF	6003-001026	SCREW-TAPTITE;RH,+,B,M4,L15,ZPC(BLK),SWR	S.N.A
..2	PA+CF	6003-001026	SCREW-TAPTITE;RH,+,B,M4,L15,ZPC(BLK),SWR	S.N.A
..2	PCB+BS	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2	PCB+CF	6003-001025	SCREW-TAPTITE;RH,+,B,M4,L20,ZPC(BLK),SWR	S.N.A
..2	PCB+CF	6003-001023	SCREW-TAPTITE;RWH,+,B,M3,L10,ZPC(YEL),SW	S.N.A
..2		AA67-00110A	SCREEN-EMI,FILTER;50PDP,SPUTTER,T2.7,115	
..2		AA72-00023A	SPONGE-EMI,A;PDP,SHIELD-FORM,T12,D20,L89	
..2		AA64-01565B	KNOB-CONTROL;PDP,ABS HB,BLK,SILVER	

Loc. No.	Code No.	Description ; Specification	Remark
..2	AA63-00365B	COVER-SET;SPD-50P2H,ABS,HB,BLK	
..2	AA61-11068A	BRACKET-SHIELD ASSY;50P2H,PBS,T0.2	S.N.A
...3	AA61-01046A	BRACKET-SHIELD;PDP,PBS,T0.2	
...3	AA63-60122A	SPACER-FELT;50P2H,FELT,L75,T0.2,D30	S.N.A
..2	AA91-01033A	ASSY-COVER,TERMINAL;,SUS,T0.5,50P2	
...3	AA63-00368C	COVER-TERMINAL;SPD-50P2H,SUS,T0.5	
...3	AA72-00007A	SPONGE-EMI;PDP,SHELD FROM,D10,T2,L50	S.N.A
...3	AA72-00019A	SPONGE-EMI,JACK;50P2H,SHIELD-FORM,T2.5,H	
..2	AA91-00864C	ASSY CABINET FRONT;,HPL5025,HIPS V0,BLK	
...3	AA64-01566F	KNOB-MASTER;PDP,ABS,HB,BLK,LG807P T/S	
...3	AA64-01560D	BADGE-BRAND;PDP,AL FORGING,L68(45),SILVE	
...3	AA64-01549B	WINDOW-RMC;PDP,ACRYL VIOLET,20:1	
...3	AA64-01548D	CABINET-FRONT;HPL5025,HIPS,V0,G4309,LG80	
...3	AA61-60003J	SPRING-CS;-,SUS304,-,-,OD6,N7,OD6,-,-,-,	S.N.A
..2	AA73-00005B	RUBBER-CAP;FLAT,PRJ,SILICONE RUBBER,WHIT	
..2	AA72-00025A	SPONGE-EMI,C;PDP,SHIELD-FORM,T16,D20,L61	
..2	AA72-00024A	SPONGE-EMI,B;PDP,SHIELD-FORM,T59,D45,L15	
..2	AA61-01114A	BRACKET-WIRE;SPD50P2H,AL 6063,T1.5	
..2	AA61-01005A	BRACKET-FILTER,BOT ASSY;50P2,AL 6063 EXT	
...3	AA72-00015A	SPONGE-EMI,FILTER;50P2H,SHIELD-FORM,T1.2	
...3	AA63-00406B	GROMMET-PANEL;PDP,PBT,T0.2	
...3	AA61-01064A	BRACKET-EMI,FILTER;PDP,SPTE,T0.3,L62.6,	
...3	AA61-01044A	BRACKET-FINGER;PDP,BE-CO,T0.15,NTR	
...3	AA61-01002A	BRACKET-FILTER,BOTTOM;SPD50P2S,AL,T1.5	
..2	AA61-01004A	BRACKET-FILTER,SIDE ASSY;50P2,AL 6063 EX	
...3	AA72-00016A	SPONGE-EMI,FILTER;50P2H,SHIELD-FORM,T1.2	
...3	AA63-00406B	GROMMET-PANEL;PDP,PBT,T0.2	
...3	AA61-01064A	BRACKET-EMI,FILTER;PDP,SPTE,T0.3,L62.6,	
...3	AA61-01044A	BRACKET-FINGER;PDP,BE-CO,T0.15,NTR	
...3	AA61-00575B	BRACKET-FILTER,SIDE;SPD-50P2H,AL 6063 EX	S.N.A
..2	AA61-01003A	BRACKET-FILTER,TOP ASSY;50P2,AL 6063 EXT	
...3	AA72-00015A	SPONGE-EMI,FILTER;50P2H,SHIELD-FORM,T1.2	
...3	AA63-00406B	GROMMET-PANEL;PDP,PBT,T0.2	
...3	AA61-01064A	BRACKET-EMI,FILTER;PDP,SPTE,T0.3,L62.6,	
...3	AA61-01044A	BRACKET-FINGER;PDP,BE-CO,T0.15,NTR	
...3	AA61-00576B	BRACKET-FILTER,TOP;SPD-50P2H,AL 6063 EXT	S.N.A
..2	AA61-00581B	BRACKET-SCALER,SUB;SPD-50P2H,SPC,T1.0,NI	S.N.A
..2	AA61-00573B	BRACKET-SCALER,MAIN;SPD-50P2H,SPC,T1.0,N	S.N.A

ASSY PCB
MISC-SCALER BOARD

1	*	BN94-00298A	ASSY PCB MISC-SCALER BOARD;HPL5025M,D52A
..2		1203-002074	IC-POSI.FIXED REG.;MIC39150,TO-263,3P,-
..2		1204-001556	IC-SEPARATOR;UPD64082GF,QFP,100P,-,PLAST
..2		1204-001598	IC-VIDEO PROCESS;VPC3230D-B2,QFP,80P,-,P
..2		1204-001623	IC-VERTICAL PROCESSO;SDA9400,QFP,64P,-,P
..2		2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,
..2		2901-000172	FILTER-EMI ON BOARD;50V,10A,-,-,12x11x13
..2		2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x
..2		1203-001359	IC-POSI.FIXED REG.;1086,TO-263,3P,15.8MM
..2		0801-002394	IC-CMOS LOGIC;74LCX32,OR GATE,SOIC,14P,1
..2		0909-001029	IC-REAL TIME CLOCK;8563,-,DIP,8P,300MIL,
..2		1001-001082	IC-VIDEO SWITCH;BA7657F,-,SOP,24P,300MIL
..2		1002-001045	IC-D/A CONVERTER;9280,8BIT,PLCC,68P,-,-,
..2		1002-001204	IC-A/D CONVERTER;AD9884AKS-140,8BIT,QFP,
..2		1003-001249	IC-LCD CONTROLLER;PW364-S1675,TBGA,352P,
..2		1107-001087	IC-FLASH MEMORY;29LV160,1Mx16BIT,SOP,48P

Loc. No.	Code No.	Description ; Specification	Remark
		ASSY P/MATERIAL	
1 *	BN92-00376A	ASSY P/MATERIAL;HPL5025X/XAA	
..2	AA61-20285A	HOLDER-BOX;3456,PP,-,-,-,WHT,VO	S.N.A
..2	AA60-40006A	PIN-STAPLE;-,-,H18,33X17.8X2.4,-,AUTO	S.N.A
		ASSY LABEL	
1 *	BN92-00386G	ASSY LABEL;HPL5025X/XAA	
		ASSY BOX	
1 *	BN92-00375A	ASSY BOX;HPL5025X/XAA	
		ASSY ACCESSORY	
1 *	BN92-00415J	ASSY ACCESSORY;HPL5025X/XAA,ENG	
..2	AA39-40001E	CABLE-S.VHS;,1500MM	
..2	AA59-00222B	REMOCON;,TM63,PDP,48,G6671B,SPK4215M	
..2	BN68-00263A	MANUAL USERS;HPL5025X,ENG,S/W120,D52A,A4	
..2	AA39-00288A	CBF SIGNAL;HPL5025M,15P/15P,2990,1830MM,	
..2	3301-001110	CORE-FERRITE;ZZ,35x19.5x9.0mm,-,-	
..2	3301-001201	CORE-FERRITE;AE,21x11x32mm,1500,280G	
..2	3705-001262	CONNECTOR-COAXIAL;BNC,ADAPTOR,2MOHM,75OH	
..2	4301-000103	BATTERY-ALKALINE;1.5V,750mAH,AAA,10.5x44	S.N.A
⚠ ..2	AA39-00233A	POWER CORD;SPD50P2HM,VM0289S/VM0266S,SVT	

10-2 PPM50H2X/XAA

Loc. No.	Code No.	Description ; Specification	Remark

ASSY MISC-PDP PBA

1	*	BN91-00366A	ASSY MISC-PDP PBA;HPL5025MX/XAA	S.N.A
..2		AA95-01797L	ASSY SUB-PCB,CONTROL;HPL5025M,D52A,AA95-	S.N.A
...3	CN11	AA39-00273A	LEAD CONNECTOR ASSY;HPL5025M,UL1007#26,U	
...3	SW11	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3	SW12	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3	SW13	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3	SW14	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3	SW15	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3	SW16	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3	SW17	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3		AA97-05466A	ASSY AUTO-SUB;HPL5025M,D52A	S.N.A
....4	PCB	AA41-00370A	PCB-CONTROL;SPD-50P2HM,FR-1,1L,A,1.6T,-	S.N.A
....4	R11	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
....4	R12	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
....4	R13	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
....4	R14	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
...3		0202-000187	SOLDER-WIRE FLUX;-,RS60S,D1.2,63Sn/37Pb	S.N.A
..2		AA95-01833B	ASSY SUB-PCB,POWER AC BOARD;HPL5025M,D52	S.N.A
...3	CN812	3711-000203	CONNECTOR-HEADER;1WALL,3P,1R,3.96MM,STRA	
⚠ ...3	CX811S	2306-000321	C-FILM,MPPF;470NF,5%,275V,TP,-,22.5	
⚠ ...3	CX812S	2306-000321	C-FILM,MPPF;470NF,5%,275V,TP,-,22.5	
⚠ ...3	CX813S	2306-000321	C-FILM,MPPF;470NF,5%,275V,TP,-,22.5	
⚠ ...3	CY811S	2201-000987	C-CERAMIC,DISC;2.2nF,20%,400V,Y5U,TP,12.	
⚠ ...3	CY812S	2201-000987	C-CERAMIC,DISC;2.2nF,20%,400V,Y5U,TP,12.	
⚠ ...3	CY813S	2201-000987	C-CERAMIC,DISC;2.2nF,20%,400V,Y5U,TP,12.	
⚠ ...3	CY814S	2201-000446	C-CERAMIC,DISC;3.3nF,20%,400V,Y5U,TP,15x	
⚠ ...3	CY815S	2201-000446	C-CERAMIC,DISC;3.3nF,20%,400V,Y5U,TP,15x	
⚠ ...3	CY816S	2201-000446	C-CERAMIC,DISC;3.3nF,20%,400V,Y5U,TP,15x	
...3	EMI	2901-001206	FILTER-EMI AC LINE;250V,10A,UL/CSA(etc),	
...3	FS811A	3602-000149	FUSE-CLIP;125V,30A,0.004ohm	
...3	FS811B	3602-000149	FUSE-CLIP;125V,30A,0.004ohm	
⚠ ...3	FS811S	3601-001019	FUSE-CARTRIDGE;250V,12A,SLOW-BLOW,CERAMI	
...3	LINEMI	AA39-00296A	LEAD CONNECTOR ASSY;PDP,UL1617#18,UL/CSA	
...3	LINPWR	AA39-00295A	LEAD CONNECTOR ASSY;PDP,UL1617#18,UL/CSA	
⚠ ...3	LS812S	AA27-00189A	COIL CHOKE;-,HPL5025M,20UH,10%,0.03OHM,7	
⚠ ...3	LS813S	AA27-00189A	COIL CHOKE;-,HPL5025M,20UH,10%,0.03OHM,7	
⚠ ...3	LX811S	AA29-00017A	FILTER LINE NOISE;,25-4MH 7A,0.1OHM,1.5K	
⚠ ...3	LX812S	AA29-00017A	FILTER LINE NOISE;,25-4MH 7A,0.1OHM,1.5K	
⚠ ...3	PD811S	3711-000203	CONNECTOR-HEADER;1WALL,3P,1R,3.96MM,STRA	
⚠ ...3	RX811S	2002-001021	R-COMPOSITION;560KOHM,10%,1/2W,AA,TP,3.7	
⚠ ...3	VX811S	1405-000152	VARISTOR;560V,2500A,14x8.5mm,TP	
...3		AA61-00589B	BRACKET-NOISE,FILTER;SPD-50P2H,SUS,T0.5	S.N.A
...3		AA64-02554A	INLAY-SHIELD;50P2H,PS SHEET V0,T1.0,BLK	
...3		AA65-30105B	CLAMP-WIRE;ALL MODEL,NYLON 66,V2,-,NTR,2	S.N.A
...3		AA97-05467A	ASSY AUTO-SUB;HPL5025M,D52A	S.N.A
....4	EL819	AA60-40011B	EYELET;ID2.2,OD3.2,-,-,BSP,-	S.N.A
....4	EL820	AA60-40011B	EYELET;ID2.2,OD3.2,-,-,BSP,-	S.N.A
....4	EL827	AA60-40011B	EYELET;ID2.2,OD3.2,-,-,BSP,-	S.N.A
....4	EL828	AA60-40011B	EYELET;ID2.2,OD3.2,-,-,BSP,-	S.N.A
....4	EY811	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY812	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY813	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY814	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY815	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY816	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY817	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY818	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY821	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY822	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY823	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY824	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY825	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY826	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	PCB	AA41-00391A	PCB-LINE FILTER;SPD-50P2HM,CEM-1,1L,A,1.	S.N.A
...3		AA61-00582B	BRACKET-LINE,FILTER;SPD-50P2H,SPC,T1.0,N	S.N.A
...3		0202-000187	SOLDER-WIRE FLUX;-,RS60S,D1.2,63Sn/37Pb	S.N.A
...3		6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2		AA95-01833C	ASSY SUB-PCB,POWER ON/OFF;HPL5025M,D52A,	S.N.A
...3	PCB+BP	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
...3	R01	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
...3	SW01	3404-001006	SWITCH-TACT;12V,50mA,160gf,6x6mm,SPST	
...3		AA41-00494A	PCB-POWER S/W;HPL5025M,FR-4,2L,A,1.6T,24	S.N.A
...3		AA61-00716B	BRACKET-POWER;,SECC,T1.0	
...3		0202-000187	SOLDER-WIRE FLUX;-,RS60S,D1.2,63Sn/37Pb	S.N.A
...3		3301-001201	CORE-FERRITE;AE,21x11x32mm,1500,280G	
..2		AA95-01837A	ASSY SUB-PCB,REMOCON;HPL5025M,D52A,AA95-	
...3	C21	2401-000922	C-AL;22uF,20%,16V,GP,TP,5x5,5	
...3	CN21	AA39-00275B	LEAD CONNECTOR ASSY;PDP,UL1007,2547#26,U	
...3	D21	0601-001381	LED;ROUND,RED/GRN,5.0MM,650/563NM	
...3	MD21	AA59-60002B	MODULE-REMOCON;-,ORC-50HF,38KHz,940mm,ME	
...3		AA97-05465A	ASSY AUTO-SUB;HPL5025M,D52A	S.N.A
....4	PCB	AA41-00371A	PCB-REMOCON;SPD-50P2HM,FR-4,2L,A,1.6T,24	S.N.A
....4	R21	2001-000734	R-CARBON;4.7KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
....4	R22	2001-000793	R-CARBON;47OHM,5%,1/8W,AA,TP,1.8X3.2MM	
....4	ZD1	0403-000510	DIODE-ZENER;MTZJ6.2B,6.2V,5.96-6.27V,500	
...3		AA61-00583B	HOLDER-LED;SPD-50P2H,ABS,BLK	S.N.A
...3		0202-000187	SOLDER-WIRE FLUX;-,RS60S,D1.2,63Sn/37Pb	S.N.A
..2		AA95-01844J	ASSY SUB-PCB,SOUND;HPL5025MX/XAA,D52A,AA	S.N.A
...3	AMPMAI	AA39-00112D	LEAD CONNECTOR ASSY;PDP,UL1007#26,UL/CSA	
...3	CN601	3711-003052	CONNECTOR-HEADER;BOX,10P,1R,2.5MM,STRAIG	
...3	CN602	3711-003046	CONNECTOR-HEADER;BOX,9P,1R,2.5mm,STRAIGH	
...3	CN603	3711-003043	CONNECTOR-HEADER;BOX,4P,1R,2.5mm,STRAIGH	
...3	IC601	1204-001222	IC-AUDIO PROCESSOR;TDA7429S,DIP,42P,-,PL	
...3	JK601	3722-001707	JACK-PIN;6P(6P),3.5MM,NI,WH/WH/WH/RD/RD/	
...3	JK602	3701-001264	CONNECTOR-DSUB;9P,2R,MALE,ANGLE,AUF	
...3	JK603	3722-000143	JACK-PHONE;1P(VER),3.4PI,AG,BLK,NO	
...3	L682	AA27-00119A	COIL CHOKE;10uH,-,10uH,10%,0.07,0.1ohm M	
...3	L683	AA27-00119A	COIL CHOKE;10uH,-,10uH,10%,0.07,0.1ohm M	
...3	L684	AA27-00119A	COIL CHOKE;10uH,-,10uH,10%,0.07,0.1ohm M	
...3	L685	AA27-00119A	COIL CHOKE;10uH,-,10uH,10%,0.07,0.1ohm M	
...3	PWRAMP	AA39-00293A	LEAD CONNECTOR ASSY;PDP,UL1007#26,UL/CSA	
....4		3301-001201	CORE-FERRITE;AE,21x11x32mm,1500,280G	
...3		AA61-00580B	BRACKET-A/V;SPD-50P2H,SPC,T1.0,NI	S.N.A
...3		AA97-05301A	ASSY AUTO-SUB;HPL5025MX/XAA,D52A	S.N.A
....4	C601	2401-000426	C-AL;10uF,20%,16V,GP,TP,3.5x5,5	
....4	C602	2301-000224	C-FILM,PEF;22nF,5%,50V,TP,7.4x3.9x13mm,5	
....4	C603	2301-000224	C-FILM,PEF;22nF,5%,50V,TP,7.4x3.9x13mm,5	
....4	C604	2301-000445	C-FILM,PEF;4.7nF,5%,50V,TP,5.5x7x3mm,5mm	
....4	C605	2305-000665	C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0m	
....4	C606	2301-000104	C-FILM,PEF;1.2NF,5%,50V,TP,6.5X3.0X5.5MM	
....4	C607	2301-000289	C-FILM,PEF;5.6nF,5%,50V,TP,7x6x3,5	
....4	C608	2305-001023	C-FILM,MPEF;680nF,10%,63V,TP,7.5x5.5x14.	
....4	C609	2401-000647	C-AL;2.2uF,20%,50V,BP,TP,5x11,5	
....4	C610	2401-000647	C-AL;2.2uF,20%,50V,BP,TP,5x11,5	
....4	C611	2401-000647	C-AL;2.2uF,20%,50V,BP,TP,5x11,5	
....4	C612	2305-000665	C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0m	
....4	C613	2305-000665	C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0m	
....4	C615	2305-000665	C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0m	
....4	C616	2305-000665	C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0m	
....4	C617	2301-000224	C-FILM,PEF;22nF,5%,50V,TP,7.4x3.9x13mm,5	
....4	C618	2301-000395	C-FILM,PEF;18NF,5%,50V,TP,6.5X12.5X3.5MM	
....4	C619	2301-000224	C-FILM,PEF;22nF,5%,50V,TP,7.4x3.9x13mm,5	
....4	C620	2301-000395	C-FILM,PEF;18NF,5%,50V,TP,6.5X12.5X3.5MM	
....4	C621	2301-000289	C-FILM,PEF;5.6nF,5%,50V,TP,7x6x3,5	
....4	C622	2301-000289	C-FILM,PEF;5.6nF,5%,50V,TP,7x6x3,5	
....4	C632	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C633	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C634	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C635	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C636	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C637	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C662	2401-002463	C-AL;470uF,20%,16V,GP,TP,8x11.5,5	
....4	C664	2401-002463	C-AL;470uF,20%,16V,GP,TP,8x11.5,5	
....4	C667	2401-000603	C-AL;1uF,20%,50V,GP,TP,5x11,5	
....4	C668	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C669	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C681	2401-000603	C-AL;1uF,20%,50V,GP,TP,5x11,5	
....4	C689	2401-002009	C-AL;100uF,20%,16V,GP,TP,6.3x7,5	
....4	C691	2401-002009	C-AL;100uF,20%,16V,GP,TP,6.3x7,5	
....4	L602	2702-001094	INDUCTOR-RADIAL;10uH,10%,6x4mm	
....4	L681	2702-001094	INDUCTOR-RADIAL;10uH,10%,6x4mm	
....4	R600	2003-000664	R-METAL OXIDE(S);33ohm,5%,2W,AF,TP,4x12m	

