Servicing Considerations

1. Prior to servicing the HV-D15, be sure to turn off the power switch of the AC adaptor, and then, disconnect the DC output cord of the AC adaptor.

2. Prior to servicing the camera, remove the connected accessories like a microscope, tripod, etc. from the camera, and perform servicing at a safe place.

3. Prior to servicing the camera, disconnect the connecting cables like a multi-cable, remote control cable, etc.

4. Use utmost care for the connector, because the camera is designed to be compact and the connector is so small and fragile.

5. Do not touch to the prism, CCD and SNS board to prevent possible loss of registration.

6. After completion of servicing, be sure to insert a shield plate in between the ASP board and the DSP board, and in between the VDA board and the PS board.

CONTENTS

1. GENERAL

- Unitized signal processor

  The entire circuit from processor to encoder is organized into a single high density (0.5 μ m precision) LSI chip that conserves both space and power. Moreover, the 10 bit A/D converter and 13 bit signal processor provide high signal to noise ratio and wide dynamic range.

- High resolution

  Precision matching of the 1/2-inch 410,000 pixel (470,000 PAL) CCDs with microlenses, plus digital double speed luminance signal processing achieve a horizontal resolution of 800 TV lines (luminance channel).

- Digital processing enables wide array of functions

  Desired hue and tint can be adjusted with 6-vector independently variable masking. Even at wide dynamic range, auto-knee and dynamic chroma can provide superbly colored images.

  The versatile detail compensating functions allow optimum contour compensation to match the scene.

- Intelligent automatic level control (ALC)

  Digital light metering of either the overall image or an iris gate with variable size and position, computer chip driven automatic gain control (AGC), lens iris and auto electronic shutter (AES) provide comprehensive control with respect to a wide variation in light. The ALC level setting is also variable.

- Three application files

  Different setting data according to the application and scene can be stored in 3 application files.

- Bi-directional data communication

  The camera can be connected to a personal computer via RS-232C for two-way data communications to provide finely detailed camera control. An identification (ID) code can be assigned to each camera in a system and allow remotely controlling multiple cameras from a single computer.

2. SPECIFICATIONS

(1)	Color system	NTSC,PAL
(2)	Optical system	1/2-inch F1.4 prism
(3)	Imaging system	RGB 3-chip
(4)	Imaging device	1/2-inch interline CCD (with microlenses)
	Total pixels	NTSC: 811 (H) × 508 (V)
		PAL : 795 (H) × 596 (V)
	Effective pixels	NTSC: 768 (H) × 494 (V)
		PAL : 752 (H) × 582 (V)
	Effective image area	6.45 (H) × 4.84 (V) mm
		6.47 (H) × 4.83 (V) mm
(5)	Encoder system	R-Y/B-Y
(6)	Sync system	Internal/external
		(Automatic changeover VBS/BBS or HD/VD. However, the GL MODE needs to be switched.)
(7)	Horizontal resolution	800 TV lines (Y signal center, Y OUT and DTL off)
(8)	Signal to noise ratio	63 dB typ(DNR:ON),60 dB typ(DNR:OFF)
		61 dB typ(DNR:ON),58 dB typ(DNR:OFF)
		(Y OUT, γ =1, DTL off, Gain 0 dB)
(9)	Standard sensitivity	2000 lx, F8
(10)	Minimum illumination	1 lx (50 IRE, F1.4, Gain +20 dB, ULTRA GAIN ON)
(11)	Gamma correction	0.35 to 1.0 (on/off selectable)
(12)	Picture distortion	Total: 0 % (not including lens characteristics)
(13)	Registration	Total: 0.05 % (not including lens characteristics)
(14)	Vertical contour correction	2 H
(15)	Lens mount	Bayonet (flangeback: 35.74 mm in air)
(16)	Sensitivity selection	AGC (0 to +20 dB), Norm/High/Max (3 positions)
(17)	Detail control	DTL level and frequency
(18)	Ultra gain function	Approx. 12 dB increase by selecting CCD readout
		(some loss of horizontal resolution)
(19)	CCD drive functions	
	Preset	1/100 (1/60 PAL), 1/250, 1/500, 1/1,000,
		1/2,000, 1/4,000, 1/10,000 second
	Lockscan	NTSC: 1/60.38 to 1/251.5 second (1 H steps)
		PAL : 1/50.31 to 1/253.8 second (1 H steps)

AES	Off to approx. 1/1,000 second
	(up to equivalent of 4 F stops, continuously variable in 1 H steps)
Long integration	Selectable field/frame integration
	NTSC: 1/30 to approx. 8 seconds (1 frame steps)
	PAL : 1/25 to approx. 8 seconds (1 frame steps)
	(External picture memory required for continuous picture.)
Frame readout	(Image lag response deteriorates)
(20) Color bar	NTSC: SMPTE
	PAL : Full
(21) Power supply voltage	12 V rated
	Use a DC power supply with risetime after power on of less than 0.5 second.
	Stable operation is ensured with DC power supply of 10.5 to 17 V.
	No ripple and noise shall occur.
(22) Power consumption	Approx. 8 W (camera head only)
	Current for lens is less than 300 mA.
(23) Dimensions	80 (W) × 85 (H) × 134 (D) mm
(24) Mass	Approx. 950 g (excluding lens)
(25) Ambient temperature (operating)	-10 to 45 °C
(26) Ambient temperature (storage)	-20 to 60 °C

3. MAINTENANCE AND INSPECTION PROCEDURE

Caution

1. Prior to disassemble the camera, be sure to disconnect the power cord.
2. Do not touch to the imaging device section. Use utmost care for the imaging device section.
3. Read this section carefully, and do not give any damage to the connector and cables.

1. Working consideations

1-1 Removal of FPC

(DRV, MB, REAR unit)

Hold the FPC lock section of the connector as shown in Fig. 1, and pull the FPC lock section in the direction of arrow to unlock the FPC lock section. Then, remove the FPC.

(SNS unit)

Hook the FPC lock section of the connector as shown in Flg. 2, and pull the FPC lock section in the direction of arrow to unlock the FPC lock section. Then, remove the FPC.

Caution

Use utmost care not to damage the FPC lock section because the lock section is fragile. After completion of servicing, insert the FPC, and lock the connector.

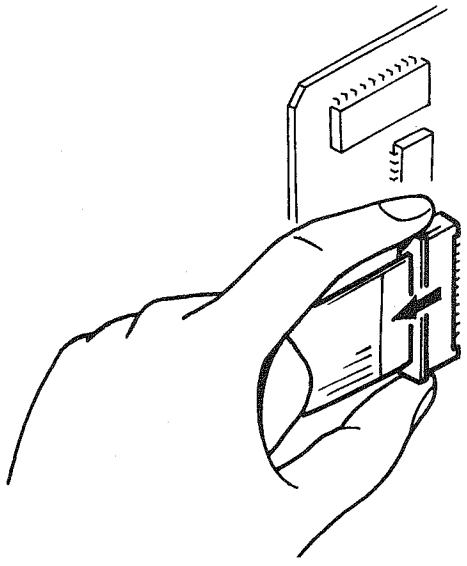


Fig. 1 Removal of FPC (DRV, MB, REAR)

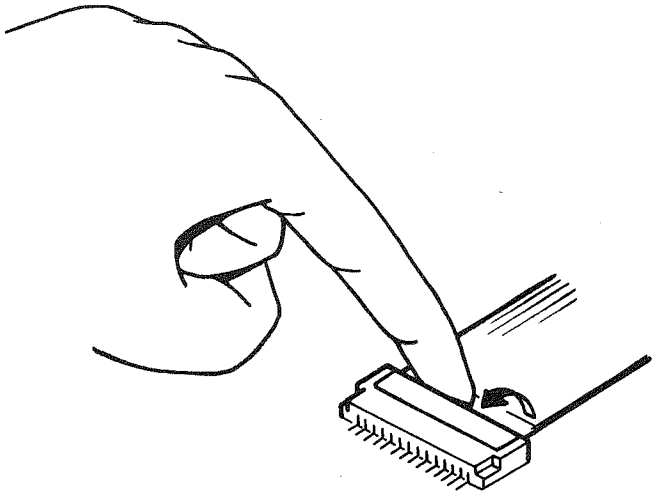


Fig. 2 Removal of FPC (SNS)

2. Disassembly

2-1 Removal of board

1) Remove four screws, and remove the top cover.
2) Remove two screws, and remove the top chassis fixing the boards as shown in Fig. 3.
3) Remove the ASP, DSP and DSP-SUB, VDA, PS, SG/CPU boards upward.
4) For removal of the DRV board, remove the screw and unlock the FPC connector, then remove the DRV board upward at Fig 4.
5) For removal of the MB board, see its exploded view.
   Remove three screws fixing the MB board, and remove two FPC connected to the MB board.
   Remove the power connector(J401), and remove the MB board.

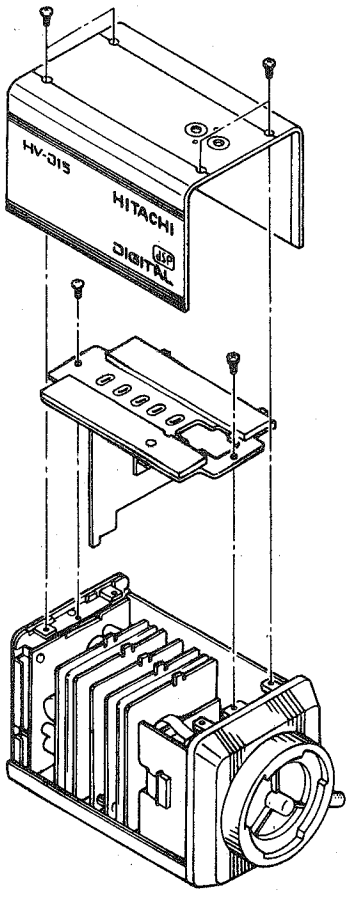


Fig. 3 HV-D15

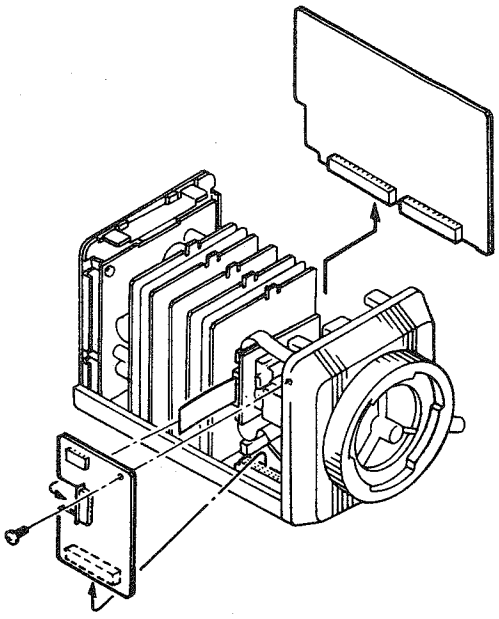


Fig. 4 Removal of DRV board

2-2 Removal of front section

(Lens mount, prism assembly)

1) Remove the DRV and ASP board.
2) Remove the connector that is CN10 as shown in Fig 5.
3) Remove two screws fixing the bottom cover, one of them is fixed by a nut form inside of camera.
4) Remove the block including the imaging device with SNS boards.

Caution: Do not touch to the imaging device to avoid possible loss of registration.

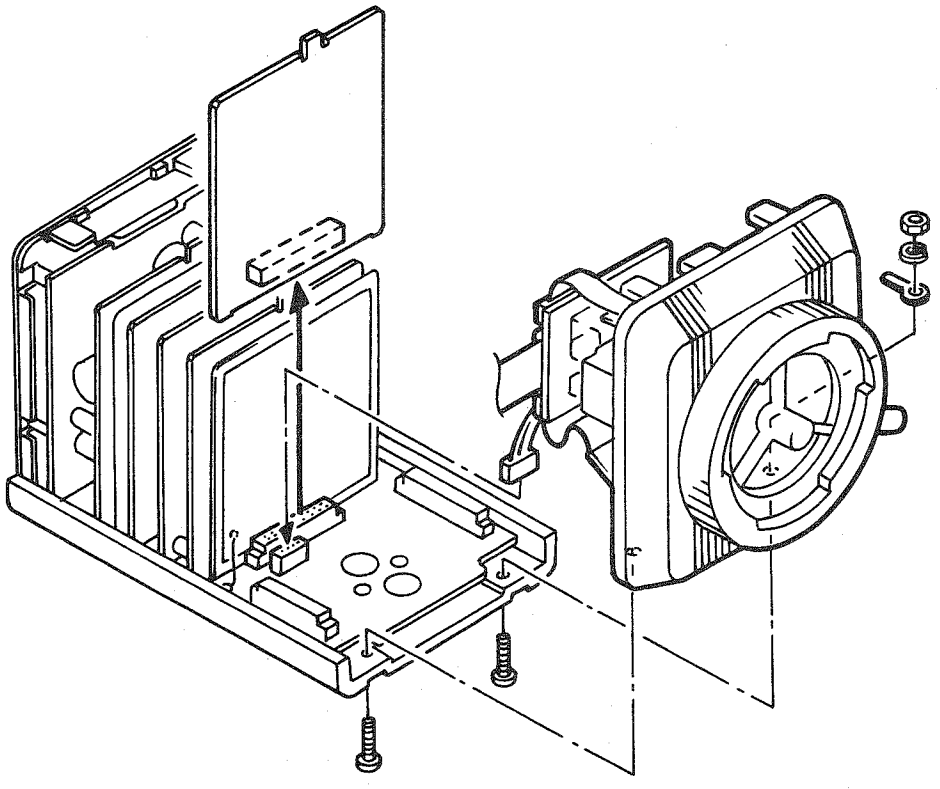


Fig. 5 Removal of front section

2-3 Removal of REAR section

1) Remove the VDA and PS boards.
2) Remove two screws fixing the bottom cover.
3) Remove the FPC connected to the MB board.
   Note: Do not lose ferrite cores.
   Caution: Use care not to damege the FPC connector.
4) Remove the power connector(J401) connected to the MB board.
5) If the camera's type is PAL remove two screws fixing the MB board to bottom cover as shown in Fig 6.

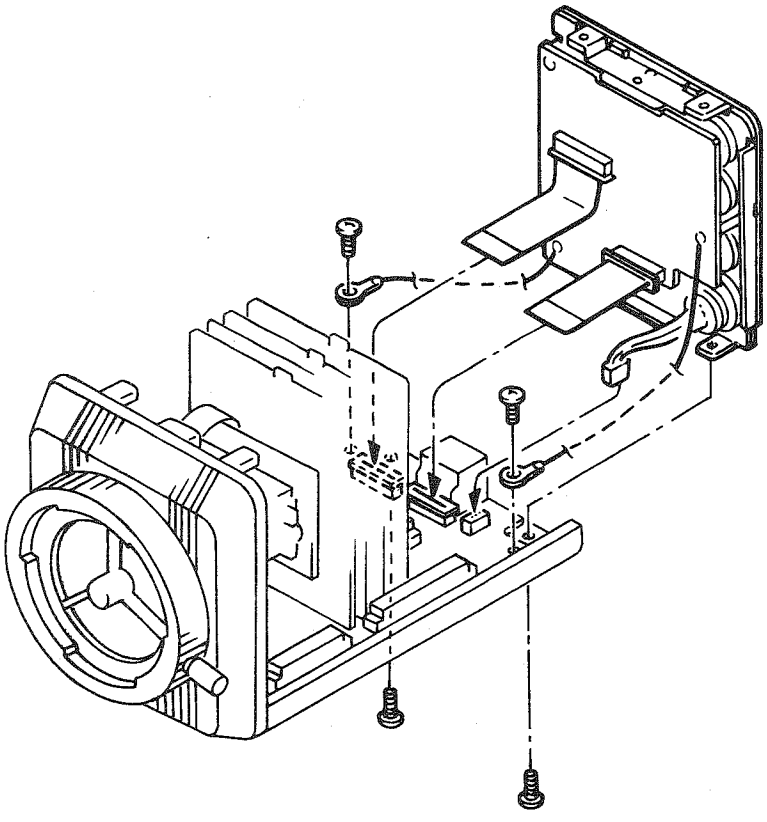


Fig. 6 Removal of rear section

3. Fuse replacement

1) Disassemble the camera, and remove the PS board.
2) Unsolder the leads of the fuse (F300) on the B side of the PS board, and remove the fuse from the A side of the PS board. (Fig. 7)
3) Insert the leads of the substitute fuse in place, and allow the fuse to contact to the surface of the PS board. Then, solder the leads.

