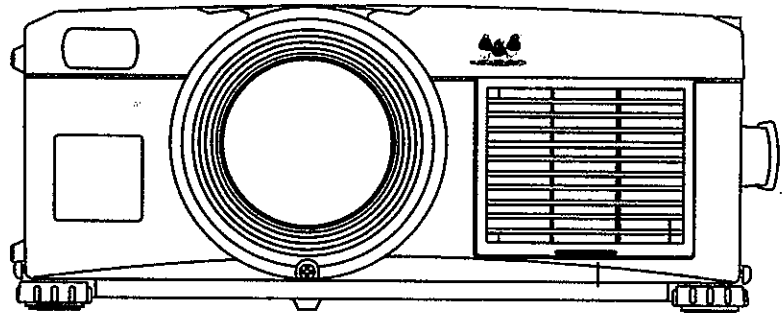


Service Manual

ViewSonic PJ1060

Model No. VPRJ21560-1

***Color XGA Ultra Bright Portable
LCD Projector***



(PJ1060_SM_15 - Rev. 1 – May 2000)

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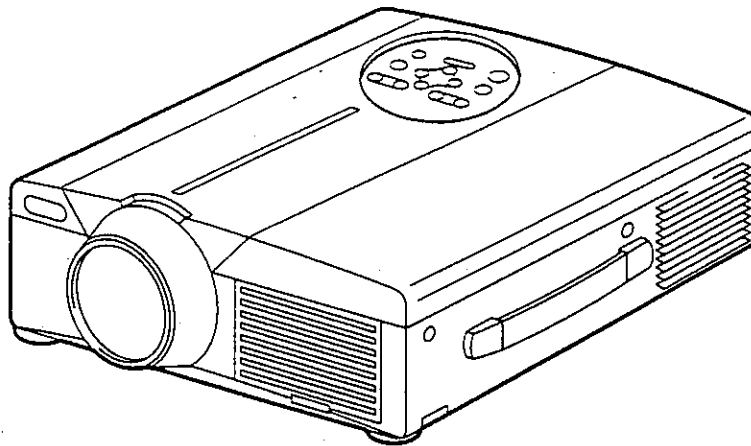
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Revision History

Revision	Date	Description Of Changes	Approval
1.0	2/24/00	Initial Issue	T. Sears

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Caution

Be sure to read this manual before attempting to service this product. This ViewSonic liquid crystal projector is designed to provide protection from fire, electric shock, physical injury, harmful radiation, and materials. It is important to read and follow all cautionary warnings mentioned in this manual.

Service Warning

1. The lamp can be extremely HOT. Be careful to avoid burning your fingers when replacing the lamp.
2. Never touch the lamp bulb. Dropping it or giving it a shock may cause the lamp to burst.
3. High voltage is present in the projector for the lamp circuit, so do not touch the electrical parts of the power unit when the projector is powered on.
4. Do not touch the exhaust fan during operation.
5. The LCD module assembly is easily damaged. When replacing the LCD Module assembly, never handle the attached flexible ribbon cable.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

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1. Features

- ▶ High brightness, High resolution
- ▶ Compact size, light weight for portability
- ▶ RGB output terminal
- ▶ RS232C Communication
- ▶ Mouse emulation
- ▶ Power zoom and power focus functions
- ▶ Complies with VESA DDC1/2B specifications
- ▶ Auto-adjustment function

2. Specifications

Liquid crystal panel	Drive system	TFT active matrix	
	Panel size	1.3 inches	
	Number of pixels	1024 (H) X 768 (V)	
Lamp		190W UHB	
Video input	System	NTSC , 4.43NTSC , PAL , M-PAL , or SECAM (N-PAL : only compulsion mode)	
	Level	Composite 1.0Vp-p (75Ω termination) Y/C Y : 1.0Vp-p (75Ω termination) C : 0.286Vp-p (NTSC burst signal, 75Ω termination) 0.3Vp-p (PAL/SECAM burst signal, 75Ω termination)	
RGB input / output	Video signal	Analog RGB input 0.7Vp-p (75Ω termination)	
	Sync signal	H/V separate TTL level	
Audio	Input	200mVrms, 20kΩ or less	
	Output	0~200mVrms, 1kΩ	
Speaker output		1.2W + 1.2W (stereo)	
Power supply		AC100~120V/3.7A.AC220~240V/1.5A	
Power consumption		320W	
Dimensions		289 (W) x 124 (H) x 345 (D) mm	
Weight		5.9kg (13lbs)	
Temperature range		Operation	: 0~35°C
		Storage	: -20~60°C
Accessories		Remote control	1 RGB cable
		POWER cord	3 Mac adapter
			Video/Audio cable
		BATTERIES LR6	2 Mouse cable

3. Names of each part

● Main unit

ZOOM button

Used to adjust the size of the image.

MUTE button

This button turns the sound on and off. Press once to turn the sound off; then press again to turn the sound back on.

STANDBY / ON button

Press this button to turn the power on and off. When turned off, the projector enters standby status.

LAMP indicator

This lamp lights or blinks when the lamp is off.

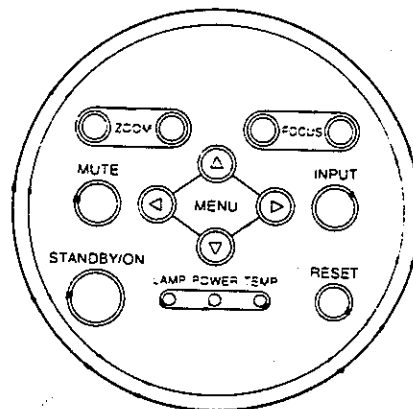
ON indicator

This indicator lights or blinks during standby and during operation.

Remote control photoreceptor

Lens

Lens cap

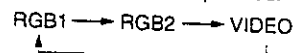


FOCUS button

Used to adjust the focus of the image on the screen.

INPUT button

Press this button to switch the input. The input changes in the following sequence each time this button is pressed.



MENU button

Displays the image menu.

RESET button

Used to reset the initial settings.

TEMP indicator

This indicator lights or blinks when the internal temperature of the projector rises and when the fan malfunctions.

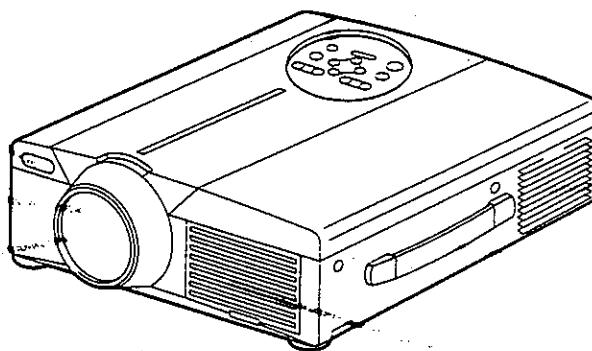
Speaker

Speaker

Cooling fan (exhaust side)

Handle

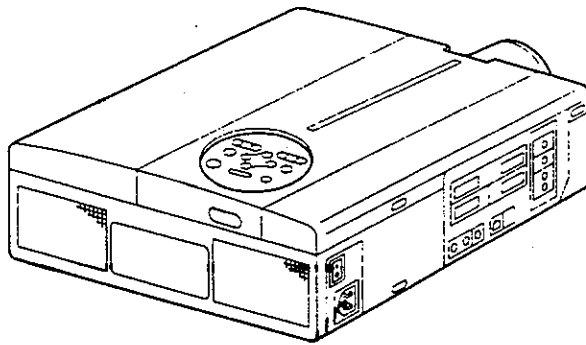
Cooling fan (intake side)



- Use the remote control in front of the remote control photoreceptor at a distance of about 5 m or less and an angle of 30 degrees to the left or right of the center.

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Remote control photoreceptor



Main power switch

Used to turn the power on and off.

O : OFF

| : ON

AC IN jack

Used to connect the accessory power cord.

Caution **Connecting to the AC IN jack**
Make sure the accessory power cord is plugged into the AC IN jack as far as it will go. Incomplete connection can result in fire or electrical shock.

VIDEO IN jack

S-VIDEO IN jack

Mini DIN 4-pin connector

VIDEO IN jack

RCA jack

AUDIO L/R IN jack

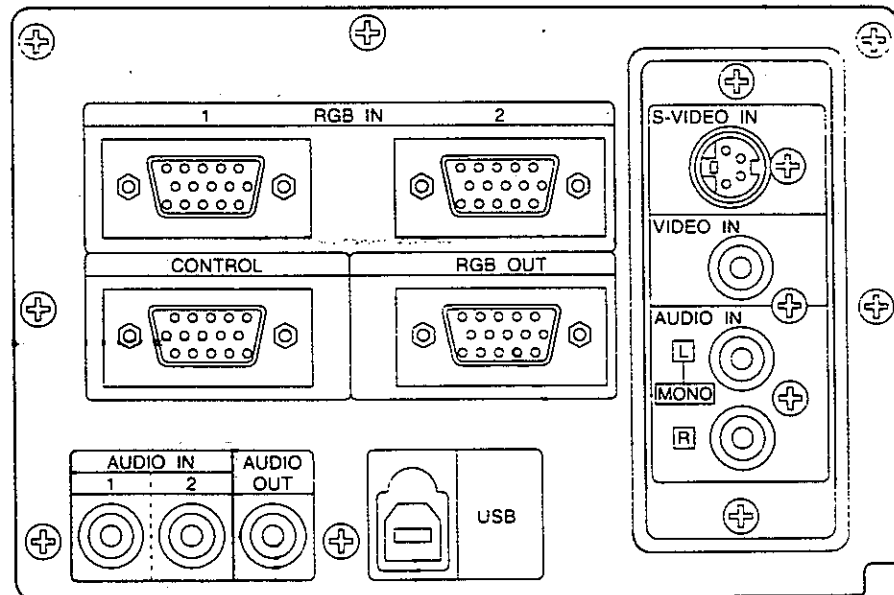
RCA jack

RGB IN jack

D-sub 15-pin shrink (1/2)

CONTROL jack

D-sub 15-pin shrink



AUDIO IN jack

Stereo mini-pin jack

USB jack

The mouse cursor can be controlled by remote control by connecting to a personal computer.

RGB OUT jack

D-sub 15-pin shrink

AUDIO OUT jack (RGB/VIDEO)

Stereo mini-pin jack

● Remote control transmitter

VIDEO, RGB button

Press to switch the input.

STANDBY / ON button

Used to turn the power on and off.

Press for 1 sec. or more to turn the power off (enter standby status).

DISK PAD

(1) Used to select menu items when the menu screen is displayed

(2) When the menu is not displayed, the mouse shift function and left click function are active.

(3) After the POSITION ON button has been pressed, the screen can be moved upward, downward and to the left and right.

MENU button

Used to turn the menu screen display on and off.

MAGNIFY button

Used to magnify the displayed image.

Pin P button

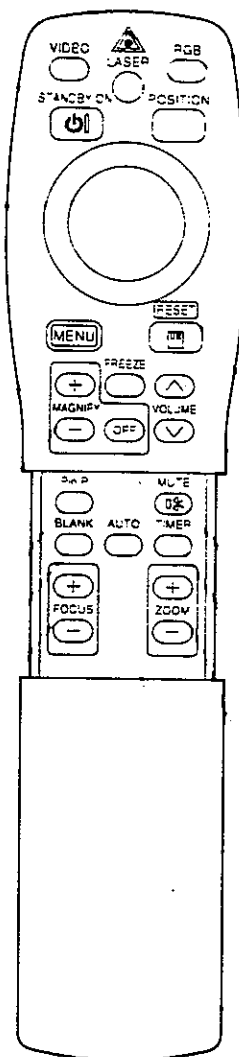
Used to turn Pin P (Picture In Picture: displays small video signal images in the RGB signal) on and off.

BLANK button

Used to turn blanking on and off.

FOCUS button

Used to adjust the focus of the image on the screen.



LASER button

Turns the laser beam on and off.

POSITION button

Pressing the top, bottom, left or right of Disk Pad after pressing this button causes corresponding movement (effective only for RGB signal output).

RESET MOUSE / RIGHT button

Operates as the RESET button when the menu is displayed. Press this button to return to the initial settings.

Used to click the right mouse button when the menu is not displayed.

FREEZE button

Used to turn the freeze (still) image display on and off.

VOLUME button

Adjusts the volume of the sound. Press [+] to increase the volume and [-] to decrease the volume.

MUTE button

Mutes the sound when pressed and restores the sound when pressed again.

TIMER button

Turns the time display of the timer displayed on the menu screen on and off.
The timer is not displayed during blanking.

ZOOM button

Used to adjust the size of the image.

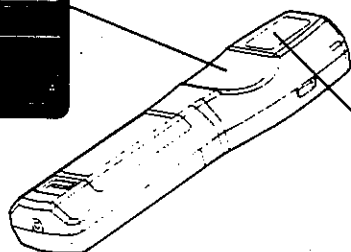
AUTO button

Used to execute auto-adjust.

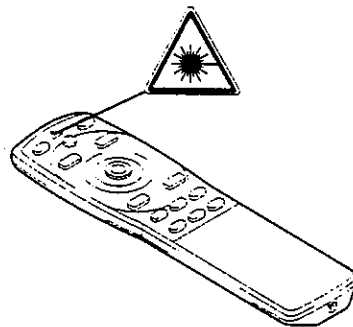


Warning

The laser pointer of the remote control is used in place of a finger or rod.
Never look directly into the laser beam outlet or point the laser beam at other people.
The laser beam can cause vision problems.



AVOID EXPOSURE-
LASER RADIATION IS
EMITTED FROM THIS
APERTURE



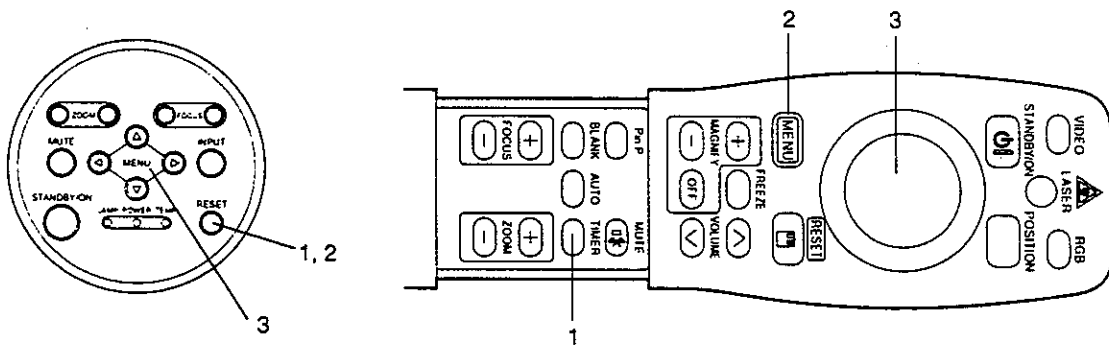
Function for service

Function	Operation
Displayed the operating time of the lamp	Press the RESET button of the projector or the TIMER button of the remote control, for 3 seconds.
Reset the operating time of the lamp	Press the RESET button of the projector or the remote control MENU, for 3 seconds. (During be displayed the operating time of the lamp.)
Displayed the operating time of the projector	Press the MUTE button of the projector or the remote control, for 3 seconds. (During be displayed the operating time of the lamp.)

When replacing the lamp, Reset the operating time of lamp.

Reset the lamp timer :

Please carry out the following operation within 10 minutes from power on, if you replaced the lamp after 2,000 hours.



- 1) Press the RESET button on projector for 3 seconds or remote control TIMER button for 3 seconds and display the total lamp used time.
- 2) Press the RESET button on projector or remote control MENU ON button during displaying the lamp used time.
- 3) Select the "0" on the screen using the MENU (◀) button or DISK PAD.

LAMP 1700 hr

LAMP 1700 → 0 CANCEL

Message table

On-screen display

The following messages are displayed on the screen.

"CHANGE THE LAMP" "AFTER REPLACING LAMP, RESET THE LAMP TIMER"	Lamp has 1,700 hours on it and may need to be changed.
"CHANGE THE LAMP" "AFTER REPLACING LAMP, RESET THE LAMP TIMER" "THE POWER WILL TURN OFF AFTER 20 Hr."	Lamp has 1,979 hours on it. See P.6 "Reset the lamp timer"
Blinking of "CHANGE THE LAMP" "AFTER REPLACING LAMP, RESET THE LAMP TIMER" "THE POWER WILL TURN OFF AFTER 0 Hr."	When the lamp has 2,000 hours or more on it, the message will blink, and the power will turns off after 10 minutes.
"NO INPUT IS DETECTED"	Signal is not input.
"SYNC IS OUT OF RANGE"	The horizontal or vertical frequency of the input signal exceeds the range of the projector, it cannot be displayed.

Indicator display

The ON indicator, LAMP indicator and TEMP indicator will light or blink in the following cases.

ON indicator	LAMP indicator	TEMP indicator	Meaning	Remedy
Lights orange	Goes off	Goes off	Standby mode	_____
Blinks green	Goes off	Goes off	During warming up	_____
Lights green	Goes off	Goes off	During operation	_____
Blinks orange	Goes off	Goes off	During cooling down	_____
Lights red	Lights red	Goes off	Lamp cannot light	Cool projector by power off for 60 minutes. If the indicator is still lit, lamp may be defective. Replace.
Lights red	Blinks red	Goes off	Lamp is not inserted	Securely insert the lamp.
Lights red	Goes off	Blinks red	Cooling fan accidented	Replace fan.
Blinks red	Blinks red	Goes off	Accumulated lamp operation time has exceeded 2,000 hours	Replace lamp and reset the accumulated lamp operation time.

When inside temperature becomes high, to protect the projector, the lamp may be turned off and the lamp indicator lights red, or the projector will be shut down and the all indicator display goes off.

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4. Adjustment (Timing should be set to 1024 X 768 X 60Hz when performing the following adjustments)

4 - 1 Before adjusting

1. Before starting adjustment, warm up the projector for about 10 min.
2. Set Zoom Wide to Max. and project an image a distance of 40 inches.
3. Normalizing the video adjustment.
(Press the MENU button of the remote controller to display the Video menu, then press the RESET button.)

4 - 2 S/H timing adjustment

Adjustment preparations

1. Use the XGA VESA (60) timing signal to input a 0.7Vp-p cross hatch signal.
2. Use H.PHASE in the Video menu to adjust until the cross hatch vertical stripes are most clearly visible.
3. Reset S/H.
Position the cursor on S/H in the Adjustment Menu and then press the RESET key.

4 - 3 SUB POSITION adjustment

Adjustment preparations

1. Make this adjustment after completing the adjustment in "4-2 S/H Timing adjustment".
2. Use the XGA VESA (60) timing signal to input a 0.7Vp-p cross hatch signal.
3. Press the AUTO button of the remote controller.

Required adjustments after a part is replaced

Adjustment at replacement			
Adjustment	Replaced part		
	Prism block	Drive PWB	Main PWB
S/H timing	x	Need	Need
Sub position	x	Need	Need
Ghost	Need	Need	Need
Flicker	Need	Need	Need
NRSH	Need	Need	Need
White balance	Need	Need	Need
Color uniformity	Need	Need	Need

4. Perform all adjustments from the Adjustment menu. Perform the following operations to display the Adjustment menu.

- a. Press the MENU button of the remote controller (the Video menu will appear).
- b. Next, press the RESET button for 5 sec. or more (the Adjustment menu will appear).