Loc. No.	Code No.	Description ; Specification	Remark
....4	AA97-06177A	ASSY SMD-SUB;HPL5025MX/XAA,D52A	S.N.A
.....5C629	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5C661	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5C663	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5C665	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5C666	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5C670	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5C682	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5C683	2203-005809	C-CERAMIC,CHIP;1000nF,10%,16V,X7R,TP,201	
.....5C685	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5C686	2203-000239	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,2012	
.....5C687	2203-005809	C-CERAMIC,CHIP;1000nF,10%,16V,X7R,TP,201	
.....5C688	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5C690	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5C692	2203-005809	C-CERAMIC,CHIP;1000nF,10%,16V,X7R,TP,201	
.....5C694	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5C695	2203-000239	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,2012	
.....5C696	2203-005809	C-CERAMIC,CHIP;1000nF,10%,16V,X7R,TP,201	
.....5C698	2203-000239	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,2012	
.....5C699	2203-000239	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,2012	
.....5DZ681	0403-001117	DIODE-ZENER;RLZ12B,5%,500mW,LL-34,TP	
.....5DZ682	0403-001117	DIODE-ZENER;RLZ12B,5%,500mW,LL-34,TP	
.....5DZ683	0403-001117	DIODE-ZENER;RLZ12B,5%,500mW,LL-34,TP	
.....5DZ684	0403-001117	DIODE-ZENER;RLZ12B,5%,500mW,LL-34,TP	
.....5IC602	1201-001681	IC-AUDIO AMP;1101,SOP,30P,433MIL,-,-,PLA	
.....5PCB	AA41-00369A	PCB-SOUND;SPD-50P2HM,FR-4,2L,A,1.6T,-,D5	S.N.A
.....5R601	2007-000981	R-CHIP;5.6KOHM,5%,1/10W,DA,TP,2012	
.....5R602	2007-000981	R-CHIP;5.6KOHM,5%,1/10W,DA,TP,2012	
.....5R603	2007-000518	R-CHIP;2.7KOHM,5%,1/10W,DA,TP,2012	
.....5R604	2007-000518	R-CHIP;2.7KOHM,5%,1/10W,DA,TP,2012	
.....5R605	2007-000572	R-CHIP;220OHM,5%,1/10W,DA,TP,2012	
.....5R606	2007-000572	R-CHIP;220OHM,5%,1/10W,DA,TP,2012	
.....5R611	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
.....5R612	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
.....5R613	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
.....5R614	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
.....5R615	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
.....5R616	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
.....5R617	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
.....5R618	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
.....5R619	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
.....5R620	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
.....5R621	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
.....5R622	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
.....5R661	2007-001177	R-CHIP;8.2KOHM,5%,1/10W,DA,TP,2012	
.....5R662	2007-000546	R-CHIP;20KOHM,5%,1/10W,DA,TP,2012	
.....5R663	2007-000738	R-CHIP;30KOHM,5%,1/10W,DA,TP,2012	
.....5R664	2007-000546	R-CHIP;20KOHM,5%,1/10W,DA,TP,2012	
.....5R665	2007-000738	R-CHIP;30KOHM,5%,1/10W,DA,TP,2012	
.....5R666	2007-000210	R-CHIP;1.1KOHM,5%,1/10W,DA,TP,2012	
.....5R682	2007-000308	R-CHIP;10OHM,5%,1/10W,DA,TP,2012	
.....5R683	2007-000308	R-CHIP;10OHM,5%,1/10W,DA,TP,2012	
.....5R690	2007-001177	R-CHIP;8.2KOHM,5%,1/10W,DA,TP,2012	
.....5R691	2007-001177	R-CHIP;8.2KOHM,5%,1/10W,DA,TP,2012	
...3	0202-000187	SOLDER-WIRE FLUX;-,RS60S,D1.2,63Sn/37Pb	S.N.A
...3	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
...3	0202-001167	SOLDER-CREAM;RX3603-2330HO,S45A,PASTE,SN	S.N.A
..2	AA95-01849B	ASSY SUB-PCB,TERMINAL;HPL5025M,D52A,AA95	S.N.A
...3 CN603A	3711-003043	CONNECTOR-HEADER;BOX,4P,1R,2.5mm,STRAIGH	
...3 JK603	AA63-40258A	TERMINAL-SPEAKER;4P,ABS,4,-,-,-,BLK	S.N.A
...3 PCB	AA41-00373A	PCB-SPK TERMINAL;SPD-50P2HM,CEM-1,1L,A,1	S.N.A
...3 SPKAMP	AA39-00294B	LEAD CONNECTOR ASSY;PDP,UL1007#22,UL/CSA	
....4	3301-001201	CORE-FERRITE;AE,21x11x32mm,1500,280G	
...3	AA61-00578B	BRACKET-EXTERNAL;SPD-50P2H,SPC,T1.0,NI	S.N.A
...3	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
...3	0202-000187	SOLDER-WIRE FLUX;-,RS60S,D1.2,63Sn/37Pb	S.N.A
..2	AA98-00136A	ASSY-MODULE-II;,HPL5025M,D52A,PP50HW001A	
...3	AA98-00143A	ASSY-PBA,L-BUFF(E);,LJ92-00409A,D52A,HPL	
...3	AA98-00144A	ASSY-PBA,L-BUFF(F);,LJ92-00410A,D52A,HPL	
...3	AA98-00145A	ASSY-PBA,L-BUFF(G);,LJ92-00411A,D52A,HPL	
...3	AA98-00146A	ASSY-PBA,L-BUFF(H);,LJ92-00412A,D52A,HPL	
...3	AA98-00147A	ASSY-PBA,L-BUFF(I);,LJ92-00413A,D52A,HPL	
...3	AA98-00148A	ASSY-PBA,L-BUFF(J);,LJ92-00414A,D52A,HPL	
...3	AA98-00137A	ASSY-PANEL;,HPL5025M,D52A,S50HW01A	
...3	AA98-00138A	ASSY-PBA,X-MAIN;,LJ92-00404A,D52A,HPL502	
...3	AA98-00139A	ASSY-PBA,Y-MAIN;,LJ92-00405A,D52A,HPL502	
...3	AA98-00140A	ASSY-PBA,L-MAIN;,LJ92-00408A,D52A,HPL502	
...3	AA98-00141A	ASSY-PBA,Y-BUFF(YA-A1);,LJ92-00406A,D52A	
...3	AA98-00142A	ASSY-PBA,Y-BUFF(YB-A1);,LJ92-00406B,D52A	
..2	AA98-00149A	ASSY-SMPS,MAIN;,LJ44-00024A,D52A,HPL5025	
..2	BN94-00298B	ASSY PCB MISC-SCALER BOARD;PPM50H2X/XAA,	
...3	1204-001556	IC-SEPARATOR;UPD64082GF,QFP,100P,-,PLAST	
...3	1204-001598	IC-VIDEO PROCESS;VPC3230D-B2,QFP,80P,-,P	
...3	1204-001623	IC-VERTICAL PROCESSO;SDA9400,QFP,64P,-,P	
...3	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
...3	2901-000172	FILTER-EMI ON BOARD;50V,10A,-,-,12x11x13	
...3	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
...3	AA63-00343B	SHIELD-CASE,A;SPD42P1S,SPTE,0.5,-,-,-,-	S.N.A
...3	AA63-00344B	SHIELD-CASE,T/A;SPD42P1S,SPTE,T0.5,-,-,-	S.N.A
...3	AA63-00345B	SHIELD-CASE,T/L;SPD42P1S,SPTE,T0.5,-,-,-	S.N.A
...3	0801-002394	IC-CMOS LOGIC;74LCX32,OR GATE,SOIC,14P,1	
...3	0909-001029	IC-REAL TIME CLOCK;8563,-,DIP,8P,300MIL,	
...3	1001-001082	IC-VIDEO SWITCH;BA7657F,-,SOP,24P,300MIL	
...3	1002-001045	IC-D/A CONVERTER;9280,8BIT,PLCC,68P,-,-,	
...3	1002-001204	IC-A/D CONVERTER;AD9884AKS-140,8BIT,QFP,	
...3	1003-001249	IC-LCD CONTROLLER;PW364-S1675,TBGA,352P,	
...3	1107-001087	IC-FLASH MEMORY;29LV160,1Mx16BIT,SOP,48P	
...3	1203-001359	IC-POSI.FIXED REG.;1086,TO-263,3P,15.8MM	
...3	1203-002074	IC-POSI.FIXED REG.;MIC39150,TO-263,3P,-,	
..2	AA31-00003A	FAN;TA225DC(M33394),PLASTIC,WITH BRACK &	
...3	3103-001109	FAN-DC;12V,110MA,2600RPM,0.34M^3/MI,-	
...3	6006-001017	SCREW-ASS'Y MACH;WSP,PH,+,M4,L35,ZPC(YEL	S.N.A
...3	AA61-00579B	BRACKET-FAN,BASE;SPD-50P2H,SECC,T1.6	S.N.A
..2	AA39-00037A	LEAD CONNECTOR-ASSY;PDP,UL1007#22,UL/CSA	
...3	3301-001305	CORE-FERRITE;AE,30X15X34(39)MM,1500,2800	
..2	AA39-00161A	LEAD CONNECTOR ASSY;PDP,UL1007#22,UL/CSA	
...3	3301-001305	CORE-FERRITE;AE,30X15X34(39)MM,1500,2800	
..2	AA39-00274A	LEAD CONNECTOR ASSY;PDP,UL2835#28,UL/CSA	
..2	AA39-00297A	LEAD CONNECTOR ASSY;PDP,UL1007#26,UL/CSA	
...3	3301-001305	CORE-FERRITE;AE,30X15X34(39)MM,1500,2800	
..2	AA65-00011C	CLAMP-WIRE;ALL MODEL,NYLON 66,V2,-,NTR,2	S.N.A
..2	AA65-30018A	CLAMP-WIRE;DONG-A,NYLON-66,-,-,-,DATL-60	S.N.A

ASSY COVER FRONT

1	*	AA90-01918A	ASSY COVER FRONT;HPL5025MX/XAA	S.N.A
..2	BA+PA	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2	BE+PA	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2	BFB+CF	6003-001020	SCREW-TAPTITE;RH,+,B,M4,L10,ZPC(YEL),SWR	S.N.A
..2	BFB+CF	6003-001023	SCREW-TAPTITE;RWH,+,B,M3,L10,ZPC(YEL),SW	S.N.A
..2	BFB+PA	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2	BFS+CF	6003-001020	SCREW-TAPTITE;RH,+,B,M4,L10,ZPC(YEL),SWR	S.N.A
..2	BFT+CF	6003-001020	SCREW-TAPTITE;RH,+,B,M4,L10,ZPC(YEL),SWR	S.N.A
..2	BLF+PA	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2	BP+CF	6003-001026	SCREW-TAPTITE;RH,+,B,M4,L15,ZPC(BLK),SWR	S.N.A
..2	BSM+PA	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2	BSS+PA	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2	BW+BW	6006-001039	SCREW-ASS'Y MACH;WSP,PH,+,M4,L12,ZPC(YEL	
..2	CB+BW	6006-001112	SCREW-ASS'Y MACH;WP,PH,+,M8,L16,ZPC(BLK)	
..2	CB+CF	AA60-10050T	SCREW-TAPPING;-,SWRCH18A,M4,L20,RH,+,2S,	S.N.A
..2	CB+CT	6001-000578	SCREW-MACHINE;TH,+,M3,L8,ZPC(YEL),SWRCH1	
..2	CT+JA	6003-001023	SCREW-TAPTITE;RWH,+,B,M3,L10,ZPC(YEL),SW	S.N.A
..2	CT+JA	6003-001025	SCREW-TAPTITE;RH,+,B,M4,L20,ZPC(BLK),SWR	S.N.A
..2	CT+LF	6001-000578	SCREW-MACHINE;TH,+,M3,L8,ZPC(YEL),SWRCH1	
..2	KC+CF	6003-001026	SCREW-TAPTITE;RH,+,B,M4,L15,ZPC(BLK),SWR	S.N.A
..2	PA+CF	6003-001026	SCREW-TAPTITE;RH,+,B,M4,L15,ZPC(BLK),SWR	S.N.A
..2	PCB+BS	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2	PCB+CF	6003-001025	SCREW-TAPTITE;RH,+,B,M4,L20,ZPC(BLK),SWR	S.N.A
..2	PCB+CF	6003-001023	SCREW-TAPTITE;RWH,+,B,M3,L10,ZPC(YEL),SW	S.N.A
..2		AA63-00365B	COVER-SET;SPD-50P2H,ABS,HB,BLK	
..2		AA64-01565B	KNOB-CONTROL;PDP,ABS HB,BLK,SILVER	
..2		AA67-00110A	SCREEN-EMI,FILTER;50PDP,SPUTTER,T2.7,115	
..2		AA61-11068A	BRACKET-SHIELD ASSY;50P2H,PBS,T0.2	S.N.A
...3		AA61-01046A	BRACKET-SHIELD;PDP,PBS,T0.2	
...3		AA63-60122A	SPACER-FELT;50P2H,FELT,L75,T0.2,D30	S.N.A
..2		AA72-00023A	SPONGE-EMI,A;PDP,SHIELD-FORM,T12,D20,L89	
..2		AA72-00024A	SPONGE-EMI,B;PDP,SHIELD-FORM,T59,D45,L15	
..2		AA72-00025A	SPONGE-EMI,C;PDP,SHIELD-FORM,T16,D20,L61	
..2		AA91-00864A	ASSY CABINET FRONT;,HPL5025M,MIJU(MONITO	
...3		AA64-01566B	KNOB-MASTER;PDP,ABS,HB,BLK,BK708P NO SIL	
...3		AA64-01560B	BADGE-BRAND;PDP,AL FORGING,L68(45),SILVE	S.N.A

Loc. No.		Code No.	Description ; Specification	Remark
...3		AA64-01549B	WINDOW-RMC;PDP,ACRYL VIOLET,20:1	
...3		AA64-01548B	CABINET-FRONT;HPL5025M,HIPS,V0,BLK,MIJU(	
...3		AA61-60003J	SPRING-CS;-,SUS304,-,-,OD6,N7,OD6,-,-,-,	S.N.A
..2		AA91-01043A	ASSY-COVER,TERMINAL;,SUS T0.5,HPL5025M	
...3		AA63-00368B	COVER-TERMINAL;HPL5025M,SUS,T0.5	
...3		AA72-00007A	SPONGE-EMI;PDP,SHELD FROM,D10,T2,L50	S.N.A
...3		AA72-00019A	SPONGE-EMI,JACK;50P2H,SHIELD-FORM,T2.5,H	
..2		AA61-01114A	BRACKET-WIRE;SPD50P2H,AL 6063,T1.5	
..2		AA61-00573B	BRACKET-SCALER,MAIN;SPD-50P2H,SPC,T1.0,N	S.N.A
..2		AA61-00581B	BRACKET-SCALER,SUB;SPD-50P2H,SPC,T1.0,NI	S.N.A
..2		AA61-01003A	BRACKET-FILTER,TOP ASSY;50P2,AL 6063 EXT	
...3		AA72-00015A	SPONGE-EMI,FILTER;50P2H,SHIELD-FORM,T1.2	
...3		AA63-00406B	GROMMET-PANEL;PDP,PBT,T0.2	
...3		AA61-01064A	BRACKET-EMI,FILTER;PDP,SPTE,T0.3,L62.6,	
...3		AA61-01044A	BRACKET-FINGER;PDP,BE-CO,T0.15,NTR	
...3		AA61-00576B	BRACKET-FILTER,TOP;SPD-50P2H,AL 6063 EXT	S.N.A
..2		AA61-01004A	BRACKET-FILTER,SIDE ASSY;50P2,AL 6063 EX	
...3		AA72-00016A	SPONGE-EMI,FILTER;50P2H,SHIELD-FORM,T1.2	
...3		AA63-00406B	GROMMET-PANEL;PDP,PBT,T0.2	
...3		AA61-01064A	BRACKET-EMI,FILTER;PDP,SPTE,T0.3,L62.6,	
...3		AA61-01044A	BRACKET-FINGER;PDP,BE-CO,T0.15,NTR	
...3		AA61-00575B	BRACKET-FILTER,SIDE;SPD-50P2H,AL 6063 EX	S.N.A
..2		AA61-01005A	BRACKET-FILTER,BOT ASSY;50P2,AL 6063 EXT	
...3		AA72-00015A	SPONGE-EMI,FILTER;50P2H,SHIELD-FORM,T1.2	
...3		AA63-00406B	GROMMET-PANEL;PDP,PBT,T0.2	
...3		AA61-01064A	BRACKET-EMI,FILTER;PDP,SPTE,T0.3,L62.6,	
...3		AA61-01044A	BRACKET-FINGER;PDP,BE-CO,T0.15,NTR	
...3		AA61-01002A	BRACKET-FILTER,BOTTOM;SPD50P2S,AL,T1.5	

ASSY COVER REAR

1	*	AA90-02081A	ASSY COVER REAR;HPL5025MX/XAA	S.N.A
..2		AA60-00110A	SPACER-FILTER;50P2H,P/U V0,L643,BLK	
..2		AA60-00110B	SPACER-FILTER;50P2H,P/U V0,L1127.5,BLK	
..2		AA91-00865A	ASSY CABINET BACK;,HIPS V0 BLK,MIJU(MONI	
...3	COB+CB	6003-001020	SCREW-TAPTITE;RH,+,B,M4,L10,ZPC(YEL),SWR	S.N.A
...3		AA72-00020A	SPONGE-EMI,A;PDP,SHIELD-FORM,T16,D20,L10	
...3		AA64-01551B	HANDLE-SET;PDP,ABS,HB,BLK	
...3		AA64-01550B	CABINET-BACK;50P2,HIPS,V0,BLK,WP1000	
...3		AA63-00234A	COVER-BACK,ASSY;HPL5025M,AL 3003-0,T1.2,	S.N.A
....4		AA63-00525B	COVER-BOT,RIGHT;50P2,AL 3003-0,T1.2	S.N.A
....4		AA63-00526B	COVER-BOT,LEFT;50P2,AL 3003-0,T1.2	S.N.A
....4		AA72-00007A	SPONGE-EMI;PDP,SHELD FROM,D10,T2,L50	S.N.A
....4		AA72-00007C	SPONGE-EMI;,SPONGE,T2,W10,L75	
....4		AA72-00007D	SPONGE-EMI;,SPONGE,T2,W10,L180	
....4		AA72-00007E	SPONGE-EMI;,SPONGE,T2,W10,L100	
....4		AA63-00524B	COVER-TOP,LEFT;50P2,AL 3003-0,T1.2	S.N.A
....4		AA60-00109A	SPACER-FAN;SPD-50P2H,P/UFORM V0,BLK	
....4		AA61-00597B	HOLDER-FAN;SPD-50P2H,ABS V0,BLK	S.N.A
....4		AA63-00364B	COVER-BACK;HPL5025MX,AL 3003-0,T1.2	
....4		AA63-00366B	COVER-FAN;SPD-50P2H,SPTE,T0.5	
....4		AA63-00373B	COVER-BACK,BOTTOM;SPD-50P2H,AL 3003-0,T1	
....4		AA63-00523B	COVER-TOP,RIGHT;50P2,AL 3003-0,T1.2	S.N.A
...3		6003-001026	SCREW-TAPTITE;RH,+,B,M4,L15,ZPC(BLK),SWR	S.N.A
...3		6003-001019	SCREW-TAPTITE;RH,+,B,M4,L12,ZPC(BLK),SWR	S.N.A

Loc. No.		Code No.	Description ; Specification	Remark

ASSY P/MATERIAL

1	*	AA92-03170A	ASSY P/MATERIAL;HPL5025MX/XAA	S.N.A
..2		AA61-20285A	HOLDER-BOX;3456,PP,-,-,-,WHT,VO	S.N.A
..2		AA60-40006A	PIN-STAPLE;-,-,H18,33X17.8X2.4,-,AUTO	S.N.A

ASSY BOX

1	*	AA92-03008A	ASSY BOX;HPL5025MX/XAA	S.N.A

ASSY LABEL

1	*	AA92-02807A	ASSY LABEL;HPL5025MX/XAA	S.N.A

ASSY ACCESSORY

1	*	AA92-03203A	ASSY ACCESSORY;HPL5025MX/XAA	S.N.A
..2		AA68-02167A	MANUAL USERS;HPL5025M(RS232C),ENG,USA,S/	
⚠ ..2		AA39-00233A	POWER CORD;SPD50P2HM,VM0289S/VM0266S,SVT	
..2		3301-001110	CORE-FERRITE;ZZ,35x19.5x9.0mm,-,-	
..2		3301-001201	CORE-FERRITE;AE,21x11x32mm,1500,280G	
..2		AA59-00243A	S/W DRIVER;PDP,INSTALL-S/W,HP,CD-ROM	
..2		4301-000103	BATTERY-ALKALINE;1.5V,750mAH,AAA,10.5x44	S.N.A
..2		AA39-00288A	CBF SIGNAL;HPL5025M,15P/15P,2990,1830MM,	
..2		AA39-00311A	CBF SIGNAL;PDP,9P/1P,UL2851#28,5000MM,UL	
..2		AA39-40001E	CABLE-S.VHS;,1500MM	
..2		AA59-00222B	REMOCON;,TM63,PDP,48,G6671B,SPK4215M	
..2		AA68-02166A	MANUAL USERS;HPL5025M,ENG,USA,S/W120(S/W	

11. Glossary

AC PDP :
Plasma display driven by alternating current plasma electric discharge.

Address discharge(Reference : scan and data) :
Term with two meanings that can be used for both scan and data (write or erase) discharge.

Address Electrode(Reference : scan and data electrode) :
Term with two meanings that can be used for both scan and data electrodes.

Address pulse(Reference : scan and data pulse) :
Address drive wave form

Address voltage(reference; scan and data voltage) :
Address drive amplitude of vibration

Addressing :
Process that gives authorization to cells to allow for turning on and off by drive wave form.

Addressing speed :
Time necessary for writing and erasing.

ADS, address display separation :
Drive tech that separates address pulse temporarily from sustained voltage.

Aging :
The change of operation expectancy- for example, operation voltage change and luminance decline-related characteristics.

Angular distribution :
Characteristics which change as function of angles between perpendicularity and surface.
referring to dependency on angles of, for example, luminance or chromaticity.

Aperture ratio :
Referring to the ratio of an element activation area to the gross area.

Area luminance :
Luminance measured in relatively large area.

Aspect ratio :
The ratio of screen width to height.

Auto power control :
Circuit means for controlling panel's average or maximum power.
Auxillary anode :
Anode where discharge of DC panel has little contribution to light output power.

Back ground luminance :
Referring to the panel luminance in off mode or black screen, in other words, luminance in the vicinity of the screen.

Barrier rib :
barriers that cross all the gaps of wafers dividing the cells in panel.

Black stripe :
black substance located in between the fluorescent areas to bring about improvement in contrast by reflection ratio decline. Generally, this is striped.

Bright defect :
defects that occur when the image is rather bright than accurate.

Brightness(Reference : luminance) :
visible and subjective quality, for example, how bright matters look or how much visible rays are perceived.
Notice) Do not get confused luminance with brightness because those two are not the same. Brightness is subjective while luminance is objective.

Brun in :
element's initial operation section that takes place until the element stabilizes or the initial expectancy expiration is detected.

Bus electrode :
aggregate of sustained electrodes that are bussed together.

Cathode electrode :
cathode electrified electrode that releases electrode from element. In AC plasma panel, polarity switches in every half a cycle.

Cell :
capacity corresponding to each electric discharge. In general, it is defined by the shape of substrates and electrodes but can be defined by partitions.

Cell gap :
measurements identifying the gaps between substrates.

Cell pitch :
measurement that identifies the cells from the surface of substrates. It varies depending on the direction of rows and columns.

Charge transfer curves :
curves expressing the quantity of electric charge that is transferred, as the function of drive wave form characteristics.(for example, voltage, time and others)

Color arrangement(in other words, sub-pixel arrangement) :
term expressing the location of one pixel consisted of sub color pixels.