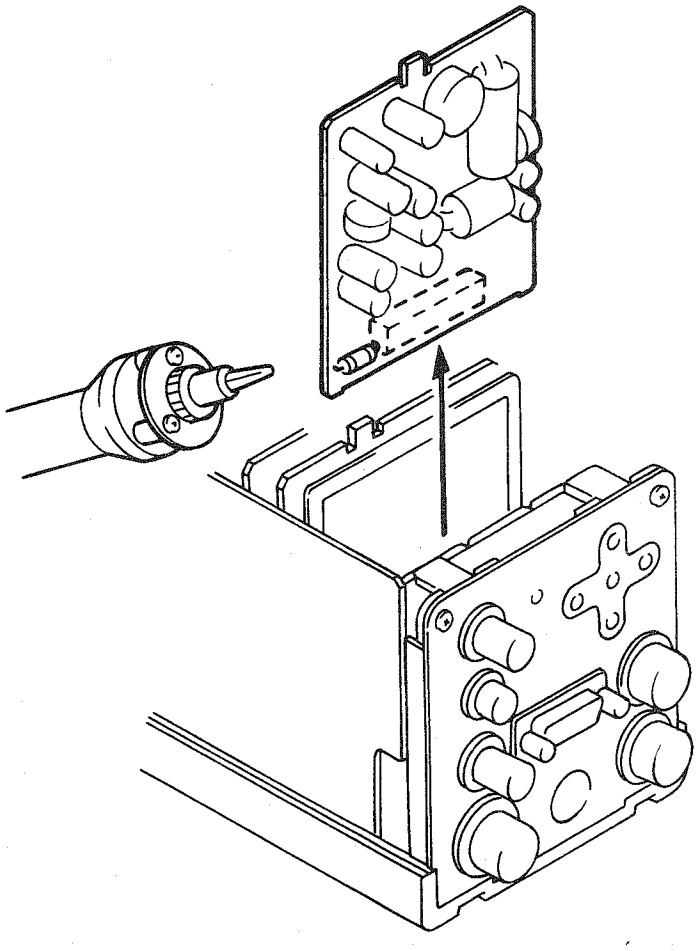


Fig. 7 Fuse replacement

4. Use of extension boards

Six extension boards are available.

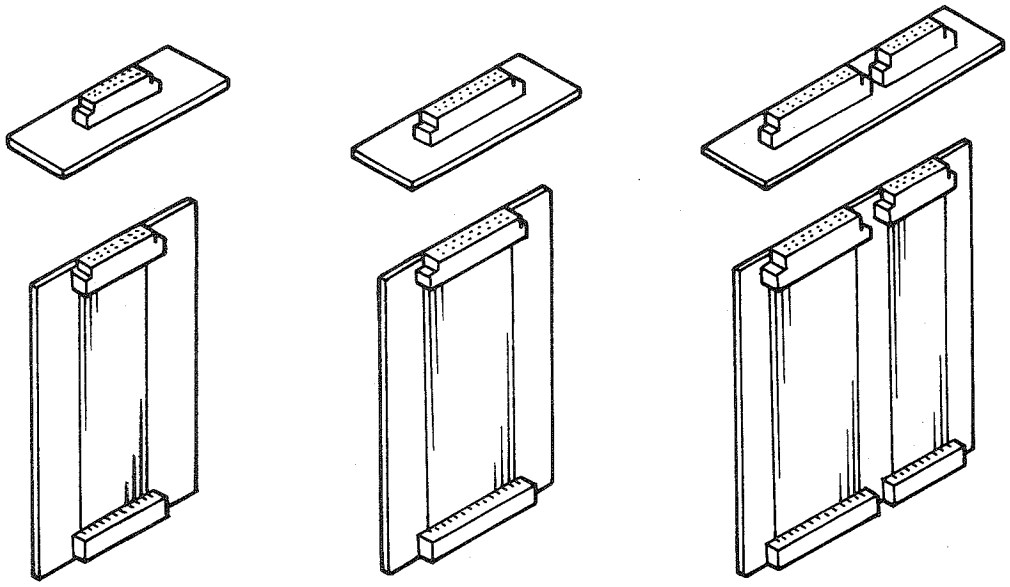
EXT-HV(EXT1-HV and EXT2-HV boards): For ASP, VDA, and PS boards

EXTDSP-HV(EXTDSP1-HV and EXTDSP2-HV boards): For DSP board

EXTCPU-HV(EXTCPU1-HV and EXTCPU2-HV boards): For CPU board

These extension boards combine as shown in Fig 8.

Be sure to use the extension boards correctly. Unless otherwise, trouble occurs.



EXT-HV EXTDSP-HV EXTCPU-HV

Fig. 8 Extension board

4-1 Extension of ASP, VDA, PS, DSP, and SG/CPU board

Extension board: EXT-HV (For ASP, VDA, PS boards)

Extension board: EXTDSP-HV (For DSP board)

Extension board: EXTCPU-HV (For SG/CPU board)

For example DSP board(Fig 9)

1) Remove the DSP board from the MB board.

2) Insert the extention board EXTDSP-HV to the connector of the MB board form whitch the DSP board was removed.

3) Insert the DSP board to CN 905 of the extension board EXTDSP2-HV.

NOTE1: We do not have extension board for DRV board.

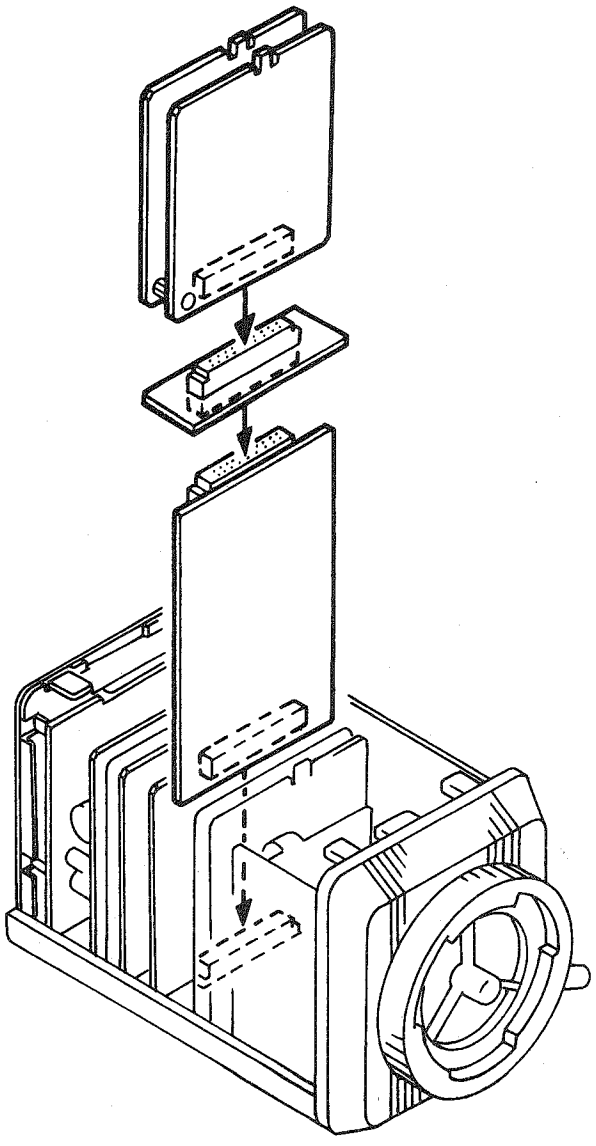


Fig. 9 Extension of DSP board

4-2 Extension of SG/CPU board (Fig. 10)

Extension board: EXTCPU-HV (For SG/CPU board)

1) Remove the SG/CPU board from the MB board.

2) Insert the extention board EXTCPU-HV to the connector of the MB board form whitch the SG/CPU board was removed.

3) Insert the SG/CPU board to CN 909 and CN910 of the extension board EXTCPU2-HV.

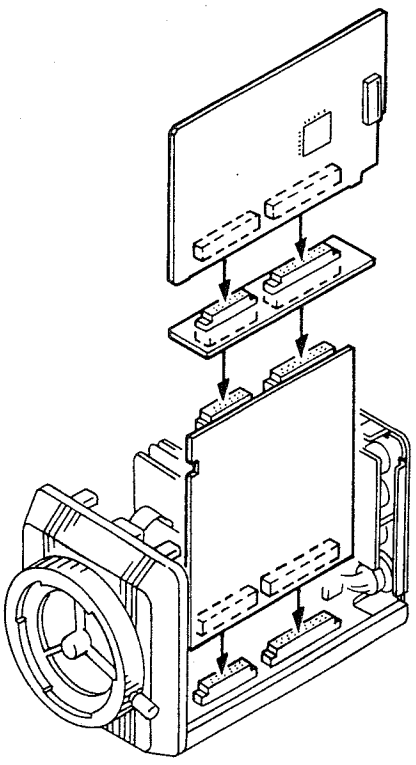


Fig. 10 Extension of SG/CPU board

4-3 Caution

Extension boards for the DRV, DSP-SUB, MB and REAR are not available.

4-2 Extension of CPU/GL board

Extension board: EXT

1) Remove the CPU/GL board from the SG/MB board.
2) Insert the CPU/GL board to CN3 and CN4 of the extension board EXT.
   (A white line is silk-screened on the extension board. Insert the CPU/GL board to the connectors of the EXT board so that both the white lines coincide.)
3) Insert the EXT extension board with the CPU/GL board connected to the connector of the SG/MB board from which the CPU/GL board is removed.
   Note: To extend the CPU/GL board, use both connectors CN1 and CN2 of the EXT extension board.
   When inserting the EXT extension board to the SG/MB board, be sure to use two connectors correctly.

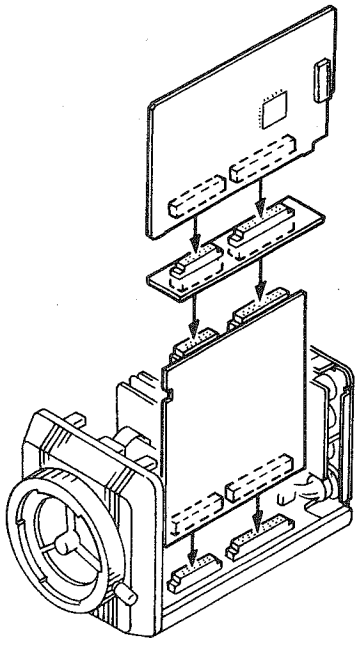


Fig. 10 Extension of CPU/GL board

4-3 Caution

Extension boards for the DRV, DSP-SUB, SG/MB and REAR are not available.

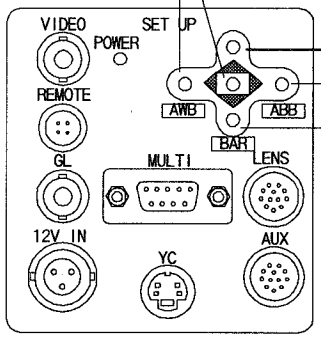
4-2 Adjustments procedure

4-2.1 Standard condition

1)	Standard sensitivity	2000 lux
2)	Color temperature	3200 K
3)	Lens	YH13×7.5KRS (Canon) S12×7.5BRM-27 (Fujinon) or equivalent lens
4)	Lens iris	F8
5)	Power supply	AP-60A or +12 Vdc
6)	Ambient temperature and humidity	20 ± 10 ℃, 45 to 85 % RH
7)	Monitor	B/W or color monitor, standard adjustment
8)	Test chart	Greyscale (reflectance 89.9 % log)
9)	Functions settings	According to factory settings of Section 4-2.3

4-2.2 Rear panel button operation

1) Button names and functions



Setup
Displays camera setting menu. Other button operations differ between not displayed (direct) and displayed (menu) modes.

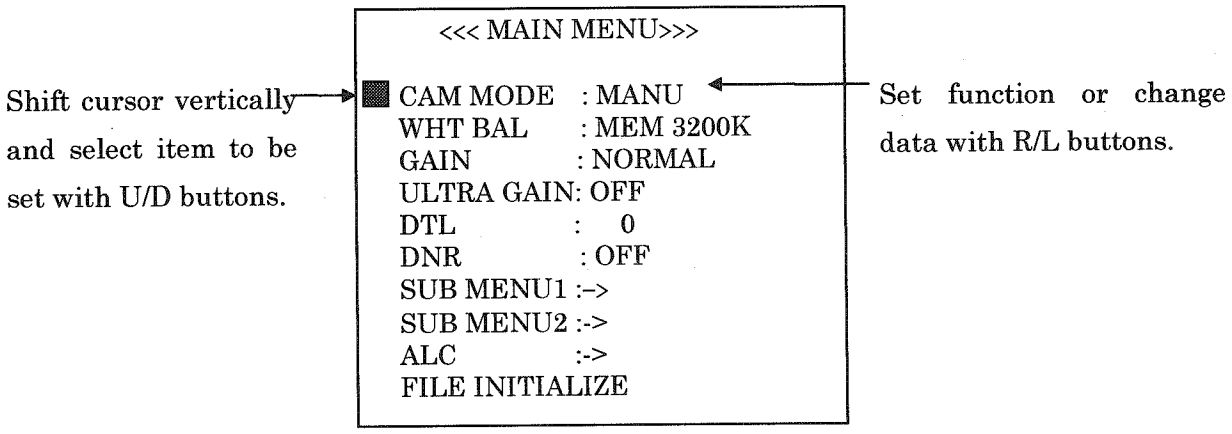
AWB/L
Direct mode: Press for longer than 2 seconds for automatic white balance.
Menu mode: Change function data or execute function.

U
Direct mode: Operation not assigned.
Menu mode: Shift cursor upward and select function.

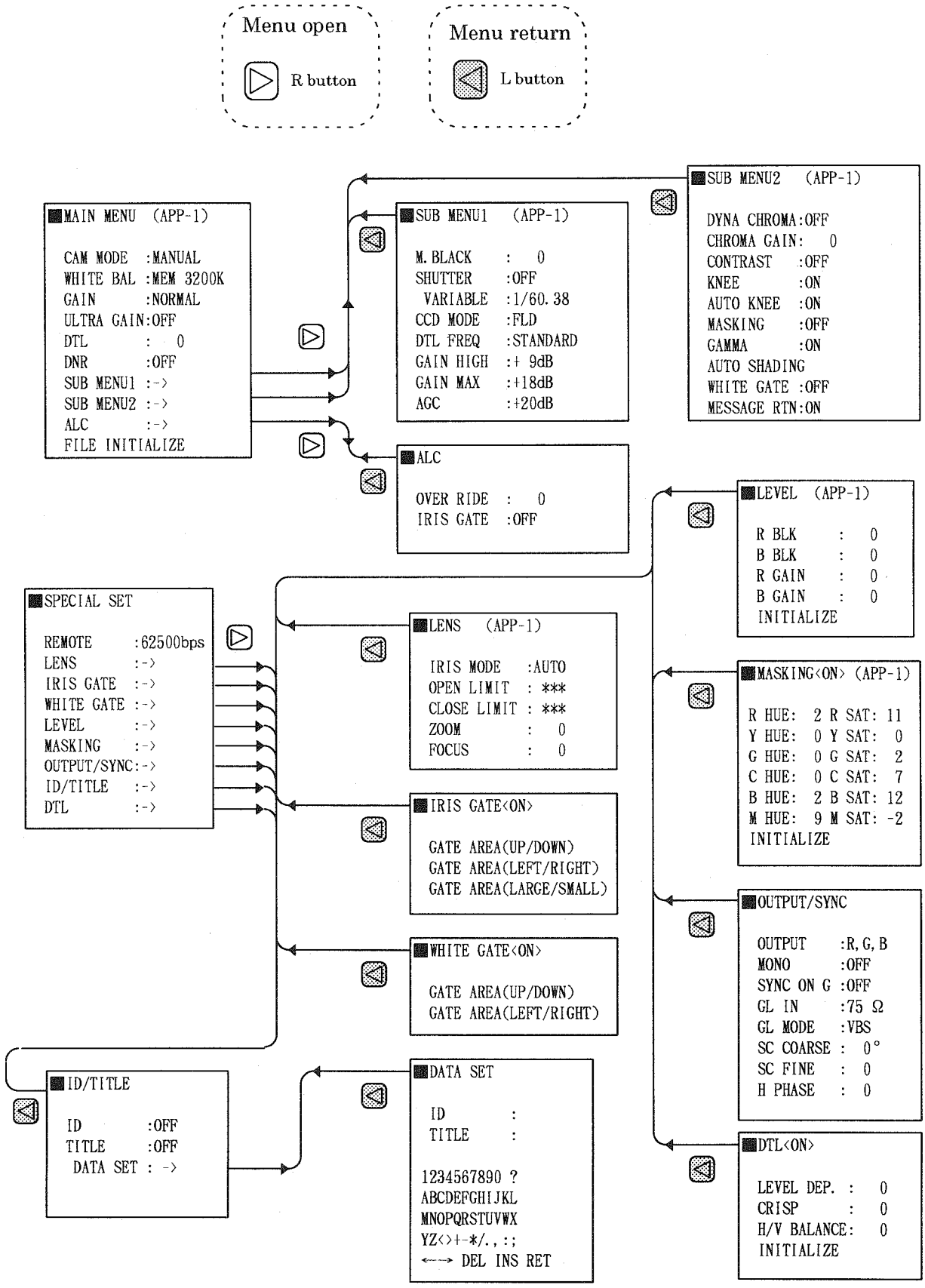
ABB/R
Direct mode: Press for longer than 2 seconds for automatic black balance.
Menu mode: Change function data or execute function.