Adjustment procedure

1. Use S/H - S/H Timing in the Adjustment menu to adjust until the cross hatch vertical stripes are most clearly visible.
2. Next, check whether or not vertical jitter is within the range of $-16 < A < +16$ at the value resulting from the adjustment in item 1.
3. If there is jitter, change S/H - S/H POL in the Adjustment menu (change NEGA to POSI and POSI to NEGA).
4. Finally, return S/H - S/H TIMING in the Adjustment menu to the value in item 1.

Adjustment procedure

1. Use the XGA VESA (60) timing signal to input a 0.7Vp-p frame signal.
2. Use S/H - SUB POSITION in the Adjustment menu to adjust so that the left and right frames are displayed.

Caution: The frame is displayed in three steps at this stage, but adjust to the center step; otherwise, colors may appear in the vertical stripes in some cases.

4 - 4 Ghost adjustment

Adjustment preparations

1. Make this adjustment after completing the adjustment in "4-3 SUB POSITION adjustment".
2. Use the **XGA** VESA (60) timing signal to input a 0.7Vp-p cross hatch signal.
3. Use H.PHASE in the Video menu to adjust until the cross hatch vertical stripes are most clearly visible.

Adjustment procedure

1. Display the R primary color signal and then use S/H - GHOST-R: in the Adjustment menu to adjust so that R color ghost is at a minimum.
2. (If ghosts appear on the right side of the vertical stripes because the adjustment value is too large, return two steps.)
3. In the same way, display the G primary color signal and then use S/H - GHOST-G: in the Adjustment menu to adjust so that G color ghost is at a minimum.
4. In the same way, display the B primary color signal and then use S/H - GHOST B: in the Adjustment menu to adjust so that B color ghost is at a minimum.

4 - 5 Flicker adjustment (V.COM adjustment)

Adjustment procedure

1. Make this adjustment after completing the adjustment in 4-4 Ghost adjustment.
2. Use the **XGA** VESA (60) timing signal to input a 0.35Vp-p R primary color signal for every other line.
3. Use DAC-P - V.COM - R: in the Adjustment menu to adjust until flicker is minimum.
4. Use the **XGA** VESA (60) timing signal to input a 0.35Vp-p G primary color signal for every other line.

5. Use DAC-P - V.COM - G: in the Adjustment menu to adjust until flicker is minimum.
6. Use the **XGA** VESA (60) timing signal to input a 0.35Vp-p B primary color signal for every other line.
7. Use DAC-P - V.COM - B: in the Adjustment menu to adjust until flicker is minimum.

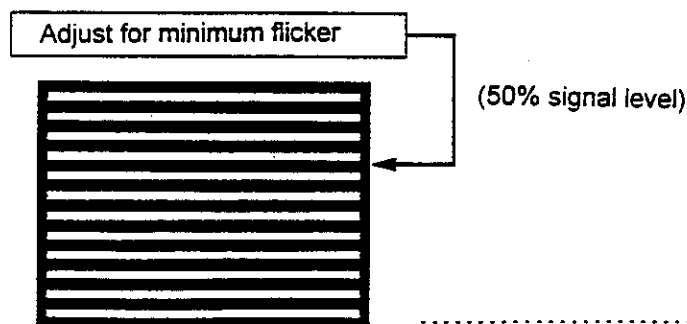
4 - 6 NRSH adjustment (vertical streak adjustment)

Adjustment procedure

1. Make this adjustment after completing the adjustment in 4-5 Flicker adjustment.
2. Use the **XGA** VESA (60) timing signal to input a 0.7Vp-p 16-step gray scale signal.
3. Use DAC-P - NRSH in the Adjustment menu to adjust until vertical streaks are minimum every 6 dots or every 12 dots.

(This adjustment will change the flicker level so always adjust the flicker after making this adjustment.)

4. Then vertical streaks is still displayed, use S/H-S/H Timing in the Adjustment menu to adjust until vertical streaks are minimum.



4 - 7 White balance adjustment

Adjustment procedure

1. Make this adjustment after completing the adjustment in 4-6 NRSH adjustment.
2. Use the XGA VESA (60) timing signal to input a 0.7Vp-p 16-step G primary color signal.
3. Use DAC-P - SUB BRIGHT - G: and DAC-P - SUB CONTRAST - G: in the Adjustment menu to adjust to the optimum 16-step shading characteristics (visually).

Adjustment hints:

Lock DAC-P - SUB CONTRAST - G: at 30. Also lock DAC-P - BLACK2-GAIN - G: at 32.

Use SUB BRIGHT - G: to adjust until the last two of the 16 steps on the bright side can no longer be distinguished and then return slightly.

After adjusting, if contrast is thought to be insufficient, use DAC-P - SUB CONTRAST - G: to slightly increase the contrast and then readjust.

To lower only the black level, adjust BLACK2-GAIN - G:.

4. Switch to a 0.21Vp-p white signal.
5. Use DAC-P - SUB BRIGHT - R: and DAC-P - SUB BRIGHT - B: in the Adjustment menu to adjust until the color coordinates in the center of the screen are as follows.
 $X = 0.280 \pm 0.005$, $Y = 0.340 \pm 0.01$ (low brightness white balance).

4 - 8 Color uniformity adjustment

Adjustment preparations

1. Make this adjustment after completing the adjustment in 4-7 "White balance adjustment".
2. Reset color uniformity correction.
 Position the cursor on C.UNIF in the Adjustment Menu and then press the RESET key for each color.
3. This adjustment is used to assure color uniformity over the entire screen by adjusting in sequence the white balance of each of the 33 points shown in the diagram below, starting with the smallest signal.
4. Do not adjust adjustment point No. 1 because, as with DAC-P - SUB BRIGHT in the Adjustment Menu, the brightness of the entire screen will be changed.
5. Basically, only adjustment points No. 2 and No. 3 can be adjusted for the color green (G).

6. Switch to a 0.52Vp-p white signal.
7. Use DAC-P - SUB BRIGHT - R: and DAC-P - SUB CONTRAST - B: in the Adjustment menu to adjust until the color coordinates in the center of the screen are as follows.

$X = 0.280 \pm 0.005$, $Y = 0.345 \pm 0.01$ (low brightness white balance).

8. Repeat the operations described in items (4) - (7) and adjust the low brightness and medium brightness white balance.

9. Next, switch to a 0.07Vp-p white signal.

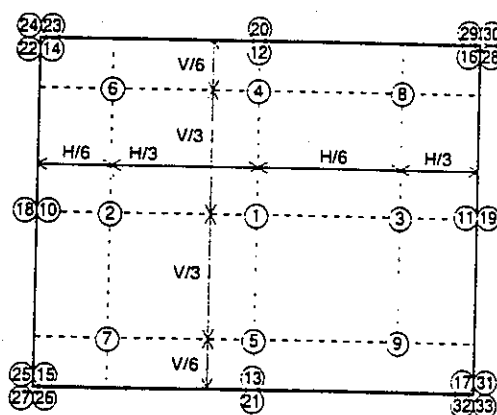
10. Use DAC-P - BLACK2 GAIN - R: and DAC-P - BLACK2 GAIN - B: in the Adjustment menu to adjust until the color coordinates in the center of the screen are as follows.

$X = 0.270 \pm 0.03$, $Y = 0.320 \pm 0.03$ (black white balance).

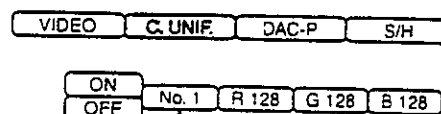
Note:

Use the Minolta CL-100, Color Differential Meter for measurements and adjustments.

Representative adjustment points



Adjustment Menu



Representative adjustment points No.

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Adjustment procedure

1. Use the XGA VESA (60) timing signal to input a 0.35Vp-p G primary color signal.
2. Measure the illumination at adjustment points No. 2 and No. 3.

The values should be:

No. 2 = Y2 [lux]

No. 3 = Y3 [lux]

3. Determine which of the No. 2 or No. 3 adjustment point has the higher illumination and then adjust it to match the one with the lower illumination.

For example, if $Y2 > Y3$, adjust No. 2 G: to set the No. 2 illumination as follows.

$$Y2 = Y3 \pm 10 \text{ [lx]}$$

This completes the G color adjustment.

4. Next, use the SVGA VESA (60) timing signal to input a 0.35Vp-p G white signal.
5. Measure and make a note of the color coordinates of adjustment point No. 1.

The values should be: $x = x1$, $y = y1$

Note:

When using the CL-100 (Color Differential Meter), it is convenient to use the Delta mode. After measuring the color coordinates of adjustment point No. 1, hold down the [F] button on the front and set the slide switch on the side to [Δ] Delta. After that, the differences from adjustment point No. 1 will be displayed as the measurement values.

6. Next, measure the color coordinates of adjustment point No. 2, and then adjust No. 2 A: and B: until the color coordinates are as follows.

$$x = x1 \pm 0.01, y = y1 \pm 0.01 \text{ (ANSI point color uniformity)}$$

7. Measure and adjust the color coordinates of adjustment points No. 3 - No. 9 in sequence in the same way, starting with the smallest signal.

8. Next, measure the color coordinates of adjustment point No. 10, and then adjust No. 10 A: and B: until the color coordinates are as follows.

$$x = x1 \pm 0.01, y = y1 \pm 0.02 \text{ (corner color uniformity)}$$

9. Measure and adjust the color coordinates of adjustment points No. 11 - No. 17 in sequence in the same way, starting with the smallest signal.

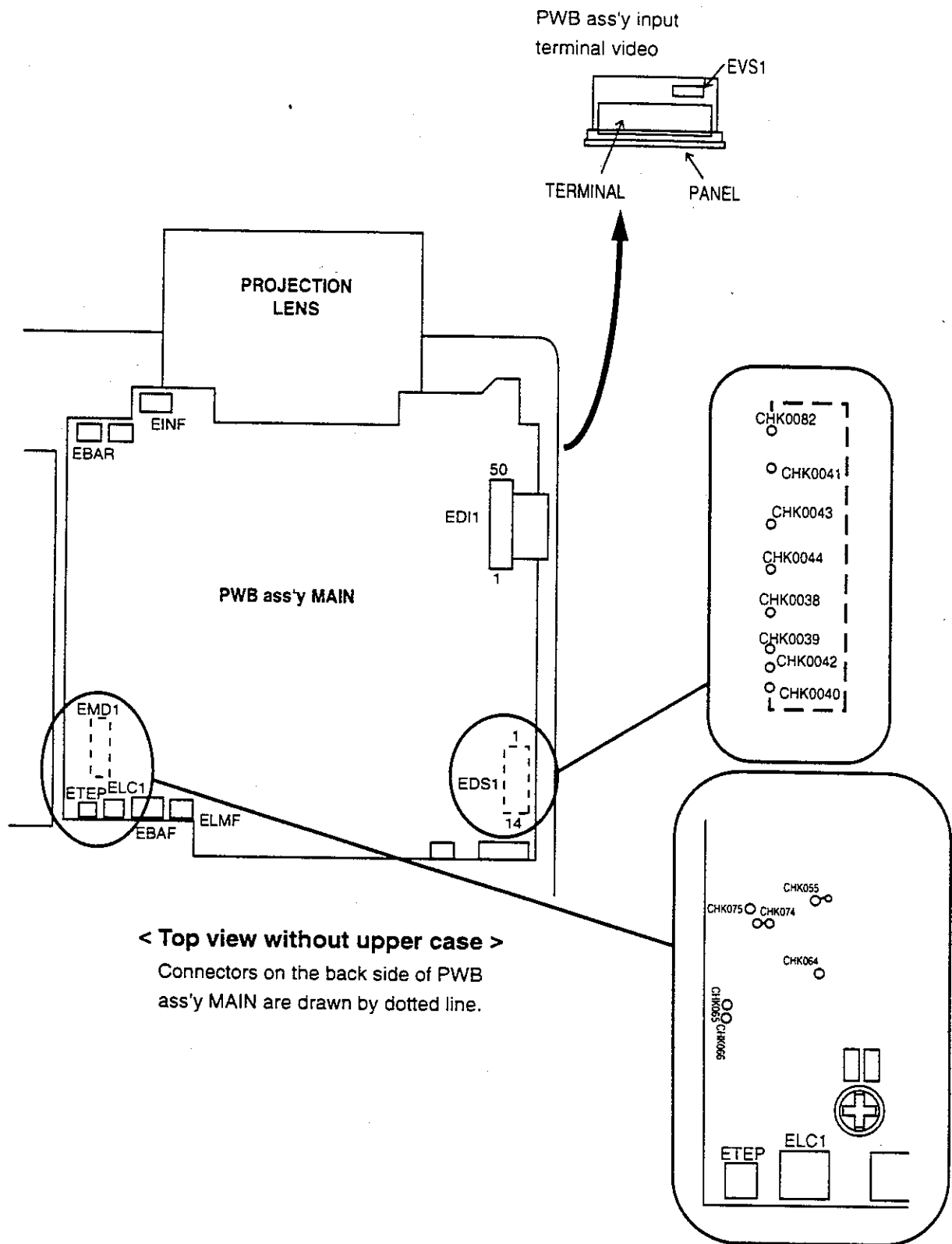
10. This completes the normal color uniformity adjustment. Adjust visually if local lack of color uniformity still remains around the periphery of the screen.

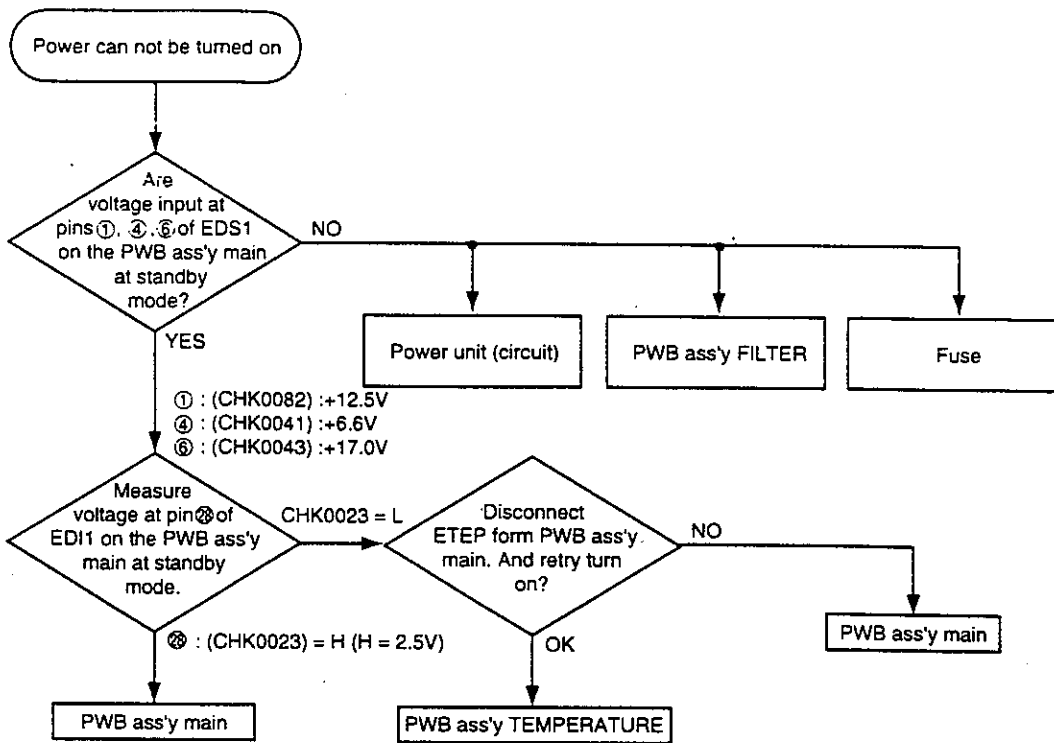
11. If there is local lack of color uniformity around the periphery of the screen, adjust the color coordinates of adjustment point No. 18 - No. 21 outside the worst side of the screen.

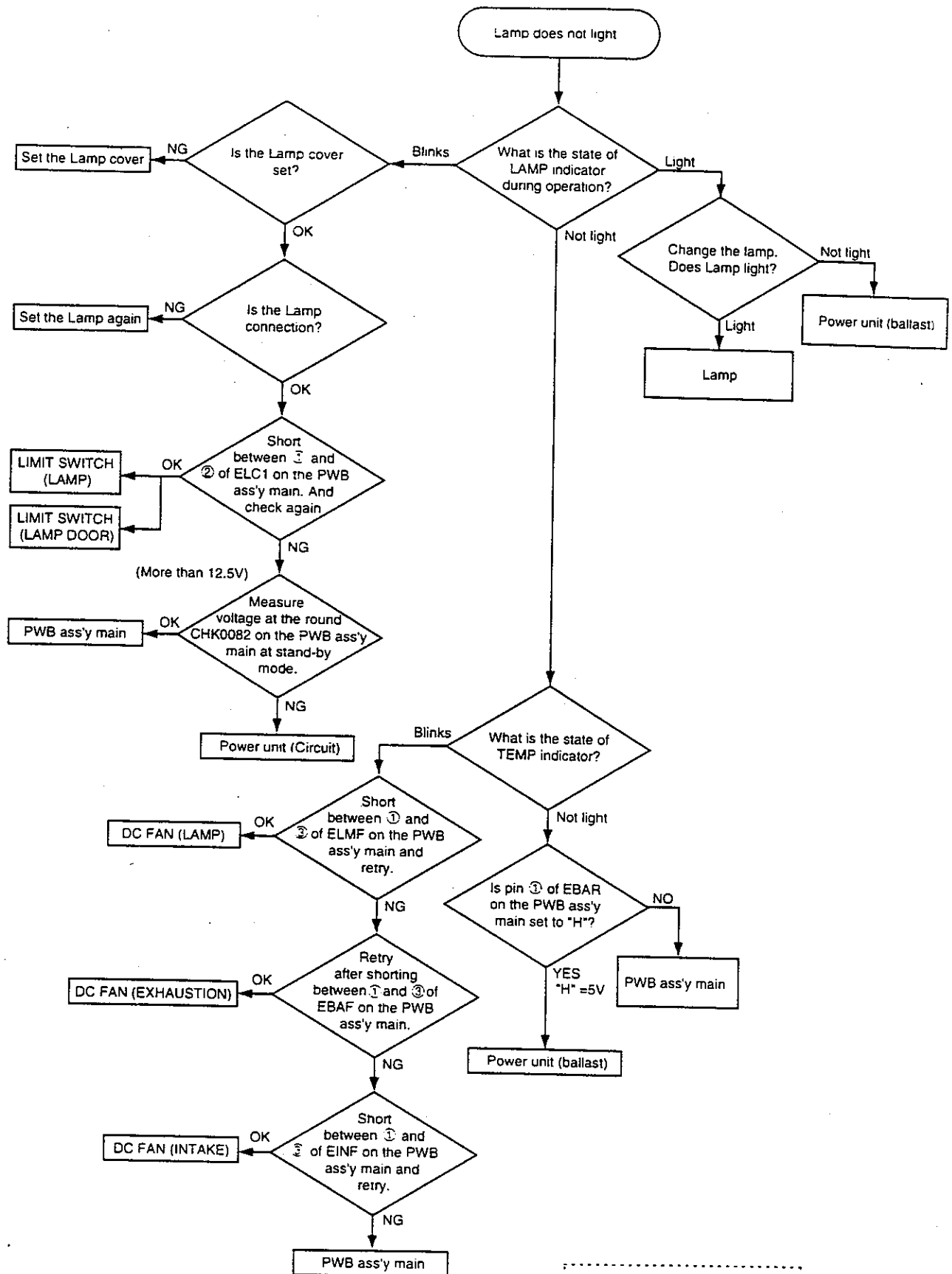
12. If there is local lack of color uniformity in the corners of the screen, adjust the color coordinates of adjustment point No. 22 - No. 33 outside the worst corner of the screen.