Color coordinates, CIE 1931 :
Color image expressing method in color dimension, originated from CIE standard of 1931, expressed by X, Y and Z. Among those three, Y element corresponds to luminous flux that is expressed as lumen while X and Y are values that express red and purple element of luminous flux. Colors of matter are expressed as color coordinates pair (x, y). Here $x=X/(X+Y+Z)$, $y=Y/(X+Y+Z)$.
Method for colors, known as (u, v), where image colors are expressed in more even color dimension. Colors of matter are expressed as color coordinates pair (u, v). Here, $u=4X/(X+15Y+3Z)$, $y=6Y/(X+15Y+3Z)$.

Color coordinates, CIE 1960 :
Method for colors, known as (u, v), where image colors are expressed in more even color dimension. colors of matter are expressed as color coordinates pair(u, v). Here, u=4X(X+15Y+32), y=6Y / (X+15Y+32Z).

Color coordinates, CIE 1976
Method for colors, known as (u', v'), where revised image colors are expressed in more even color dimension. v' is 1.5-fold of recommended v value of 1960. The color of matter is expressed as color coordinates pair (u', v'). Here, u'=4X / (X+15Y+3Z) , v'= 9Y / (X+15Y+3Z).

Color coordinates, CIE 1976 CIELUV and CIELAB :
Three dimensional parameters expressing with u' and v' including Ω√∞®º∫ against chromaticity and luminance of standard white light in display. Among the parameters, only CIELUV gets to have proper color space where additional two blend light appears in line segment. (refer to CIE Publication 15.2, Colorimetry 1st edition 1976, 2nd edition 1986)

Color depth :
The number of digital bit alocated to each major color.

Color gamut :
Physically realizable color space area.

Color reproducibility (Refer to color gamut) :
The expression of realizable colors limited by color information distinction or fluorescent substance chromaticity.

Color temperature, correlated (symbol CCT) :
Seemingly temperature expressed with absolute temperature of black body radiation with the closest chromaticity. This can be expressed as CCT, in the form of C. S. McCamy. CCT=437N3+3601n2+5517, n=(x-0.3320) / (0.1858-y) and x, y=color coordinates of CIE 1931.

Columm electrode :
Vertically successive electrodes. It generally refers to data electrodes. When panel is installed along the photograph, this can be arranged along the horizontal direction.

Concurrent driving method :
Driving method to disperse address pulse and scan pulse at equal distance.

Contrast ratio Columm electrode :
Ratio of white luminance to black luminance of image. This measurement has many parameters, so measurers are required to explain the consideration for measurement to make understood the meaning of the measurement. The parameters of contrast ratio are as follows.

- CA - ratio of center luminance in all white screen to center luminance of all black screen on the condition of light being spreading around.
- CG - ratio of white luminance to black luminance in successive arrangement of white and black lines at equal distance.
- CL - ratio of white luminance to black luminance in white line against black screen of black line against white screen.
- CR - the ratio of white luminance to black luminance.

- Cm - Michelson contrast or contrast modulation:
  Here, Lw is the luminance of the color white while Lb is the luminance of the color black.

- CT - Threshold contrast ratio: the minimum contrast ratio that is permissive, in general.

Chip on board(COB) :
PCB with IC on substrate.

Dark defect :
Defects in the brighter image realization than normal one.

Data electrode :
Electrodes allowed for controlling electric discharge by changing the cell's state to switch on from off (and vise versa) in AC plasma panel.

Data electrode driver :
Driving circuit to be attached to dada electrode.

Data write pulse :
Wave form for data electrode that switches from off to on.

Data erase pulse :
Wave form for data electrode that switches from on to off.

DC PDP :
Display panel whose plasma discharge is driven by direct current.

Decay time :
Time required for parameters to drop from certain level to another. It can be time necessary for dropping from 90% to 10%, or to e-1 level of the initial value, or to certain irreversibility.

Dielectric layer :
Dielectric layer with larger sustained electric constant.

Discharge :
1. neutralization of electric charge (for example, voltage decrease of capacitor)
2. electric current flow in dielectric media such as gas.

Discharge current :
Discharge electric current.

Discharge electrode :
Another term for sustained electrode.

Discharge efficiency :
Another term for gloss efficiency

Discharge gap :
The gap among sustained electrodes in discharge space of three-electrode plasma panel.

Discharge slit :
(Refer to discharge gap)

Displacement current :
Electric current flow through capacitor that includes atomic rearrangement of discharge within electric matter.

Display color number (color number possible to be displayed with other words.) :
displayable individual color's number.

Display Diagonal :
Diagonal size of display contour

Display efficiency :
The ratio of gloss output divided by the entire display power.

Display height :
Height of display contour

Display scan electrode :
(Refer to scan electrode)

Display width :
Width of display contour

Displayed color :
Refer to displayed color number.

Displayed color number :
Color numbers that can be made by display.

Dot (Refer to cell, pixel and subpixel) :
The term is hard to be defined because it is not clear if the term refers to full color pixel or subpixel. The term is used when referring to color related elements that make up full color pixel or subpixel.

Dot pitch :
(Ambiguous expression. Refer to dot, cell pitch, pixel pitch and subpixel pitch.)

Driving waveform :
Expressing ∞ÊΩ√ change of driving signal voltage.

Driving scheme :
Expressing the thought applying driving voltage to display.

Effcacy :
Refer to luminous efficacy.

Energy recovery circuit :
Circuit degauss caught after reusing the power that drove AC plasma panel.

Erase :
Process where cells are erased from AC plasma panel.

Erase pulse :
Cell erasing waveform

Erase voltage :
Erase pulse voltage required for erasing cells from AC plasma panel.[symbol : Ve]

Evacuating (Interchangeable terms : evacuation, exhaust) :
Process where unwanted gas is rid from device.

Exhaust tubulation (Interchangeable terms: exhaust tube, exhaust pipe) :
Tube shaped hole in device connected to external vacuum pump, for controlling the initiation from device during process. This is usually glass tube that prevents with flannelet after filling proper gas

Filling gas (Refer to gas mixture) :
After removing air, plasma panel goes through filling with proper electric and optical gas. Therefore, panel gas composition is commonly called "filling gas".

Firing voltage :
Minimum voltage where triggers discharge in plasma device[symbol : Vf]

Flicker :
Fast and instant changes in luminance, perceivable in almost regular luminance experiment pattern.

Front substrate :
Substrates closer to the viewers, made of transparent material such as glass

Full color display :
Full color image (for example, image with more than 8 bit color tone) realizable display

Fpc(Flexible Printed Curcuit) :
Flexible substrates with circuited copper foil on polyimide

Gas mixing ratio (Interchangeable terms: gas mixture, gas composition) :
Gas composition within plasma device. It is usually expressed with ratio of the constituent gas.

Gas voltage (Interchangeable terms: gas break down voltage) :
Voltage where electrode and ion within plasma device can generate additional electrodes and ions.
-Thus, increasing the electric current within the device sharply. (break down or overflowing)

Glass substrate :
Substrates consisted of glass

Glow discharge :
Plasma discharge taking place under pressure of tens of millimeter. This is defined by ionization generated by activated electrons in discharge space and electron release in cathode by ion bombardment.

Gradation :
Gradual change in characteristics such as luminance and chromaticity

Gray scale :
The range of luminance acquired when displayed from black to white.

High strain point glass :
Glass of which strain point (temperature with viscosity of 1014.5 poise) is relatively high

Image retention :
Continuous existence of image after the stimulation is removed.

Image sticking :
(Refer to Image retention.)

Interconnect pad groups :
A group of connection terminals that attach to individual connector. (also referred to as terminal block.)

Interconnect pad pitch :
Mutual measurements for individual of interconnect pad group.

Interconnect pad spacing :
The size of non-electric conductive area between individual terminal.

Inter-electrode gap :
In Three electrodes plasma panel, the measurement of sustained voltage separated from outside discharge space.

Ion bombardment :
The bombardment of energetic ions in the surface of solid matter. The transfer of kinetic energy toward surface from ions can cause electron release, ion or neutron release and temperature change in surface.

Life time :
Time during device exerts its function. Commonly known as mean time failure (MTTF).

Low melting point glass :
Glass of which melting point (temperature with viscosity of 1014.5 poise) is relatively low.
Since glass is non- crystalline, the word melting is not appropriate, but it gets more fluid as it becomes hot.

Luminance :
Colloquial term for measurement of brightness of display.
It also refers to display related CIE Y constituent. it is expressed by cd / m2.

Luminance efficacy :
It refers to gloss output against the total display consumption power. It is calculated by the value generated through dividing gloss output of ∞Ìª Û white substance with gross consumption power. It is expressed as lumen / watt.

Luminance efficiency :
Gloss output value according to consumption power increase, calculated by the value generated through dividing gloss output of ∞Ìª Û white substance with white screen power consumption increase against black screen. It is expressed as lumen / watt.

Luminance loading :
Luminance decline that takes place when white square luminance increases into full size all white square.

Matrix(type) PDP :
Plasma display panel made up of matrix with rows and columns.

Matrix type :
Refer to matrix PDP
Maximum firing voltage :
Voltage value required for triggering discharge in all cells.

Maximum sustain voltage :
Maximum drive voltage required not to turn off the cells.

Memory margin :
The disparity between the maximum sustained voltage for keeping discharge and the sustained voltage for turning off the cells

Memory type PDP :
Refer to AC Plasma Panel that has memory. PDP made up of cells that keep turned on or off until switch occurs.

MgO layer :
In bombardment of electrons and ions, MgO's high electron release rate, like cathode application, makes it easier to release electrons.

MgO protecting layer (Refer MgO layer) :
MgO layer on fluorescent material has secondary benefit that prevents fluorescent degradation by ion bombardment.

Minimum firing voltage :
Minimum voltage that can turn on any cells.[symbol : V1]

Minimum sustain voltage :
Minimum sustain voltage that keeps turned on cell on.[symbol : Vsm1]

Monochrome display Minimum sustain voltage :
Display that only expresses a limited color such as white, green and amber.

Multi-color display :
Display that can express multiple colors .if not all colors.

Non-discharge slit :
(Refer to inter electrode gap)

Operating margin :
AC PDP voltage range that keeps cells turned on or off. Generally, its value gets less than memory margin because of additional factors such as temperature effect, gloss ionization effect and waveform change.

Operating window :
Actual voltage range that keeps cells turned on or off in any drive levels and surrounding environment.

Operating window degradation :
Gradual decline in operating window, according to operating time.

Opposed discharge :
Traditional two-electrode plasma panel structure where discharge occurs between the two sustained electrodes across from each other.

Opposed discharge PDP :
(Refer to opposed discharge.)

Peak luminance :
Maximum luminance generated in one pixel in panel.

Peak luminance enhancement :
Circuit and drive technology that accommodates increasing peak luminance.

Phosphor degradation :
Gradual decline in fluorescence efficiency according to operating expectancy.

Phosphor layer :
Thin layer made up of phosphor. Fluorescenc**Pl**e substance must be thick enough to optimize transferring the ultraviolet rays from plasma discharge to visible light

Pixel, picture element :
The smallest unit that can display the entire range of luminance and chromaticity. Generally, pixel consists of sub pixels (or dots).

Pixel arrangement :
Expression of sub pixels within a pixel.

Pixel count :
The number of pixels that make up a display. It is described as the number of column pixels against the number of row pixels.

Pixel pitch :
The distance between the centers of the two closest pixels. Move as far as the pitch and reach the identical location.

Plasma display :
Electrically driven display device for causing electric discharge in gas within device. Electric energy generates light with atomic light release or from proper colored fluorescence substance.

Positive column discharge :
The plasma area for long glow discharge. This area is a low electric field but relatively electric conductive plasma area.

Pre discharge :
Cell's state where pre discharge is taking place. In this case, cell's state becomes electric conductive due to formation of discharge generated by ionization process of gas.

Priming :
The stage where ions are generated for forming discharge. Generally, this is required for injection.

Priming pulse :
Electric waveform to define the proper conditions for the next cell discharge.[symbol : Pp]

Priming voltage :
Voltage of priming pulse.[symbol : Vp]

Protecting layer :
The layers applied to the device function constituents (for example, fluorescence, electrode and glass layers).

Quantum efficiency :
Substrates farther from the viewers. These can be opaque.

Rear substrate :
Efficiency measurement that is directly expressed with the number of output particles against the number of input particles. In case of plasma panel, the number of photons in visible area, generated from photons in ultraviolet area

Reset :
(Refer to erase.)

Reset discharge, Reset pulse :
(Refer to erase.)

Resolution :
Display's ability to enable to distinguish the matters close to each other. It is confusing with addressibility that generates pattern undistinguishable to the eyes.

Row electrodes :
Horizontally successive electrodes. In terms of traditional drive concept, these are the sustained electrodes. If the panel is installed toward portrait, these row electrodes can be arranged horizontally.

Sand discharge :
Process where grinding of surface occurs. It is used for making three dimensional surface in lithography or silt in sheet.

Scan discharge :
Discharge injected along the pair of sustained electrodes.

Scan electrode :
Electrodes of the pair of sustained electrodes that inject discharge downward along the panel columns.

Scan pulse :
Waveform that injects discharge with new columns.
Optic defects where scratches display over certain size.

Seal :
Combining the substrates or substrate with ventilation tube.

Seal layer :
Material layer that provides the connection of substrates. This can be a single layer of solder glass (frit) or the combination of solder glass and ring.

Sealing :
Process where free electrons that get out of the surface by extracting static electricity field when energetic electrons or ions are limited to a surface.

Secondary electron emission :
Process where drags discharged cell to certain waveform. This could occur before ionization offset when cell voltage decreases.

Self erase :
Plasma display in the form where stimulating discharge occurs for discharge process precedes below panel.

Self-scan type PDP :
Plasma display in the form where stimulating discharge occurs for discharge process precedes below panel.

Self-shift type PDP :
Process of combining substrates. High temperature process that melts solder glass combining substrates.

Space charge :
Mutual repulsion caused by accumulation of electric charge of similar signal.

Stripe rib :
Stripe shaped partition structure. It follows panel column direction.

Sub frame :
(Refer to sub field)

Sub field :
A part of panel

Surface charge :
It refers to the location of discharge in AS plasma panel where sustained electrodes are on the same surface.

Surface charge PDP :
AS plasma panel where sustained electrodes are on the same surface.

Sustain :
Discharge in AC plasma panel that keeps on or off until the cell is erased or written. Sustained electrodes are divided into bus (common electrodes) and addressable electrodes.

Sustain driver :
Circuit that drives sustained electrodes.

Sustain electrode :
Electrodes driven by AC voltage that provides plasma with energy major parts. This electrode is driven by enough waveform to keep discharge of turned on state. In turned off cell, trigger discharge does not takes place.

Sustain magin :
The disparity between sustained voltage that keeps turned on cells and sustained voltage that can turn off cells.

Sustain pulse :
Sustained drive waveform[symbol : Ps]

Sustain vlotage :
Voltage level of sustained waveform
Thermal compaction :
Substrates successive density increase observed by substrates pattern contraction.

Thermal radiation :
Radiation in infrared rays over 800nm.

Three electrode type :
Modern AC panel has three electrodes for each cell and a pair of thermal electrodes provide cells with AC power. Data electrodes in opposite substrates provide unique writing and erasing signals to each cell

Time modulation driving method (Other terms: time division multiplex method) :
Modulation method in proportion to certain time applied to stimulation with regular output. Output strength is changed according to input time.

Tip pipe :
(Refer to exhaust turbulation.)

Townsend discharge :
Self sustained plasma discharge expressed by Townsend in 1901. This discharge requires 200v voltage.

Transparent electrode :
Electrode made up of transparent electric conductive matter such as ITO.

Two eledtrode type :
Original AC plasma panel used two electrodes that provide not only sustained waveform but also write and erase waveform.

Ultraviolet ray :
Ultraviolet light below 380nm in spectrum.

Vacuum ultraviolet :
Ultraviolet ray of wavelength below 200nm.

Viewing angle :
Vertical angle that can display the image. It is normally limited by the change in luminance and chromaticity.

Viewrable screen diagonal :
Releasable screen diagonal length measured between outmost pixel edges

Viewrabel screen height :
Releasable screen height measured between outmost pixel edges

Viewrable screen width :
Releasable screen width measured between outmost pixel edges.

Visible defect :
Imperfection that prevents displaying with proper image.

Wall charge :
Pure accumulation of positive and negative charges in cell wall.

Wall charge erase pulse :
Pulse that neutralizes wall charge

Wall charge transfer curve :
Curve related to wall charge pulse parameters and the changes in wall charge.

Wall voltage transfer curve :
Curve expressed with wall transfer that is caused by any changes in electric charges including wall charges and wall charge pulse related parameters.

White back :
White coating for minimize absorbing valid gloss, located black contrast improvement layer and fluorescent material.

Write electrode :
(Refer to data electrode.)

Write electrode :
(Refer to data electrode)[symbol : Pw]

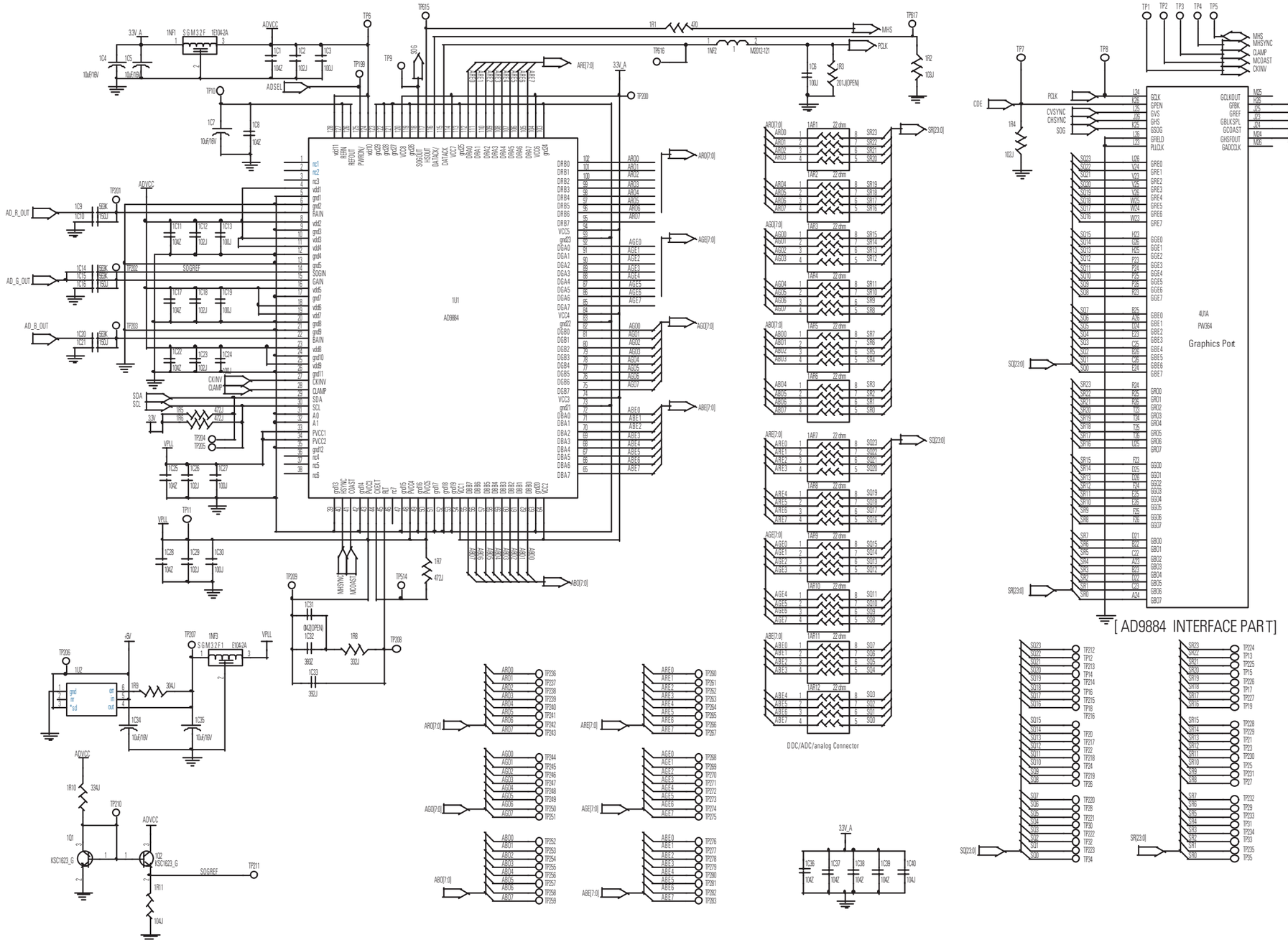
Write electrode :
(Refer to data electrode)[symbol : Vw]