BAR/D
Direct mode: Color bar signal on/off.
Menu mode: Shift cursor downward and select function.

2) Menu operation



4-2.3 Factory settings

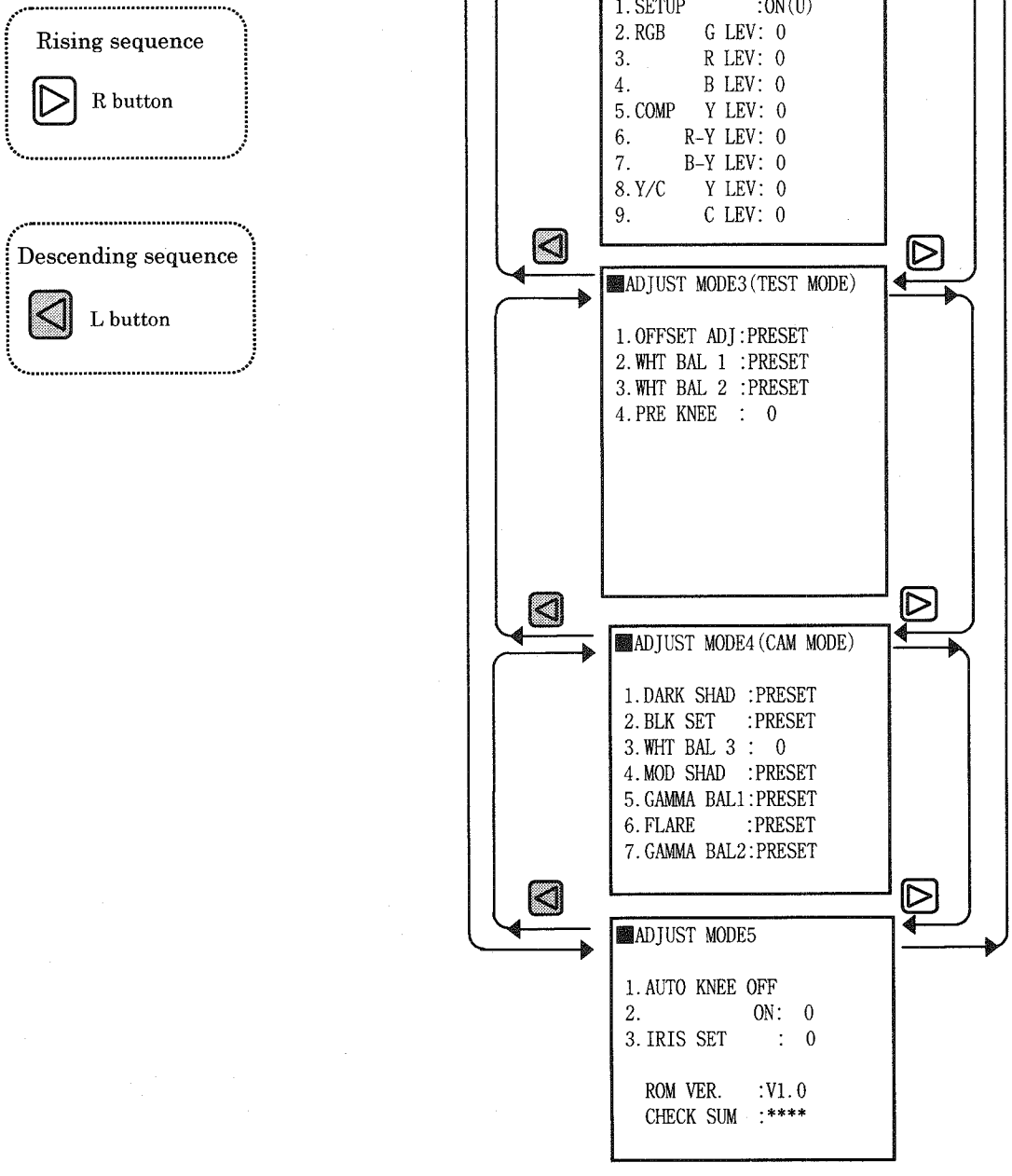


4-2.4 Adjust menu

Adjust menus are used for nearly all the camera adjustments and checks.

1) Menu selection

Set the **ADJ switch** of the CPU unit to **on** to display the **ADJUST MODE 1** menu. Press ◁ button to select the modes in rising sequence and ▷ button to select in descending sequence. There are 5 Adjust Mode menu.



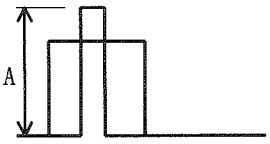
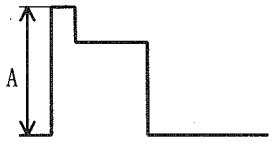
Power supply voltage

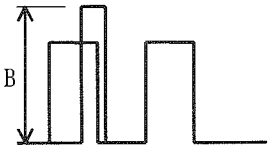
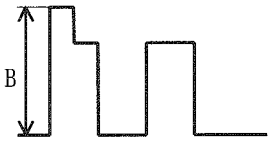
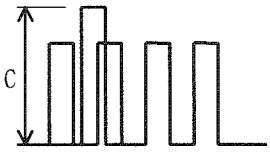
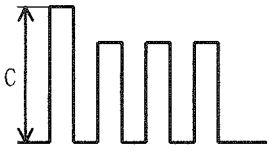
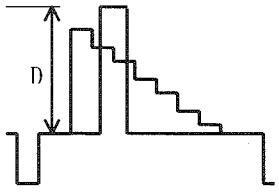
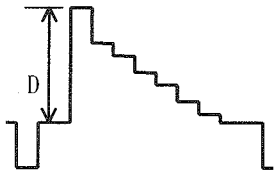
No	Item	Adjust	Check point	Initial setting	Adjustment	Remark
1	Check Output voltage		PS unit CN300 Pin17 CN300 Pin1 CN300 Pin3 CN300 Pin9 CN300 Pin12 CN300 Pin11	Set the PS unit in the extender board	Measure the PS or extender board connector pin voltages. +4.97±0.1Vdc +4.97±0.1Vdc +3.30±0.1Vdc +15.0±1Vdc -3.2±0.1Vdc -9.0±0.5Vdc	

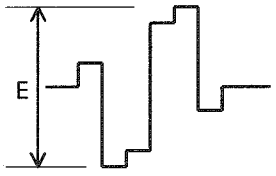
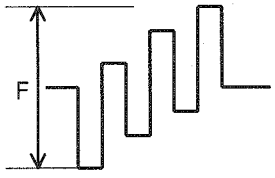
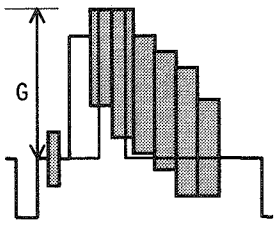
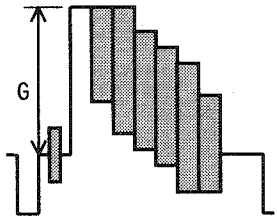
3) Sync system

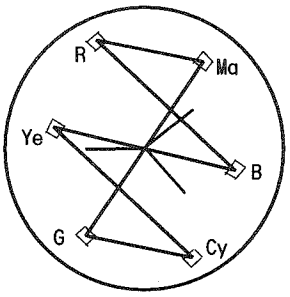
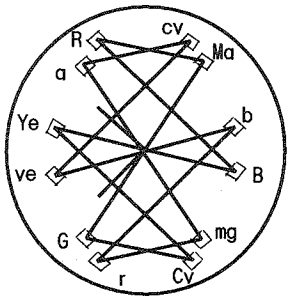
No	Item	Adjust	Check point	Initial setting	Adjustment	Remark
1	Adjustment of SC frequency	SG/CPU unit SW405 (ADJ SW)	SG/CPU unit TP7	Set the **ADJ switch** to **ON** and display **ADJUST MODE 1** menu. Position the cursor to 1. SC ADJ.	Press ▷ and ◁ buttons to change the frequency setting. NTSC:3579545±10Hz PAL :4433619±10Hz	
2	Adjustment of SC PLL DC		TP1	Supply a black burst signal to GL IN. Position the cursor to 2. SC GL ADJ.	Press ▷ and ◁ buttons to change the frequency setting. 3.3±0.2Vdc	
3	Adjustment of H PLL DC		TP6	Supply a sync signal to HD/VD IN and position the cursor to 3. H GL ADJ.	Press ▷ and ◁ buttons to change the frequency setting. 3.0±0.2Vdc	

3) Color bar

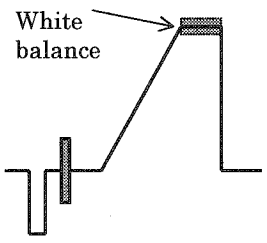
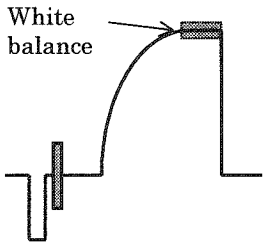
No	Item	Adjust	Check point	Initial setting	Adjustment	Remark
1	Adjustment of SET UP		VIDEO OUT	Select the **ADJUST MODE2** menu. Connect Video Out to an oscilloscope or waveform monitor and terminate at 75 Ω. Position the cursor to 1. Setup.	Press ◁ and ▷ buttons to select between on (U type) and off (E/K types)	
2	Adjustment of G level		D-SUB pin4 G/Y OUT	Connect D-sub RGB Out to an oscilloscope or waveform monitor and terminate at 75 Ω. Position the cursor to 2. RGB G LEV.	Press ◁ and ▷ buttons to adjust the G Out level. A:700±20mVp-p  (NTSC)  (PAL) To render the levels easier to see, press the Setup button to extinguish all characters other than the flashing cursor. Again press the Setup button to display the menu screen. Press ◁ and ▷ buttons to change the data of the item indicated by the flashing cursor. The same operation can be used for the following adjustments.	

No	Item	Adjust	Check point	Initial setting	Adjustment	Remark
3	Adjustment of R level		D-SUB pin4 R/R-Y OUT	Set the cursor to 3. R LEV.	Press ◁ and ▷ buttons to change the R LEV setting and adjust the R Out level. B: 700±20mVp-p   	(NTSC) (PAL)
4	Adjustment of B level		D-SUB pin5 B/B-Y OUT	Set the cursor to 4. B LEV.	Press ◁ and ▷ buttons to change the B LEV setting and adjust the B Out level. C: 700±20mVp-p   	(NTSC) (PAL)
5	Adjustment of Component Y level		D-SUB pin4 G/Y OUT	Set the cursor to 5. COMP Y LEV.	Press ◁ and ▷ buttons to change the Y LEV setting and adjust the Y Out level. D:100±3 IRE  D:700±20mVp-p  	(NTSC) (PAL)

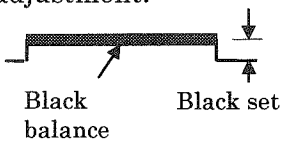
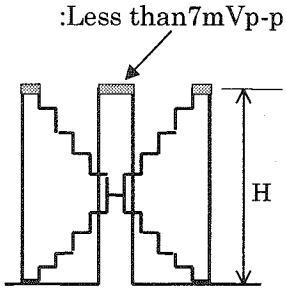
No	Item	Adjust	Check point	Initial setting	Adjustment	Remark
6	Adjustment of R-Y level		D-SUB pin3 R/R-Y OUT	Set the cursor to 6. R-Y LEV.	Press ◁ and ▷ buttons to change the R-Y LEV setting and adjust the R-Y Out level. E:525m±20mVp-p 	
7	Adjustment of B-Y level		D-SUB pin6 B/B-Y OUT	Set the cursor to 7. B-Y LEV.	Press ◁ and ▷ buttons to change the B-Y LEV setting and adjust the B-Y Out level. F:525m±20mVp-p 	
8	Adjustment of Composite Y level		VIDEO OUT	Set the cursor to 8. Y/C Y LEV.	Press ◁ and ▷ buttons to change the Y LEV setting and adjust the Y Out level. G:100±3IRE  G:700±20mVp-p 	(NTSC) (PAL)

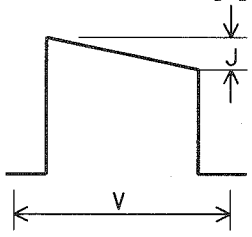
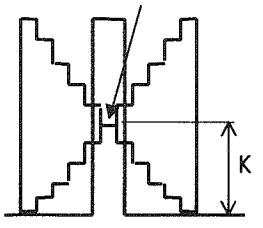
No	Item	Adjust	Check point	Initial setting	Adjustment	Remark
9	Adjustment of Composite Chroma level		VIDEO OUT	Connect Video Out to a vectorscope and terminate at 75 Ω. Set the cursor to 9. Y/C C LEV.	Press ◁ and ▷ buttons to change the C LEV setting and adjust the vectors for each color to the respective vectorscope reference marks. ±2%   	(NTSC) (PAL)

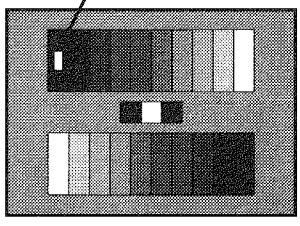
5) Test signal

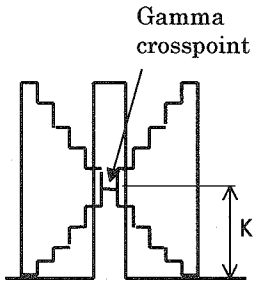
No	Item	Adjust	Check point	Initial setting	Adjustment	Remark
1	Adjustment of Y OFFSET		VIDEO OUT	Display the **ADJUST MODE 3** menu and set the cursor to 1. OFFSET ADJ.	Press ▷ button to initiate automatic adjustment.	
2	Adjustment of Test level (LINER)			Set the cursor to 2. WHITE BAL1.	Press ▷ button to initiate automatic adjustment. The signal level rating is 100 %. 	
3	Adjustment of Test level (GAMMA)			Set the cursor to 3. WHITE BAL2.	Press ▷ button to initiate automatic adjustment. The signal level rating is 100 %. 	
4	Adjustment of Pre knee			Set the cursor to 4 PRE KNEE.	Press ◁ and ▷ buttons to set the pre knee to -50.	