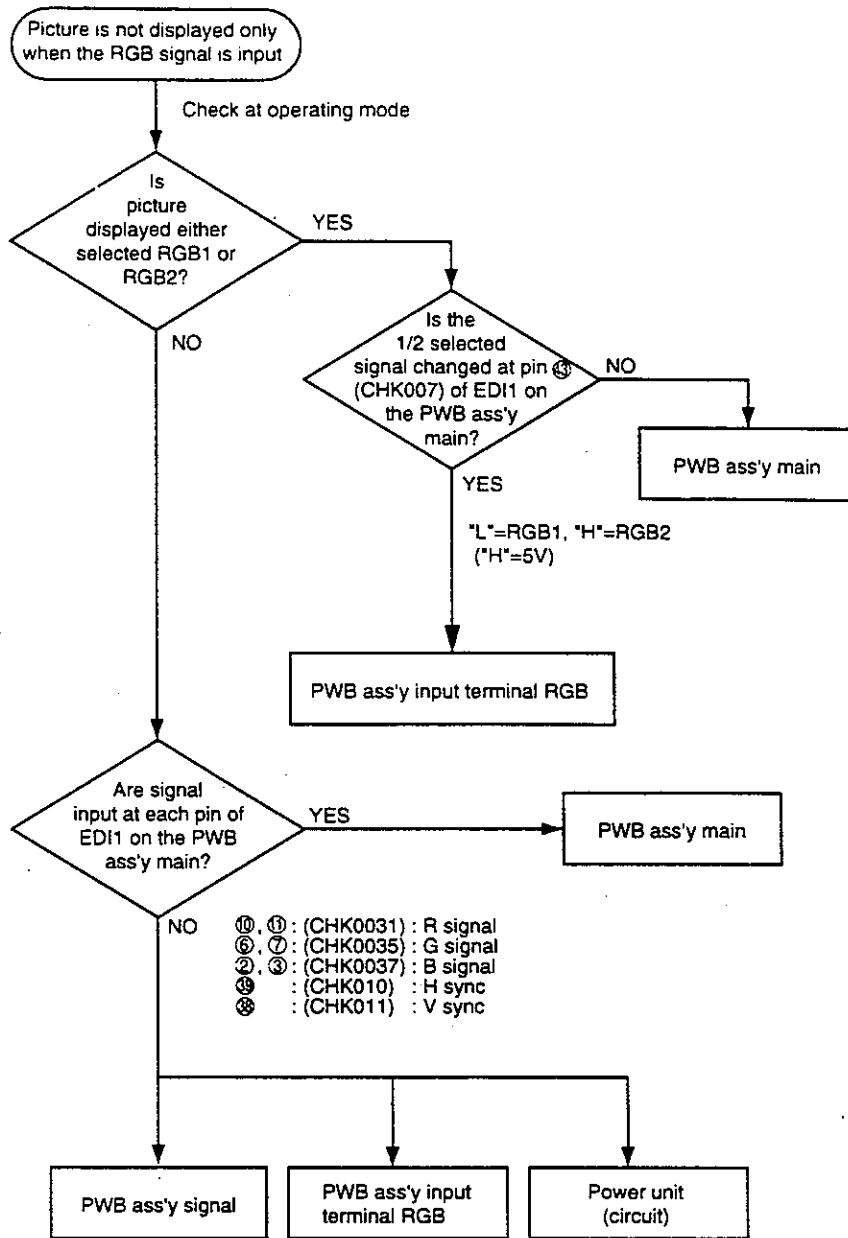
5. Troubleshooting

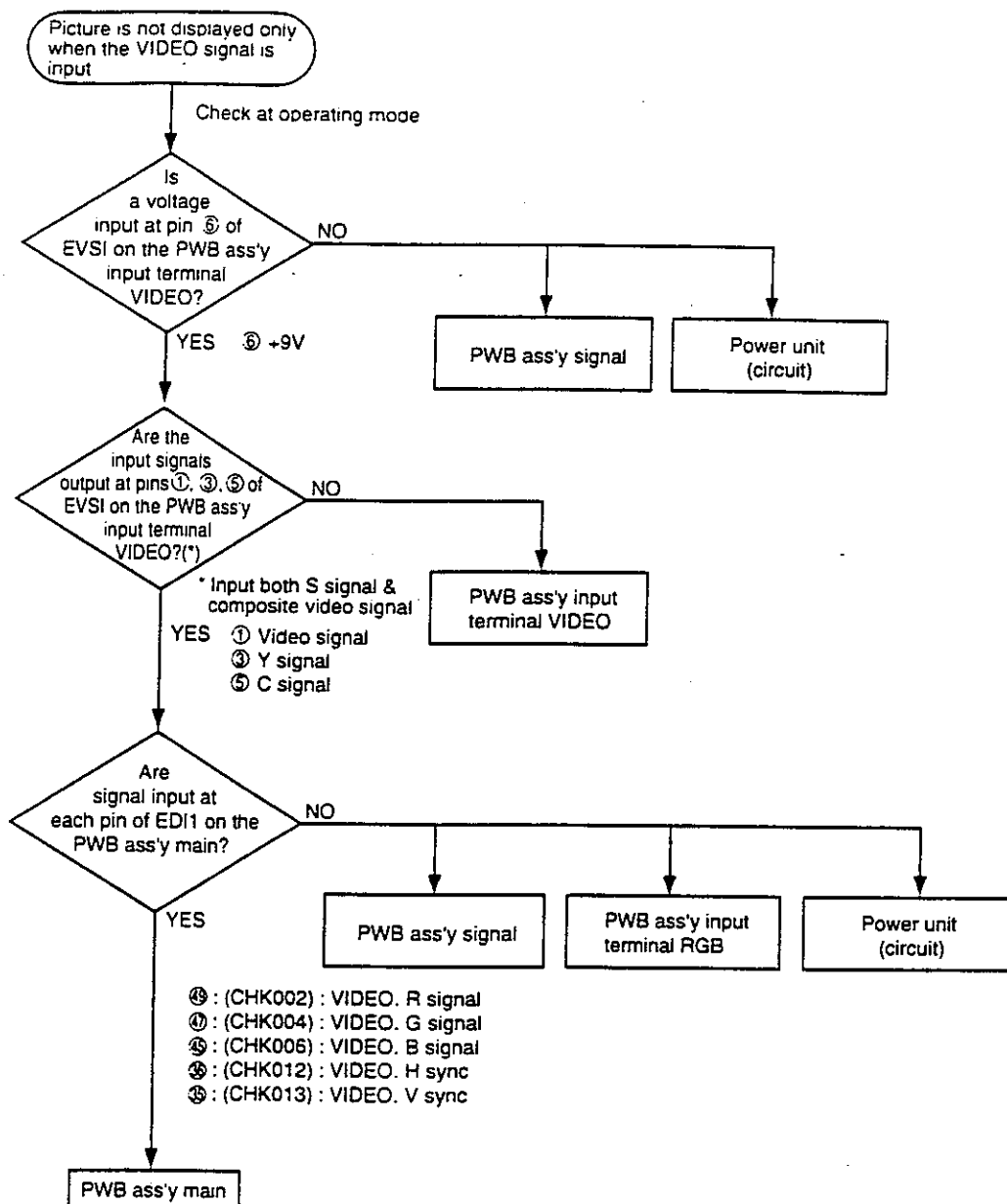
Check points at trouble shooting

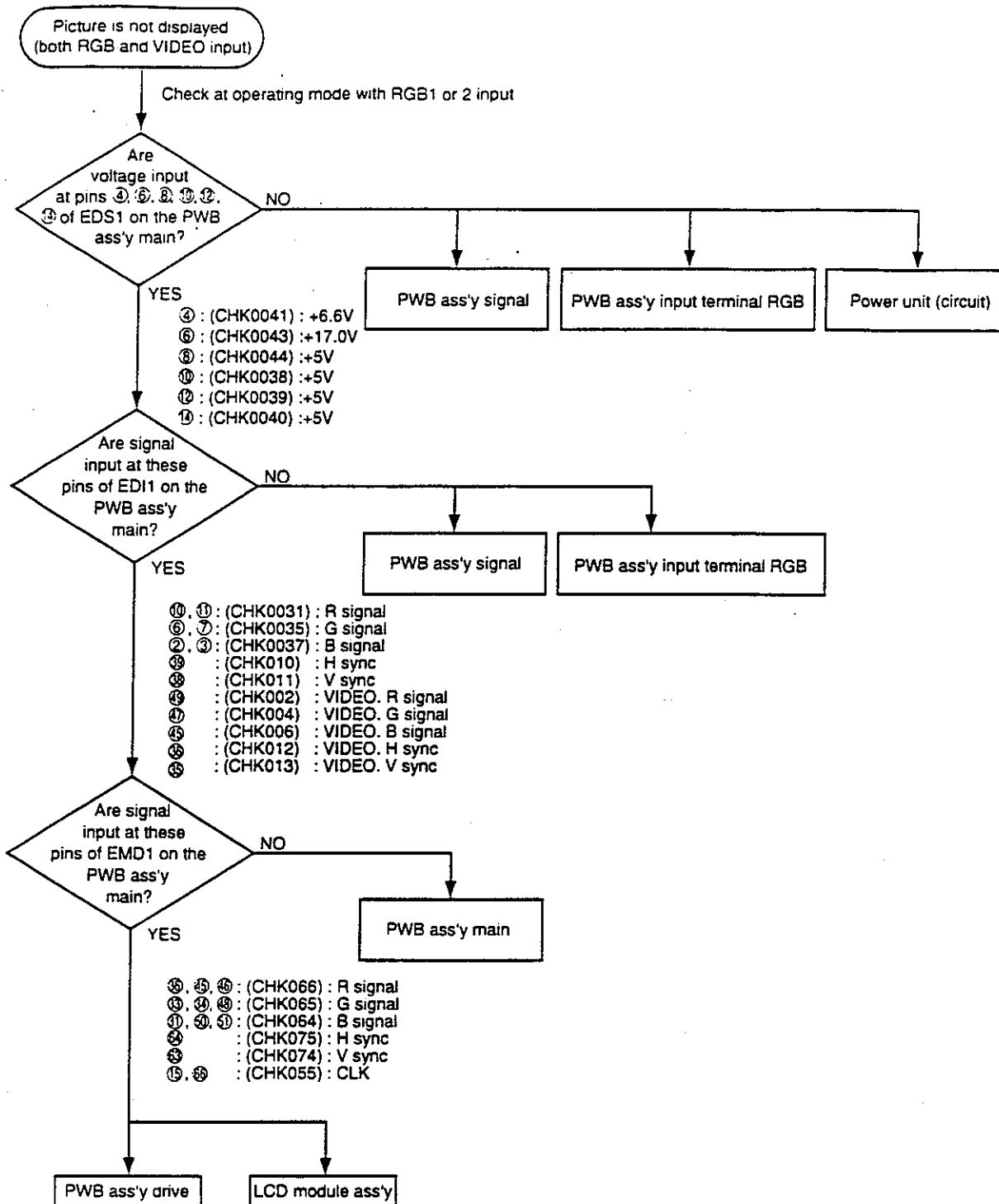


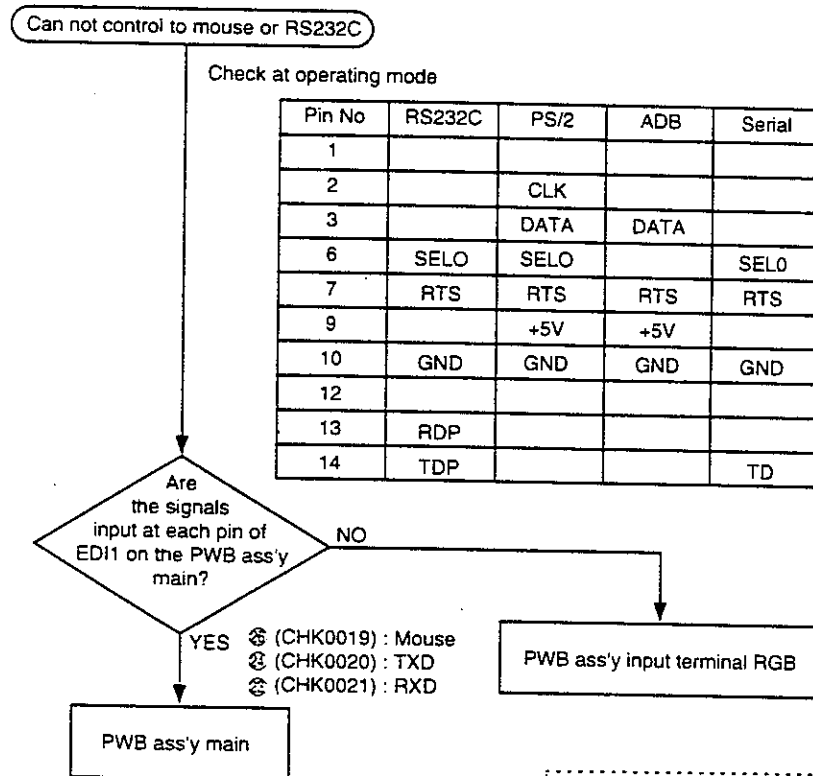
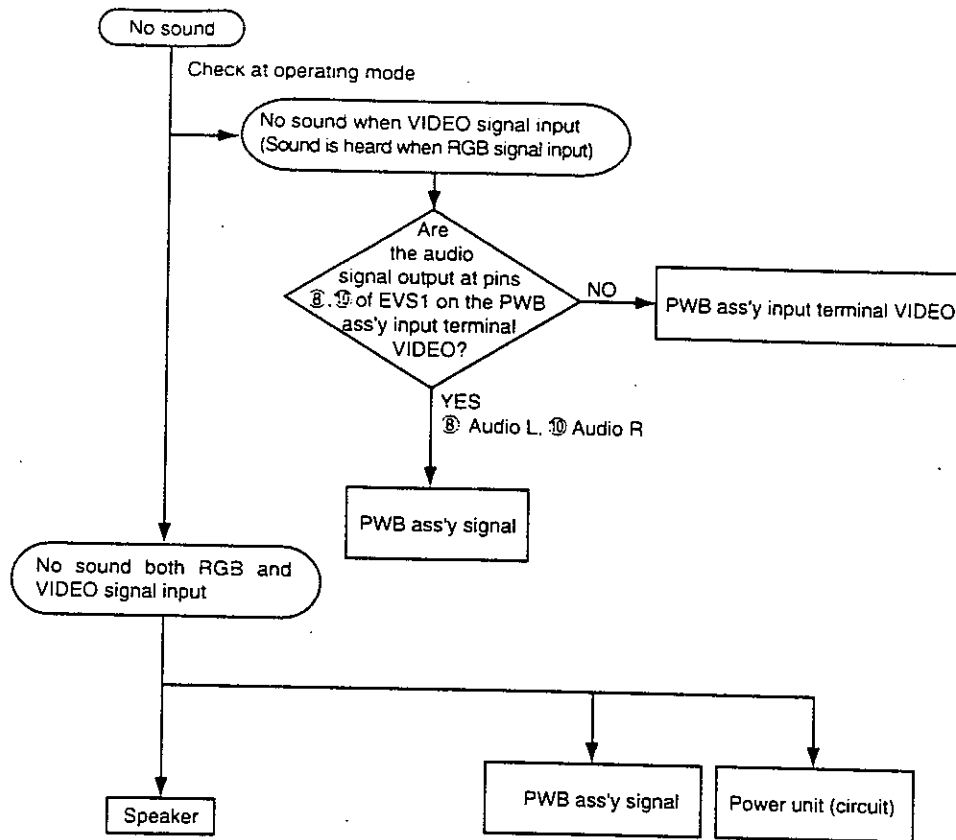




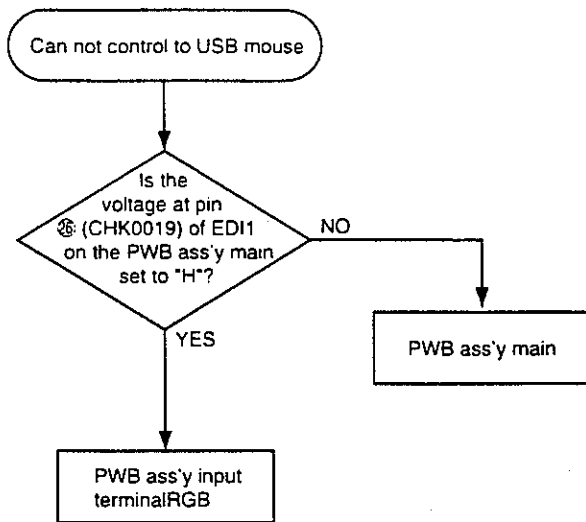








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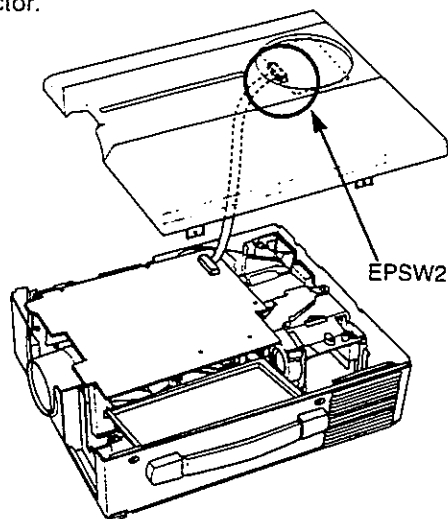


6. Service points

6 - 1 POINT

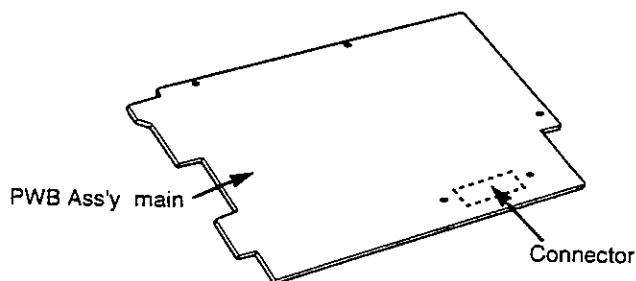
• Cautions when removing the Upper case

In the Upper case, an operation PWB is installed. When removing, lift carefully without using excessive force to prevent damaging the ESW2 connector.