M E M O

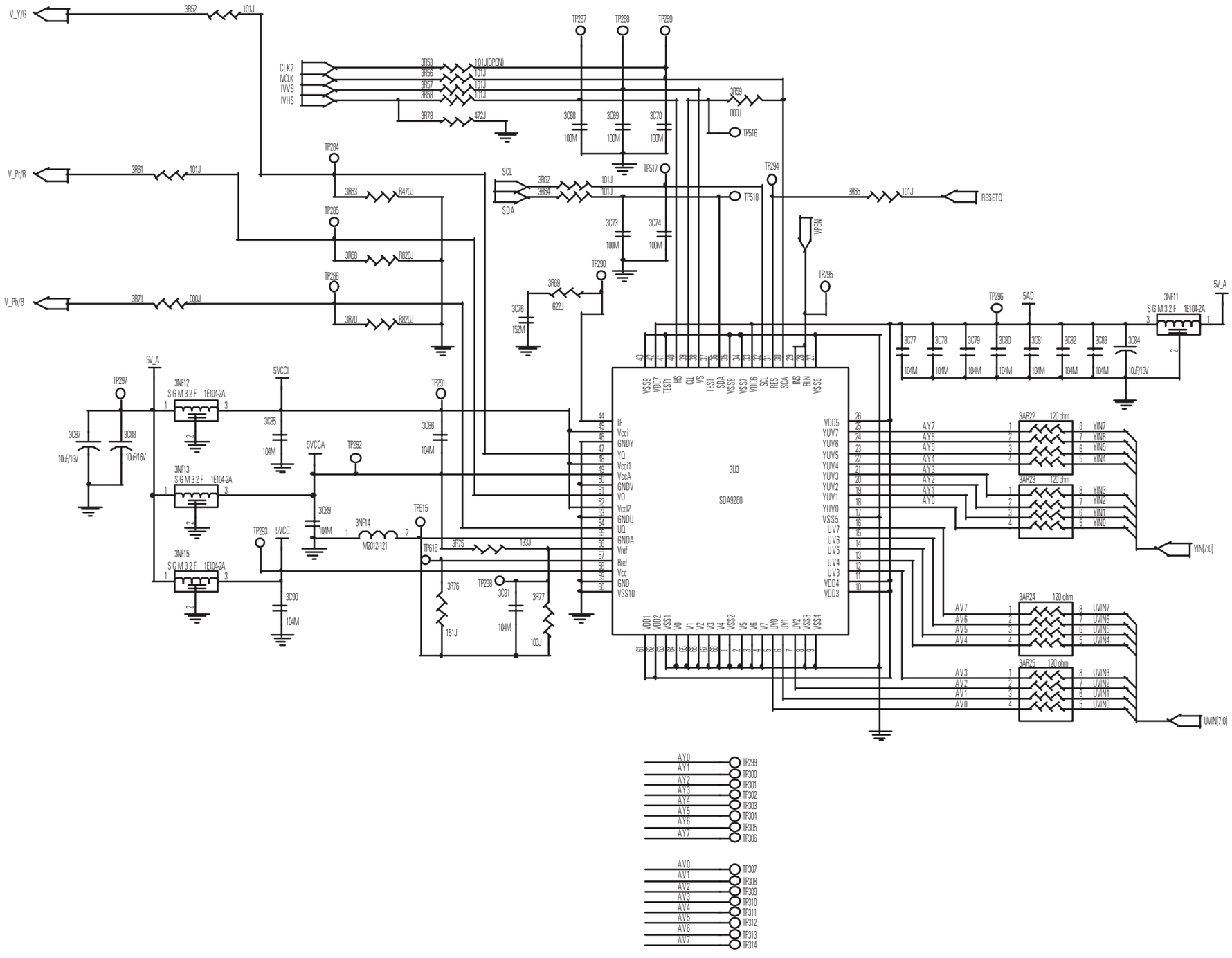
12. Schematic Diagrams

12-1 VIDEO

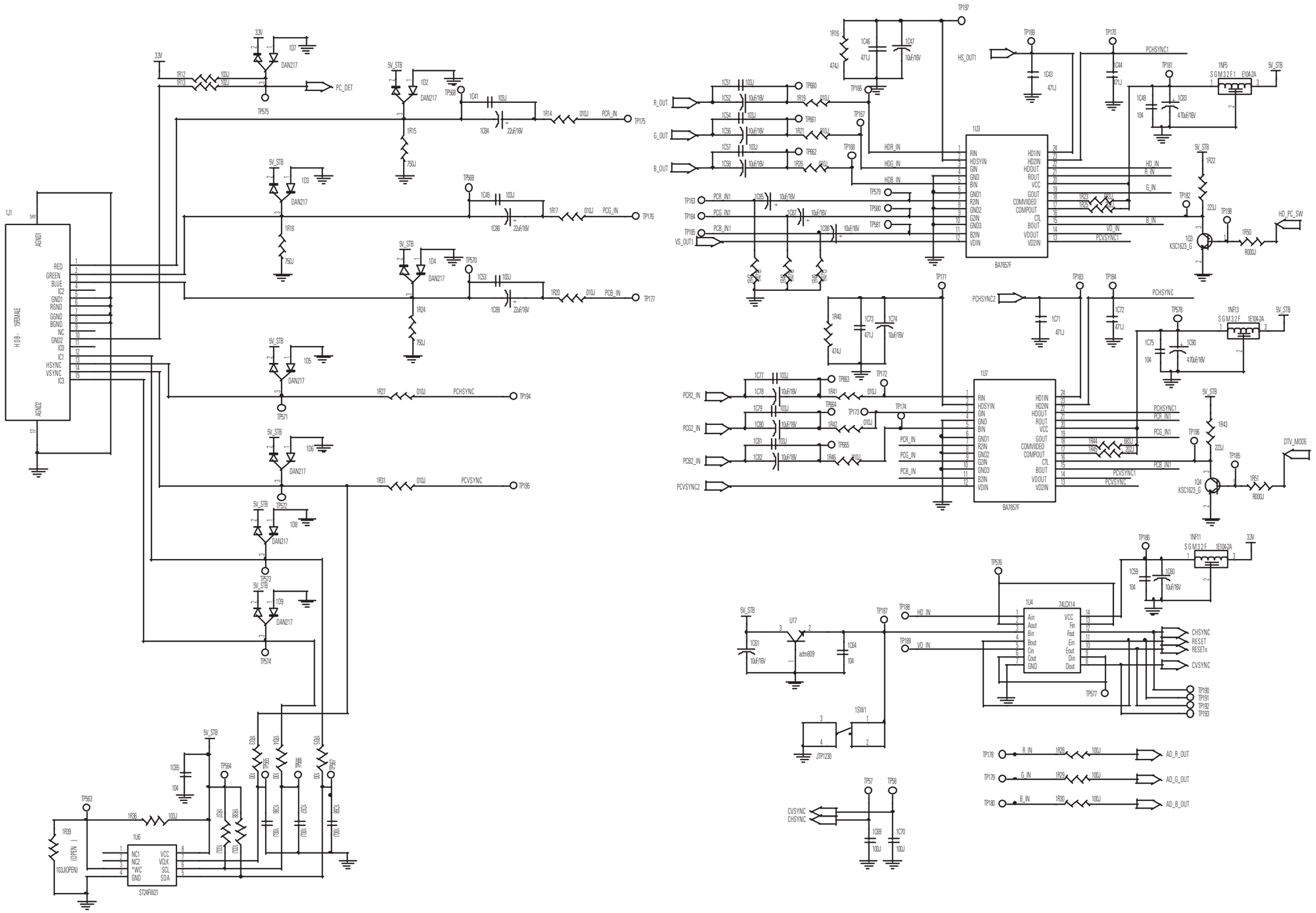
12-1-1 MAIN ADC (AD9884)



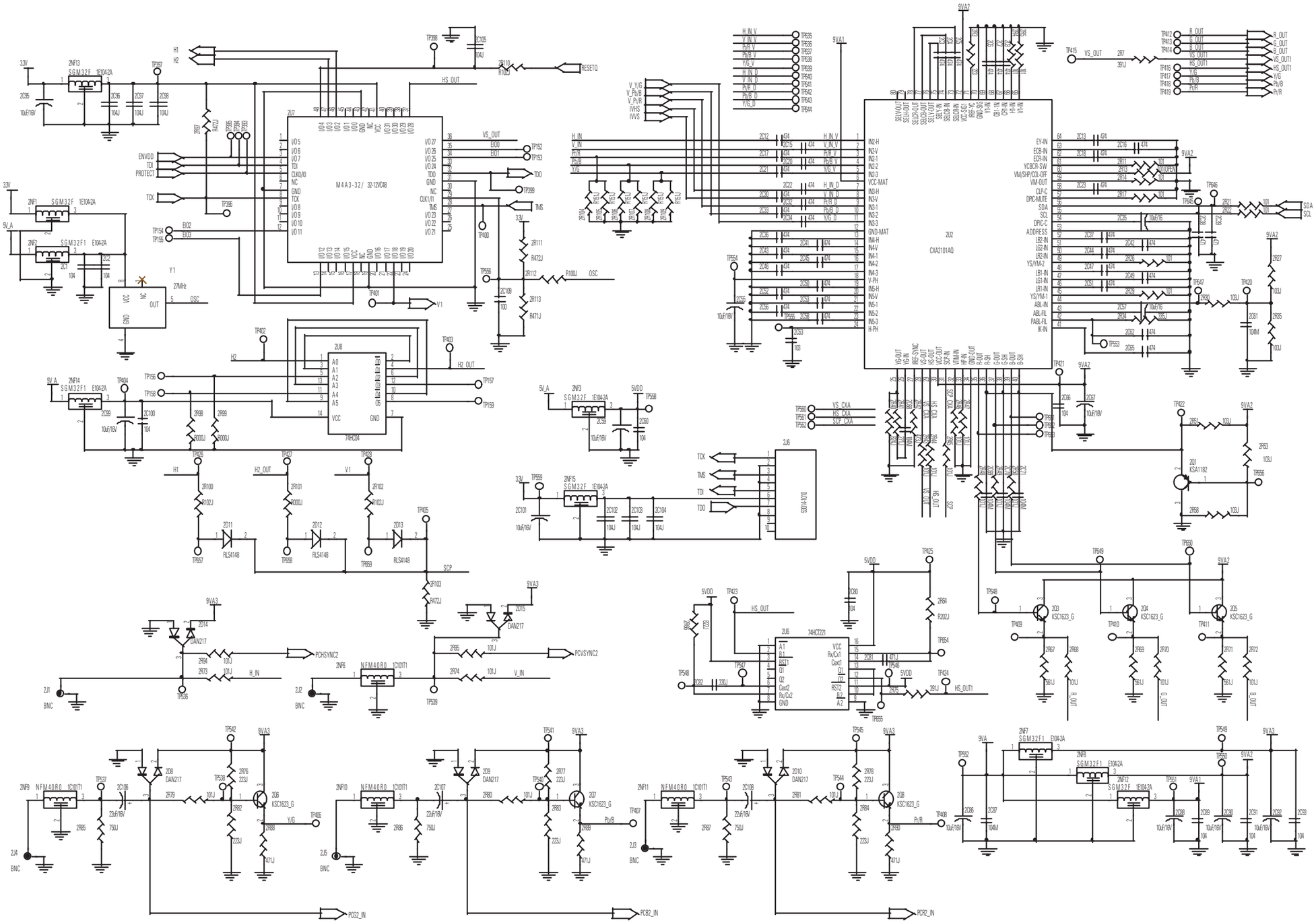
12-1-2 VIDEO D/A CONVERTER



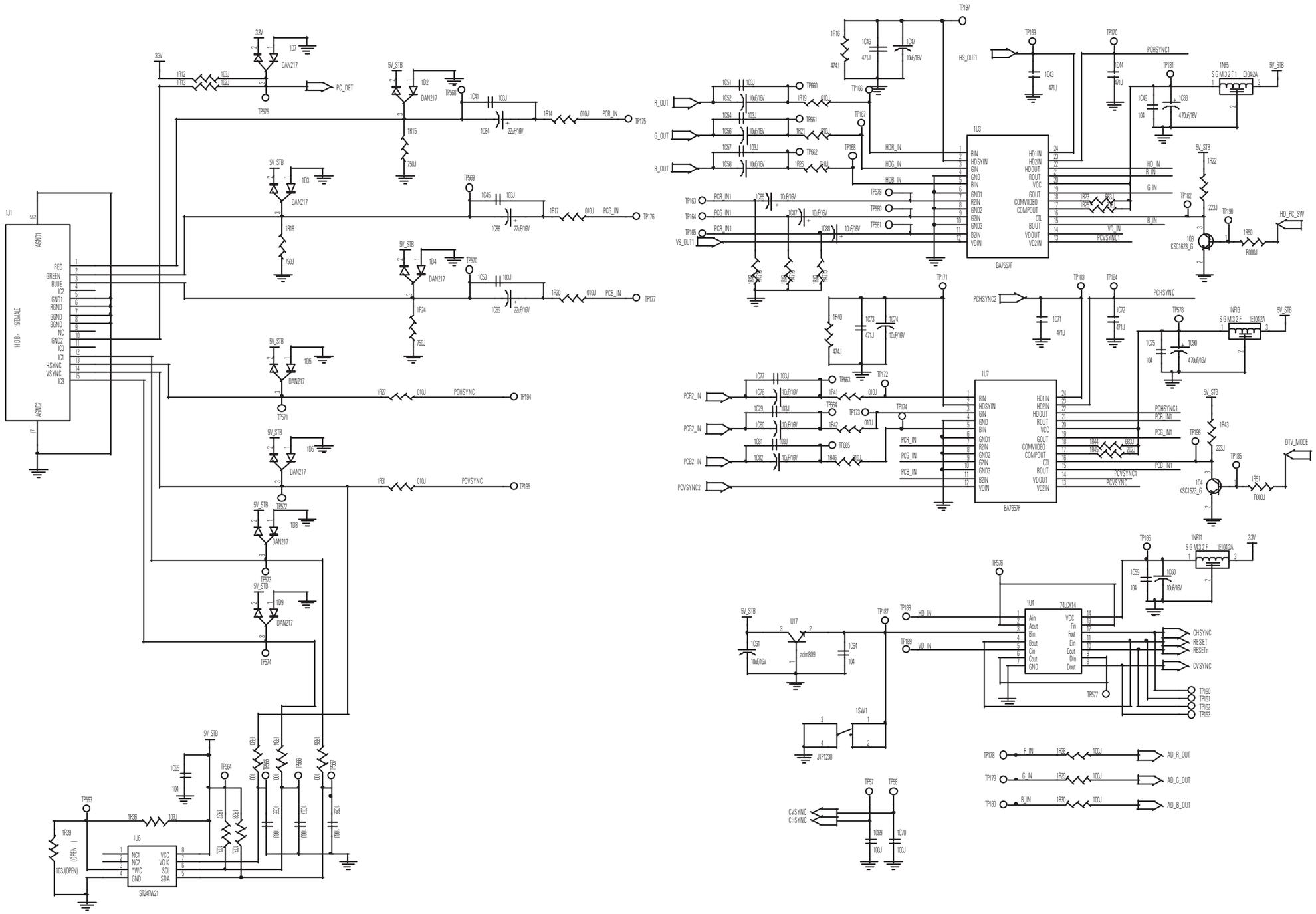
12-1-3 S-VIDEO &COMPONENT1 SIGNAL PROCESS