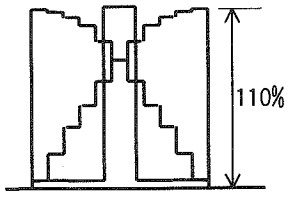
6) Video signal

No	Item	Adjust	Check point	Initial setting	Adjustment	Remark
1	Adjustment of Dark shading		VIDEO OUT	Display the **ADJUST MODE 4** menu and set the cursor to 1. DARK SHAD.	Press ▷ button to initiate automatic adjustment. Dark shading is compensated for the H sawtooth, H parabola and H frame.	
2	Adjustment of Black set and black balance			Set the cursor to 2. BLK SET.	Press ▷ button to initiate automatic adjustment.  Repeat the adjustments of Items 1 and 2, then proceed to Item 3.	
3	Adjustment of Video level	ASP unit RV400 (R GAIN) RV401 (G GAIN) RV402 (B GAIN)		Set the cursor to 3. WHITE BAL3	Close the lens iris. Adjust the black set level with ◁ and ▷ buttons. 10.5±2IRE 20 ±10mVp-p Pickup a greyscale chart at 3200 K, 2000 lux. F8.0 and adjust the white peak level. H:100±2IRE 700±15mVp-p White balance :Less than7mVp-p  Repeat the adjustments of Items 2 and 3, then proceed to Item 4.	(NTSC) (PAL) (NTSC) (PAL)

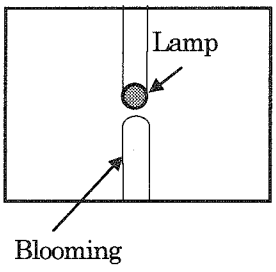
No	Item	Adjust	Check point	Initial setting	Adjustment	Remark
4	Adjustment of Modulation shading		D-SUB pin4 G/Y OUT	Set the cursor to 4. MOD SHAD. Pickup a uniformly illuminated white chart and set the G Out level to 80 IRE. Press the Setup button to extinguish characters other than the flashing cursor.	Adjust MOD SHAD at G Out with ◁ and ▷ buttons. J: Less than20mVp-p  	
			VIDEO OUT		Press △ button to initiate automatic white balance, then press ▽ button to initiate automatic shading adjustment. Afterwards, press the Setup button to display the menu screen.	
5	Adjustment of Gamma balance (Normal Gain)		D-SUB pin4 G/Y OUT	Set the cursor to 5. GAMMA BAL 1. Pickup a greyscale chart and adjust the lens iris for the specified white peak level. Press the Setup button to extinguish characters other than the flashing cursor.	Adjust gamma balance at G Out with ◁ and ▷ buttons. Set the gamma crosspoint. K: 57.5±1 IRE 420±7m Vp-p Gamma crosspoint  	(NTSC) (PAL)

No	Item	Adjust	Check point	Initial setting	Adjustment	Remark
5	Adjustment of Gamma balance (Normal Gain)		VIDEO OUT		Press △ button to initiate automatic white balance adjustment. Reduce the lens iris opening to set the white peak to the crosspoint level. Press ▽ button to initiate automatic adjustment of gamma balance 1. Press the Setup button to display the menu screen. Again adjust Item 2 Black set.	
6	Adjustment of Flare			Set the cursor to 6. FLARE. Pickup a greyscale chart and adjust the lens iris for the specified white peak level. Press the Setup button to extinguish characters other than the flashing cursor.	Press △ button to initiate automatic white balance adjustment. Open the lens iris 2 f-stops. Press ▽ button for automatic flare adjustment. The gate window is displayed. Adjust the picture size so display the gate window at the black position of the greyscale chart (see figure). Gate window  Again press ▽ button for automatic flare adjustment. Carrier balance is obtained within the gate window. Press the Setup button to display the menu screen.	

No	Item	Adjust	Check point	Initial setting	Adjustment	Remark
7	Adjustment of Gamma balance (Max Gain)		D-SUB pin4 G/Y OUT	Set the cursor to 7. GAMMA BAL 2. Pickup a greyscale chart and adjust the lens iris for the specified white peak level. Press the Setup button to extinguish characters other than the flashing cursor.	Adjust gamma balance at G Out with ◁ and ▷ buttons. Set the gamma crosspoint. K: 52±1 IRE 390±7m Vp-p  	(NTSC) (PAL)
			VIDEO OUT		Press △ button to initiate automatic white balance adjustment. Reduce the lens iris opening to set the white peak to the crosspoint level. Press ▽ button to initiate automatic adjustment of gamma balance 2. Press the Setup button to display the menu screen. Again adjust Item 2 Black set.	

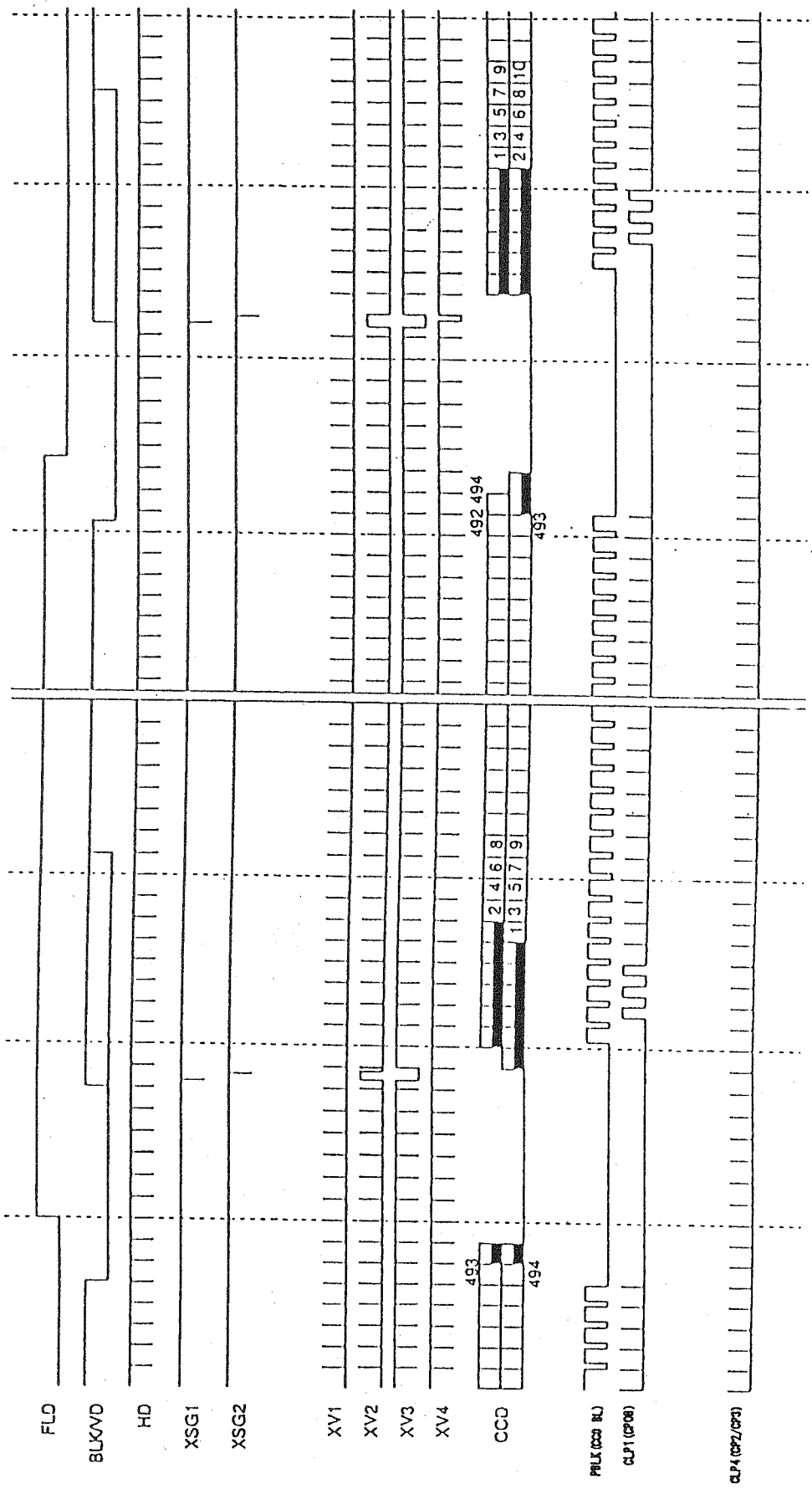
No	Item	Adjust	Check point	Initial setting	Adjustment	Remark
8	Adjustment of Auto knee		VIDEO OUT	Display the **ADJUST MODE 5** menu, pickup a greyscale chart and set the cursor to 1. AUTO KNEE ON.	Open the lens iris 2 f-stops more than the rated value. Adjust ◁ and ▷ buttons so that the white peak is 110 % of the rated level. 	
9	Adjustment of Iris set level			Pickup a greyscale chart and set the cursor to 2. IRIS SET.	Change the iris set value with ◁ and ▷ buttons and adjust the white peak level. 98±4 IRE 0.68±0.03Vp-p	 (NTSC) (PAL)
10	End of Adjust mode	SG/CPU unit SW405 (ADJ SW)		Set the **ADJ switch** to **OFF** and exit the Adjust menu.		

4-2.5 CCD SUB voltage

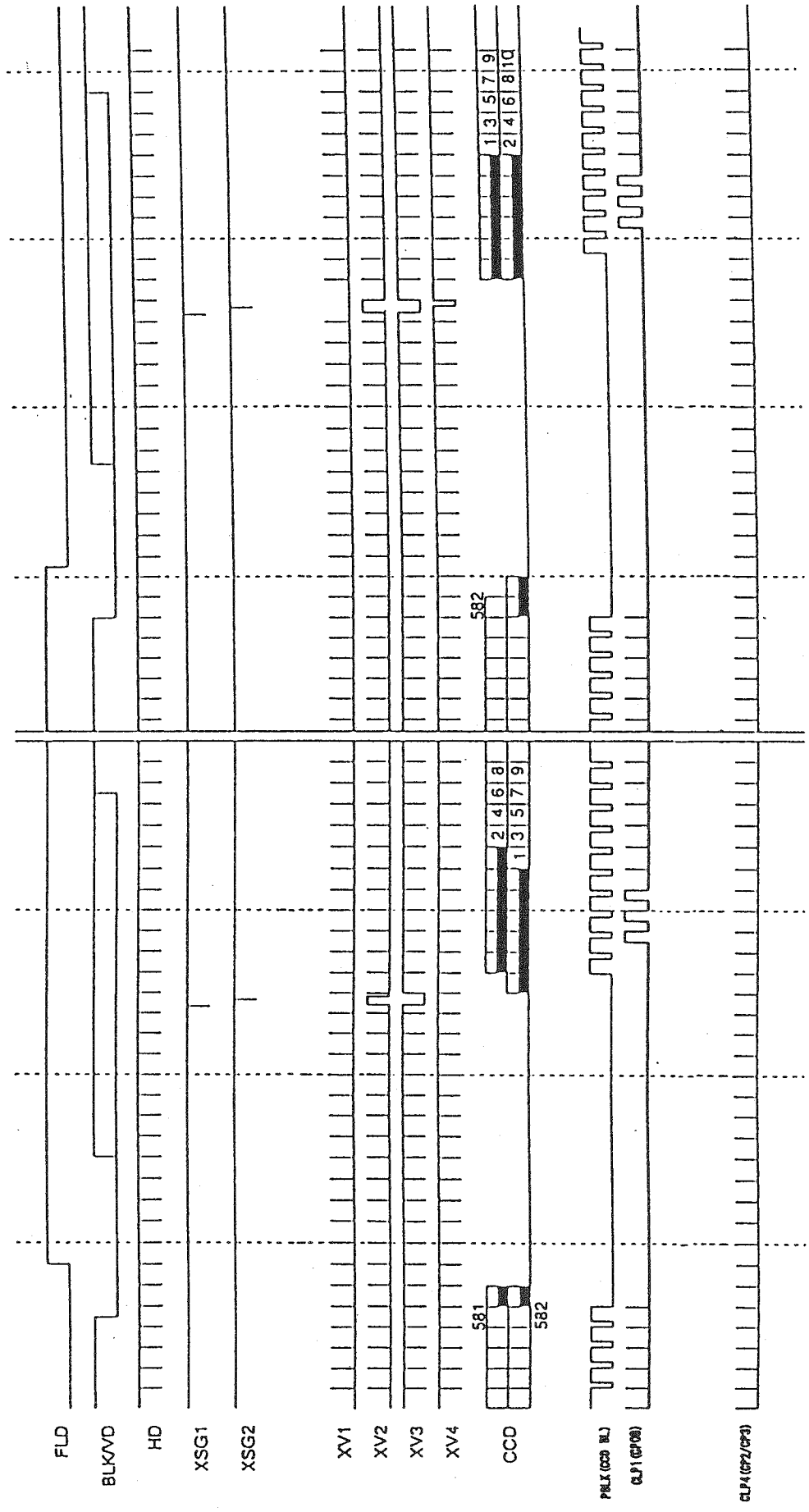
No	Item	Adjust	Check point	Initial setting	Adjustment	Remark
1	Adjustment of CCD SUB voltage	DRV unit RV502 (R SUB) RV503 (G SUB) RV504 (B SUB)	VIDEO OUT	Pickup the light from a 100 W bulb.	Adjust the sub voltage of each channel to prevent blooming in the overall monitor display.  ·Turn one of the RGB controls counter-clockwise to where blooming occurs in the corresponding color. If blooming does not occur, turn the control fully counter-clockwise. ·Turn the sub control clockwise to where blooming extinguishes. · Confirm absence of blooming regardless of the position of the light with respect to the screen. Notes 1. Vertical smear characteristic of a CCD does not change. 2. Turning a control excessively clockwise reduces the video signal dynamic range.	

6. TIMING CHART

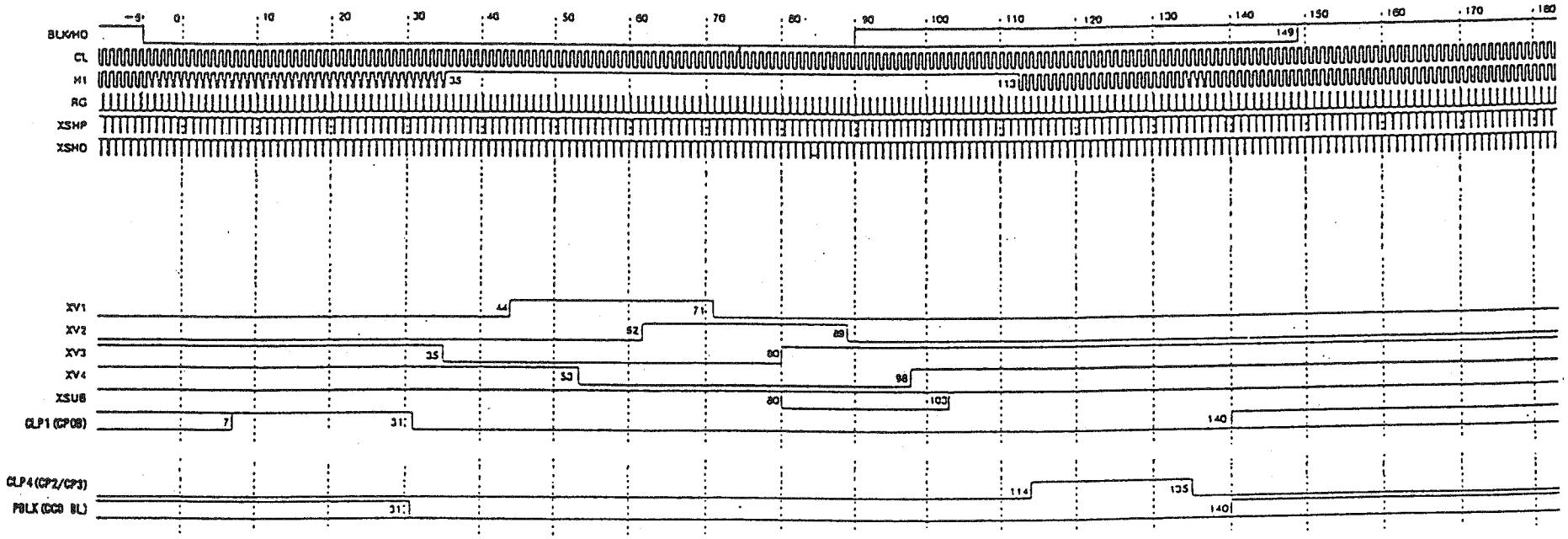
V direction timing chart of CCD TIMING GEN (NTSC)