• Cautions when removing the main PWB

When removing the main PWB, there is danger of damaging the connector connecting the drive PWB. Lift up the part near the main PWB connector and disconnect the connector before removing the main PWB.

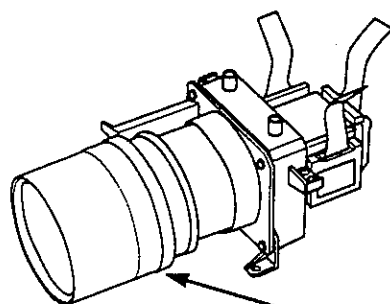


• Before Replacing the LCD / Lens Prism

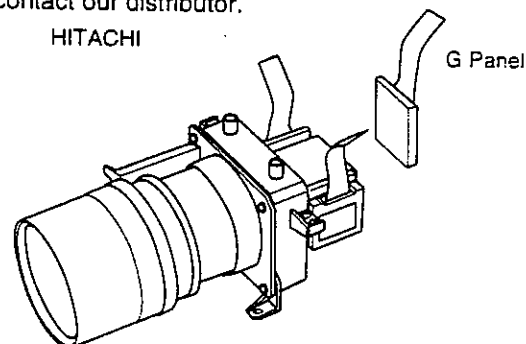
You should not replace separately the parts of the liquid crystal LCD / Lens Prism because it works properly only when used together. Therefore, regarding these parts, you can either replace part, LCD / Lens Prism Ass'y, or send the whole unit LCD / Lens Prism Ass'y back to **ViewSonic**, we will replace the malfunctioning part, recondition the device and send it back to you. In that case please contact our distributor.

DISTRIBUTOR

HITACHI



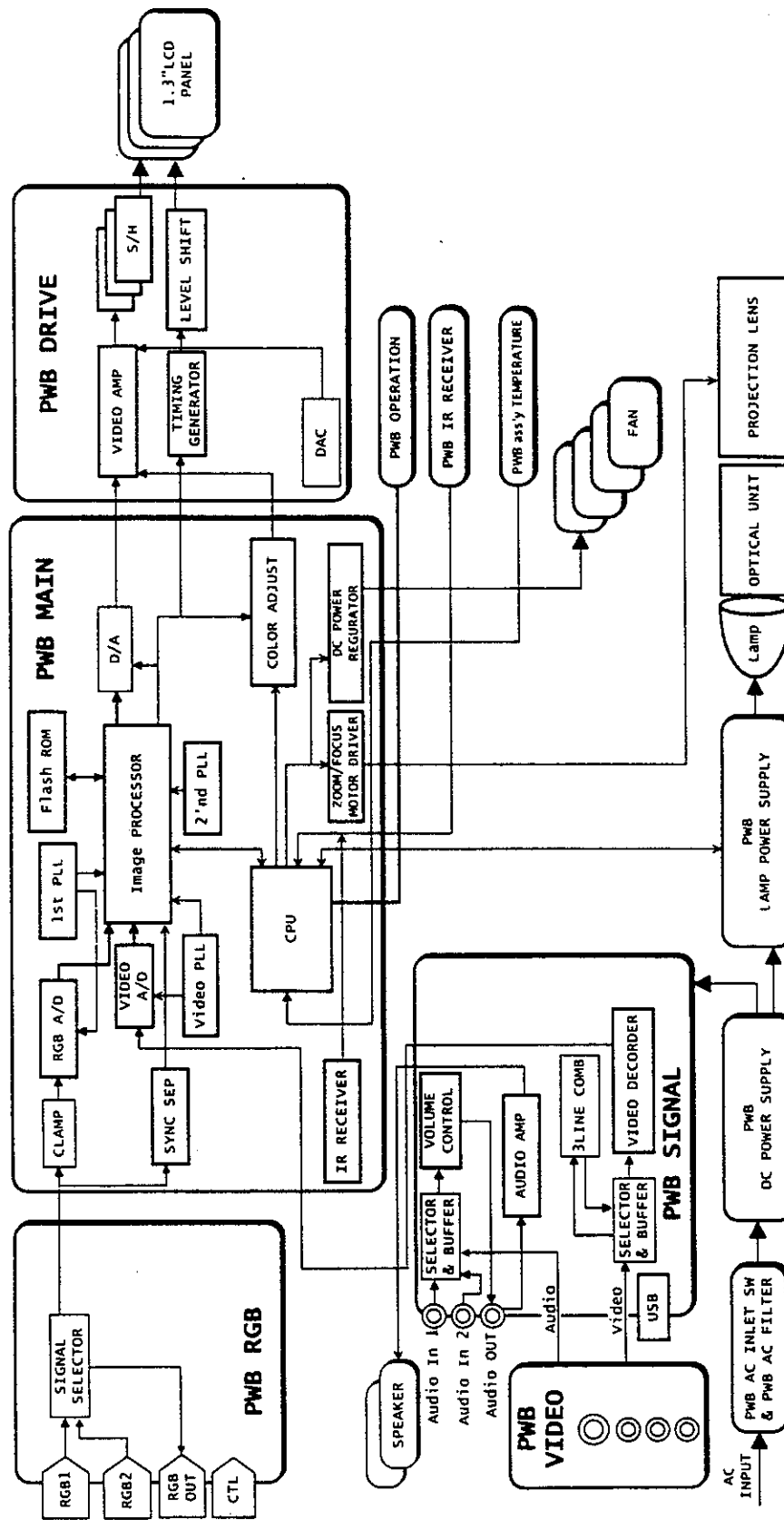
- Do not disassemble the unit because replacement of separate parts is not possible.
- For repairs of the product, please contact our distributor.



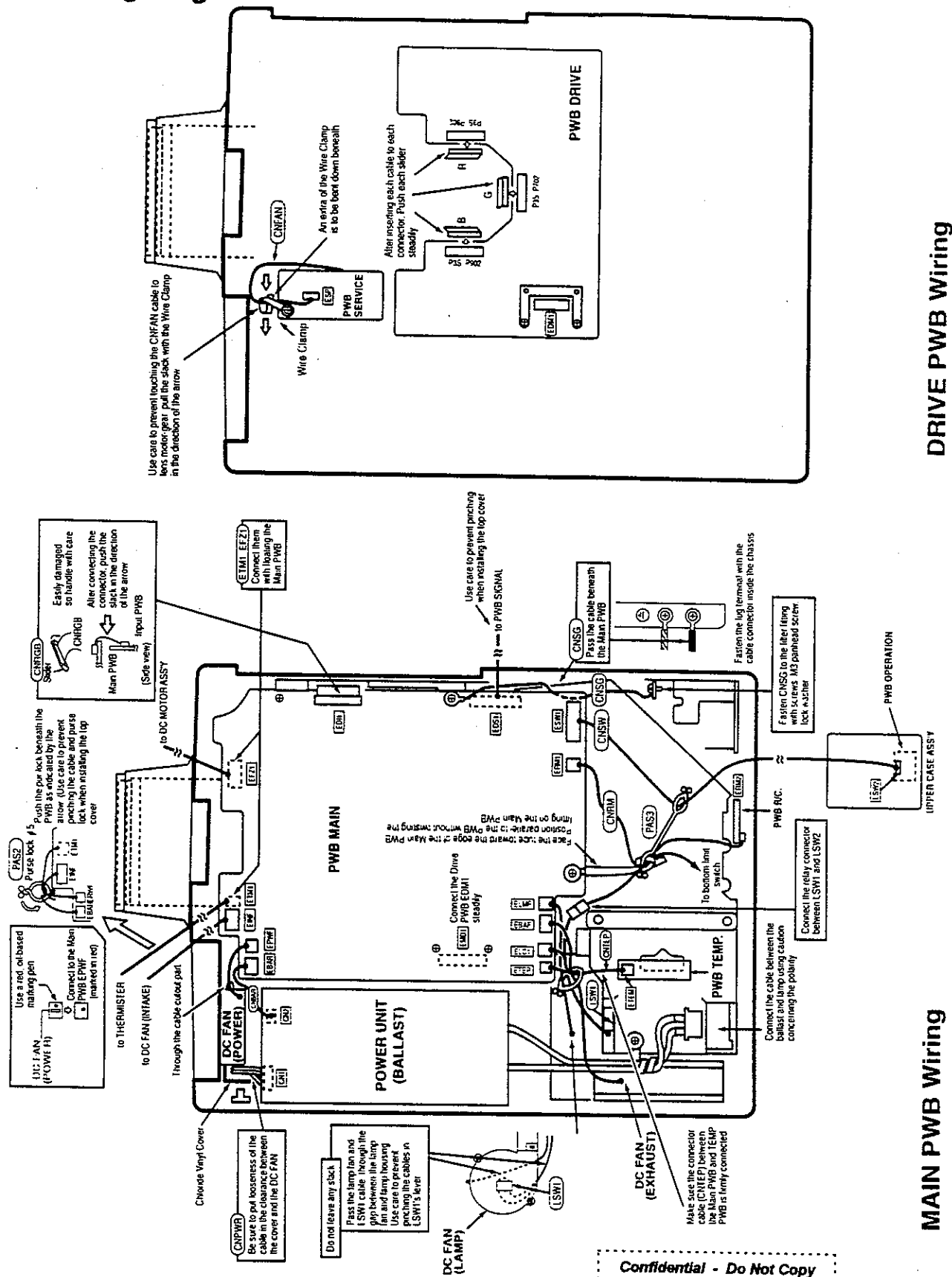
Replacement of G Panel → Reconditioning

Return

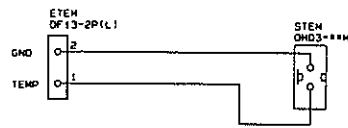
7. Block diagram



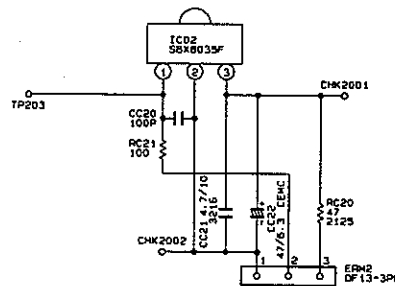
8. Wiring diagram



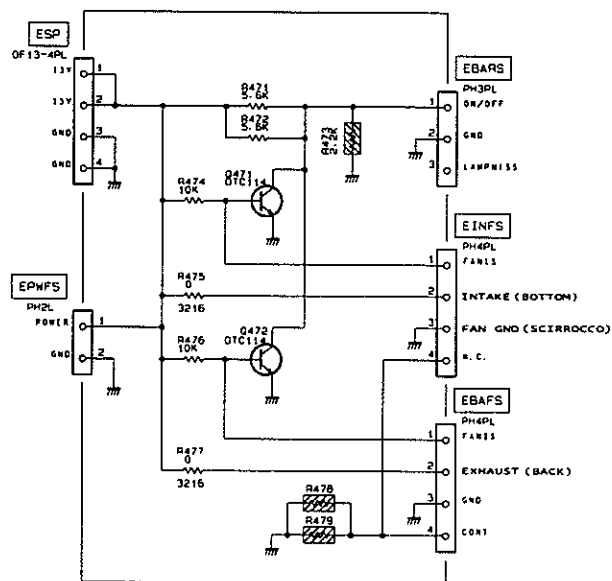
9. Basic circuit diagram



PWB ass'y TEMPERATURE

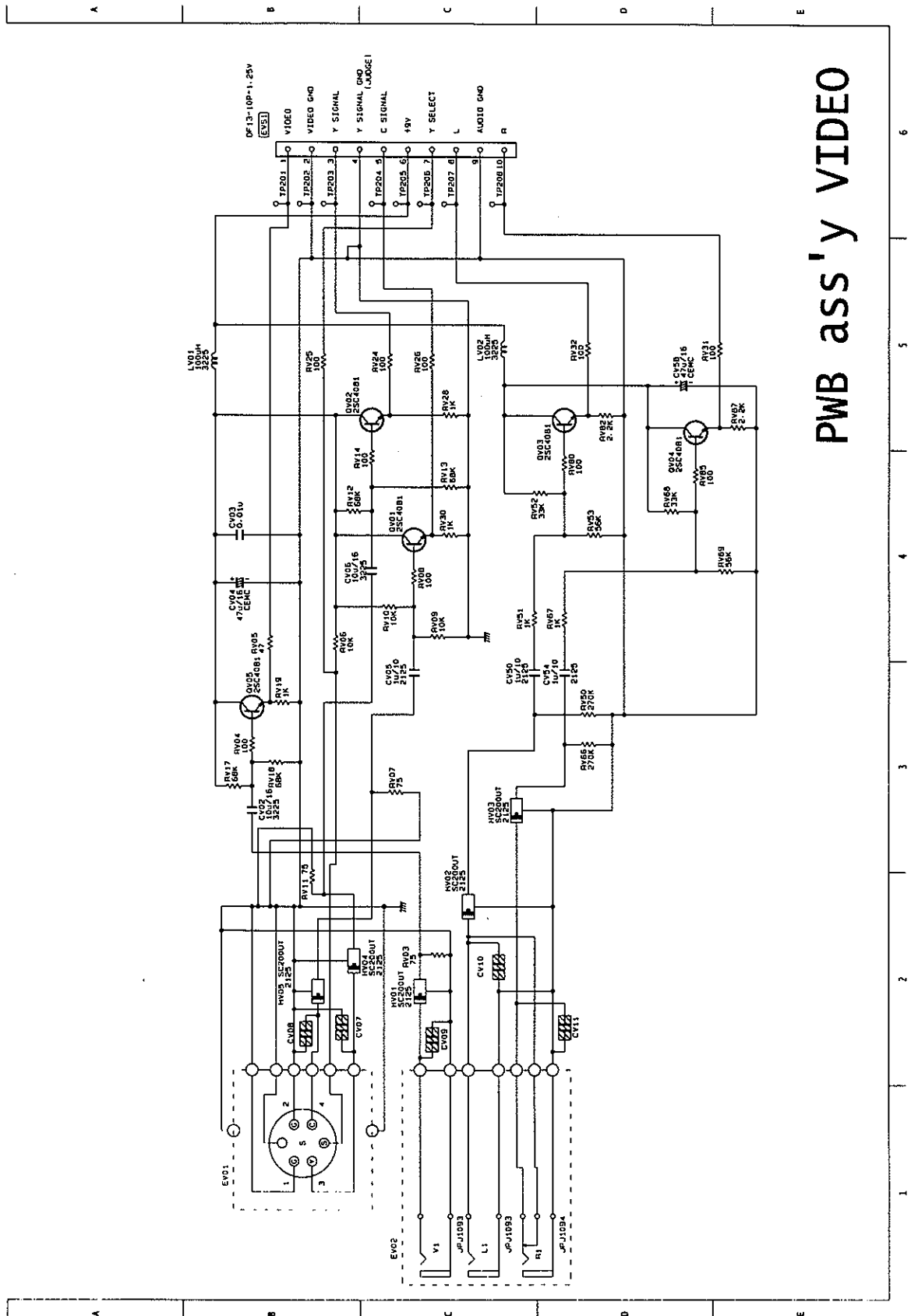


PWB ass'y R/C.