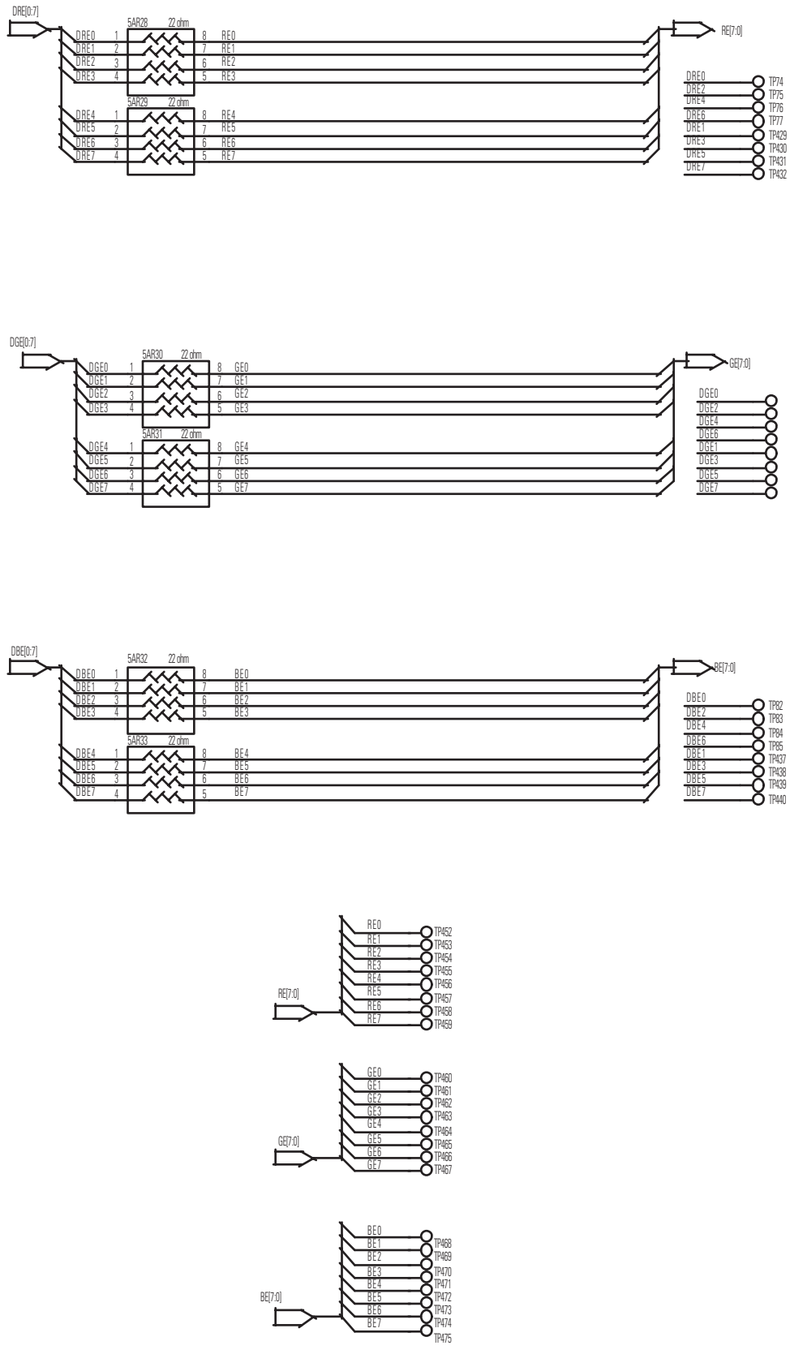
12-1-4 CONPONENT2 SIGNAL PROCESS



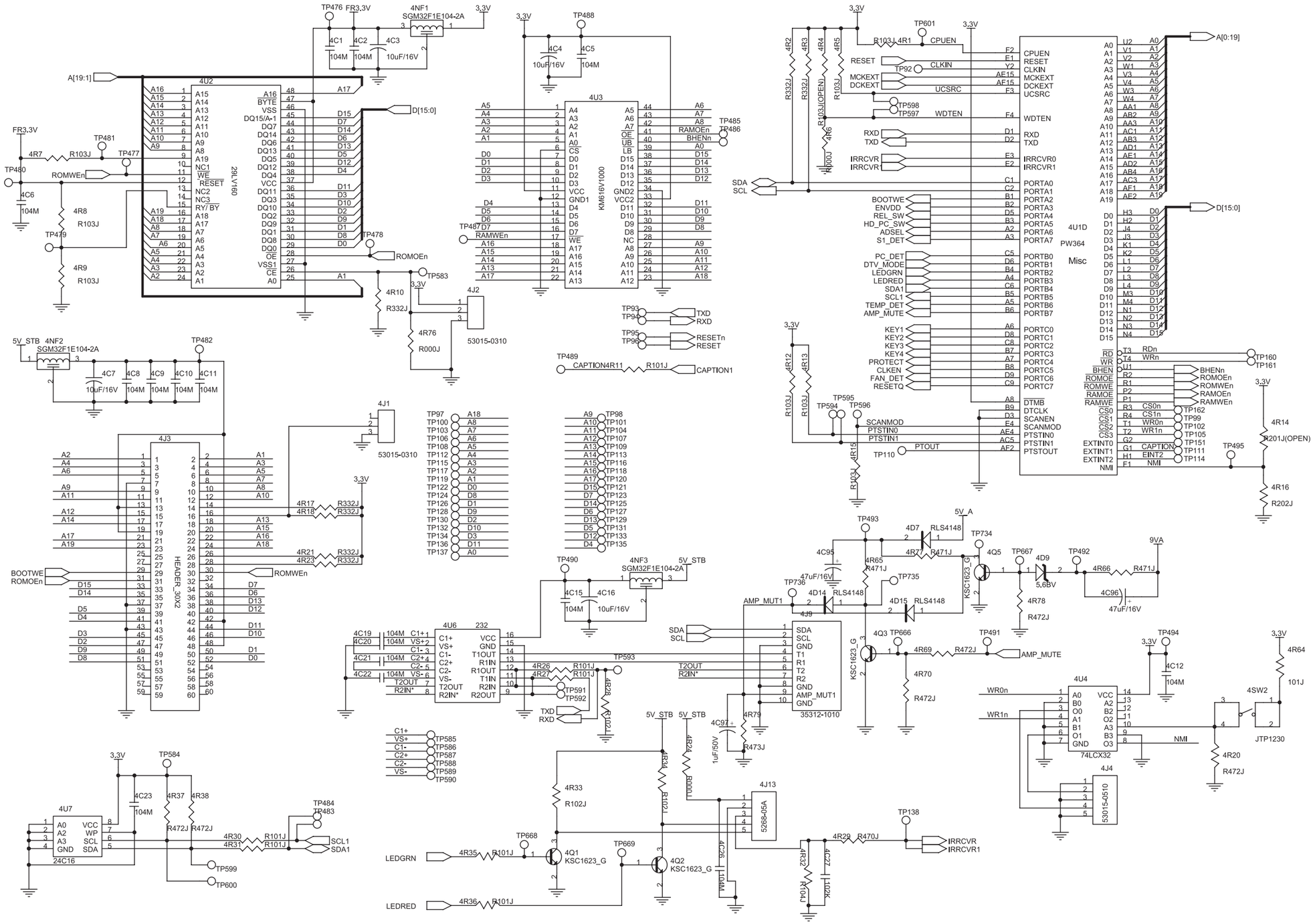
12-1-5 RGB INTERFACE



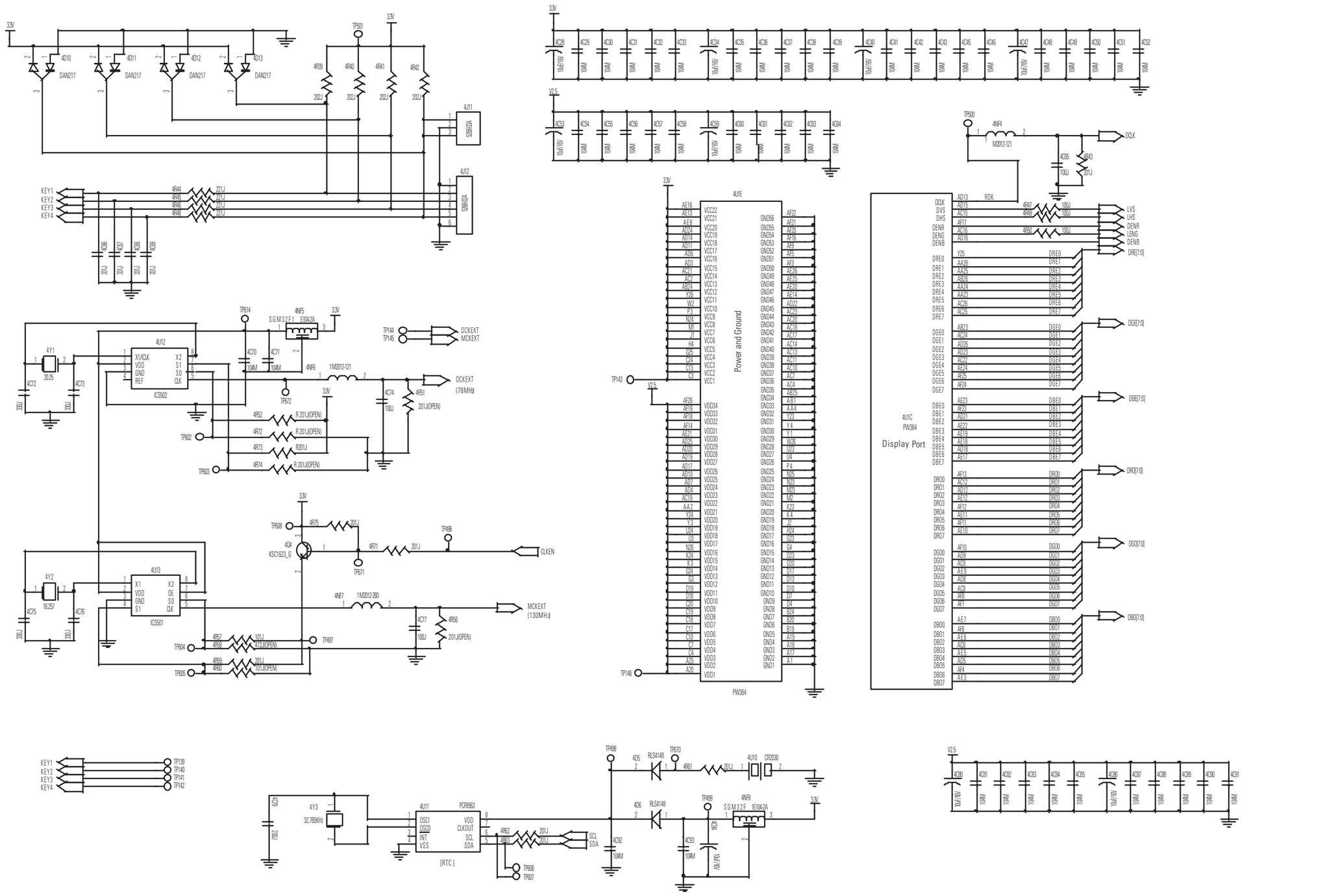
12-1-6 LVDS INTERFACE



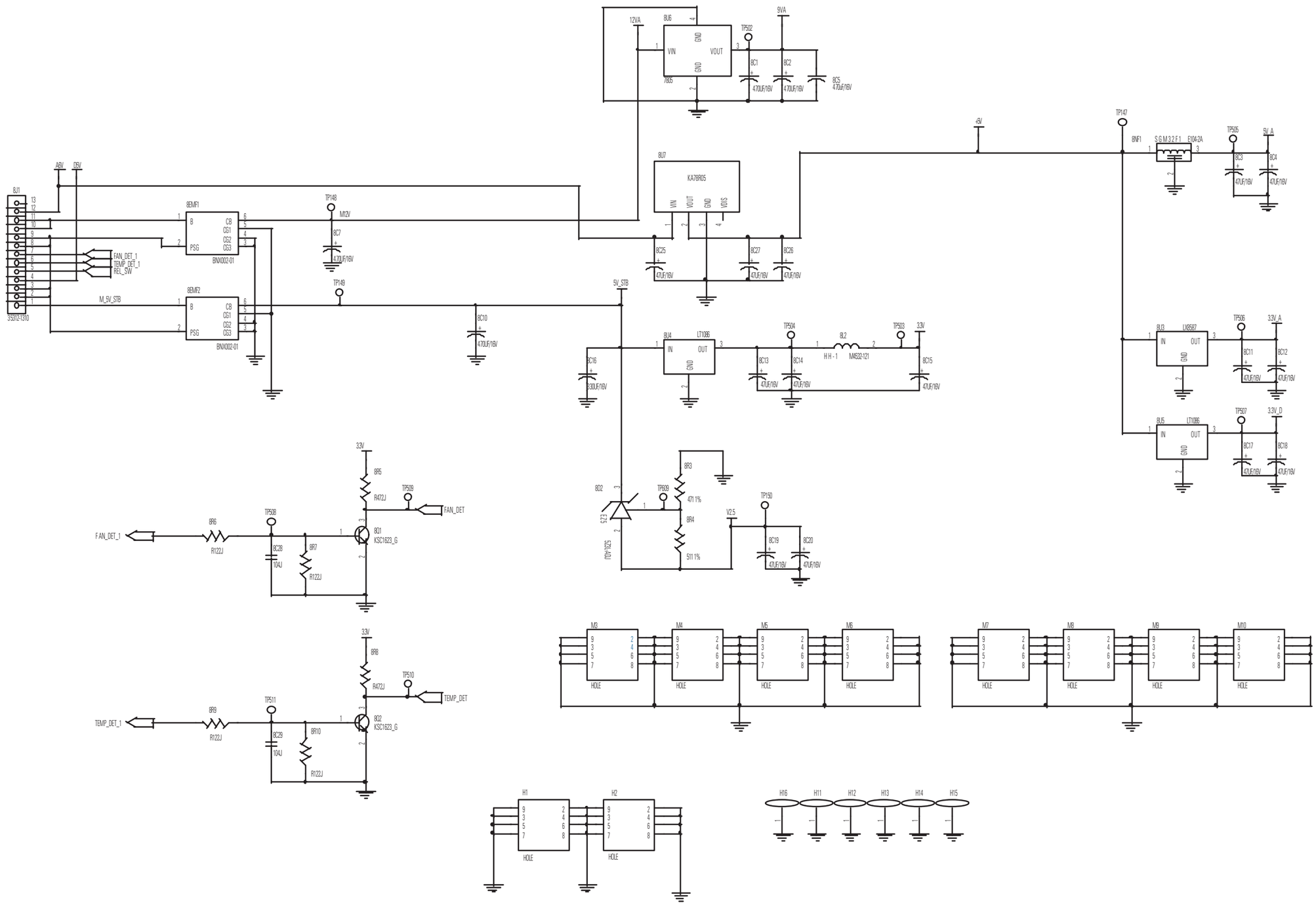
12-1-7 MEMORY INTERFACE & CONTROL INTERFACE`



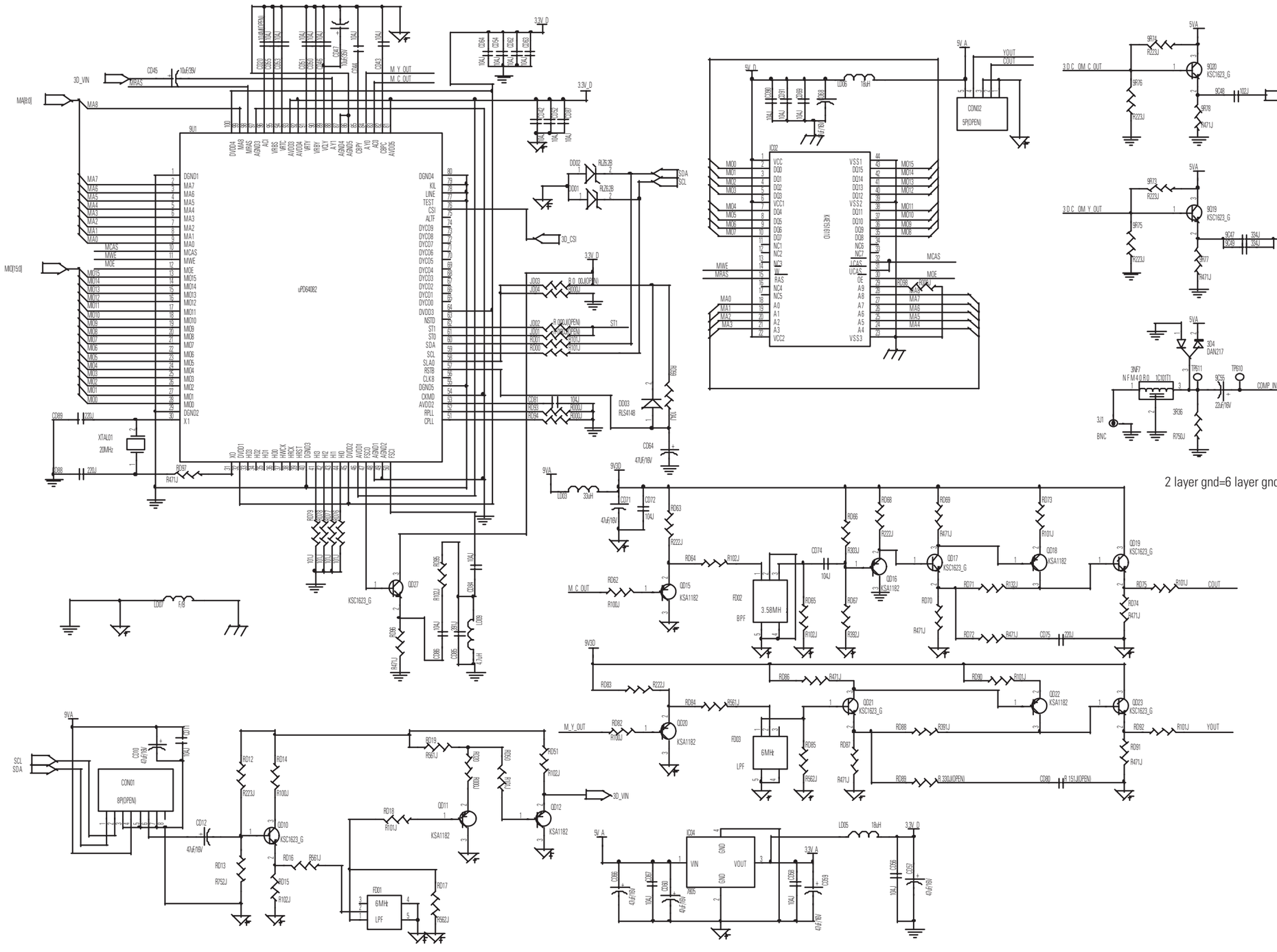
12-1-8 OUTPUT & PLLS OF SCALER



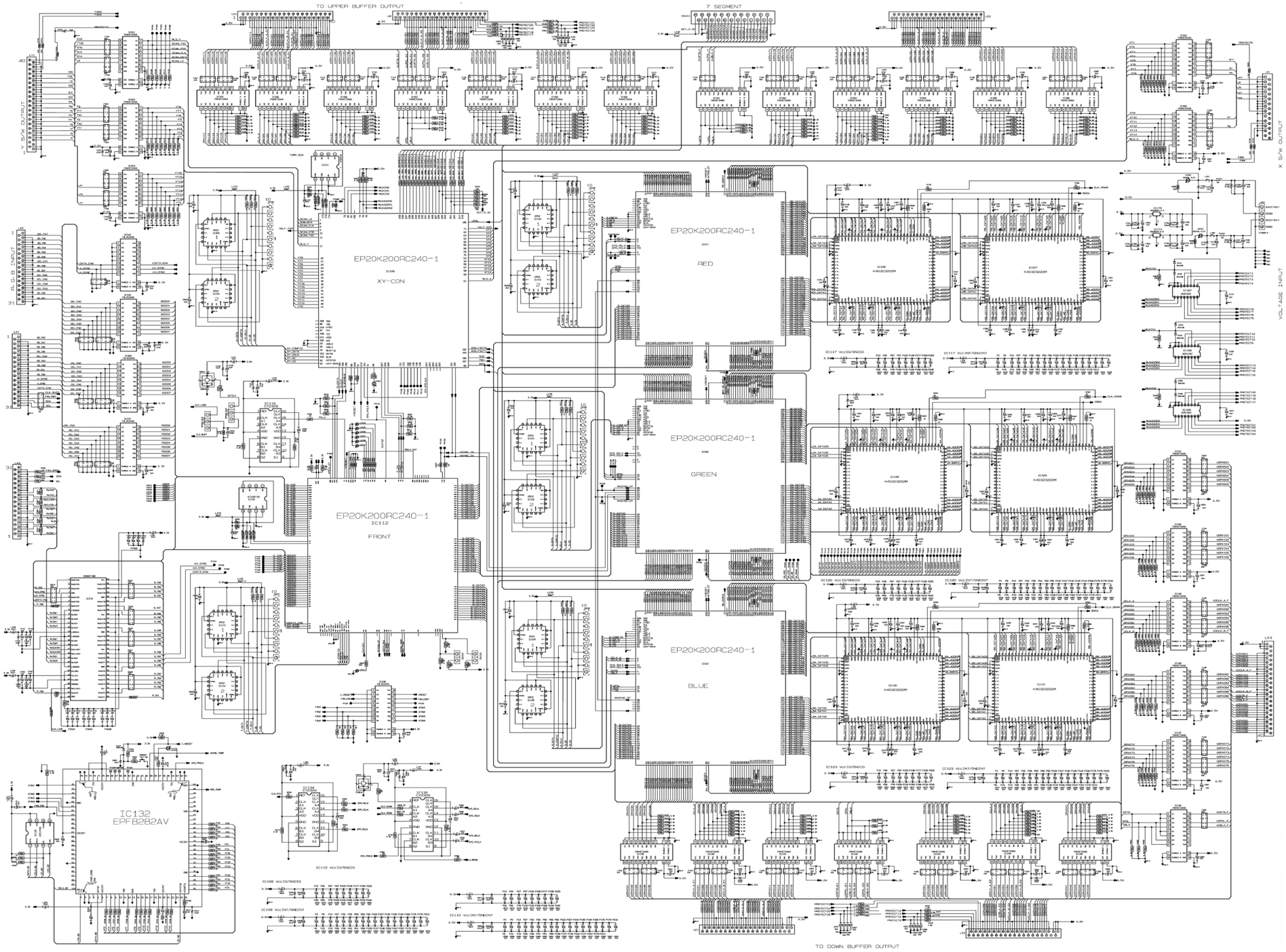
12-1-9 POWER


12VA
8U6
VIN
VOUT
GND
7805
TP502
5VA
8C1
8C2
8C5
470UF/16V
8U7
KA78R05
VIN
VOUT
GND
VOIS
8C25
8C27
8C26
47UF/16V
+9V
TP147
8NF1
S.G.M.3.2.F.1
E104-2A
TP505
5V_A
8C3
8C4
8J1
3S312-T310
A8V
D8V
8EMF1
8EMF2
BNX002-01
FAN_DET_1
TEMP_DET_1
REL_SW
M_5V_STB
TP148
M12V
8C7
470UF/16V
TP149
5V_STB
8C10
8U4
LT1086
IN
OUT
GND
8C16
330UF/16V
TP504
8L2
HH-1
M4522-121
TP503
3.3V
8C13
8C14
8C15
8U3
LX8587
TP506
3.3V_A
8C11
8C12
8U5
TP507
3.3V_D
8C17
8C18
3.3V
8R5
R472J
TP509
FAN_DET
TP508
8R6
R122J
8C28
104J
8R7
8Q1
KSC1623_G
8R8
TP510
TEMP_DET
TP511
8R9
8C29
8R10
8Q2
8Q3
8R3
471.1%
8R4
511.1%
TP508
TP150
V2.5
8C19
8C20
M3
M4
M5
M6
M7
M8
M9
M10
HOLE
H1
H2
H16
H11
H12
H13
H14
H15

12-1-10 3D-COM

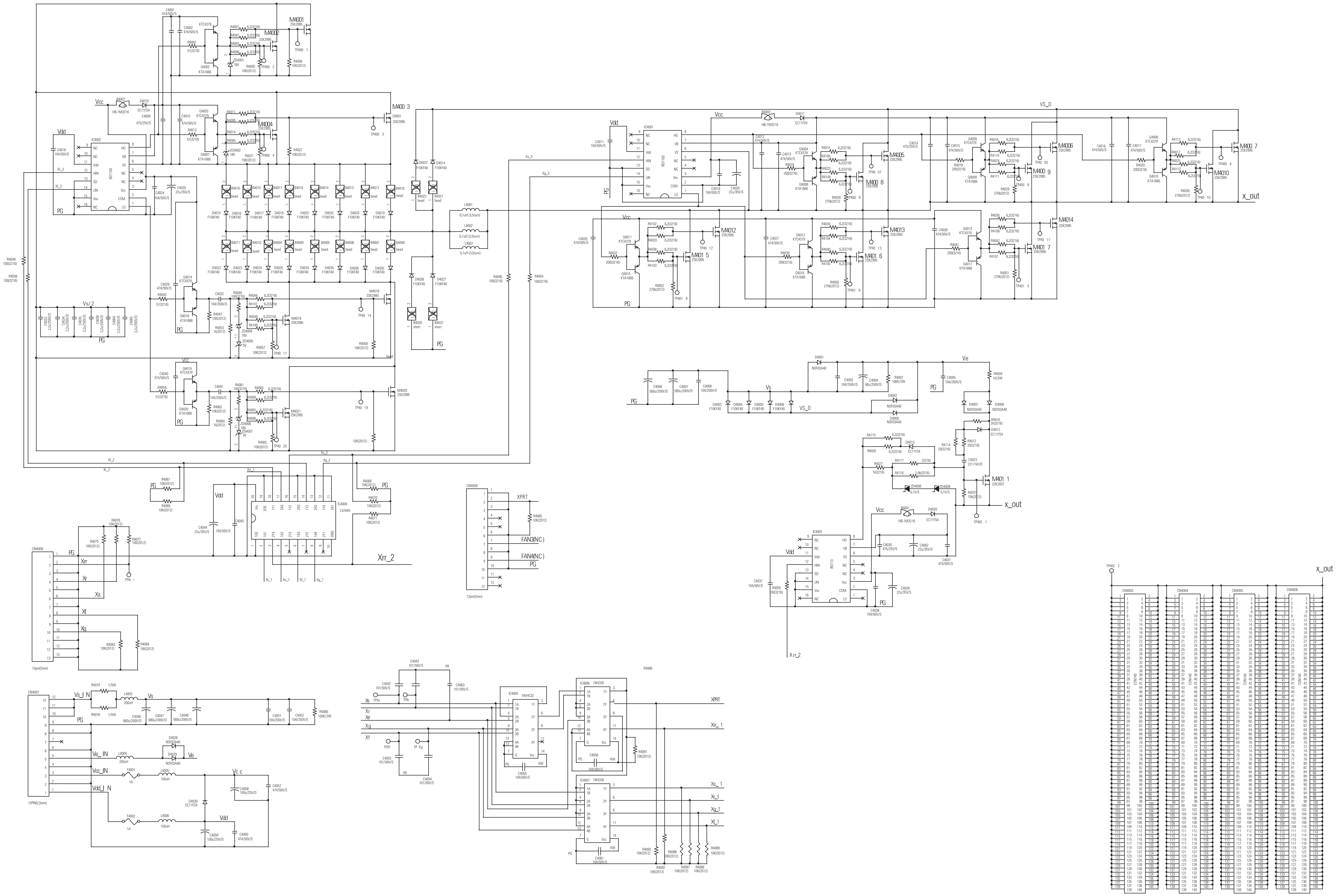


12-2 LOSIC

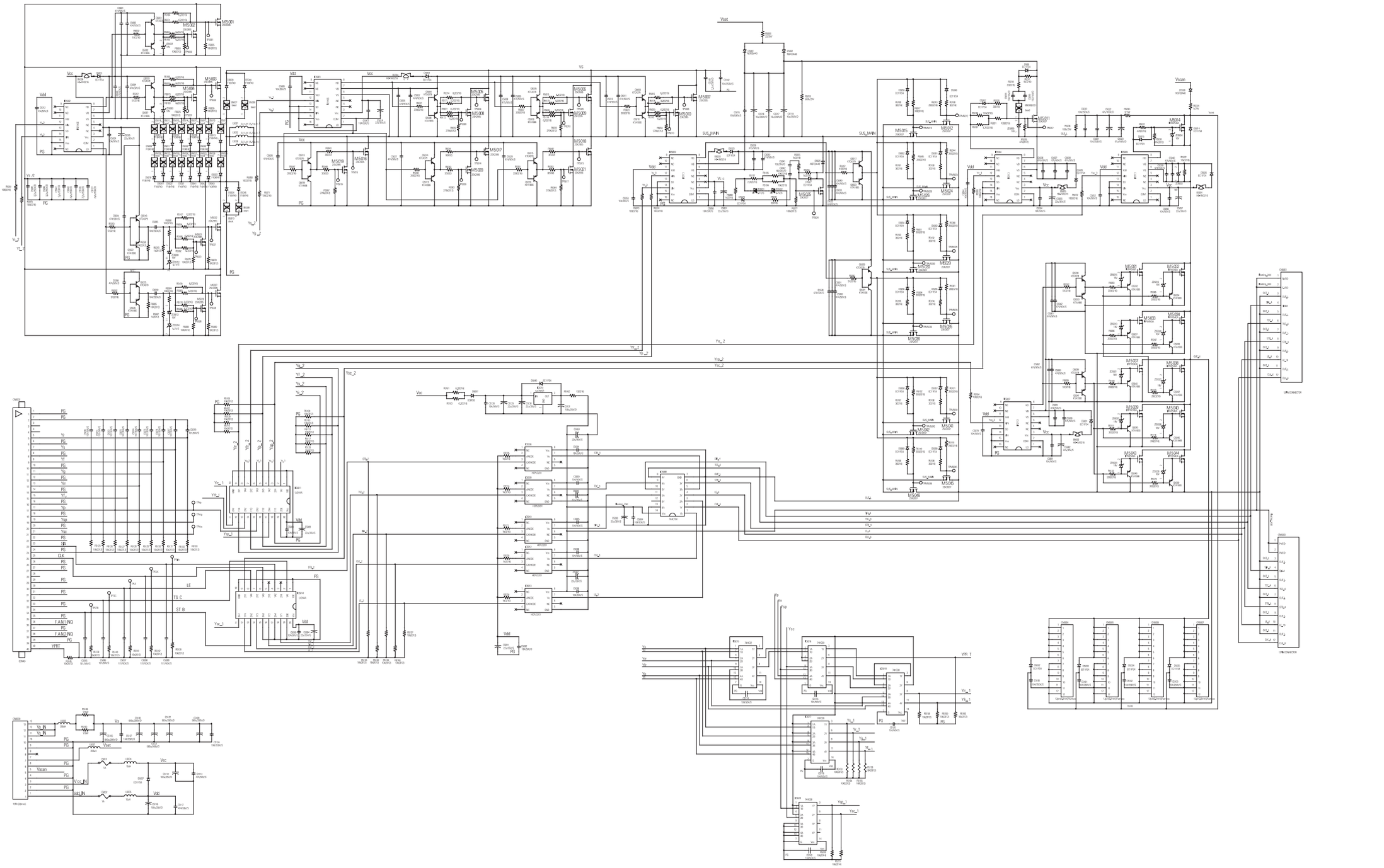

TO UPPER BUFFER OUTPUT
7 SEGMENT
Y S/W OUTPUT
X S/W OUTPUT
R.G.B INPUT
VOLTAGE INPUT
EP20K200RC240-1
IC108
XY-CON
EP20K200RC240-1
IC117
RED
EP20K200RC240-1
IC88
GREEN
EP20K200RC240-1
IC89
BLUE
EP20K200RC240-1
IC112
FRONT
IC132
EPF8282AV
IC108 Vcc IO/GNDIO
IC109 Vcc INT/GNDINT
IC112 Vcc IO/GNDIO
IC117 Vcc IO/GNDIO
IC117 Vcc INT/GNDINT
IC120 Vcc IO/GNDIO
IC120 Vcc INT/GNDINT
IC123 Vcc IO/GNDIO
IC123 Vcc INT/GNDINT
TO DOWN BUFFER OUTPUT