V direction timing chart of CCD TIMING GEN (PAL)

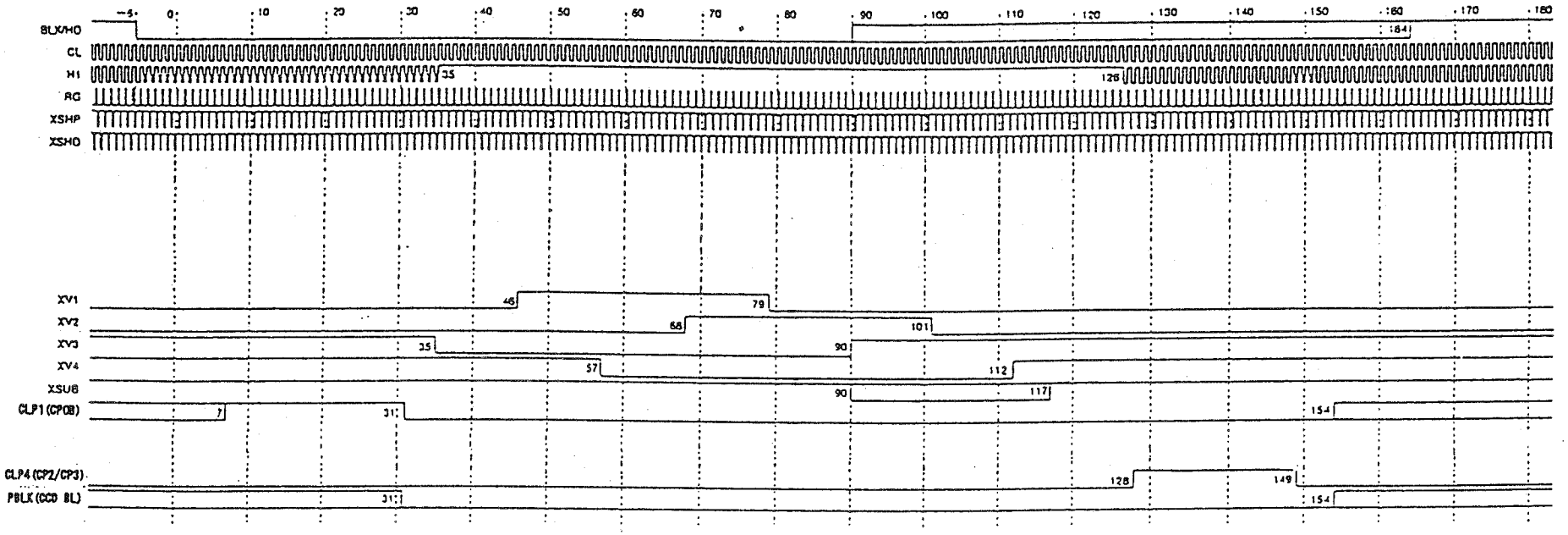


H direction timing chart of CCD TIMING GEN (NTSC)



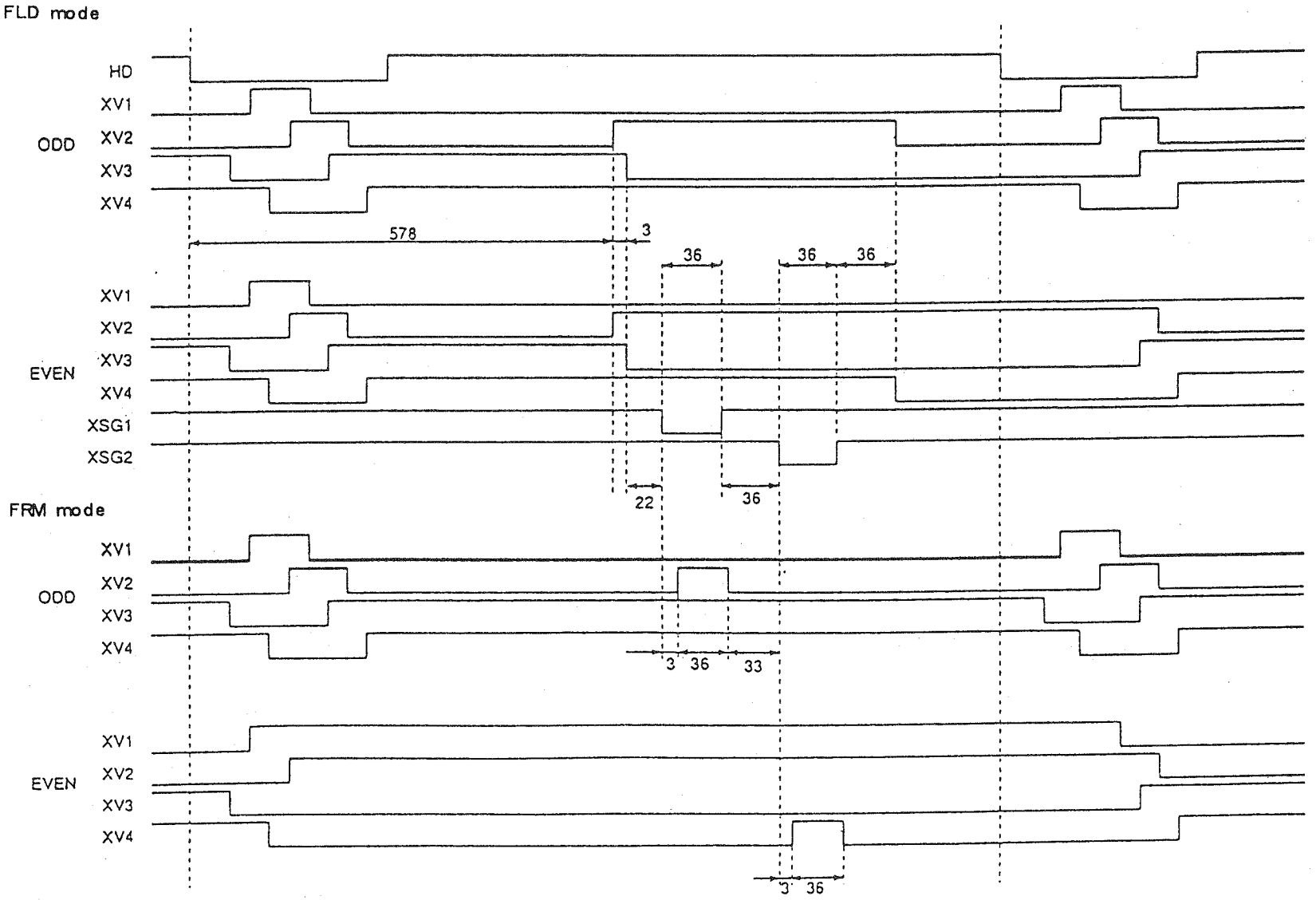
(GM = L, D2 = H, TEST2 = L)

H direction timing chart of CCD TIMING GEN (PAL)



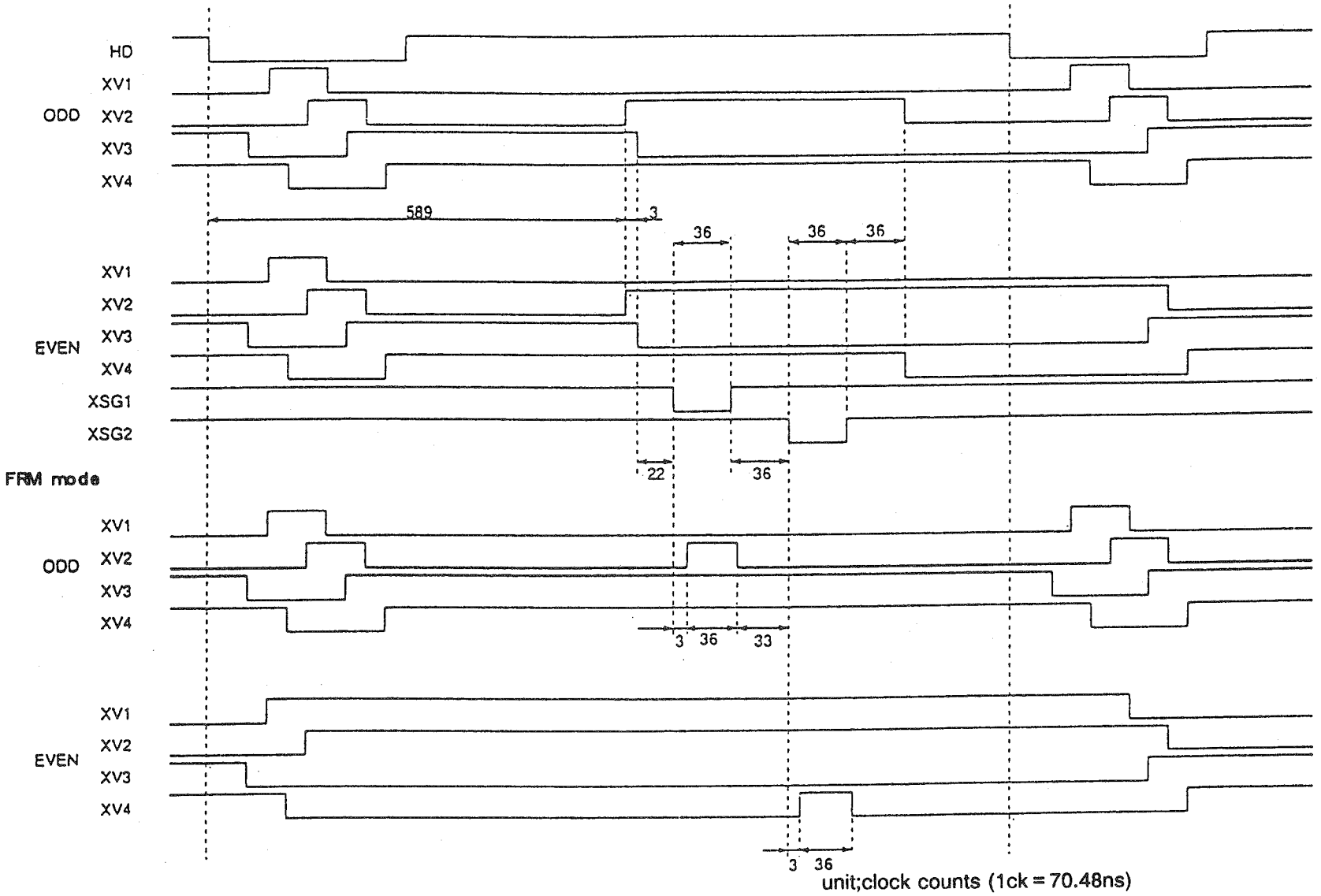
(GM = L, D2 = H, TEST2 = L)

Timing chart of CCD TIMING GEN (NTSC)

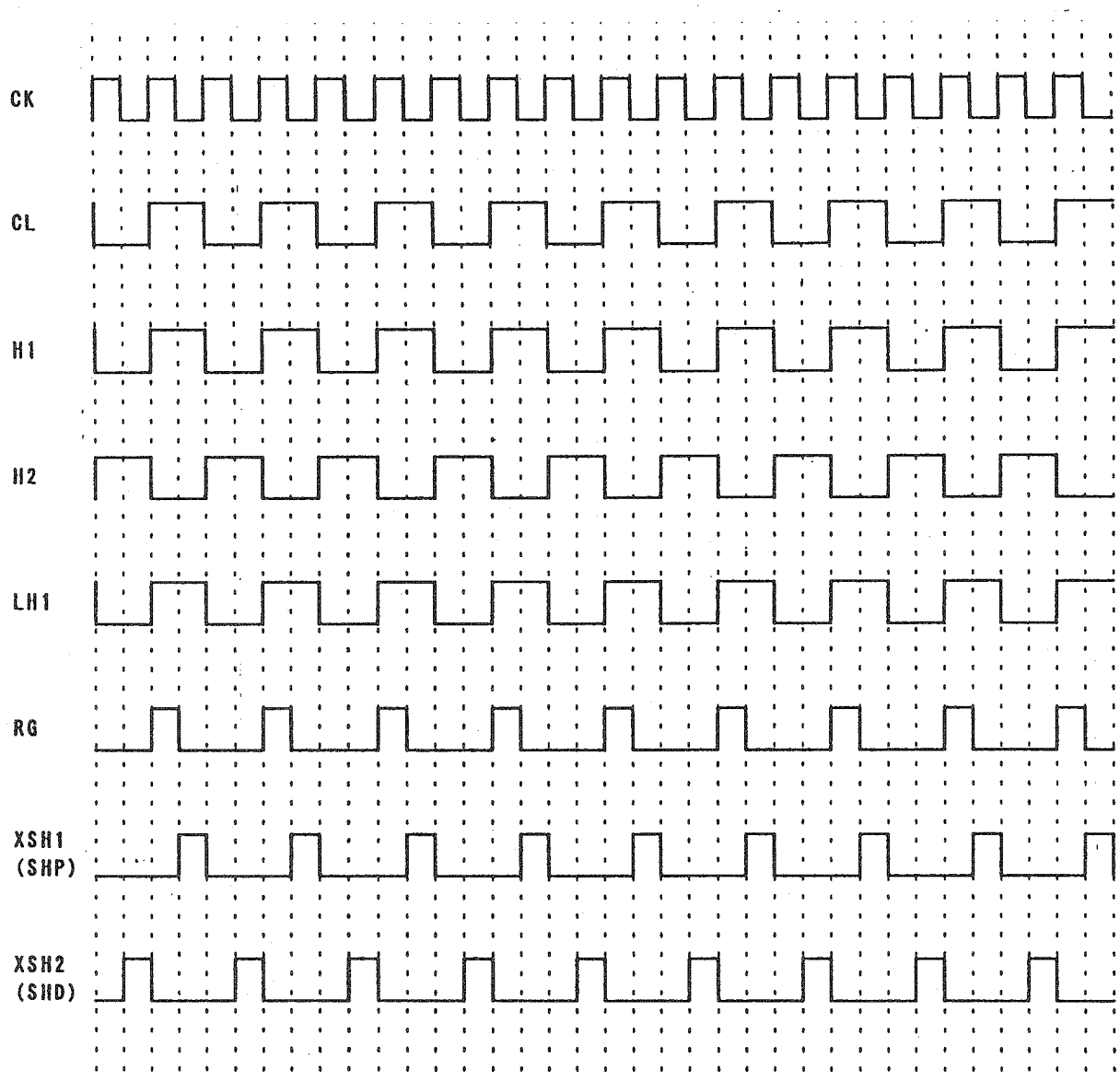


Timing chart of CCD TIMING GEN (PAL)