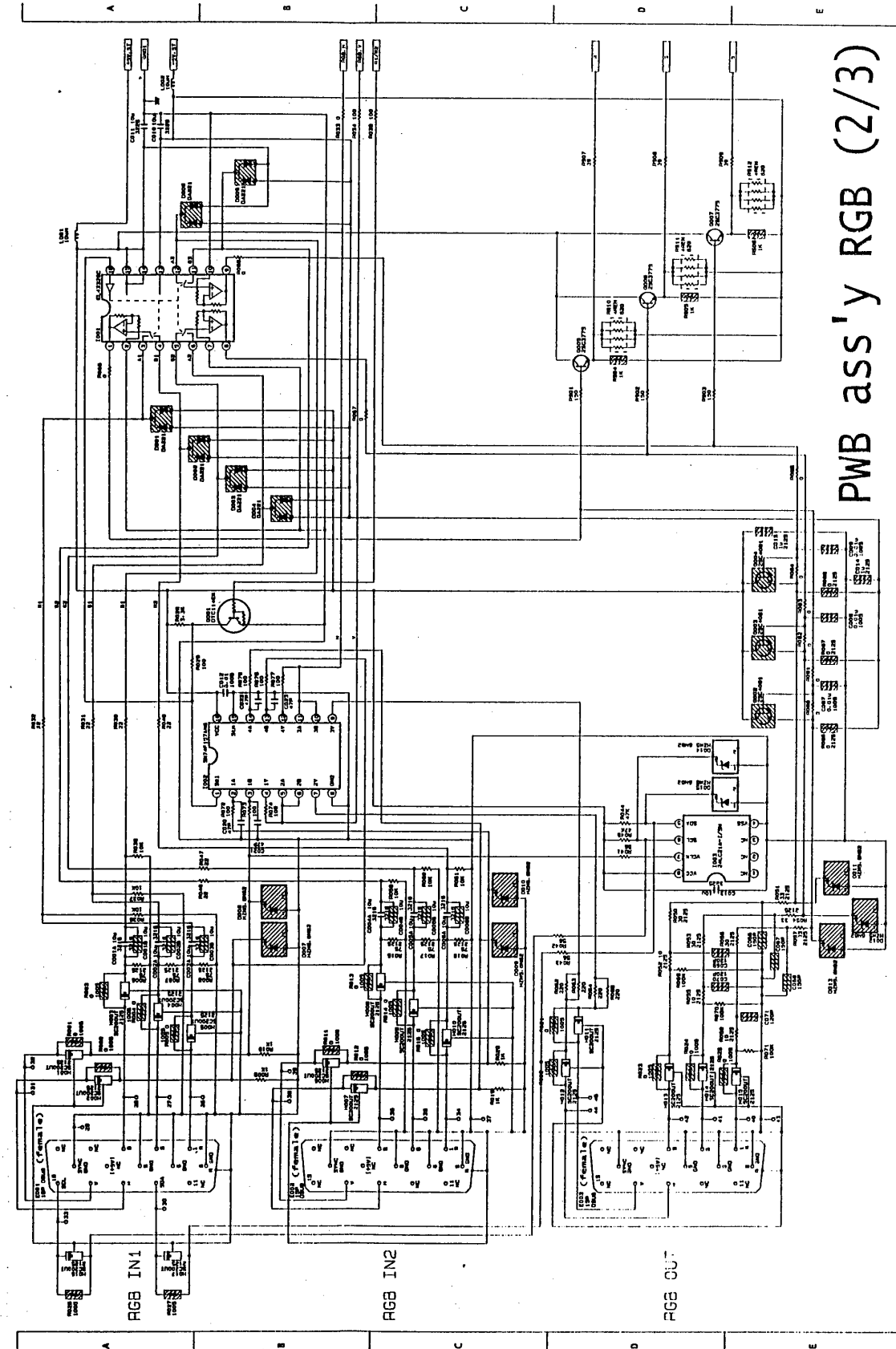


PWB ass'y SERVICE

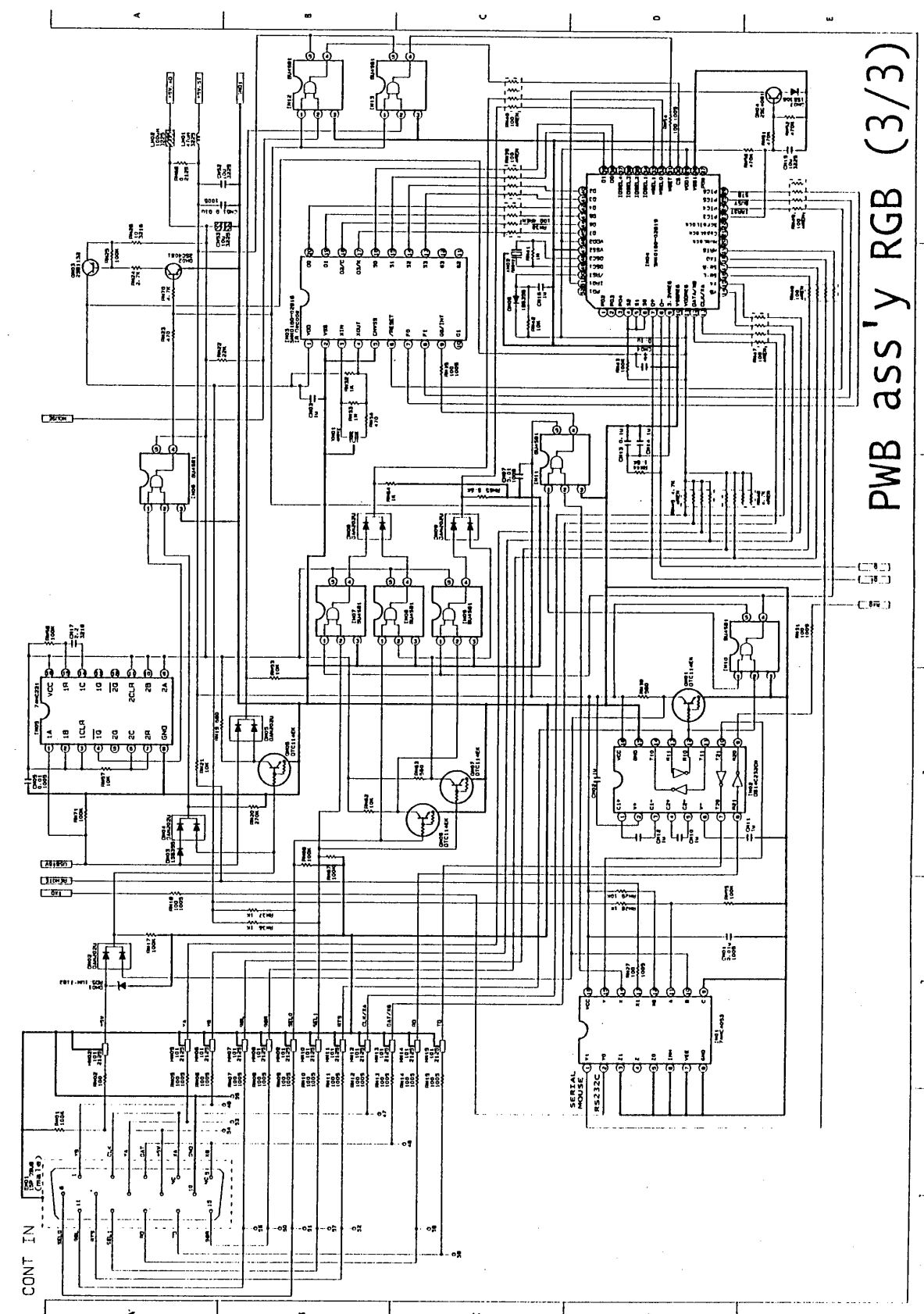




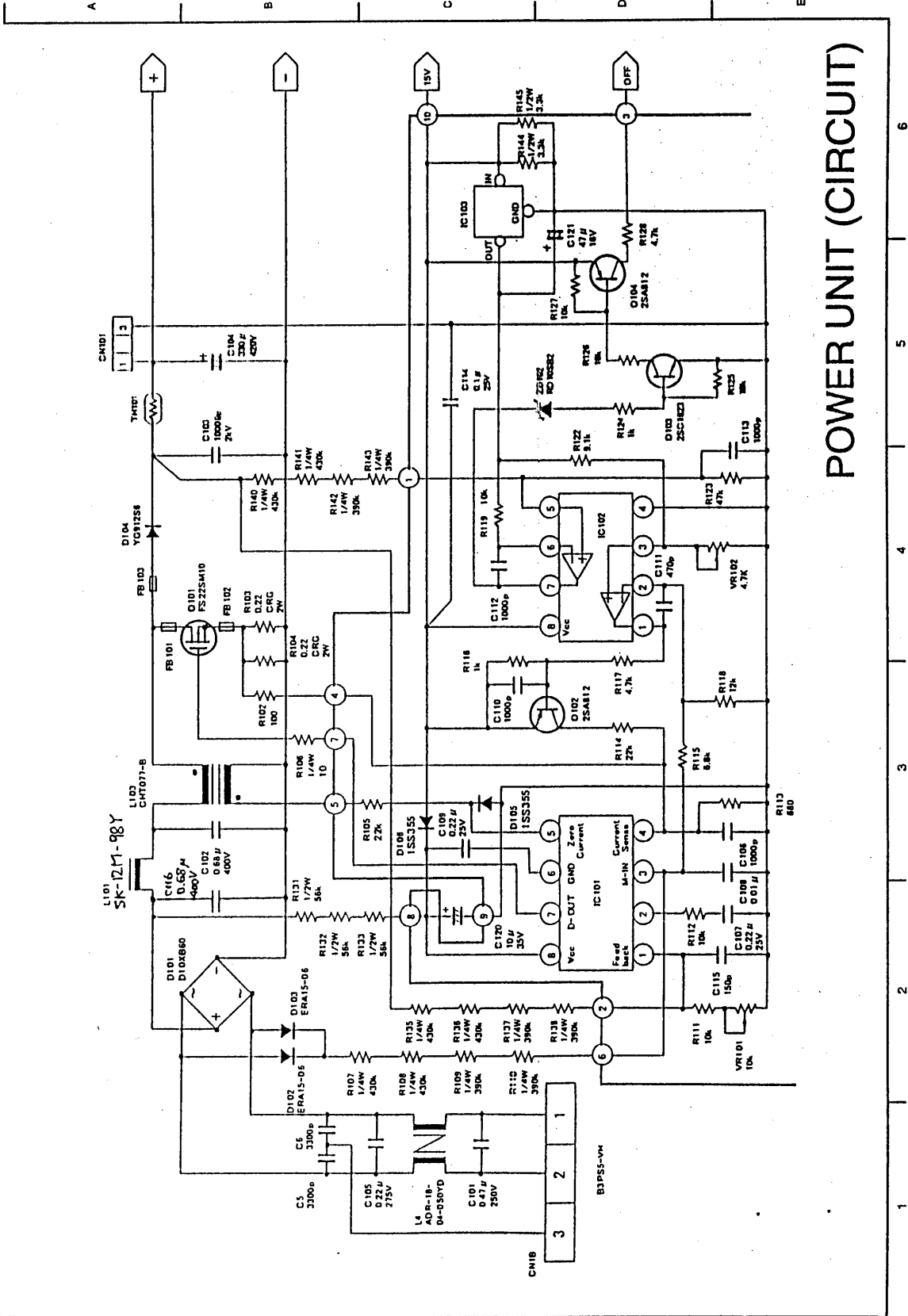
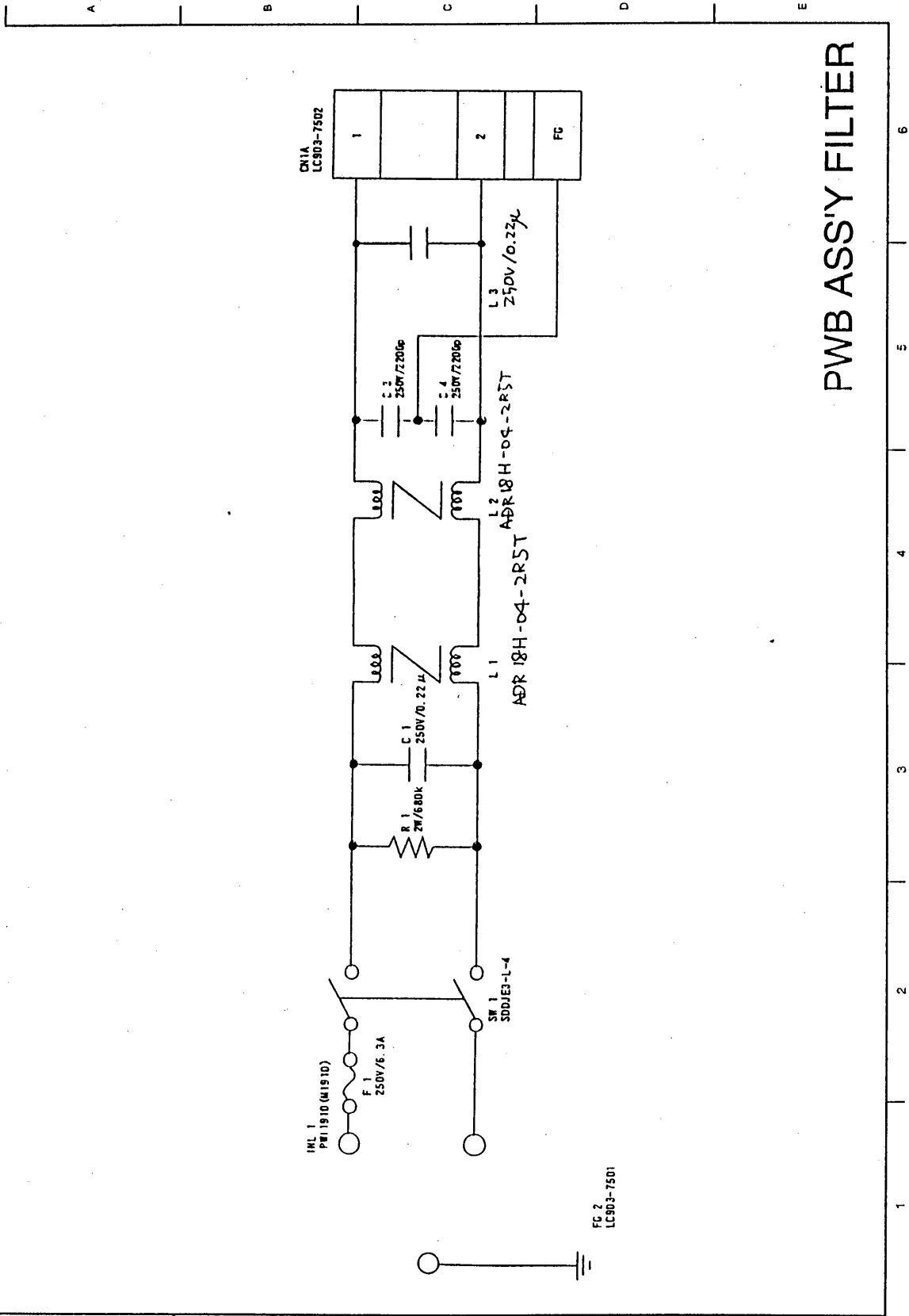


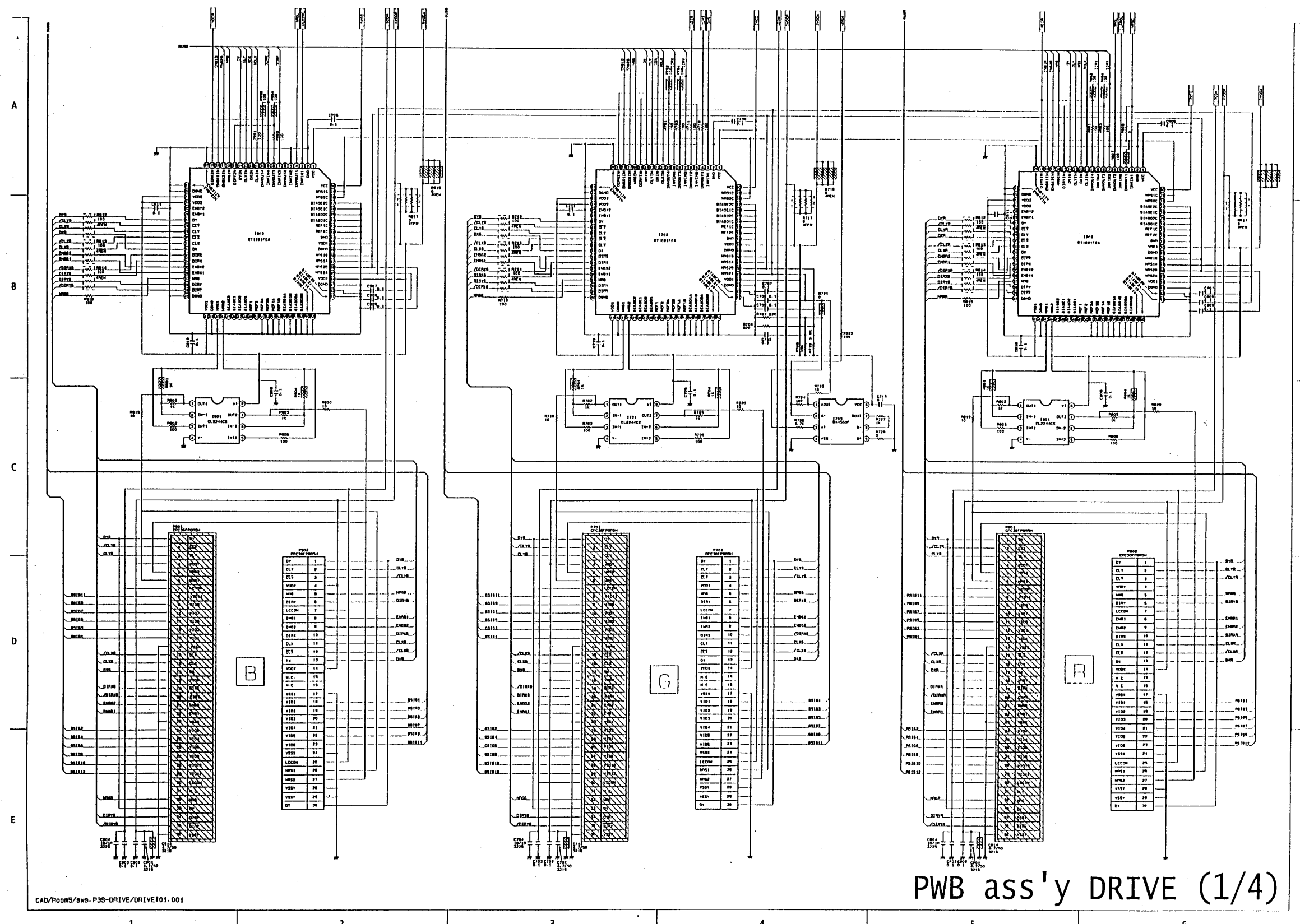


PWB ass'y RGB (2/3)

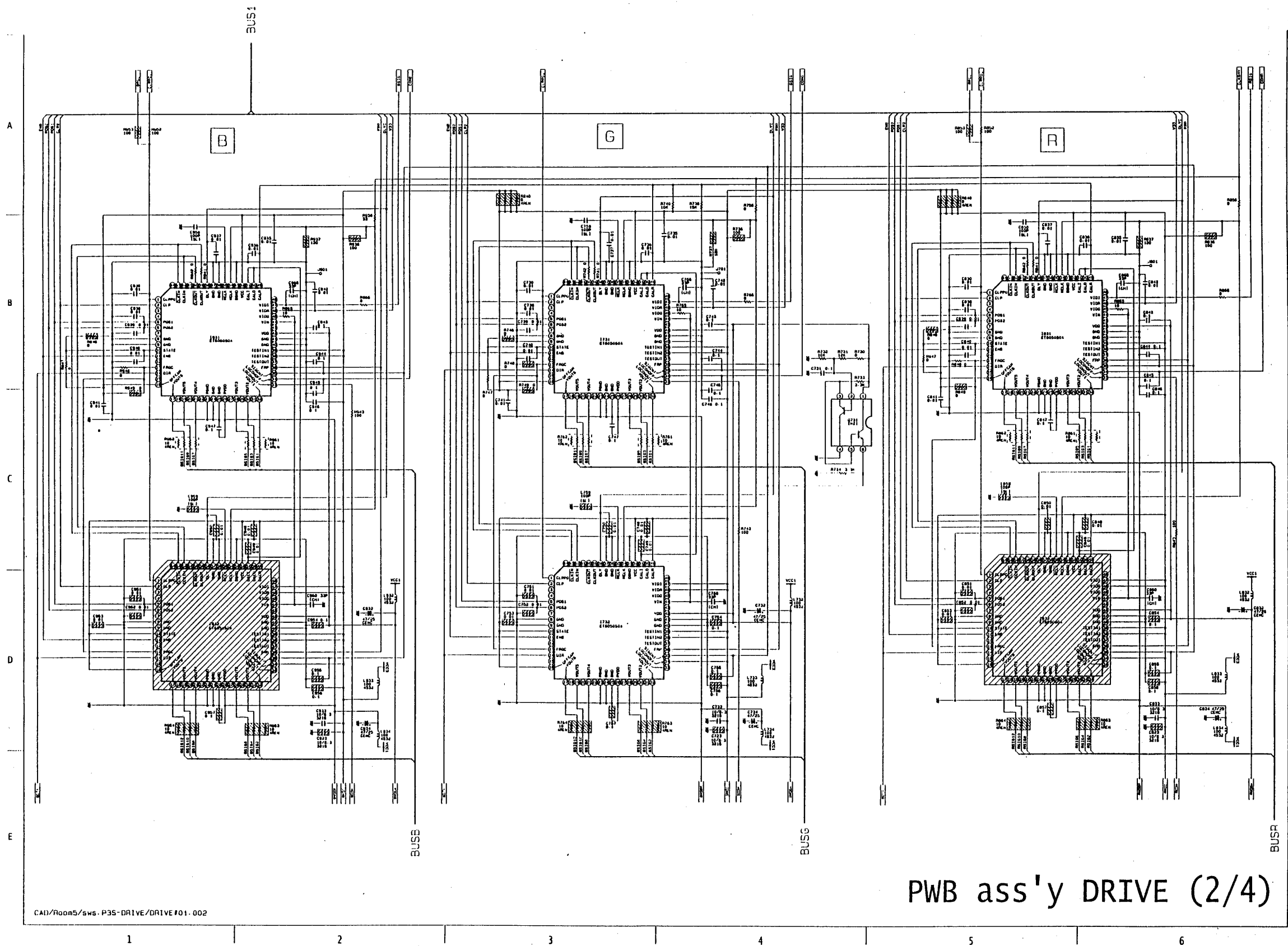


PWB ass'y RGB (3/3)