12-3 DRIVER

12-3-1 X-DRIVER

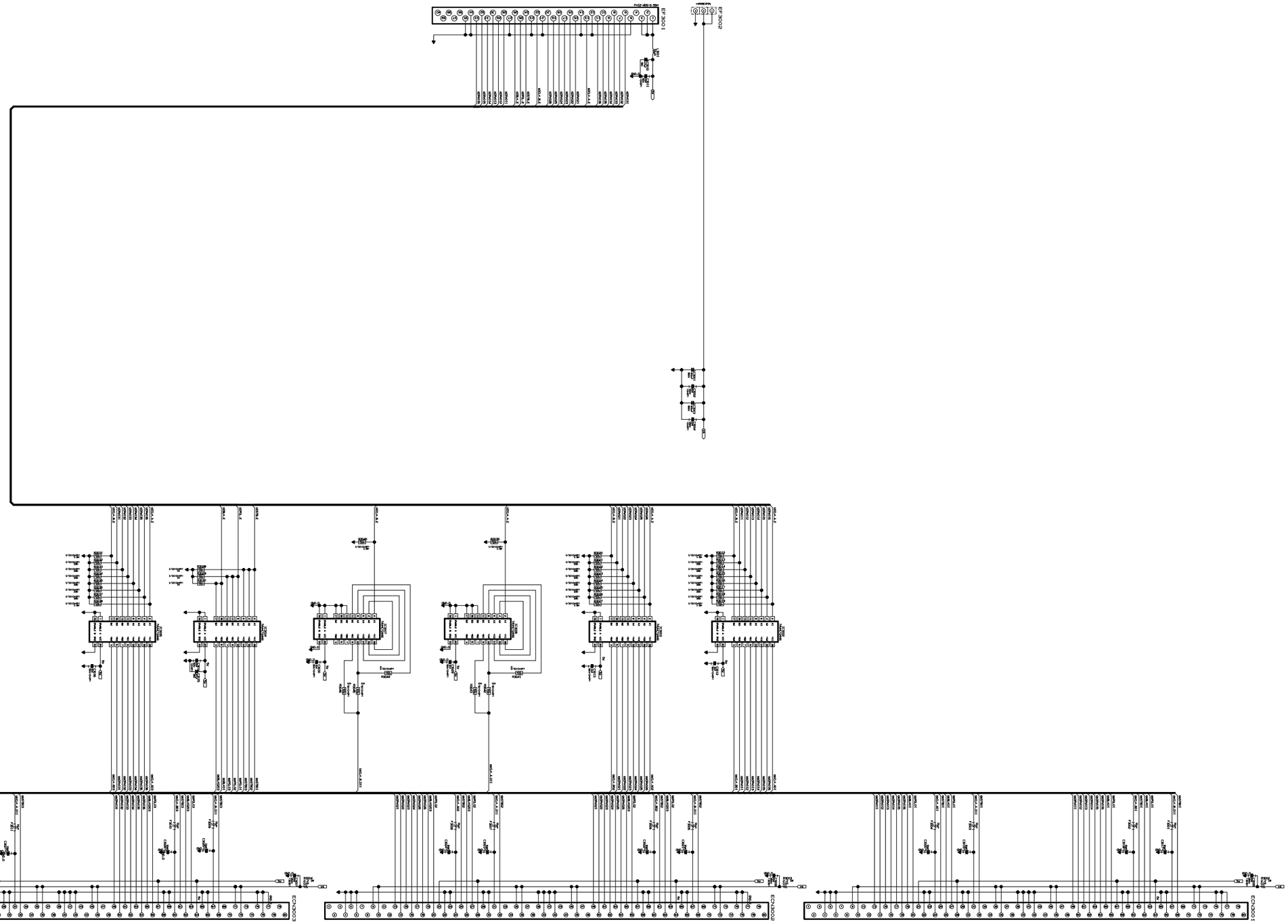


12-3-2 Y-DRIVER

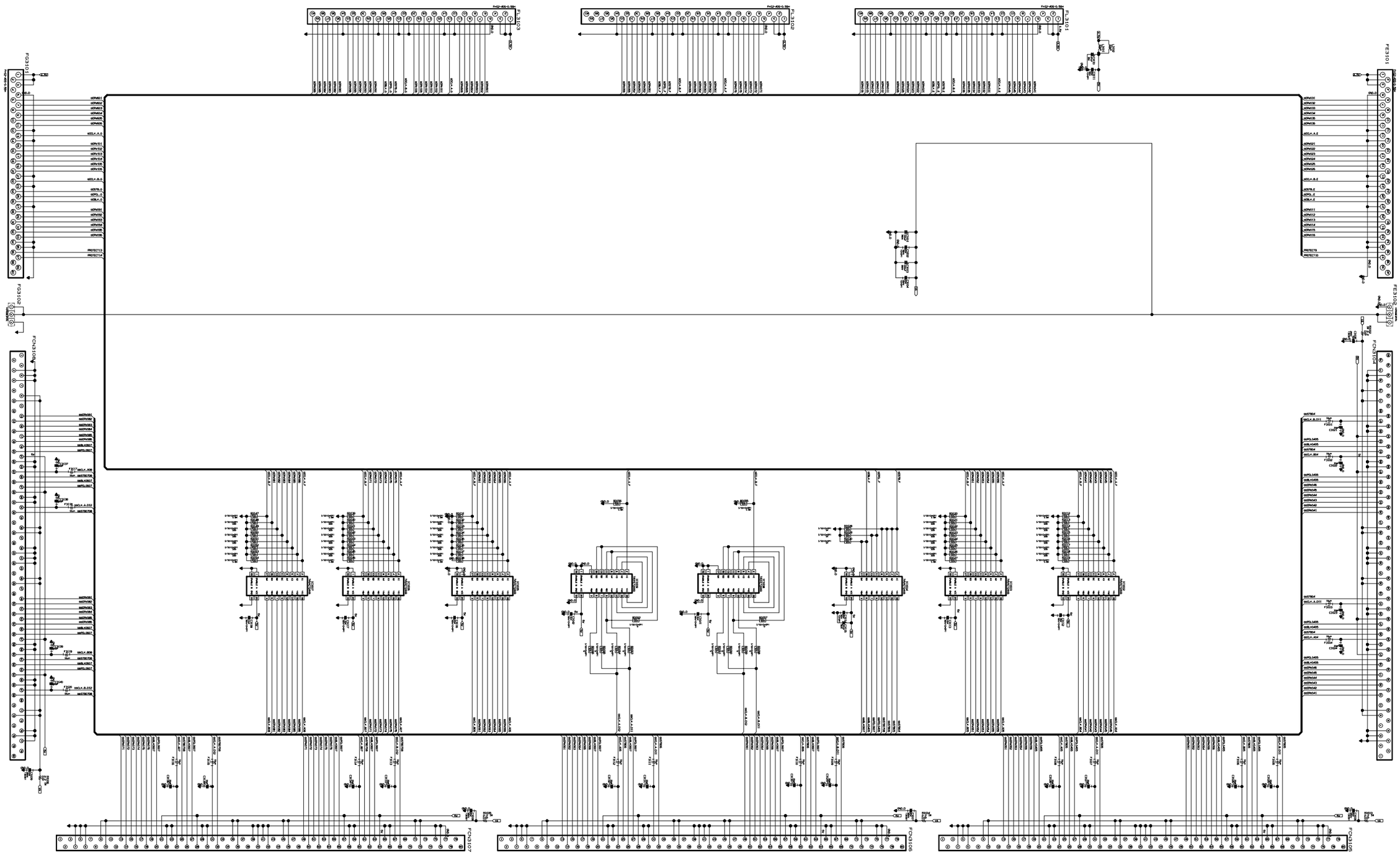


12-4 BUFFER

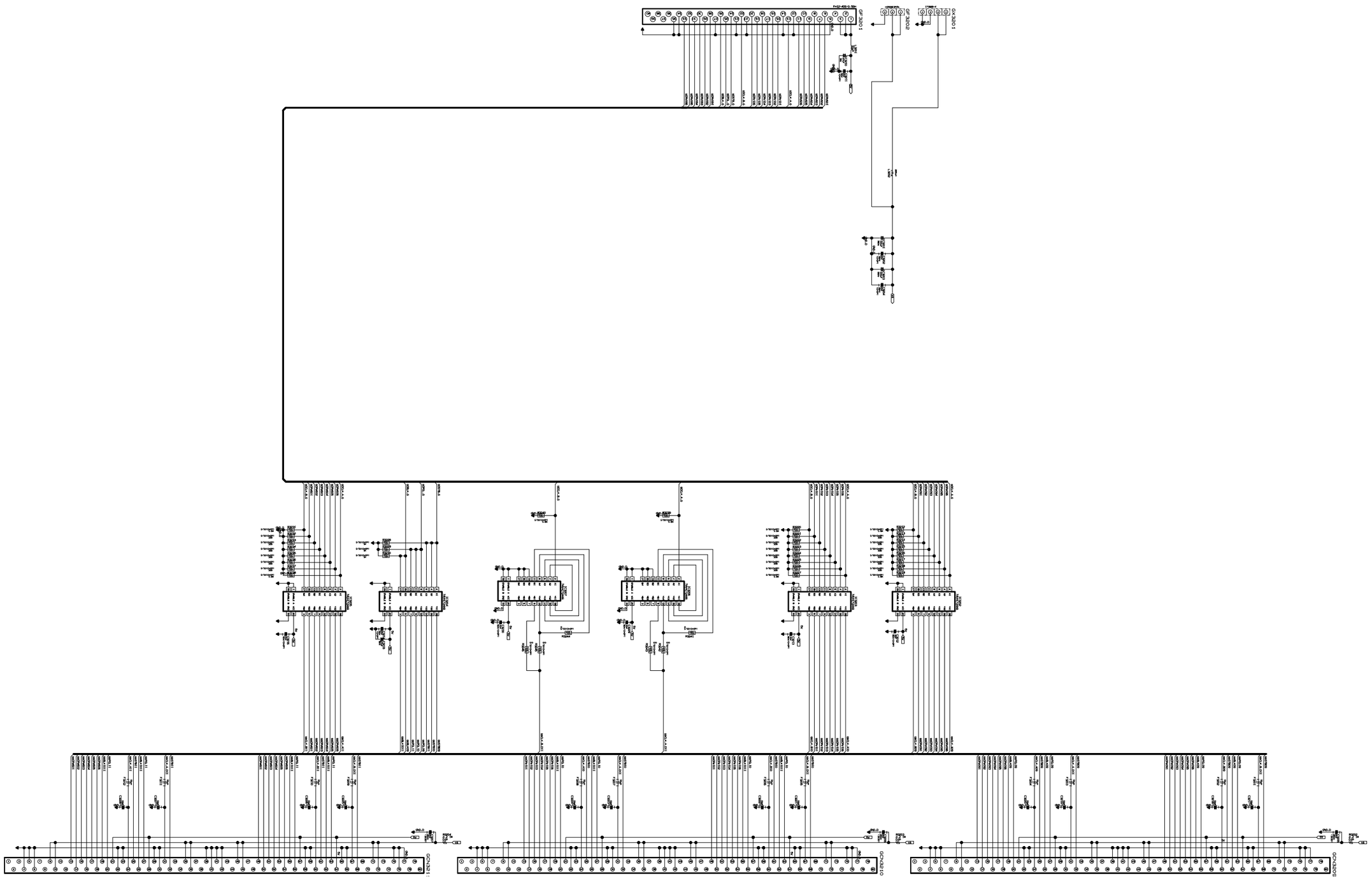
12-4-1 E-BUFFER



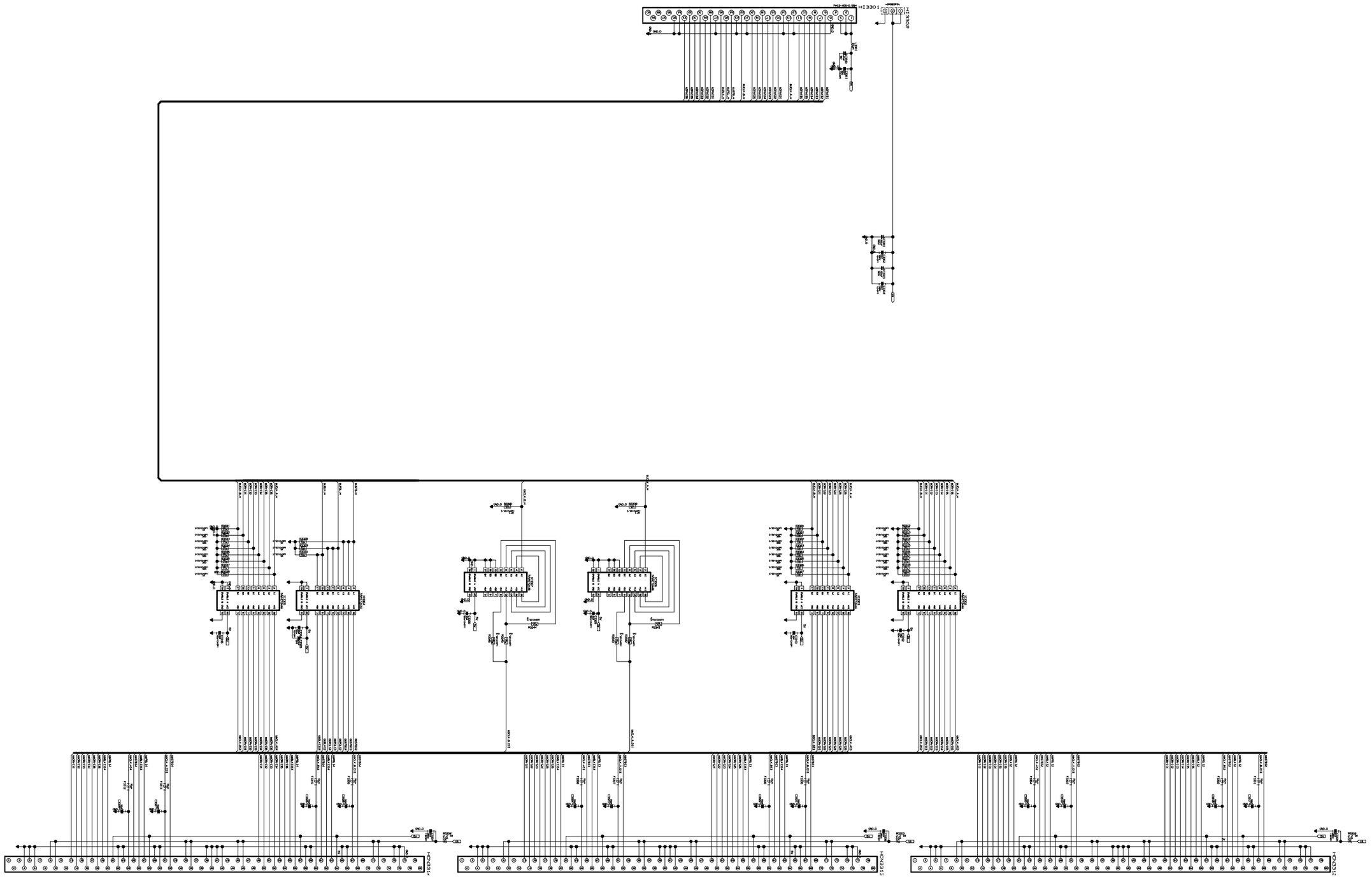
12-4-2 F-BUFFER



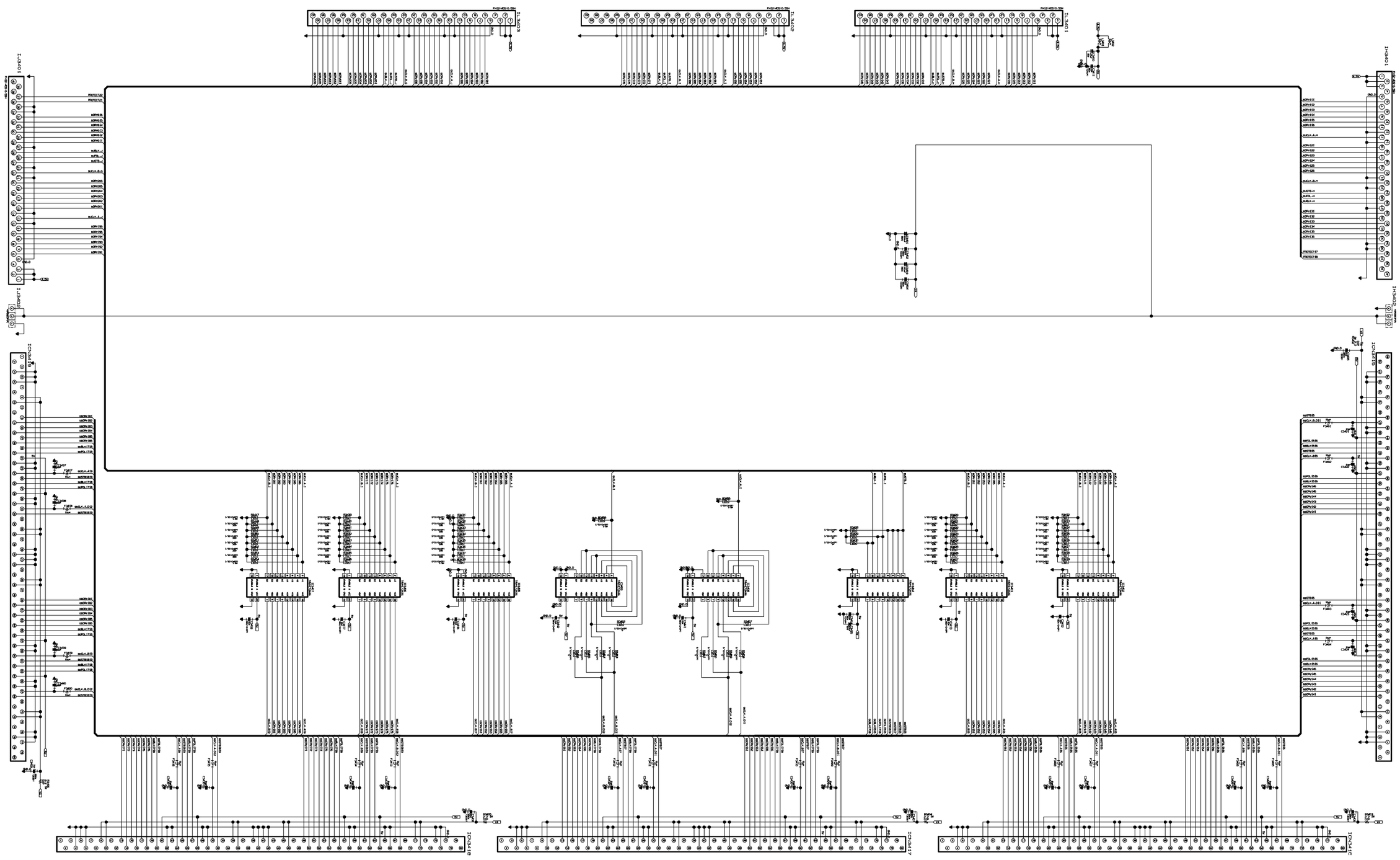
12-4-3 G-BUFFER



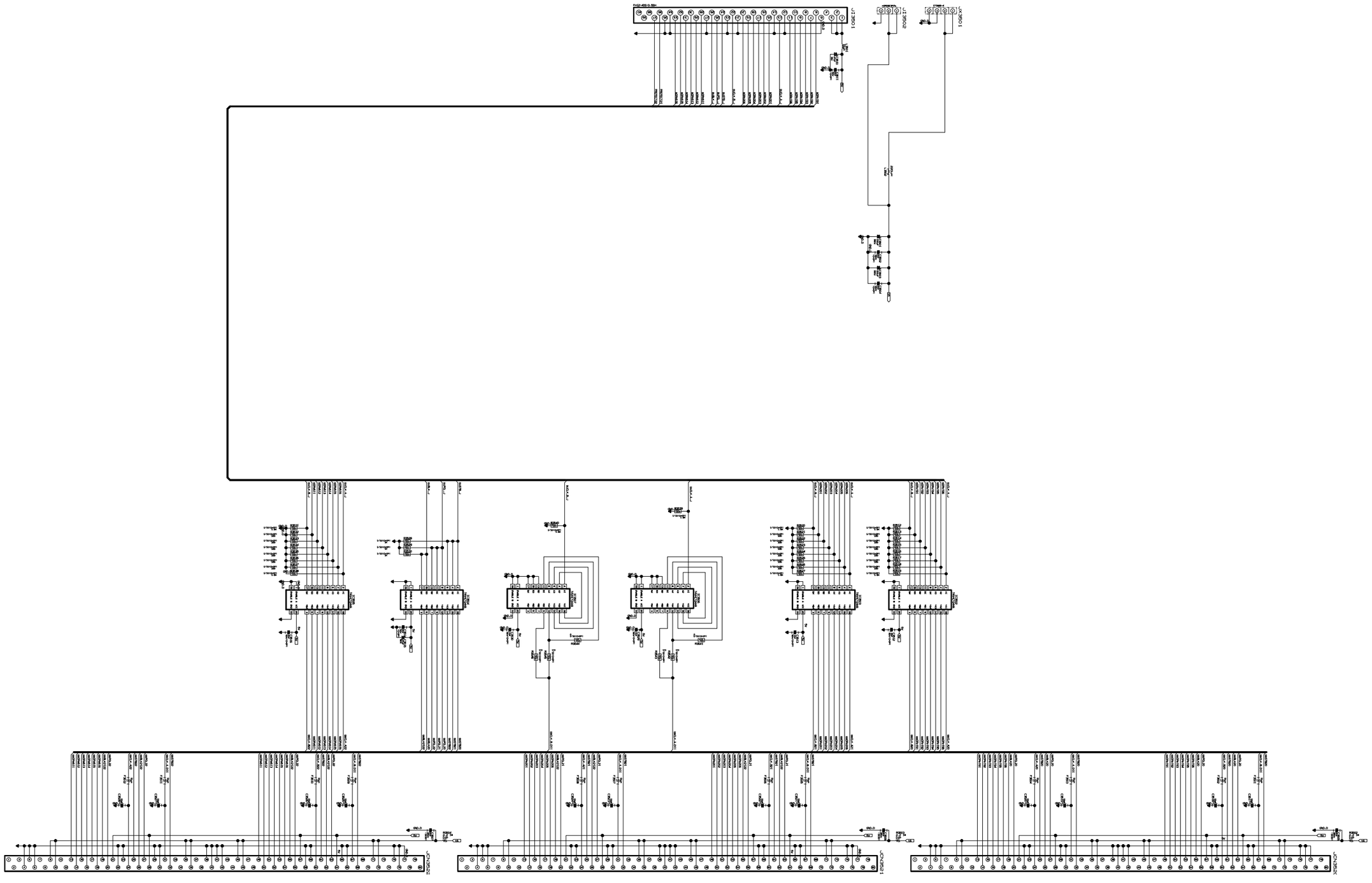
12-4-4 H-BUFFER



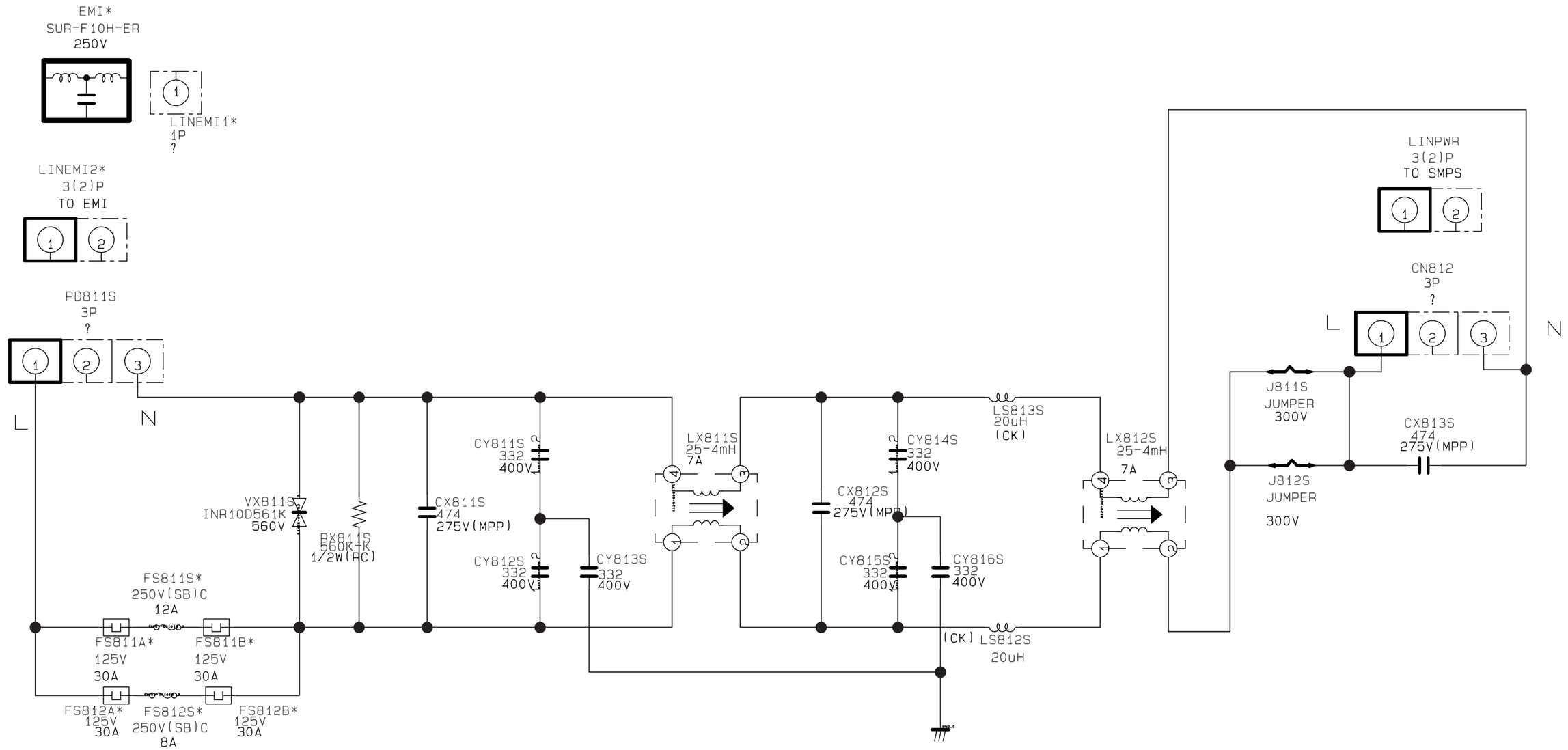
12-4-5 I-BUFFER



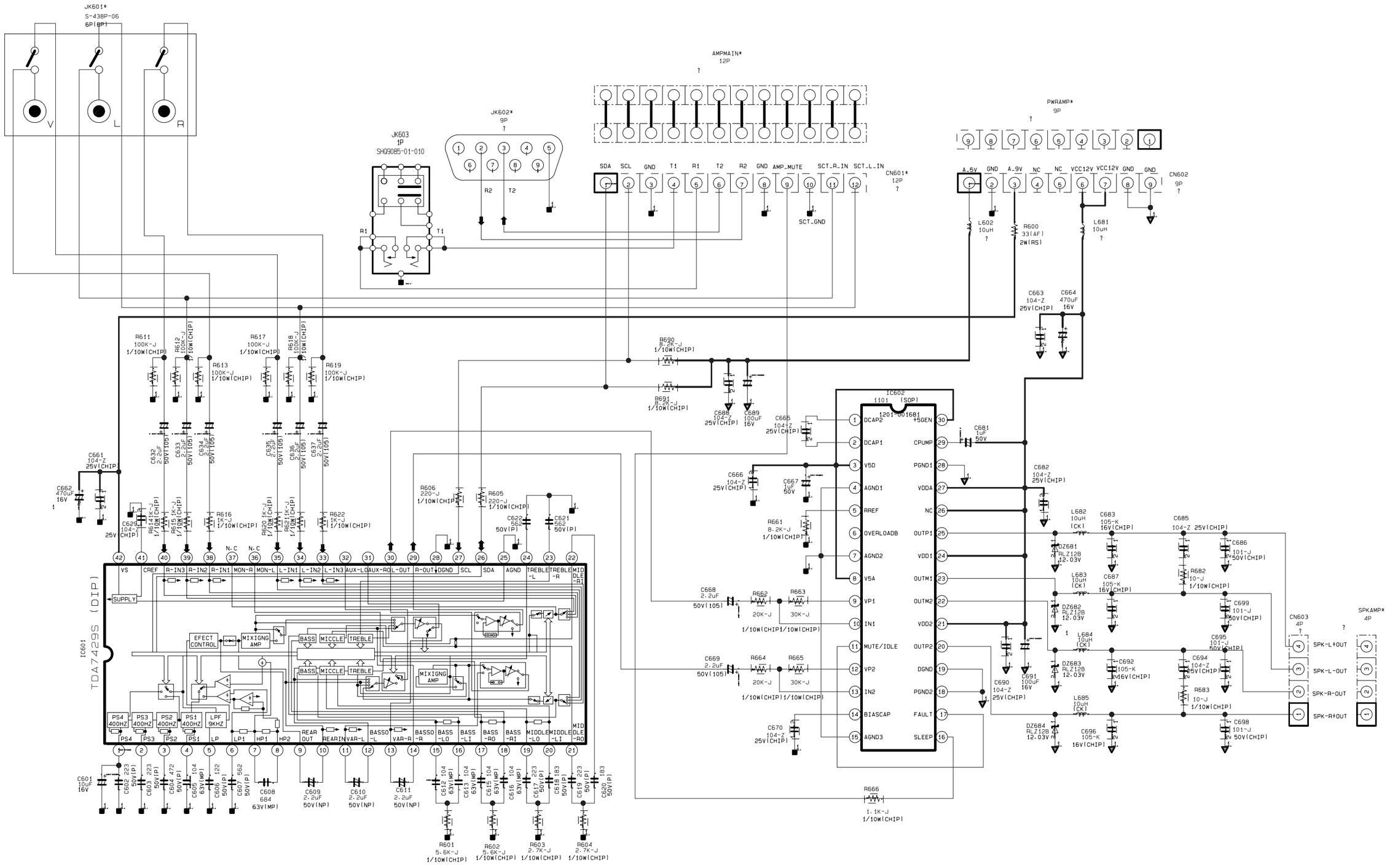
12-4-6 J-BUFFER



12-5 LINE FILTER

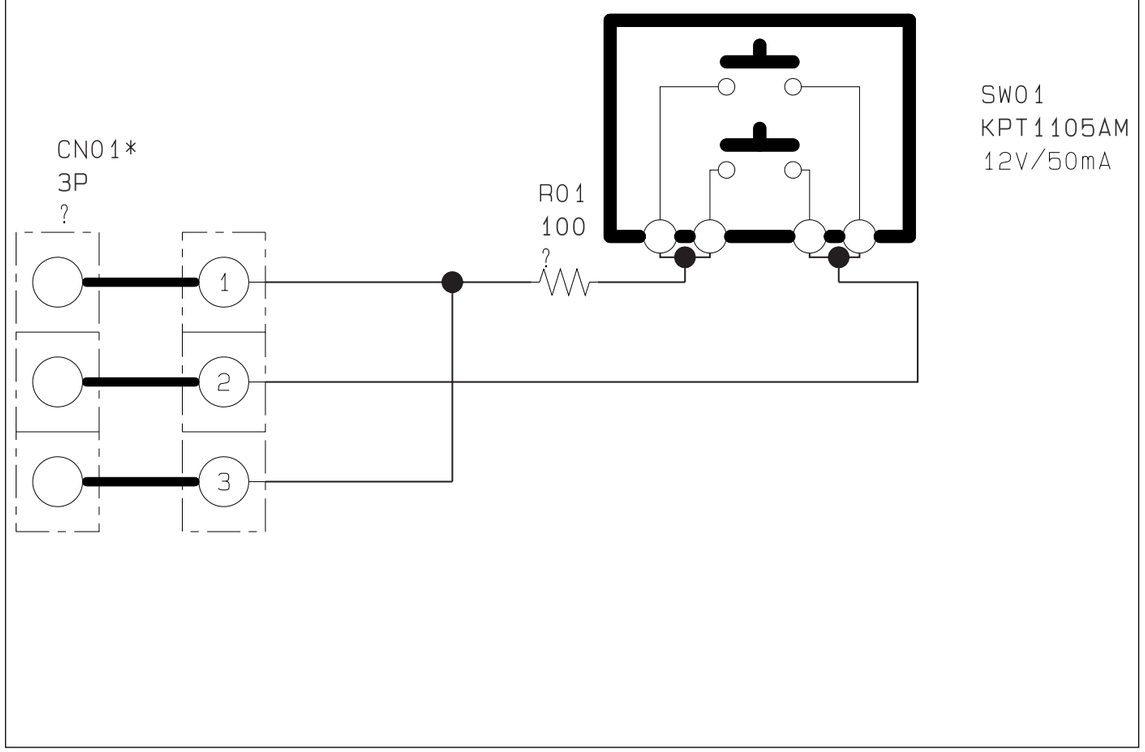


12-6 SOUND

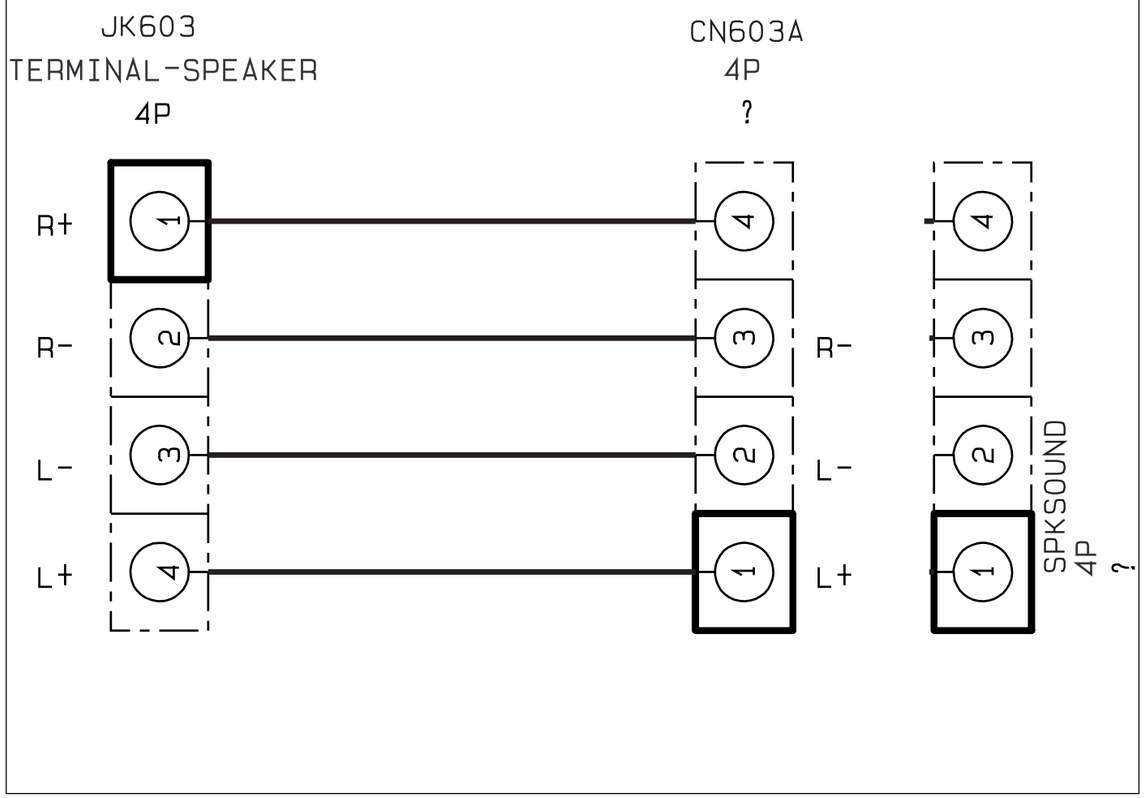

JK601*
S-43BP-06
6P(8P)
V
L
R
JK603
1P
SH09085-01-010
JK602*
9P
?
R1
T1
R2
T2
AMPMAIN*
12P
?
SDA SCL GND T1 R1 T2 R2 GND AMP_MUTE SCT_R_IN SCT_L_IN
SCT_GND
CN601*
12P
?
PWRAMP*
9P
?
A_5V GND A_9V NC NC VCC12V VCC12V GND GND
CN602
9P
?
L602
10uH
?
R600
33(AF)
2W(RS)
L681
10uH
?
C663
104-Z
25V(CHIP)
C664
470uF
16V
R611
100K-J
1/10W(CHIP)
R612
100K-J
1/10W(CHIP)
R613
100K-J
1/10W(CHIP)
R617
100K-J
1/10W(CHIP)
R618
100K-J
1/10W(CHIP)
R619
100K-J
1/10W(CHIP)
C661
104-Z
25V(CHIP)
C662
470uF
16V
C625
104-Z
25V(CHIP)
R614
1K-J
1/10W(CHIP)
R615
1K-J
1/10W(CHIP)
R616
1K-J
1/10W(CHIP)
R620
1K-J
1/10W(CHIP)
R621
1K-J
1/10W(CHIP)
R622
1K-J
1/10W(CHIP)
C632
2.2uF
50V(105)
C633
2.2uF
50V(105)
C634
2.2uF
50V(105)
C635
2.2uF
50V(105)
C636
2.2uF
50V(105)
C637
2.2uF
50V(105)
R606
220-J
1/10W(CHIP)
R605
220-J
1/10W(CHIP)
C622
562
50V(P)
C621
562
50V(P)
IG601
TDA7429S (DIP)
VS CREF R-IN3 R-IN2 R-IN1 MON-R MON-L L-IN1 L-IN2 L-IN3 AUX-L AUX-R L-OUT R-OUT DGND SCL SDA AGND TREBLE -L TREBLE -R MIDDLE -RI
SUPPLY
EFECT CONTROL
MIXIGNG AMP
BASS MICCLE TREBLE