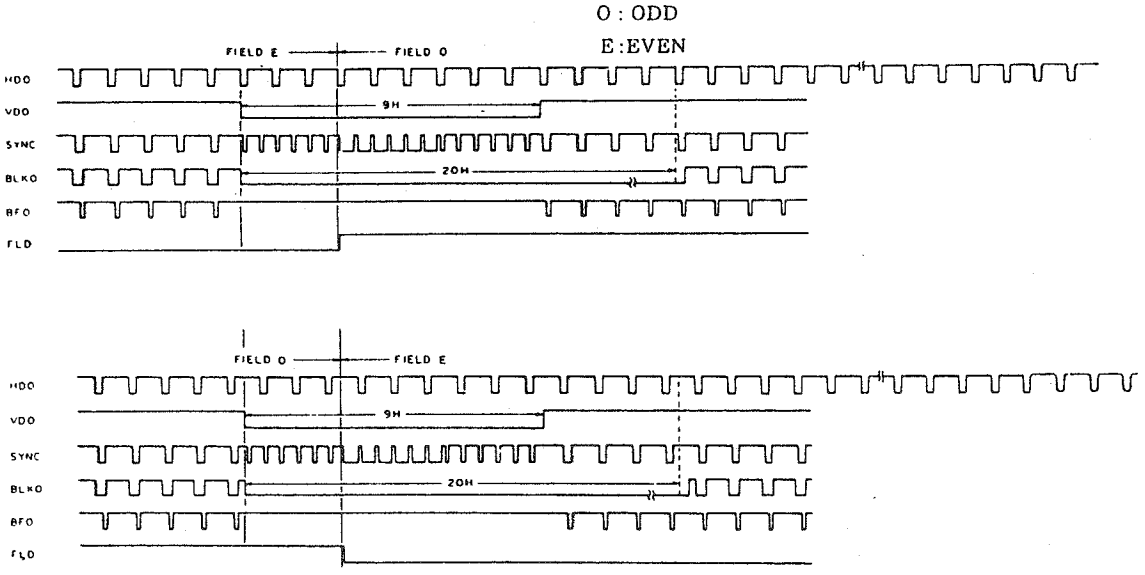
FLD mode



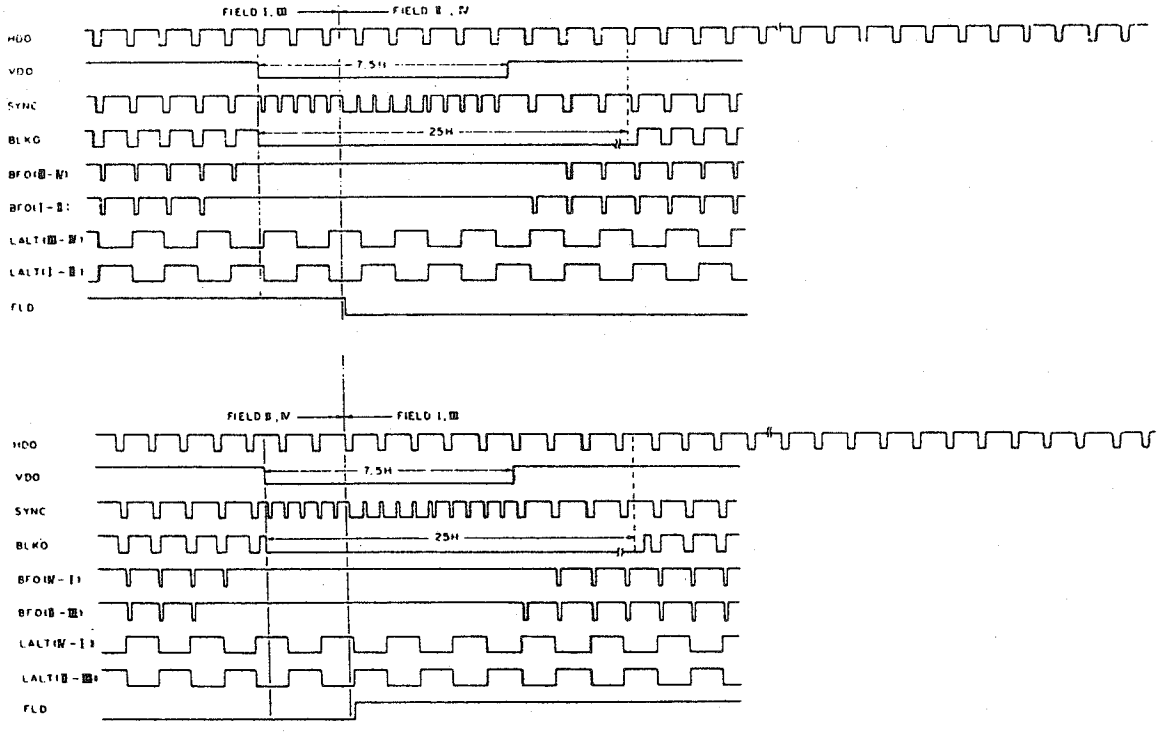
High speed phase timing chart



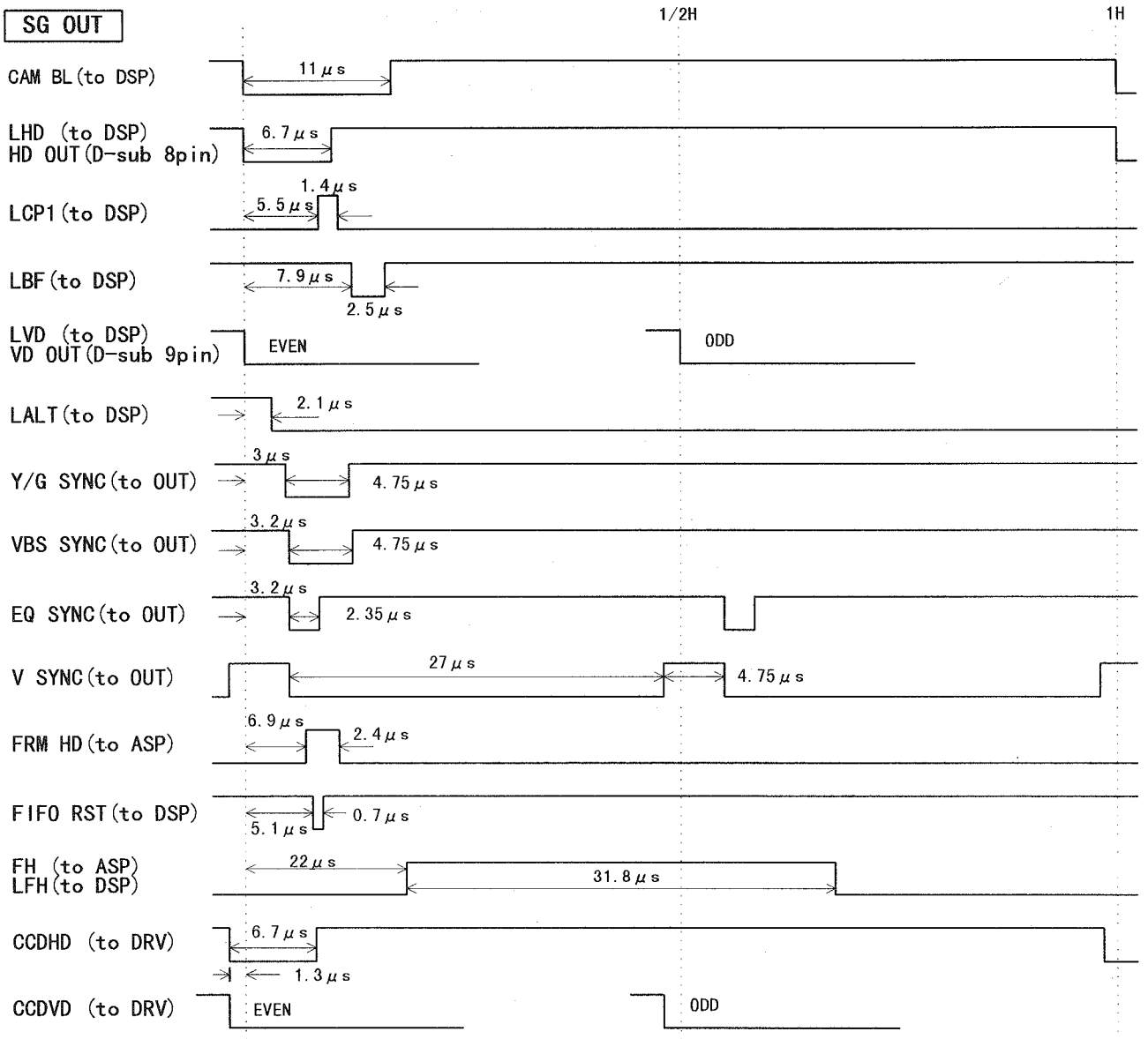
V direction timing chart (NTSC)



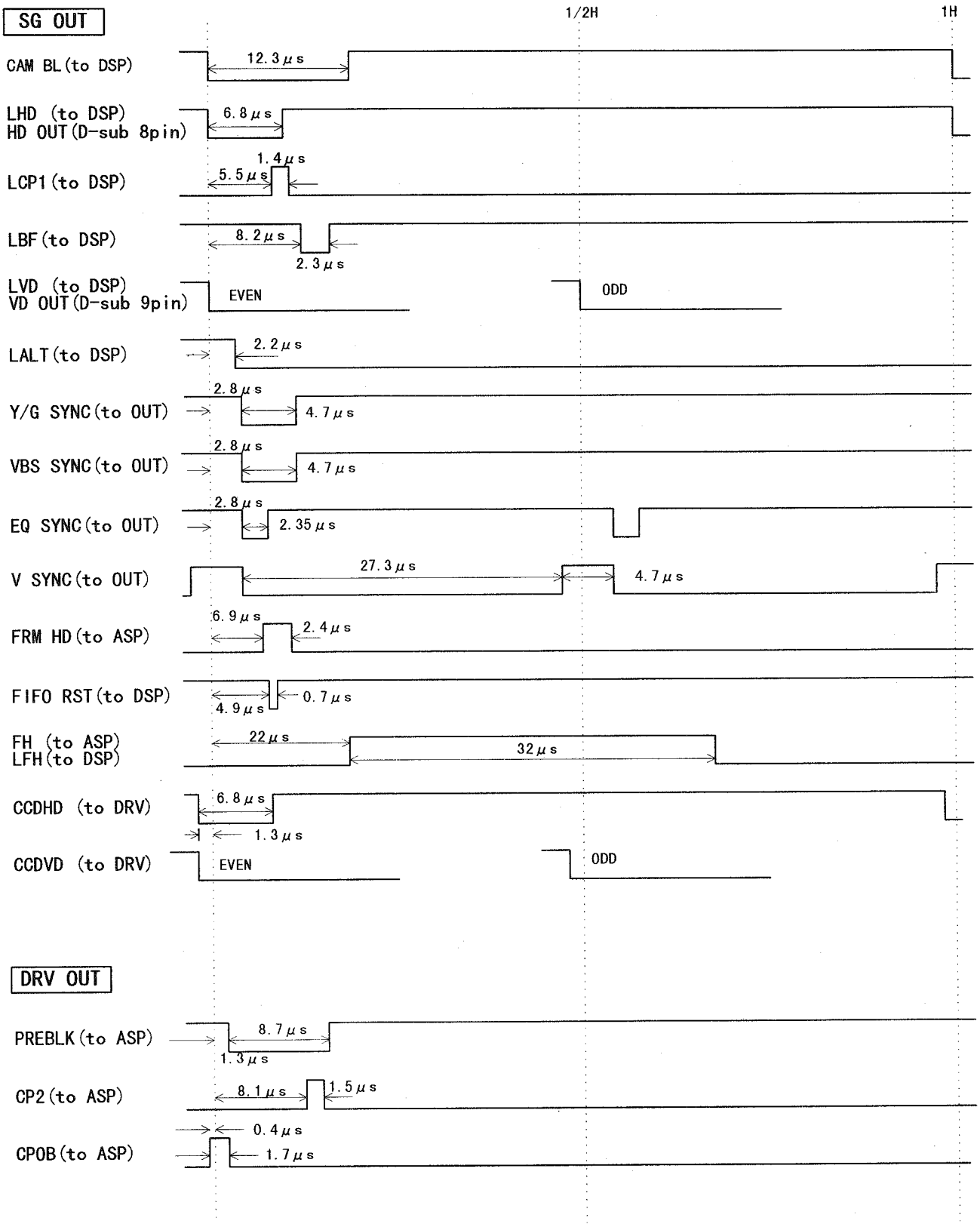
V direction timing chart (PAL)

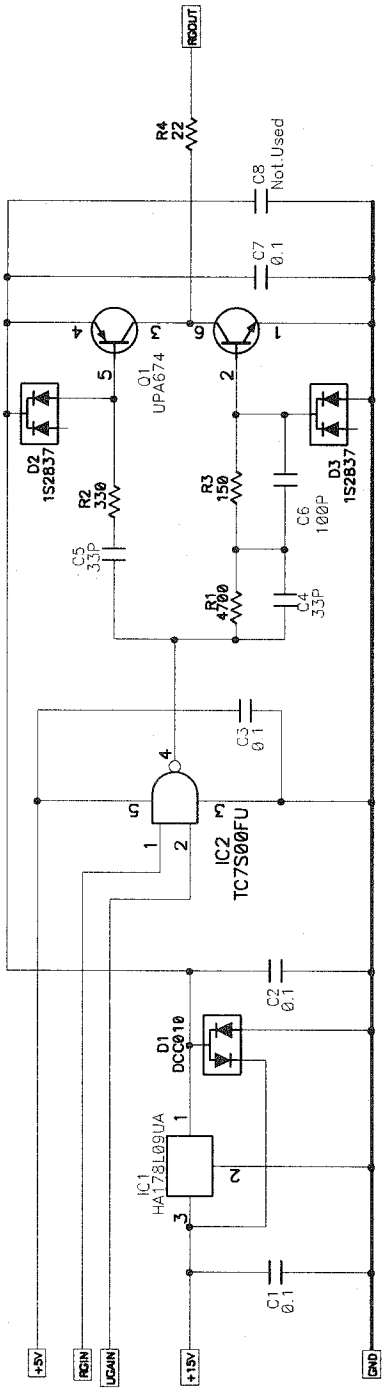


H direction timing chart(NTSC)

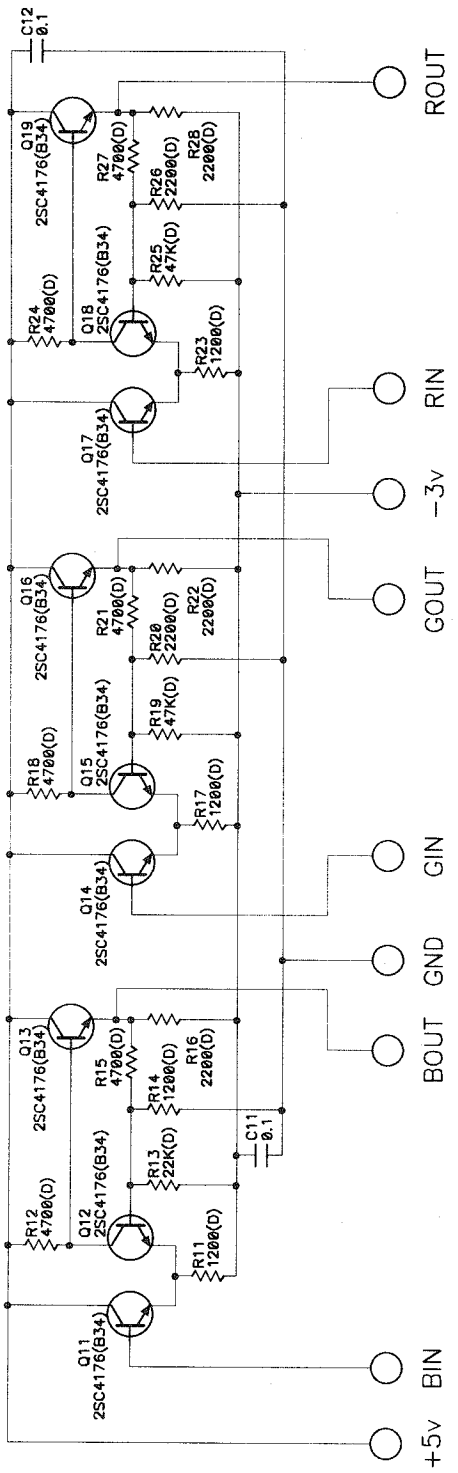


H direction timing chart(PAL)