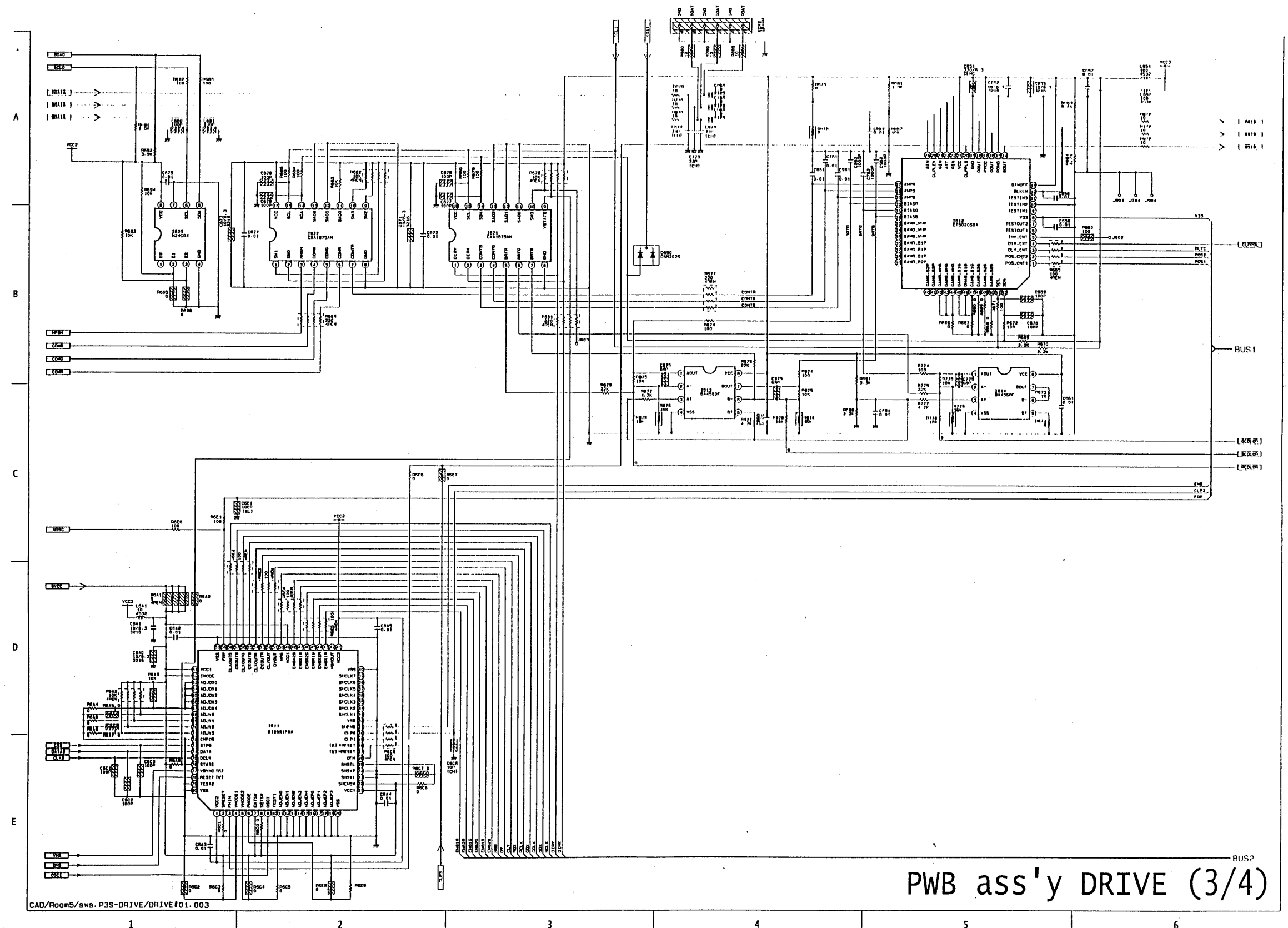


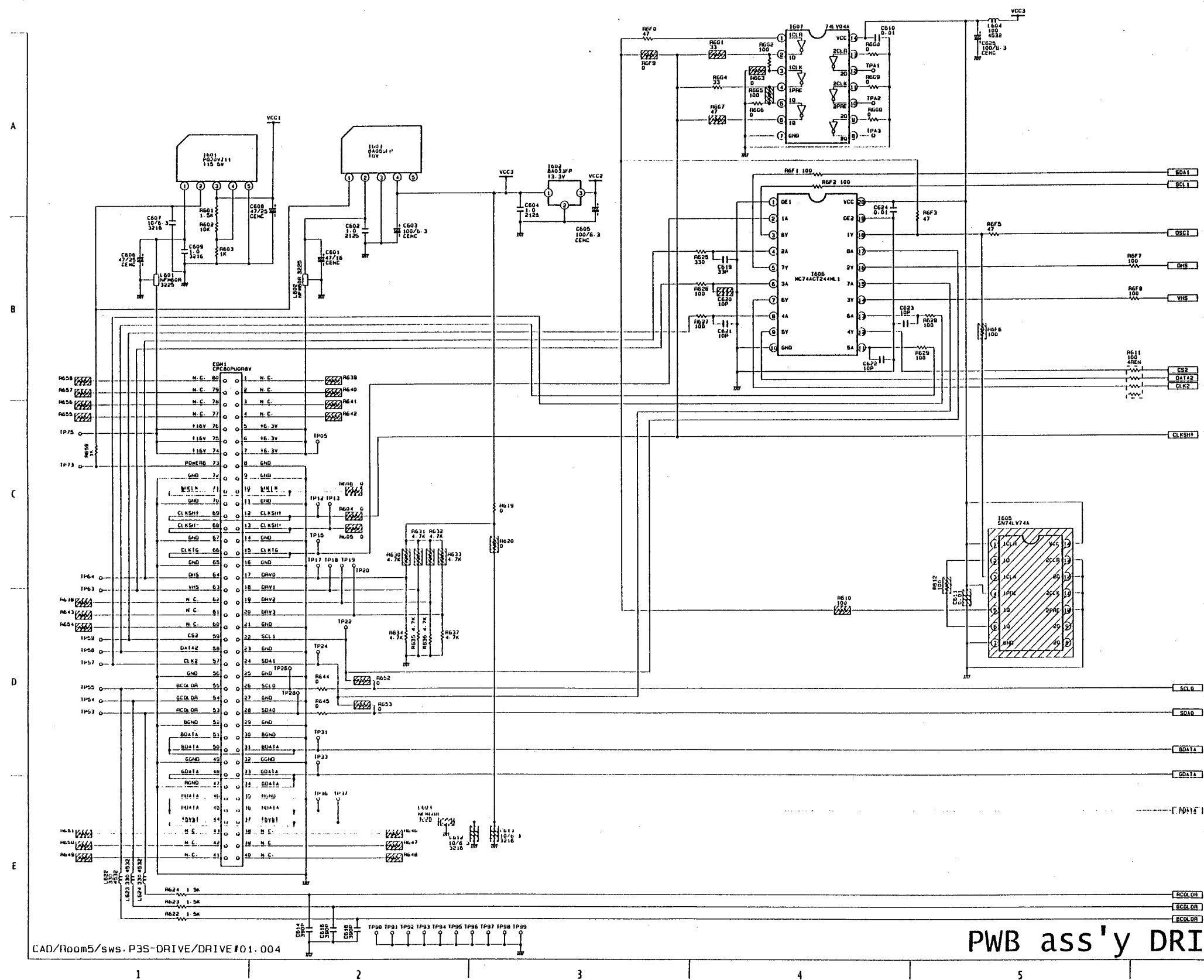
PWB ass'y DRIVE (1/4)



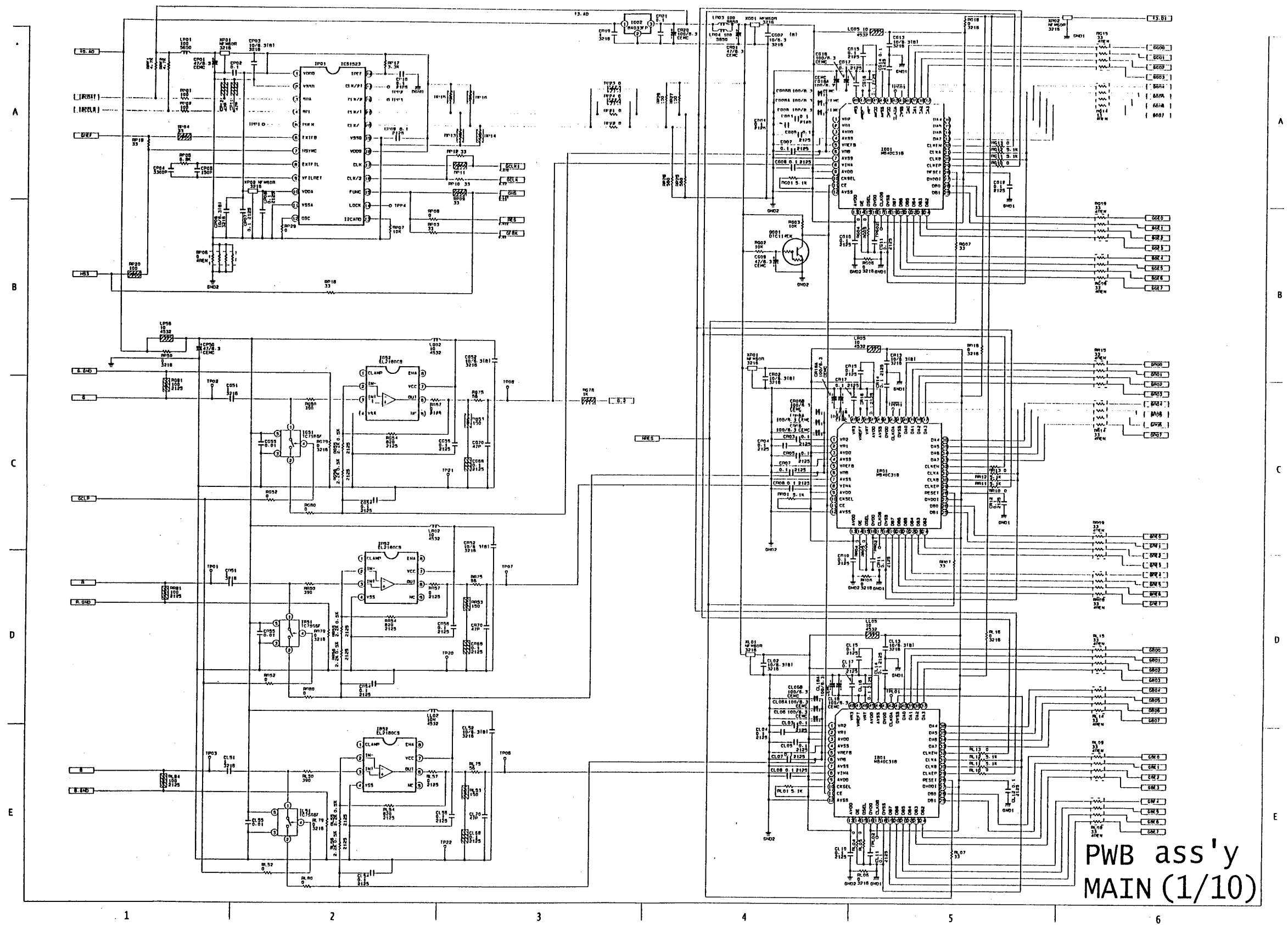
PWB ass'y DRIVE (2/4)