MIXIGNG AMP
PS4 400HZ
PS3 400HZ
PS2 400HZ
PS1 400HZ
LPF 9KHZ
REAR OUT REARIN VAR-L BASSO -L VAR-R BASSO -R BASS -LO BASS -LI BASS -RO BASS -RI MIDDLE -LO MIDDLE -LI MIDDLE -RO
C601
10uF
16V
C602
223
50V(P)
C603
223
50V(P)
C604
472
50V(P)
C605
104
63V(MP)
C606
122
50V(P)
C607
562
50V(P)
C608
684
63V(MP)
C609
2.2uF
50V(NP)
C610
2.2uF
50V(NP)
C611
2.2uF
50V(NP)
C612
104
63V(MP)
C613
104
63V(MP)
C615
104
63V(MP)
C616
104
63V(MP)
C617
223
50V(P)
C618
183
50V(P)
C619
223
50V(P)
C620
183
50V(P)
R601
5.6K-J
1/10W(CHIP)
R602
5.6K-J
1/10W(CHIP)
R603
2.7K-J
1/10W(CHIP)
R604
2.7K-J
1/10W(CHIP)
R690
8.2K-J
1/10W(CHIP)
R691
8.2K-J
1/10W(CHIP)
C688
104-Z
25V(CHIP)
C689
100uF
16V
C665
104-Z
25V(CHIP)
IC602
TA1201-001681 (SOP)
DCAP2 DCAP1 V5D AGND1 RREF OVERLOADB AGND2 V5A VP1 IN1 MUTE/IDLE VP2 IN2 BIASCAP AGND3
+5GEN CPUMP PGND1 VDDA NC OUTP1 VDD1 OUTM1 OUTM2 VDD2 OUTP2 DGND PGND2 FAULT SLEEP
C681
1uF
50V
C666
104-Z
25V(CHIP)
C667
1uF
50V
R661
8.2K-J
1/10W(CHIP)
C682
104-Z
25V(CHIP)
C668
2.2uF
50V(105)
R662
20K-J
1/10W(CHIP)
R663
30K-J
1/10W(CHIP)
C669
2.2uF
50V(105)
R664
20K-J
1/10W(CHIP)
R665
30K-J
1/10W(CHIP)
C690
104-Z
25V(CHIP)
C691
100uF
16V
C670
104-Z
25V(CHIP)
R666
1.1K-J
1/10W(CHIP)
L682
10uH
(CK)
C683
105-K
16V(CHIP)
DZ681
RLZ12B
12.03V
L683
10uH
(CK)
C687
105-K
16V(CHIP)
DZ682
RLZ12B
12.03V
L684
10uH
(CK)
C692
105-K
16V(CHIP)
DZ683
RLZ12B
12.03V
L685
10uH
(CK)
DZ684
RLZ12B
12.03V
C696
105-K
16V(CHIP)
C685
104-Z 25V(CHIP)
C686
101-J
50V(CHIP)
R682
10-J
1/10W(CHIP)
C699
101-J
50V(CHIP)
C695
101-J
50V(CHIP)
C694
104-Z
25V(CHIP)
R683
10-J
1/10W(CHIP)
C698
101-J
50V(CHIP)
CN603
4P
?
SPK-L+OUT
SPK-L-OUT
SPK-R-OUT
SPK-R+OUT
SPKAMP*
4P
?