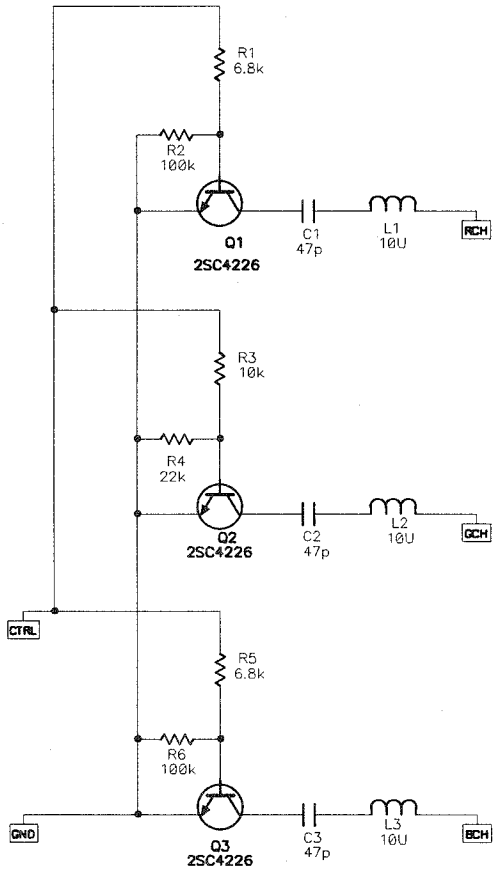




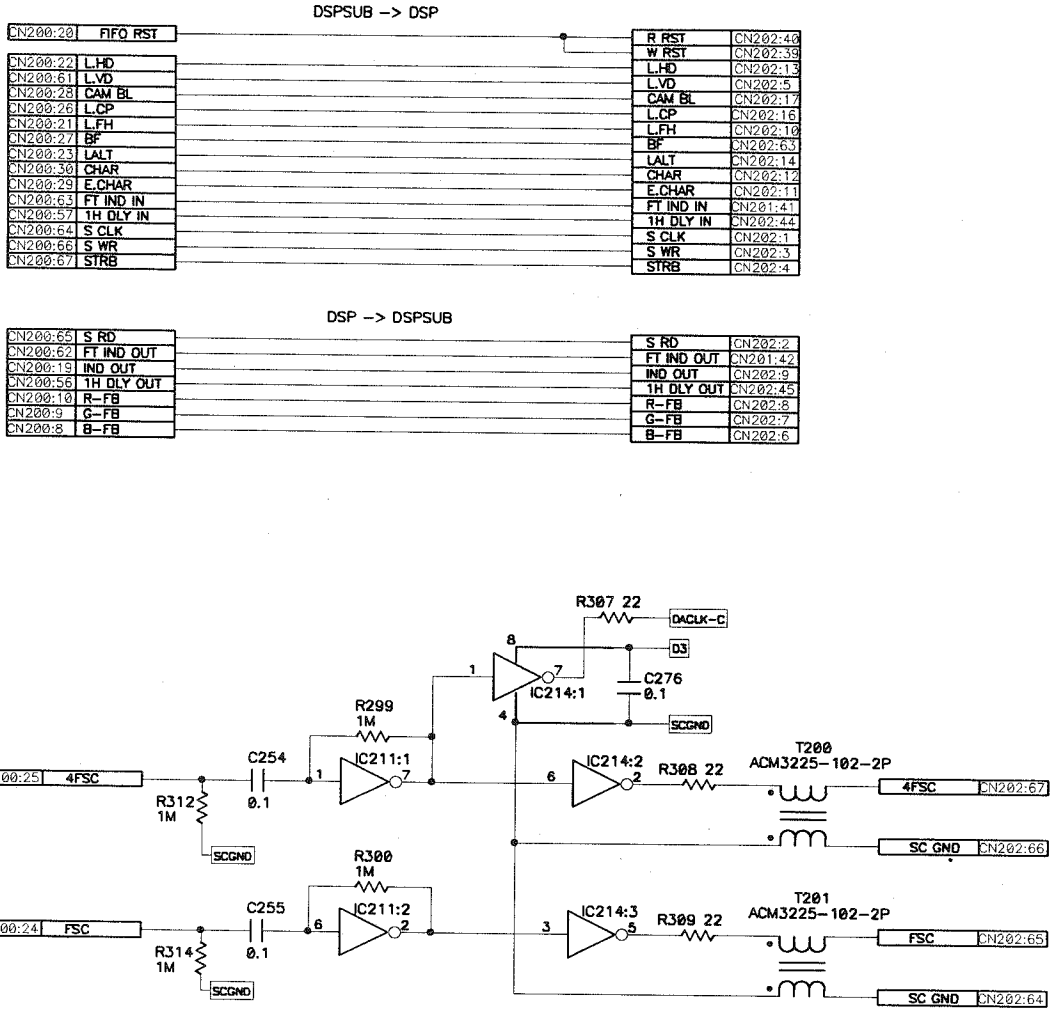
DRV-SUB UNIT
SCHEMATIC DIAGRAM

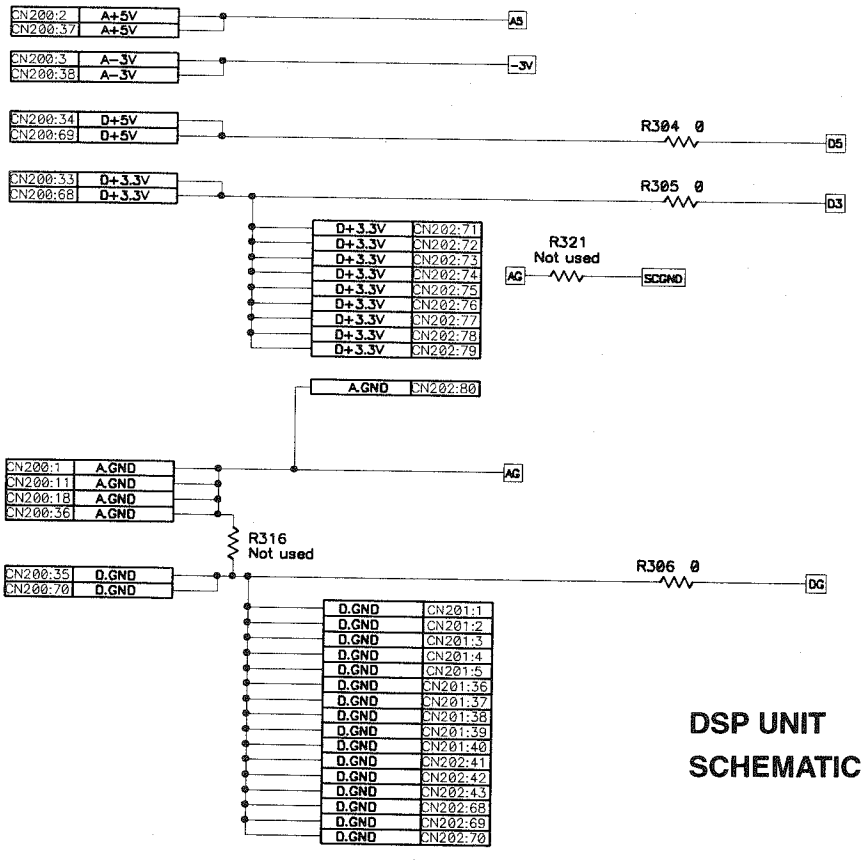


AMP UNIT
SCHEMATIC DIAGRAM

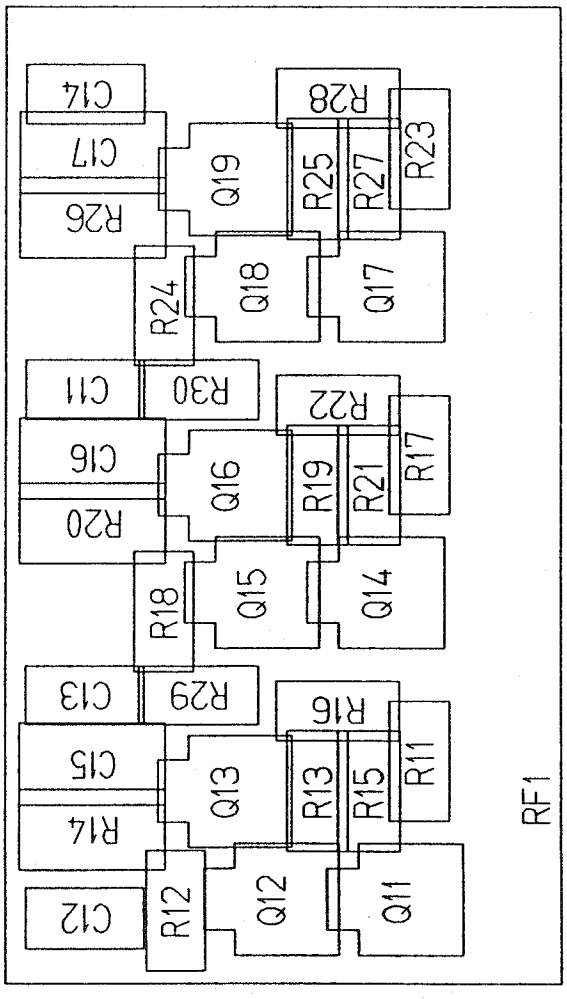


TRAP UNIT
SCHEMATIC DIAGRAM





DSP UNIT
SCHEMATIC DIAGRAM (3/3)


C14
C17
R26
Q19
R28
R25
R27
R23
R24
Q18
Q17
C11
R30
R22
C16
Q16
R19
R21
R17
R20
R18
Q15
Q14
C13
R29
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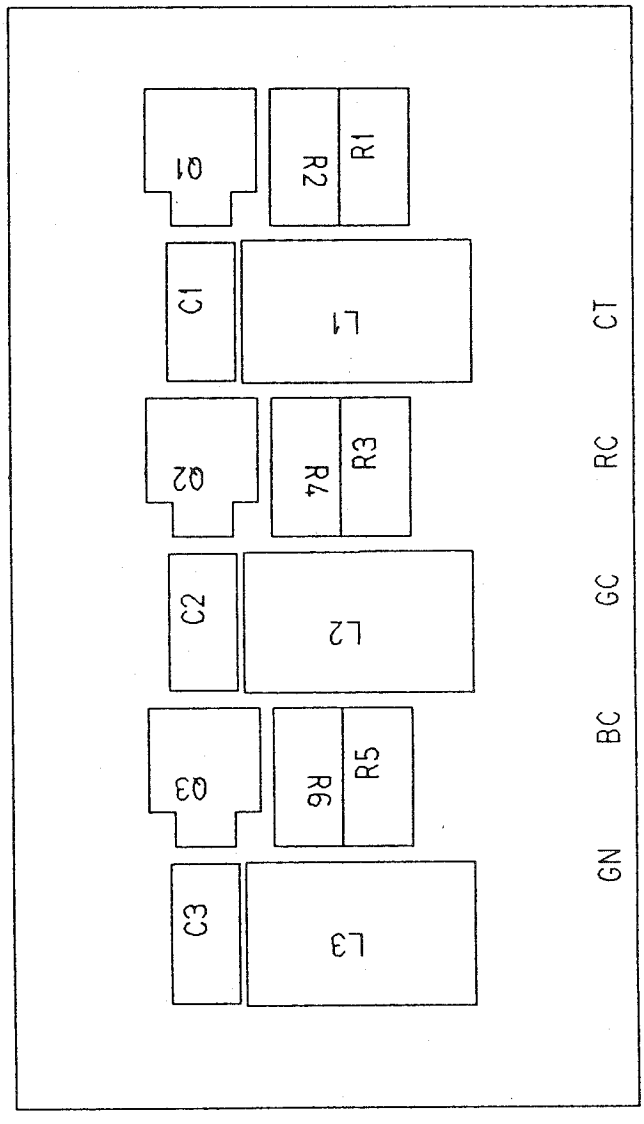
C15
Q13
R13
R15
R11
R14
C12
R12
Q12
Q11
RF1

AMP



TRAP

9. ELECTRICAL AND MECHANICAL PARTS LIST

Symbol	Part Code	Description	Q'ty
2	8598337 A	SCREW BASE	2
3	8661679 A	SHIELD PACKING	2
4	22M0232	BOTTOM FRAME	1
5	8645000 A	SPACER	1
6	8645000 B	SPACER	1
7	8661661 A	SHIELE PLATE(PAL)	1
8	8647837 A	SHIELD PLATE P	1
9	3402222 A	REAR PANEL	1
10	3406029 A	REAR PANER	1
11	8655467 A	BRACKET	1
12	8585693 C	SPACER	1
13	8655493 A	BRACKET	1
14	8655529 A	SHEET	1
15	8655529 B	SHEET	1
16	8655547 A	SHEET	1
17	8655546 A	SHEET	1
101	XCA6204	SCREW BIND HD M2X4 NIP	11
102	XCA6010	SCREW FLAT HD M2.6X10 NIP	1
103	8447518 H	SCREW PAN HD M2.6X5 NIP	4
104	XCA6006	SCREW BIND HS M2.6X6 NIP	4
105	XCA6205	SCREW BIND HD M2X5 NIP	4
106	8603769 B	SCREW BIND HD M2X4 NIP	3
107	XCA1705	NUT M2.6 NIP	1
108	XCA1878	SPRING WASHER M2.6 NIP	1
109	8370588 D	SCREW BIND HD M2X3 NIP	1
G01	22X0763	FRONT FRAME ASSY(NTSC)	1
G01	22X0764	FRONT FRAME ASSY(PAL)	1
G02	22X0765	REAR PANEL ASSY	1
G03	22M0233	TOP CHASSIS ASSY	1
G04	22X0766	SHIELD PLATE ASSY	1
G05	22E0426	DRIVE UNIT ASSY	1
G06	22E0427	ASP UNIT ASSY	1
G07	22E0428	DSP UNIT ASSY	1
G08	22X0766	DSP-SUB UNIT ASSY	1
G09	22E0429	VDA UNIT ASSY	1
G10	22E0430	PS UNIT ASSY	1
G11	22E0431	CPU/SG UNIT ASSY	1
G12	22E0432	MB UNIT ASSY	1
G13	3401363 A	TOP COVER(NTSC)	1
G13	22M0242	TOP COVER ASSY(PAL)	1
201	22X0438	LENS MOUNT	1
202	8497381 A	MOUNT LOCK LEVER	1

11. ELECTRICAL PARTS LIST

SNS R UNIT

Symbol	Parts Code	..... Description.....	Remark
IC11	IDS0764CX	IC,LOGIC SN74AHC04PW	
Q10	HTC0969CA	TRANSISTOR 2SC4176 (B34)	
Q11	HTC0969CA	TRANSISTOR 2SC4176 (B34)	
Q12	HTC0969CA	TRANSISTOR 2SC4176 (B34)	
Q13	HTA0387CA	TRANSISTOR 2SA1610 (Y34)	
Q14	HTK0159CA	TRANSISTOR 2SK302GR	
Q15	HTK0159CA	TRANSISTOR 2SK302GR	
Q16	HTK0159CA	TRANSISTOR 2SK302GR	
D10		Not Used	
R10	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R11	RME1801CA	R,METAL 1/32W 220 OHM +-5%	
R12		Not Used	
R13		Not Used	
R14	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R15	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R16	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R17	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R18	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R19	RME1785CA	R,METAL 1/32W 10 OHM +-5%	
R20	RME1793CA	R,METAL 1/32W 47 OHM +-5%	
R21		Not Used	
R22	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R23	RME1816CA	R,METAL 1/32W 3.9 KOHM +-5%	
R24	RME1828CA	R,METAL 1/32W 39 KOHM +-5%	
R25	RME1804CA	R,METAL 1/32W 390 OHM +-5%	
R26		Not Used	
R27	RME1785CA	R,METAL 1/32W 10 OHM +-5%	
R28	RME1785CA	R,METAL 1/32W 10 OHM +-5%	
R29	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R30	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R31	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R32	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R33	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R34	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R35	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R36	RME1413CA	R,METAL 1/10W 0 OHM	
R37	RME1785CA	R,METAL 1/32W 10 OHM +-5%	
R38	RME1785CA	R,METAL 1/32W 10 OHM +-5%	
R39	RME1785CA	R,METAL 1/32W 10 OHM +-5%	
R40	RME1785CA	R,METAL 1/32W 10 OHM +-5%	
C10	CCU0206CD	C,CERAMIC 50 V 2.2 UF+80-20%	
C11	CCG9612CA	C,CERAMIC 50 V 0.1 UF+80-20%	
C12		Not Used	
C13		Not Used	
C14	CCG0566CA	C,CERAMIC 50 V 47 PF+-5%	
C15	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
C16	CCG0564CA	C,CERAMIC 50 V 33 PF+-5%	
C17	CCU0206CD	C,CERAMIC 50 V 2.2 UF+80-20%	
C18	CCG9612CA	C,CERAMIC 50 V 0.1 UF+80-20%	
C19	CSX0164CD	C,TA ELYC 16 V 22 UF+-20%	
C20	CSS0168CA	C,TA ELYC 16 V 1 UF+-20%	
C21	CCG9613CA	C,CERAMIC 25 V 0.22UF+80-20%	
C22	CSX0164CD	C,TA ELYC 16 V 22 UF+-20%	
C23	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
T10	AFA0017CA	FIL ACM3225-102-2P	
CN11	JBF0105CJ	CONNECTOR FH12-20S-0.5SH	