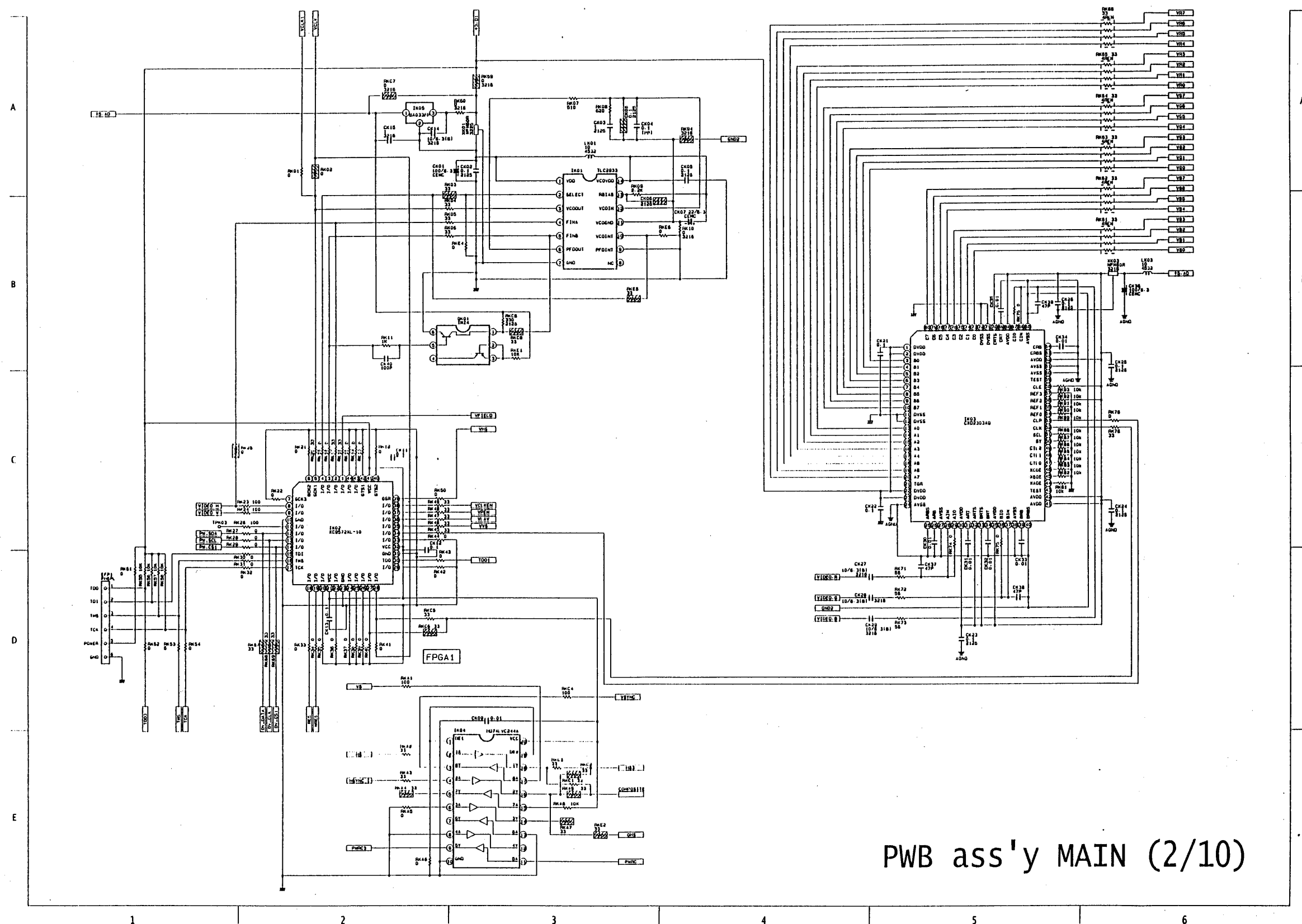
CAI/Room5/sws-P35-DRIVE/DRIVE#01-002

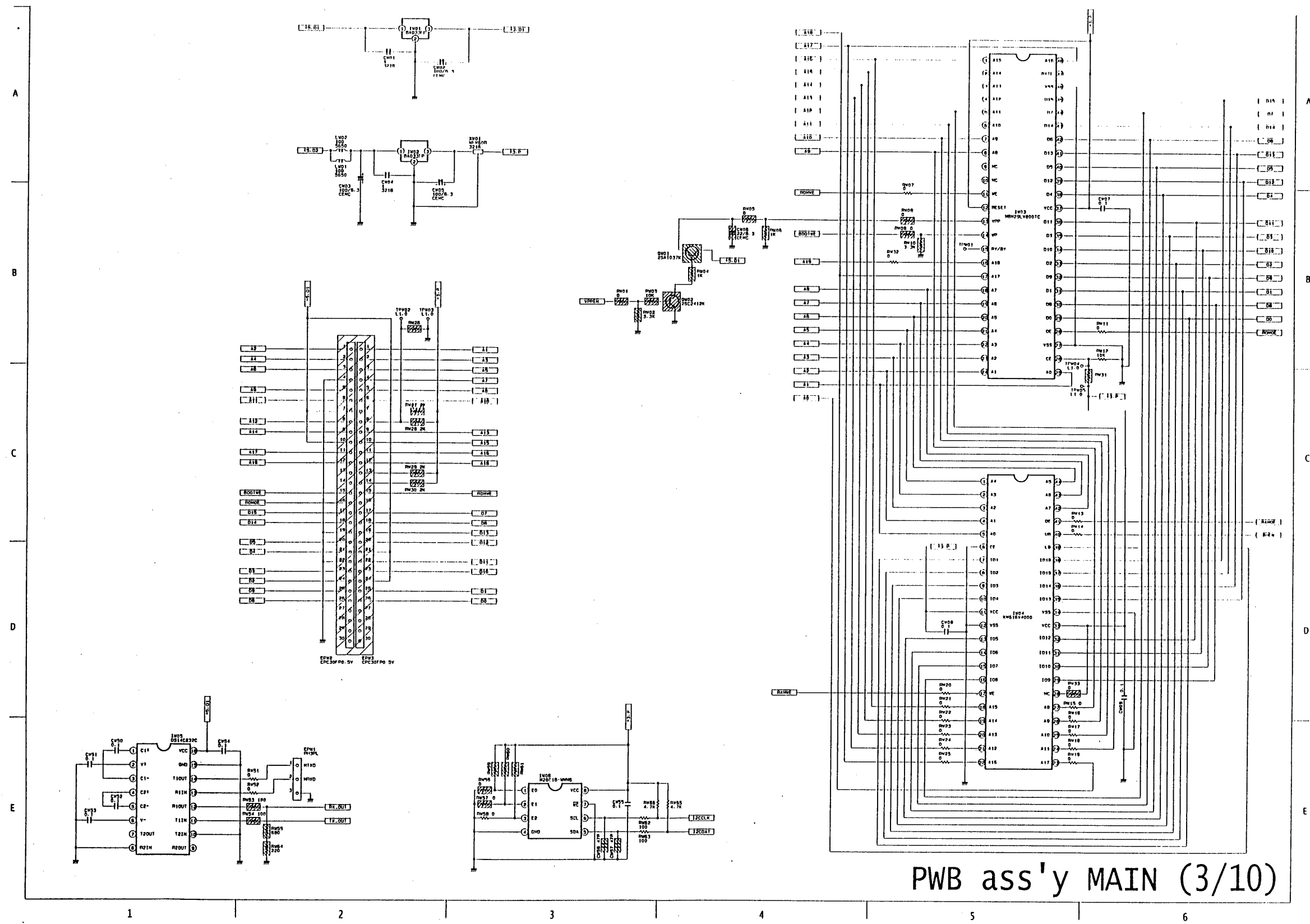


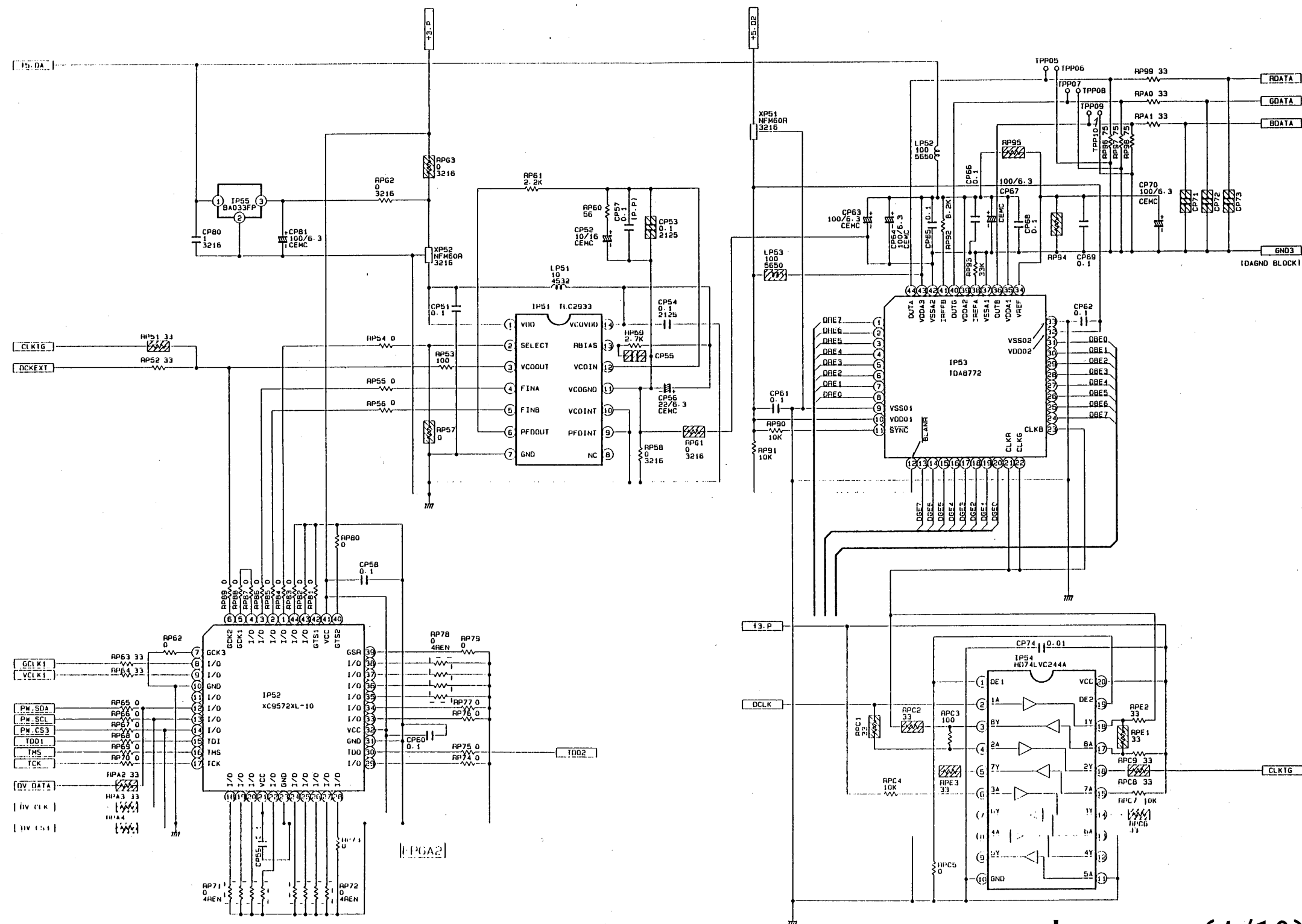


PWB ass'y DRIVE (4/4)

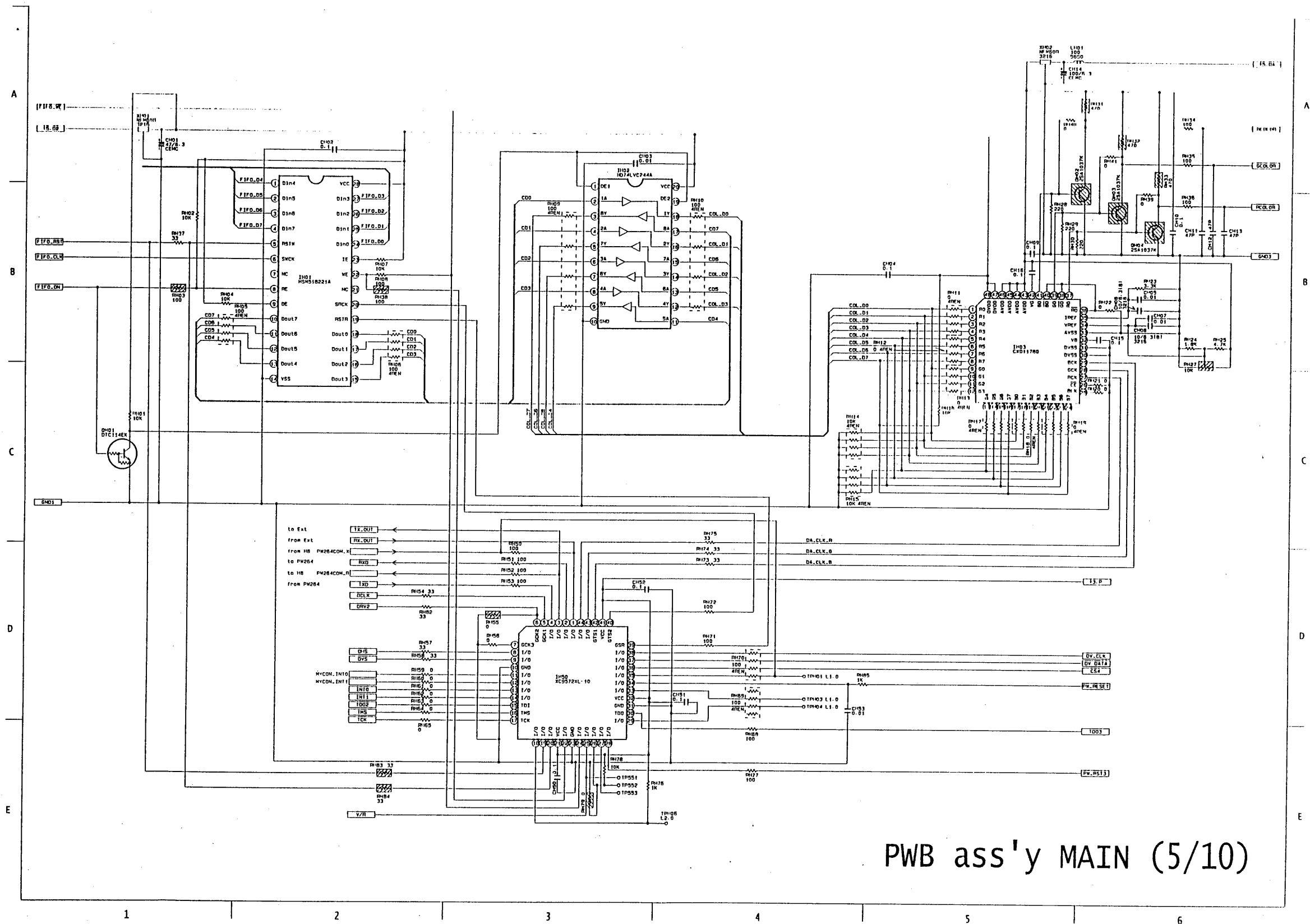


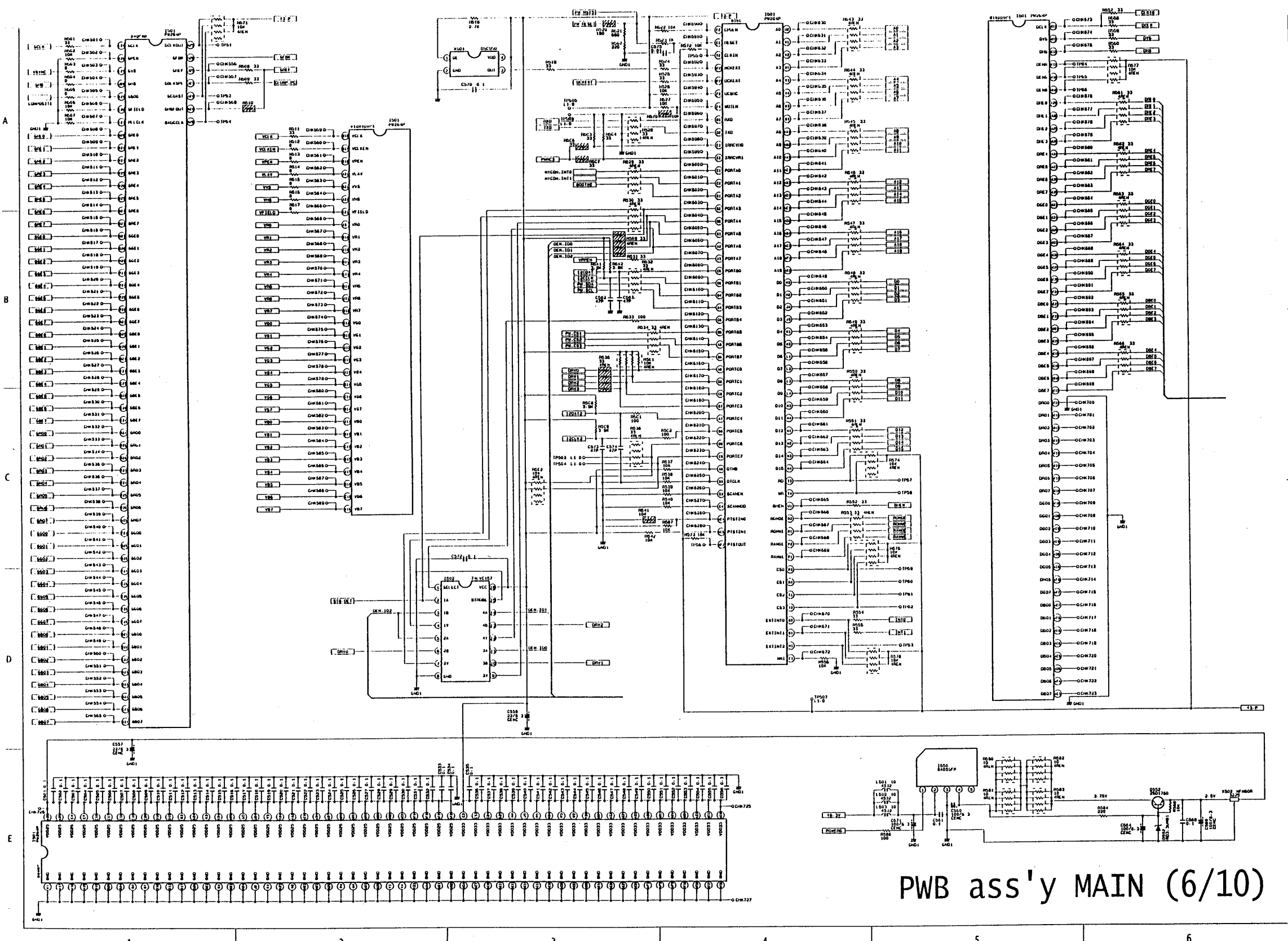




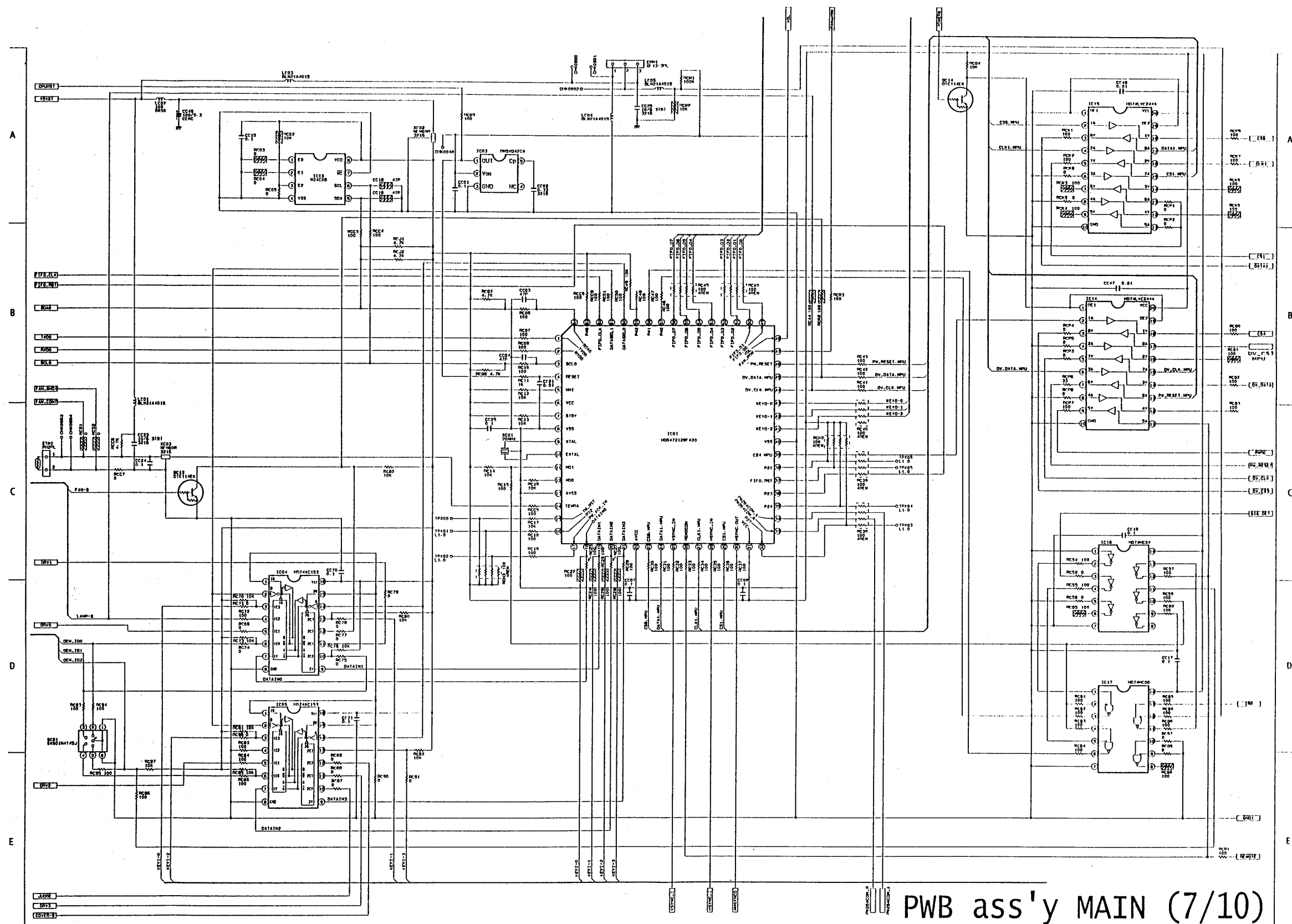


PWB ass'y MAIN (4/10)