12-7 POWER SWITCH / SPK TERMINAL

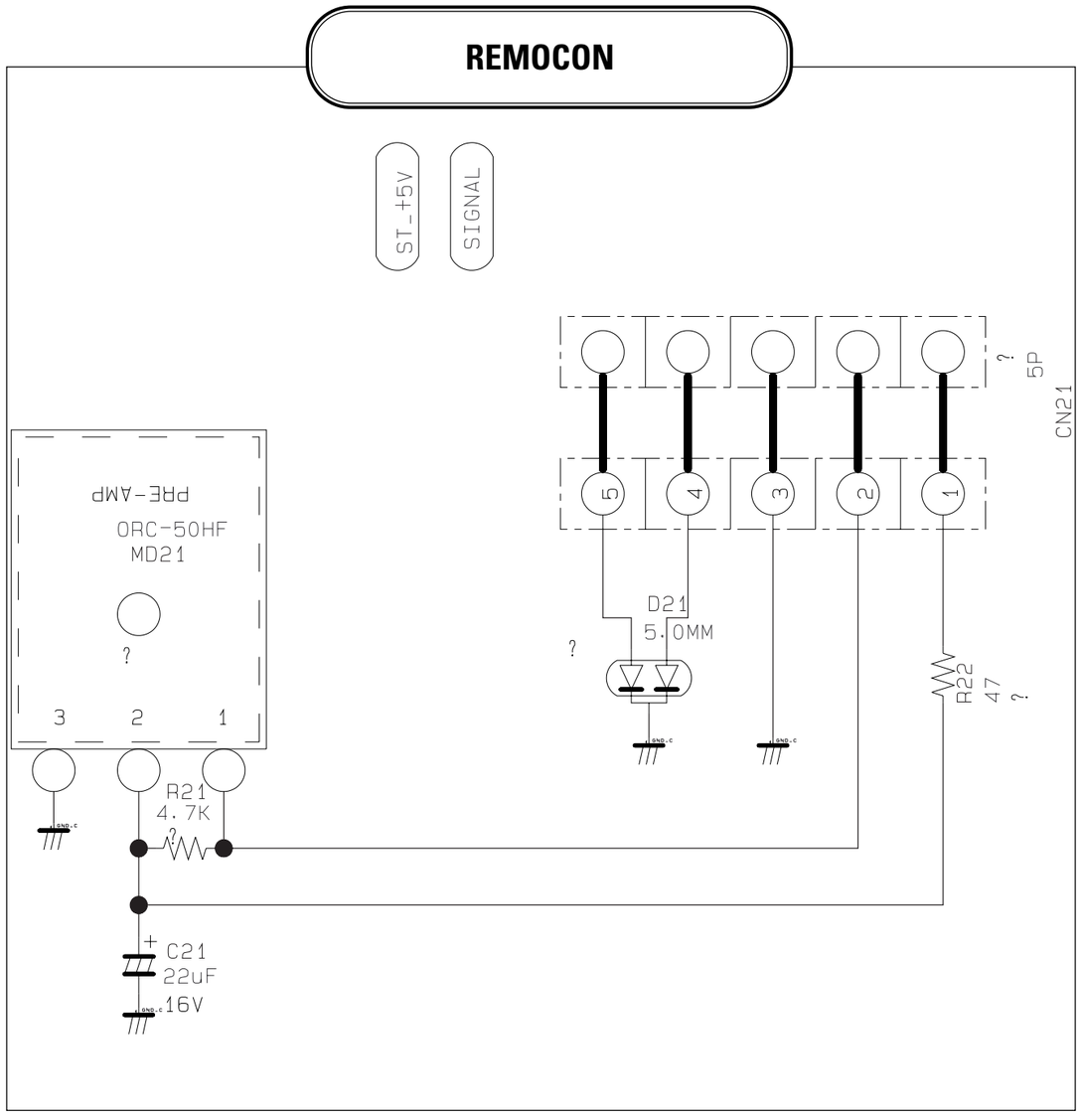
POWER SWITCH

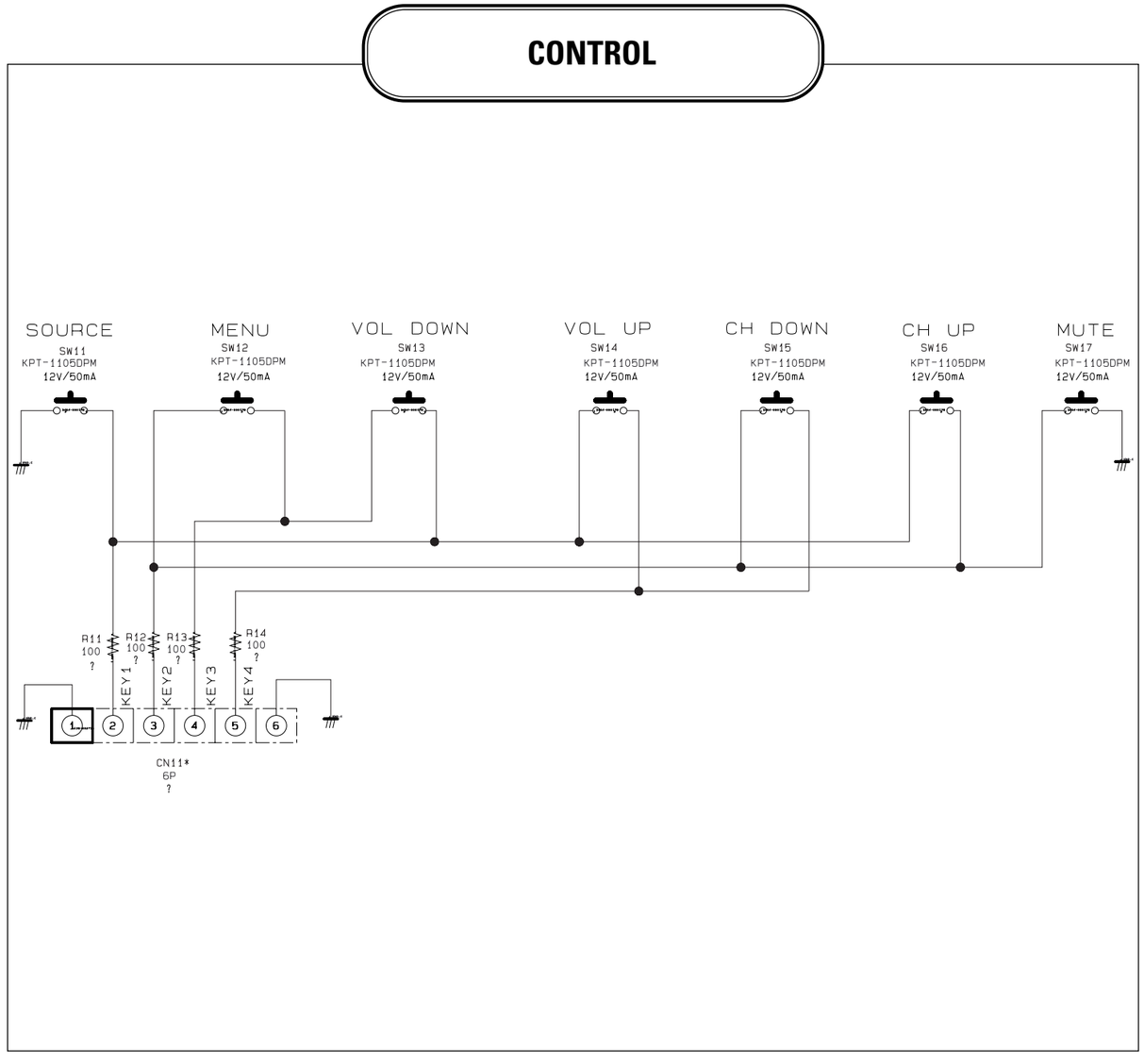


SPK TERMINAL

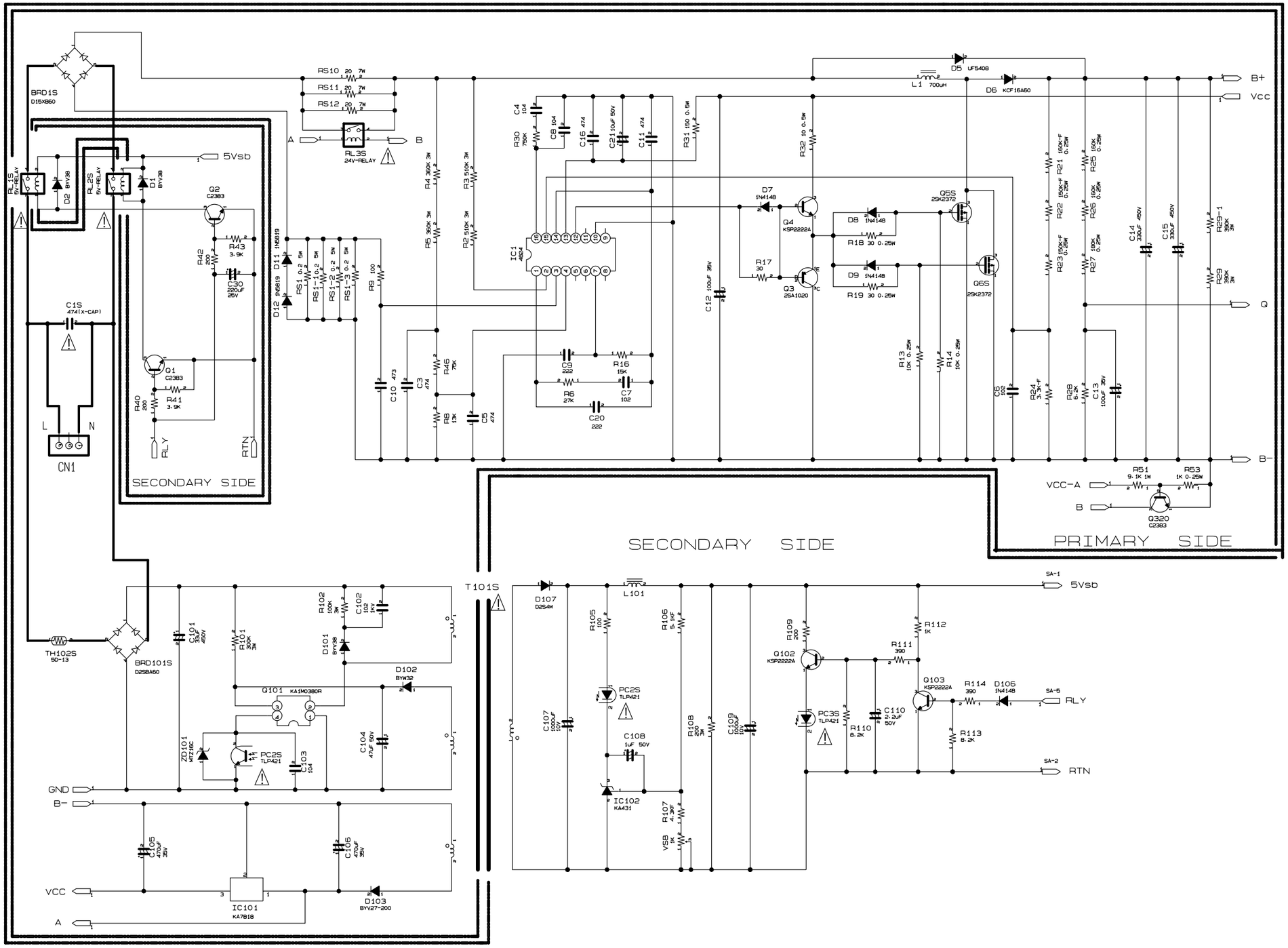


12-9 REMOCON / CONTROL

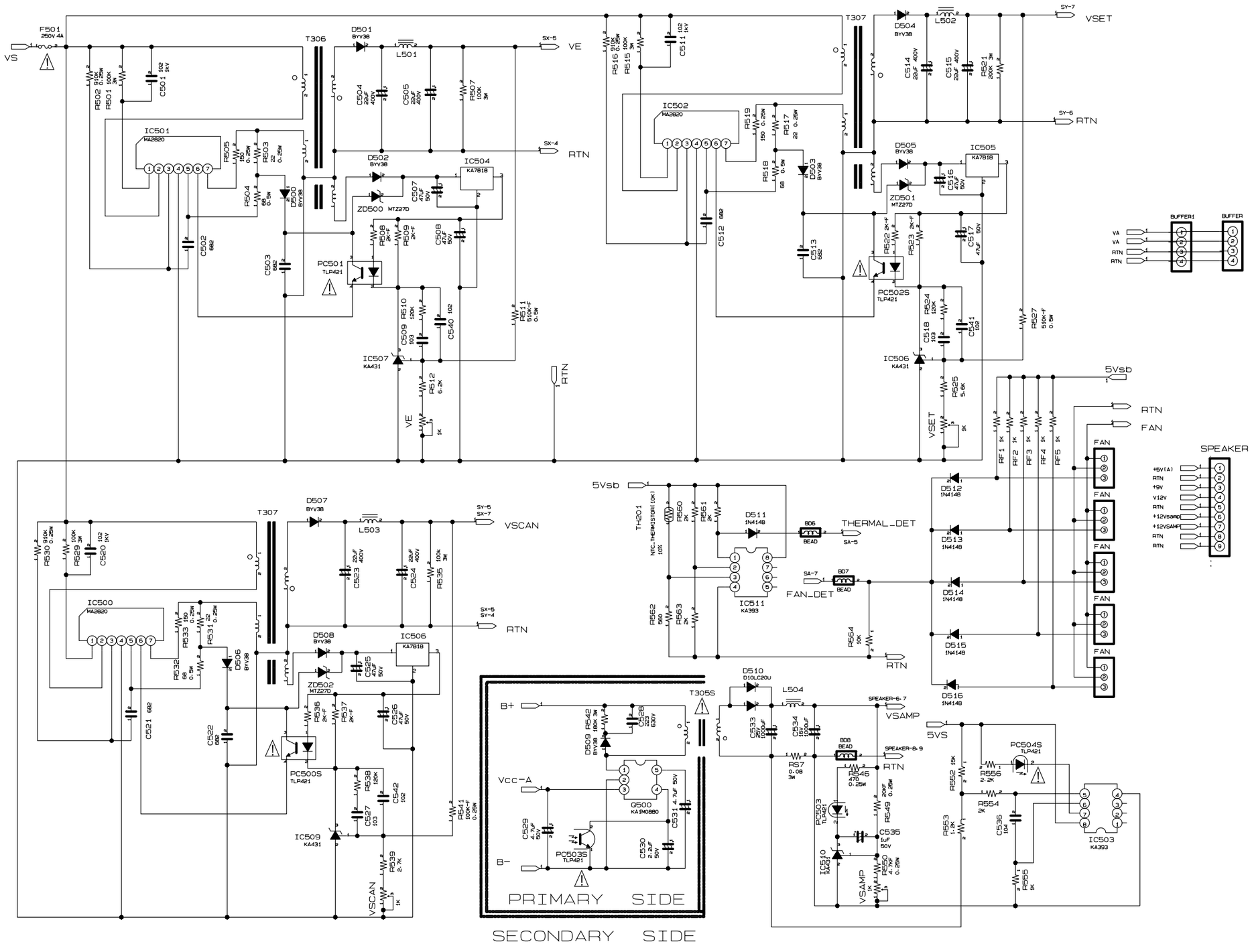




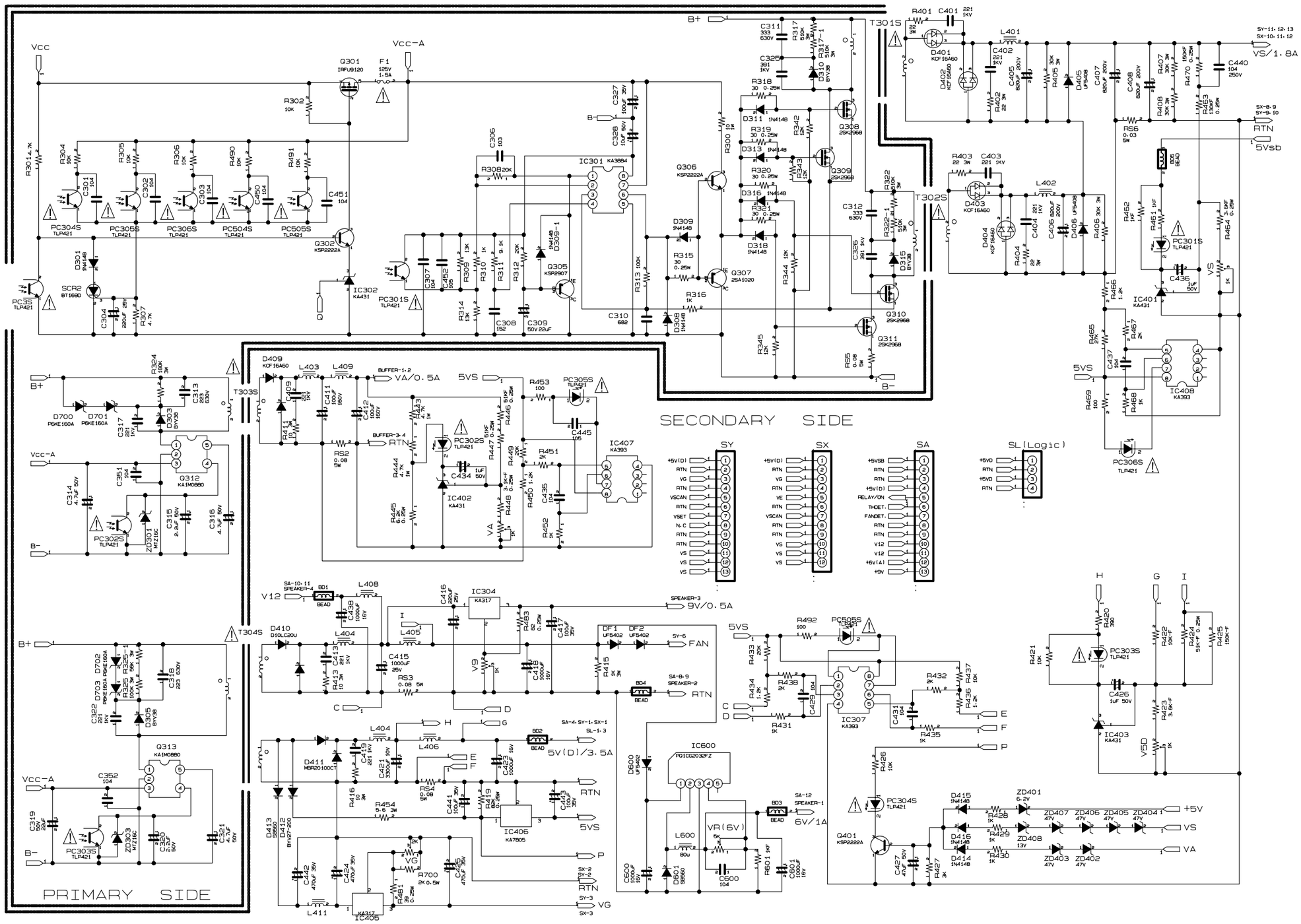
12-9 SMPS-1


BRD1S
D15XB60
RS10 20 7W
RS11 20 7W
RS12 20 7W
RL3S
24V-RELAY
A
B
D5 UF5408
L1 700uH
D6 KCF16A60
B+
Vcc
RL1S
5V-RELAY
RL2S
5V-RELAY
D2 BYV38
D1 BYV38
5Vsb
Q2
C2383
R42 200
R43 3.9K
C30 220uF 25V
C1S 474(X-CAP)
L
N
CN1
Q1
C2383
R40 200
R41 3.9K
RLY
RTN
SECONDARY SIDE
D11 1N4819
D12 1N4819
RS1 0.2 5W
RS1-1 0.2 5W
RS1-2 0.2 5W
RS1-3 0.2 5W
R9 100
R4 360K 3W
R5 360K 3W
R3 510K 3W
R2 510K 3W
R30 750K
C4 104
C8 104
C16 474
C21 10uF 50V
C11 474
R31 150 0.5W
R32 10 0.5W
IC1
4N35
D7 1N4148
Q4 KSP2222A
R17 30
Q3 2SA1020
D8 1N4148
R18 30 0.25W
D9 1N4148
R19 30 0.25W
Q5S 2SK2372
Q6S 2SK2372
C12 100uF 35V
C9 222
R16 15K
R6 27K
C7 102
C20 222
C10 473
C3 474
R46 75K
R8 15K
C5 474
R13 10K 0.25W
R14 10K 0.25W
C5 102
R24 3.3K-F
R28 6.2K
C13 100uF 35V
R21 150K-F 0.25W
R22 150K-F 0.25W
R23 150K-F 0.25W
R25 150K 0.25W
R26 150K 0.25W
R27 150K 0.25W
C14 330uF 450V
C15 330uF 450V
R29-1 390K 3W
R29 390K 3W
Q
B-
VCC-A
R51 9.1K 1W
R53 1K 0.25W
B
Q320
C2383
PRIMARY SIDE
SECONDARY SIDE
T101S
TH102S
50-13
BRD101S
D25BA60
C101 0.15uF 450V
R101 300K 3W
R102 100K 3W
C102 102 1KV
D101 BYV38
D102 BYW32
Q101 KA1M0380R
ZD101 MTZ18C
PC2S TLP421
C103 104
C104 47uF 50V
GND
B-
C105 470uF 35V
C106 470uF 35V
VCC
A
IC101 KA7818
D103 BYV27-200
D107 D25M
L101
R105 100
R106 5.1K
PC2S TLP421
C108 1uF 50V
IC102 KA431
R107 4.3K
VSB 1K
C107 1000uF 16V
R108 200 3W
C109 1000uF 16V
R109 2.2K
Q102 KSP2222A
R112 1K
R111 390
Q103 KSP2222A
R114 390
D106 1N4148
PC3S TLP421
C110 2.2uF 50V
R110 8.2K
R113 8.2K
SA-1
5Vsb
SA-5
RLY
SA-2
RTN

12-10 SMPS-2


F501
250V 4A
VS
T306
T307
D501
BYV38
L501
SX-5
VE
SX-4
RTN
D502
BYV38
IC504
KA7818
ZD500 MTZ27D
IC501
MA2820
PC501
TLP421
IC507
KA431
VE
RTN
IC502
MA2820
D504
BYV38
L502
SY-7
VSET
SY-6
RTN
D505
BYV38
IC505
KA7818
ZD501
MTZ27D
PC502S
TLP421
IC506
KA431
VSET
5Vsb
RTN
FAN
SPEAKER
BUFFER1
BUFFER
VA
VA
RTN
RTN
D507
BYV38
L503
SY-5
SX-7
VSCAN
SX-5
SY-4
RTN
IC500
MA2820
D508
BYV38
IC506
KA7818
ZD502
MTZ27D
PC500S
TLP421
IC509
KA431
VSCAN
PRIMARY SIDE
SECONDARY SIDE
5Vsb
TH201
NTC-THERMISTOR(10K)
D511
1N4148
B06
BEAD
THERMAL_DET
SA-5
SA-7
B07
BEAD
FAN_DET
IC511
KA393
RTN
D512
1N4148
D513
1N4148
D514
1N4148
D515
1N4148
D516
1N4148
FAN
T305S
D510
D10LC20U
L504
SPEAKER-6-7
VSAMP
B+
Vcc-A
B-
Q500
KA1M0880
PC503S
TLP421
B08
BEAD
SPEAKER-8-9
RTN
5VS
PC504S
TLP421
IC503
KA393
VSAMP

12-11 SMPS-3


PRIMARY SIDE
SECONDARY SIDE
Vcc
Vcc-A
B+
B-
T301S
T302S
T303S
T304S
VS/1.8A
RTN
5Vsb
9V/0.5A
FAN
5V(D)/3.5A
6V/1A
+5V
VS
VA
VG
5VS
V12
VD
SY
SX
SA
SL(Logic)
IC301 KA3884
IC302 KA431
IC307 KA393
IC401 KA431
IC402 KA431
IC403 KA431
IC405 KA317
IC406 KA7805
IC407 KA393
IC408 KA393
IC600 PQ1CG2032FZ
Q301 IRFU9120
Q302 KSP2222A
Q305 KSP2907
Q306 KSP2222A
Q307 2SA1020
Q308 2SK2968
Q309 2SK2968
Q310 2SK2968
Q311 2SK2968
Q312 KA1M0880
Q313 KA1M0880
Q401 KSP2222A
F1 125V 1.5A
SCR2 BT169D
PC3S TLP421
PC301S TLP421
PC302S TLP421
PC303S TLP421
PC304S TLP421
PC305S TLP421
PC306S TLP421
PC504S TLP421
PC505S TLP421
D700 P6KE160A
D701 P6KE160A
D702 P6KE160A
D703 P6KE160A
D409 KCF16A60
D410 D10LC20U
D411 MBR20100CT
D413 SB560
D600 UF5402
D601 SB560
ZD301 MTZ16C
ZD303 MTZ16C
ZD401 6.2V
ZD402 47V
ZD403 47V
ZD404 47V
ZD405 47V
ZD406 47V
ZD407 47V
ZD408 13V
L600 80u
VR(6V) 5K
BD1 BEAD
BD2 BEAD
BD3 BEAD
BD4 BEAD
BD5 BEAD
RS1 1.2K 1W
RS2 0.08 1W
RS3 0.08 5W
RS4 0.08 5W
R55 0.03 5W
R55 0.08 5W
R700 2K 0.5W
SY-11, 12, 13
SX-10, 11, 12
SX-8, 9
SY-9, 10
SA-10, 11
SPEAKER-4
SPEAKER-3
SA-8, 9
SPEAKER-2
SA-12
SPEAKER-1
SA-4, SY-1, SX-1
SL-1, 3
SY-6
SY-3
SX-3
BUFFER-1, 2
BUFFER-3, 4
SY
SX
SA
SL(Logic)
+5V(D)
RTN
VG
VSCAN
VSET
N.C
VE
+5VSB
RELAY/ON
THDET.
FANDET.
V12
+6V(A)
+9V