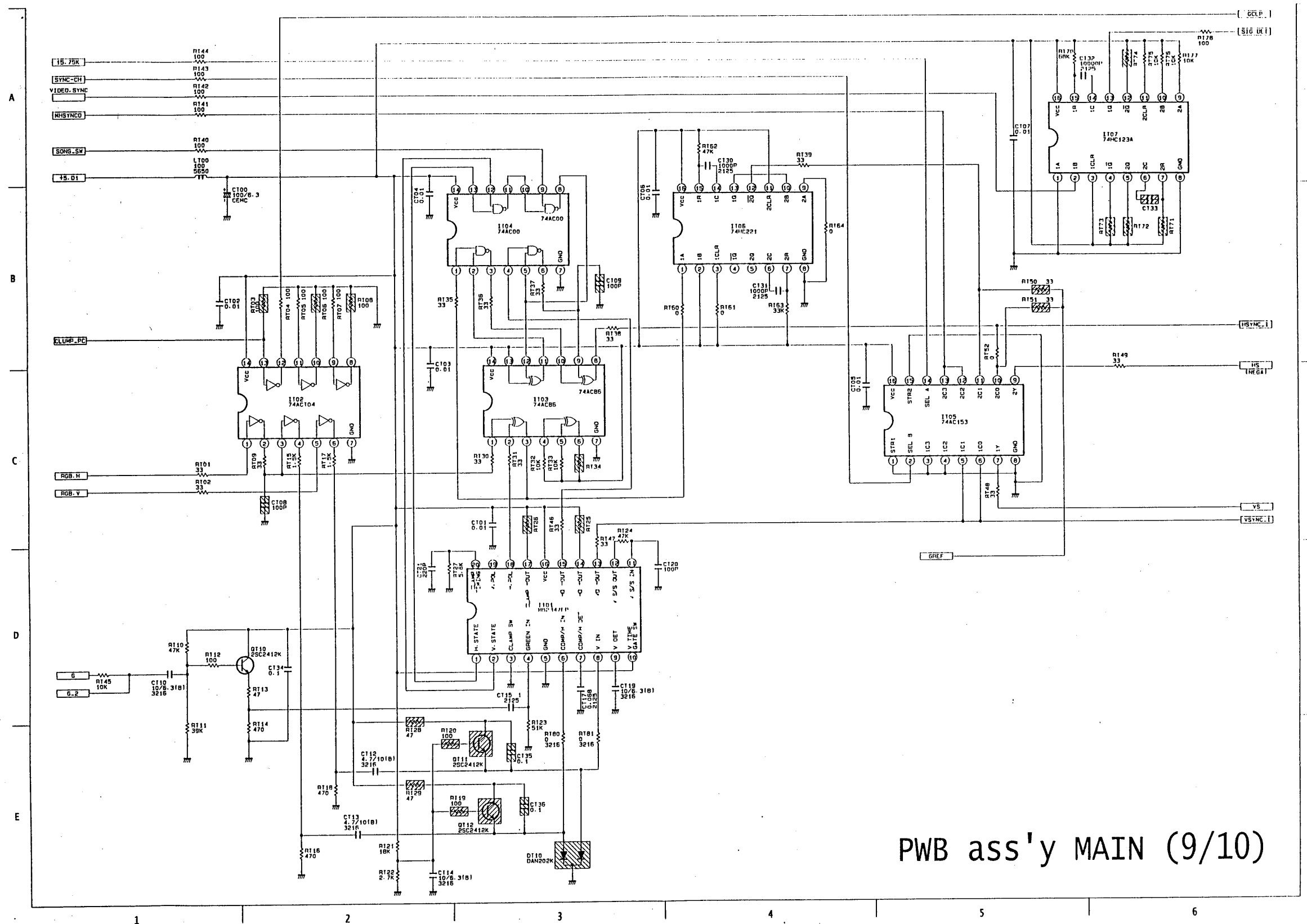




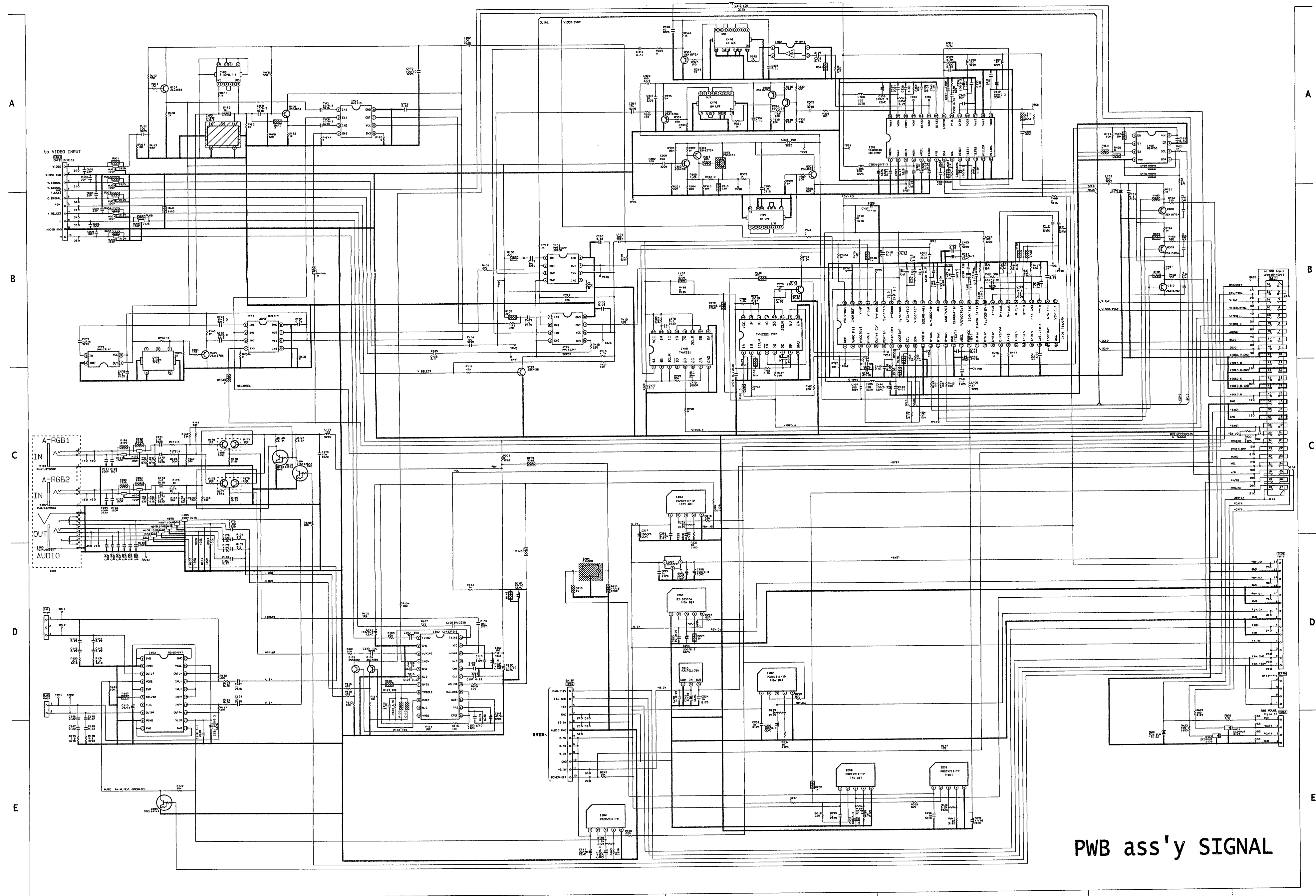
PWB ass'y MAIN (6/10)



PWB ass'y MAIN (7/10)

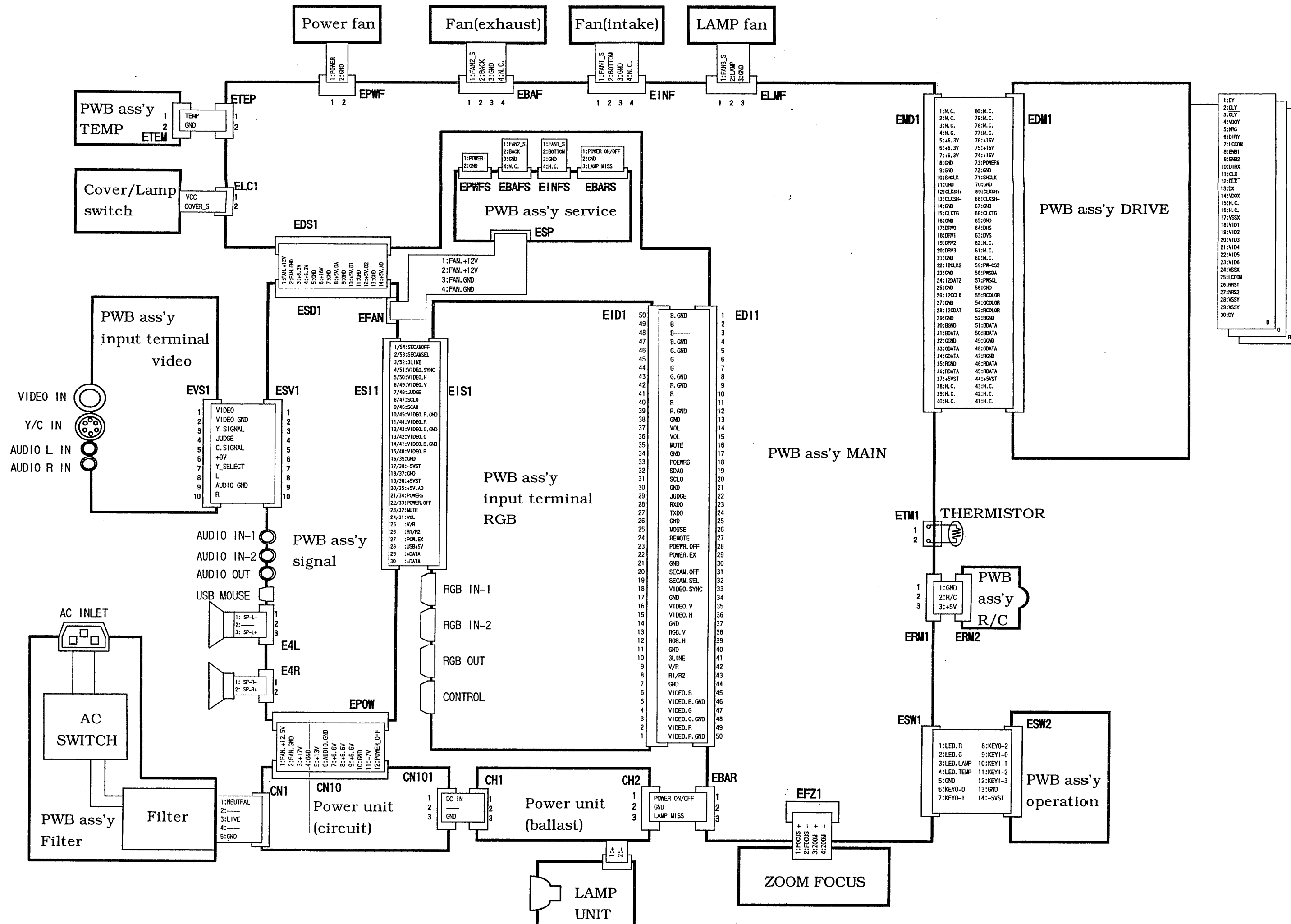


PWB ass'y MAIN (9/10)



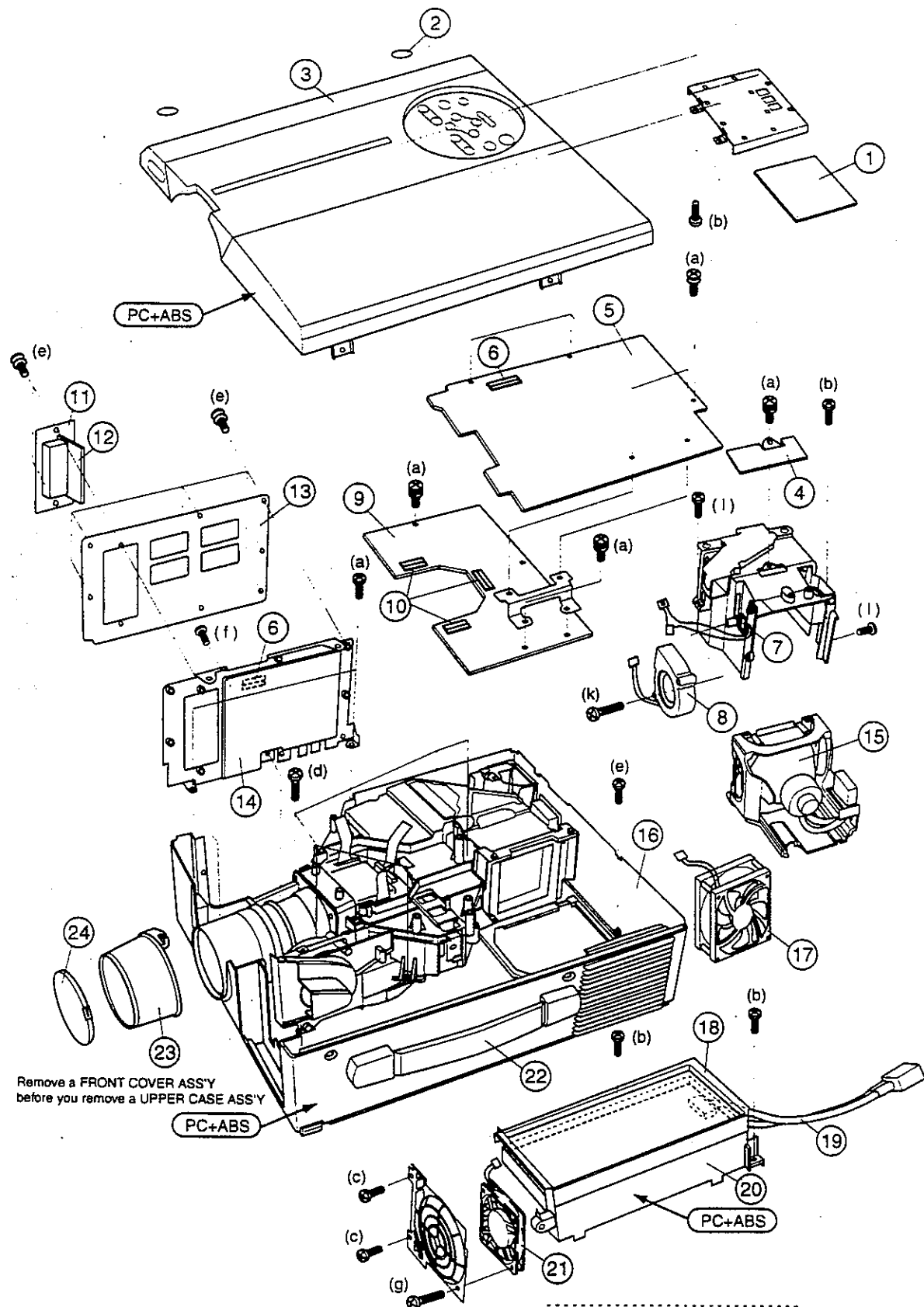
PWB ass'y SIGNAL

10. Connector connection diagram

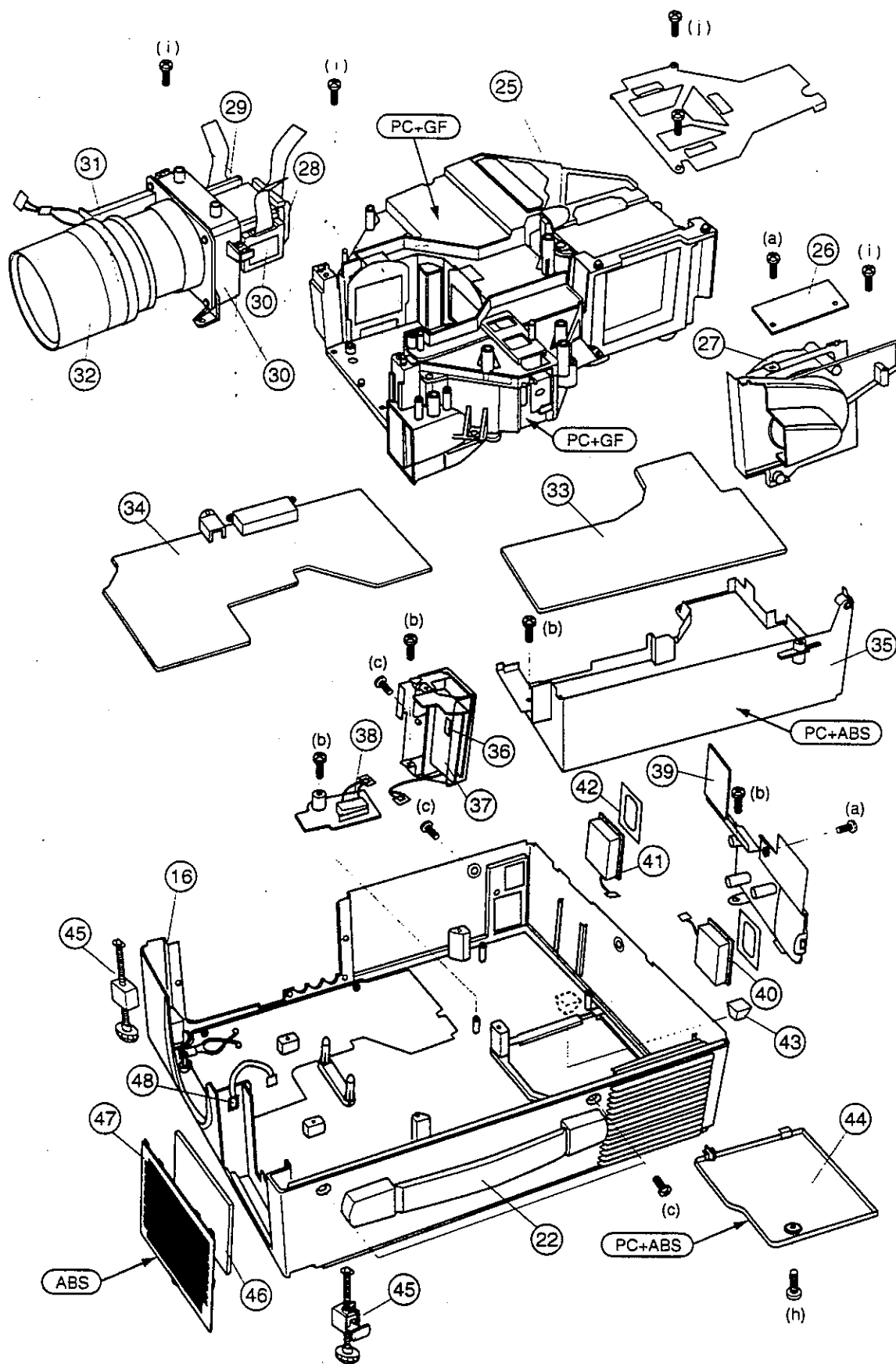


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11. Disassembly diagram



Remove a FRONT COVER ASS'Y
before you remove a UPPER CASE ASS'Y



12. Replacement Parts list

PRODUCT SAFETY NOTE : Components marked with a Δ have special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

SYMBOL NO.	PARTS NO.	DESCRIPTION	SYMBOL NO.	PARTS NO.	DESCRIPTION
1	JP03565	PWB ASS'Y OPERATION	34	JP03562	PWB ASS'Y SIGNAL
2	MU00841	FOOT P3	35	NJ03661	PWB HOLDER
3	QD08177	UPPER CASE ASS'Y	36	2722448	FUSE
4	JP03566	PWB ASS'Y TEMPERATURE	37	BZ03411	LINE FILTER
5	JP03593B	PWB ASS'Y MAIN	38	FH00182	LIMIT SWITCH(LAMP DOOR)
6	EA00282R	CPC50 CONNECTOR	39	JP03594	PWB ASS'Y R/C.
7	FH00181	LIMIT SWITCH(LAMP)	40	GK00564	SPEAKER (L)
8	GS00422	DC FAN(LAMP)	41	GK00565	SPEAKER (R)
9	JP03592	PWB ASS'Y DRIVE	42	MU01021	SP SHEET P3
10	EA00564R	CPC30 CONNECTOR	43	PE00111	RUBBER FOOT
11	MD05552	VIDEO PANEL	44	QD07992	LAMP COVER ASS'Y
12	JP03563	PWB ASS'Y VIDEO	45	QJ00621	ADJUST FOOT
13	MD05402	I/O DECO PANEL	46	MU00831	AIR FILTER
14	JP03564A	PWB ASS'Y RGB	47	QD07972	FILTER COVER ASS'Y
15	DT00231	P3S LAMP UNIT ASS'Y	48	AZ00251	THERMISTER
16	QD07748	BOTTOM CASE ASS'Y			
17	GS00362	DC FAN(EXHAUST)			(only CP-S860W)
18	MN02212	BALAST COVER	EV00631		POWER SUPPLY CORD(UL/CSA TYPE)
19	HA00621	POWER UNIT(BALLAST)	EV00641		POWER SUPPLY CORD(CONTINENTAL TYPE)
20	NJ03651	BALAST HOLDER	EV00341		POWER SUPPLY CORD(UK TYPE)
21	GS00232	DC FAN(POWER)	EW06031		3 CONDUCTOR VIDEO/AUDIO CABLE
22	PV00241	HANDLE	EW05015		RGB-D CABLE(15PIN MALE TO 15PIN MALE)
23	QD08291	FRONT COVER ASS'Y	EY00362		APPLE MAC ADAPTER
24	QD08012	LENS CAP	HL01241		REMOTE CONTROL UNIT
25	UE06031	DICHROIC OPTICS UNIT	EW02753		PS/2-2 MOUSE CABLE W/CORE
26	JP03597	PWB ASS'Y FAN	EW02743		ADB-2 MOUSE CABLE W/CORE
27	GS00371	DC FAN(INTAKE)	EW02733		SERIAL-2 MOUSE CABLE W/CORE
28	-	LCD MODULE ASS'Y G W/LNS PRISM(REPAIR)	NX05741		CLEANING TOOL FOR DUST
29	-	LCD MODULE ASS'Y R W/LNS PRISM(REPAIR)	UX06391		LCD/LENS PRISM ASS'Y
30	-	LCD MODULE ASS'Y B W/LNS PRISM(REPAIR)			
31	GP00251	DC MOTOR ASS'Y			
32	-	LENS P3 ASS'Y(REPAIR)			
33	HA00611	POWER UNIT(CIRCUIT)			

The kind of the screw

- | | |
|----------------------------|-------------------------|
| (a) M3X8 with washer | (g) 3X25 tapping screw |
| (b) 3X12 tapping screw | (h) 4X10 black |
| (c) 4X8 DT screw (black) | (i) 3X8 tapping screw |
| (d) 3X16 tapping screw | (j) 2.6X5 tapping screw |
| (e) M3X10 with lock-washer | (k) 3X25 tapping screw |
| (f) 3X8 DT screw(black) | (l) 3X10 tapping screw |

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