Symbol	Parts Code	..... Description.....	Remark

SNS G UNIT

Symbol	Parts Code	..... Description	Remark
IC51	IDS0764CX	IC,LOGIC SN74AHC04PW	
Q50	HTC0969CA	TRANSISTOR 2SC4176 (B34)	
Q51	HTC0969CA	TRANSISTOR 2SC4176 (B34)	
Q52	HTC0969CA	TRANSISTOR 2SC4176 (B34)	
Q53	HTA0387CA	TRANSISTOR 2SA1610 (Y34)	
Q54	HTK0159CA	TRANSISTOR 2SK302GR	
Q55	HTK0159CA	TRANSISTOR 2SK302GR	
Q56	HTK0159CA	TRANSISTOR 2SK302GR	
D50		Not Used	
R50	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R51	RME1801CA	R,METAL 1/32W 220 OHM +-5%	
R52		Not Used	
R53		Not Used	
R54	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R55	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R56	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R57	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R58	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R59	RME1785CA	R,METAL 1/32W 10 OHM +-5%	
R60	RME1793CA	R,METAL 1/32W 47 OHM +-5%	
R61		Not Used	
R62	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R63	RME1816CA	R,METAL 1/32W 3.9 KOHM +-5%	
R64	RME1828CA	R,METAL 1/32W 39 KOHM +-5%	
R65	RME1804CA	R,METAL 1/32W 390 OHM +-5%	
R66		Not Used	
R67	RME1785CA	R,METAL 1/32W 10 OHM +-5%	
R68	RME1785CA	R,METAL 1/32W 10 OHM +-5%	
R69	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R70	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R71	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R72	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R73	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R74	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R75	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R76	RME1413CA	R,METAL 1/10W 0 OHM	
R77	RME1785CA	R,METAL 1/32W 10 OHM +-5%	
R78	RME1785CA	R,METAL 1/32W 10 OHM +-5%	
R79	RME1785CA	R,METAL 1/32W 10 OHM +-5%	
R80	RME1785CA	R,METAL 1/32W 10 OHM +-5%	
C50	CCU0206CD	C,CERAMIC 50 V 2.2 UF+80-20%	
C51	CCG9612CA	C,CERAMIC 50 V 0.1 UF+80-20%	
C52		Not Used	
C53		Not Used	
C54	CCG0566CA	C,CERAMIC 50 V 47 PF+-5%	
C55	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
C56	CCG0564CA	C,CERAMIC 50 V 33 PF+-5%	
C57	CCU0206CD	C,CERAMIC 50 V 2.2 UF+80-20%	
C58	CCG9612CA	C,CERAMIC 50 V 0.1 UF+80-20%	
C59	CSX0164CD	C,TA ELYC 16 V 22 UF+-20%	
C60	CSS0168CA	C,TA ELYC 16 V 1 UF+-20%	
C61	CCG9613CA	C,CERAMIC 25 V 0.22UF+80-20%	
C62	CSX0164CD	C,TA ELYC 16 V 22 UF+-20%	
C63	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
T50	AFA0017CA	FIL ACM3225-102-2P	
CN50	JBF0105CJ	CONNECTOR FH12-20S-0.5SH	
CN51	8654647	CABLE ASSY ZHR-6/2P-SZN	
CN52	JBF0106CJ	CONNECTOR FH12-24S-0.5SH	
CN53	JBF0105CJ	CONNECTOR FH12-20S-0.5SH	

Symbol	Parts Code	..... Description	Remark

SNS B UNIT

Symbol	Parts Code	..... Description	Remark
IC101	IDS0764CX	IC,LOGIC SN74AHC04PW	
Q100	HTC0969CA	TRANSISTOR 2SC4176 (B34)	
Q101	HTC0969CA	TRANSISTOR 2SC4176 (B34)	
Q102	HTC0969CA	TRANSISTOR 2SC4176 (B34)	
Q103	HTA0387CA	TRANSISTOR 2SA1610 (Y34)	
Q104	HTK0159CA	TRANSISTOR 2SK302GR	
Q105	HTK0159CA	TRANSISTOR 2SK302GR	
Q106	HTK0159CA	TRANSISTOR 2SK302GR	
D100		Not Used	
R100	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R101	RME1801CA	R,METAL 1/32W 220 OHM +-5%	
R102		Not Used	
R103		Not Used	
R104	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R105	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R106	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R107	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R108	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R109	RME1785CA	R,METAL 1/32W 10 OHM +-5%	
R110	RME1793CA	R,METAL 1/32W 47 OHM +-5%	
R111		Not Used	
R112	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R113	RME1816CA	R,METAL 1/32W 3.9 KOHM +-5%	
R114	RME1828CA	R,METAL 1/32W 39 KOHM +-5%	
R115	RME1804CA	R,METAL 1/32W 390 OHM +-5%	
R116		Not Used	
R117	RME1785CA	R,METAL 1/32W 10 OHM +-5%	
R118	RME1785CA	R,METAL 1/32W 10 OHM +-5%	
R119	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R120	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R121	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R122	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R123	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R124	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R125	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R126	RME1413CA	R,METAL 1/10W 0 OHM	
R127	RME1785CA	R,METAL 1/32W 10 OHM +-5%	
R128	RME1785CA	R,METAL 1/32W 10 OHM +-5%	
R129	RME1785CA	R,METAL 1/32W 10 OHM +-5%	
R130	RME1785CA	R,METAL 1/32W 10 OHM +-5%	
C100	CCU0206CD	C,CERAMIC 50 V 2.2 UF+80-20%	
C101		Not Used	
C102		Not Used	
C103	CSS0176CA	C,TA ELYC 35 V 1 UF+-20%	
C104	CCG0566CA	C,CERAMIC 50 V 47 PF+-5%	
C105	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
C106	CCG0564CA	C,CERAMIC 50 V 33 PF+-5%	
C107	CCU0206CD	C,CERAMIC 50 V 2.2 UF+80-20%	
C108	CCG9612CA	C,CERAMIC 50 V 0.1 UF+80-20%	
C109	CSX0164CD	C,TA ELYC 16 V 22 UF+-20%	
C110	CSS0168CA	C,TA ELYC 16 V 1 UF+-20%	
C111	CCG9613CA	C,CERAMIC 25 V 0.22UF+80-20%	
C112	CSX0164CD	C,TA ELYC 16 V 22 UF+-20%	
C113	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
T100	AFA0017CA	FIL ACM3225-102-2P	
CN101	JBF0105CJ	CONNECTOR FH12-20S-0.5SH	

Symbol	Parts Code	..... Description	Remark

DRV UNIT

Symbol	Parts Code	Description	Remarks
IC500	IDS0765CX	IC, LOGIC SN74AHC08PW	
IC501	IDS0752CX	IC, LOGIC SN74HCT00APW	
IC502	IDS0764CX	IC, LOGIC SN74AHC04PW	
IC503	IDT0384CD	IC, LOGIC TC7W74FU-TE12L	
IC504	IDT0192MA	IC, LOGIC TC74HC4538F	
IC505	IDT0384CD	IC, LOGIC TC7W74FU-TE12L	
IC506	IDT0401CD	IC, LOGIC TC7WU04FU	
IC507	IDC0158	IC, LOGIC CXD1265R	
IC508	IDT0401CD	IC, LOGIC TC7WU04FU	
IC509	IDT0402CD	IC, LOGIC TC4W53FU	
IC510	IDT0354CA	IC, LOGIC TC7S32FU(E4)	
IC511	IDT0355CA	IC, LOGIC TC7S08FU(E2)	
IC512	ISC0008CX	IC CXD1250N	
IC513	IDT0402CD	IC, LOGIC TC4W53FU	
Q500	HTC0968CA	TRANSISTOR 2SC4177 (L5)	
Q501	HTC0968CA	TRANSISTOR 2SC4177 (L5)	
Q502	HTC0968CA	TRANSISTOR 2SC4177 (L5)	
D500		Not Used	
D501	HDD0159CA	DIODE DCA010	
D502	HDD0159CA	DIODE DCA010	
D503		Not Used	
D505		Not Used	
D506	HDD0169CA	DIODE DWA010	
D508	HDH0311CZ	DIODE HVU-359	
D509	HDH0311CZ	DIODE HVU-359	NTSC
D509	HDH0299CZ	DIODE HVU-200A	PAL
D510	HDH0311CZ	DIODE HVU-359	NTSC
D510	HDH0299CZ	DIODE HVU-200A	PAL
D511	HDH0299CZ	DIODE HVU-200A	
D512	HDD0169CA	DIODE DWA010	
D513	HDD0169CA	DIODE DWA010	
R500	RME1801CA	R, METAL 1/32W 220 OHM +-5%	
R501	RME1789CA	R, METAL 1/32W 22 OHM +-5%	NTSC
R501	EGF0142CA	CORE ACB1608M-120	PAL
R503	RME1789CA	R, METAL 1/32W 22 OHM +-5%	NTSC
R503	EGF0142CA	CORE ACB1608M-120	PAL
R504	RME1784CA	R, METAL 1/32W 0 OHM +-5%	
R505	RME1784CA	R, METAL 1/32W 0 OHM +-5%	
R506	RME1784CA	R, METAL 1/32W 0 OHM +-5%	NTSC
R506	EGF0142CA	CORE ACB1608M-120	PAL
R507	RME1789CA	R, METAL 1/32W 22 OHM +-5%	NTSC
R507	EGF0142CA	CORE ACB1608M-120	PAL
R508	RME1820CA	R, METAL 1/32W 8.2 KOHM +-5%	
R509	RME1823CA	R, METAL 1/32W 15 KOHM +-5%	
R510	RME1809CA	R, METAL 1/32W 1 KOHM +-5%	NTSC
R510	RME1813CA	R, METAL 1/32W 2.2 KOHM +-5%	PAL
R511	RME1806CA	R, METAL 1/32W 560 OHM +-5%	
R512	RME1784CA	R, METAL 1/32W 0 OHM +-5%	
R513		Not Used	
R514	RME1839CA	R, METAL 1/32W 1 MOHM +-5%	
R515	RME1839CA	R, METAL 1/32W 1 MOHM +-5%	
R516	RME1839CA	R, METAL 1/32W 1 MOHM +-5%	
R517	RME0912CA	R, METAL 1/8W 0 OHM	
R518	RME1809CA	R, METAL 1/32W 1 KOHM +-5%	NTSC
R518	RME1813CA	R, METAL 1/32W 2.2 KOHM +-5%	PAL
R519		Not Used	
R520		Not Used	
R521	RME1813CA	R, METAL 1/32W 2.2 KOHM +-5%	
R522	RME1799CA	R, METAL 1/32W 150 OHM +-5%	
R523	RME1839CA	R, METAL 1/32W 1 MOHM +-5%	
R524	RME1797CA	R, METAL 1/32W 100 OHM +-5%	
R525	RME1789CA	R, METAL 1/32W 22 OHM +-5%	NTSC
R525	EGF0142CA	CORE ACB1608M-120	PAL
R526	RME1797CA	R, METAL 1/32W 100 OHM +-5%	NTSC
R526	EGF0144CA	CORE ACB1608M-600	PAL
R527		Not Used	
R528		Not Used	
R529	RME1797CA	R, METAL 1/32W 100 OHM +-5%	NTSC
R529	EGF0144CA	CORE ACB1608M-600	PAL
R530	RME1789CA	R, METAL 1/32W 22 OHM +-5%	
R531	RME1789CA	R, METAL 1/32W 22 OHM +-5%	NTSC
R531	EGF0144CA	CORE ACB1608M-600	PAL
R532	RME1797CA	R, METAL 1/32W 100 OHM +-5%	NTSC
R532	EGF0144CA	CORE ACB1608M-600	PAL
R533	RME1797CA	R, METAL 1/32W 100 OHM +-5%	
R534	RME1829CA	R, METAL 1/32W 47 KOHM +-5%	NTSC
R534	RME1834CA	R, METAL 1/32W 150 KOHM +-5%	PAL
R535	RME1833CA	R, METAL 1/32W 100 KOHM +-5%	
R536	RME1821CA	R, METAL 1/32W 10 KOHM +-5%	
R537	RME1797CA	R, METAL 1/32W 100 OHM +-5%	
R538	RME1789CA	R, METAL 1/32W 22 OHM +-5%	
R539	RME1789CA	R, METAL 1/32W 22 OHM +-5%	

Symbol	Parts Code	Description	Remarks
R540		Not Used	
R541	RME1789CA	R, METAL 1/32W 22 OHM +-5%	
R542		Not Used	
R543		Not Used	
R544	RME1789CA	R, METAL 1/32W 22 OHM +-5%	
R545	RME1809CA	R, METAL 1/32W 1 KOHM +-5%	
R546	RME1784CA	R, METAL 1/32W 0 OHM +-5%	NTSC
R546	EGF0143CA	CORE ACB1608M-300	PAL
R547	RME1797CA	R, METAL 1/32W 100 OHM +-5%	
R548	RME1805CA	R, METAL 1/32W 470 OHM +-5%	
R549	RME1839CA	R, METAL 1/32W 1 MOHM +-5%	
R550	RME1833CA	R, METAL 1/32W 100 KOHM +-5%	
R551	RME1839CA	R, METAL 1/32W 1 MOHM +-5%	
R552		Not Used	
R553	RME1839CA	R, METAL 1/32W 1 MOHM +-5%	
R554	RME1839CA	R, METAL 1/32W 1 MOHM +-5%	
R555	RME1839CA	R, METAL 1/32W 1 MOHM +-5%	
R556	RME1808CA	R, METAL 1/32W 820 OHM +-5%	
R557	RME1797CA	R, METAL 1/32W 100 OHM +-5%	
R558	RME1833CA	R, METAL 1/32W 100 KOHM +-5%	
R559	RME1784CA	R, METAL 1/32W 0 OHM +-5%	
R560		Not Used	
R561	RME1833CA	R, METAL 1/32W 100 KOHM +-5%	
R562	RME1784CA	R, METAL 1/32W 0 OHM +-5%	
R563		Not Used	
R564		Not Used	
R565	RME1784CA	R, METAL 1/32W 0 OHM +-5%	
R566	RME1839CA	R, METAL 1/32W 1 MOHM +-5%	
R567	RME1784CA	R, METAL 1/32W 0 OHM +-5%	
R568	RME1784CA	R, METAL 1/32W 0 OHM +-5%	
R569	RME1837CA	R, METAL 1/32W 470 KOHM +-5%	
R570	RME1837CA	R, METAL 1/32W 470 KOHM +-5%	
R571	RME1837CA	R, METAL 1/32W 470 KOHM +-5%	
R572	RME1833CA	R, METAL 1/32W 100 KOHM +-5%	
R573	RME1784CA	R, METAL 1/32W 0 OHM +-5%	
R574	RME1784CA	R, METAL 1/32W 0 OHM +-5%	
R575	RME1833CA	R, METAL 1/32W 100 KOHM +-5%	
R576	RME1825CA	R, METAL 1/32W 22 KOHM +-5%	
R577	RME1827CA	R, METAL 1/32W 33 KOHM +-5%	
R578	RME1829CA	R, METAL 1/32W 47 KOHM +-5%	
R579	RME1827CA	R, METAL 1/32W 33 KOHM +-5%	
R580	RME1829CA	R, METAL 1/32W 47 KOHM +-5%	
R581	RME1827CA	R, METAL 1/32W 33 KOHM +-5%	
R582	RME1829CA	R, METAL 1/32W 47 KOHM +-5%	
R583	RME1784CA	R, METAL 1/32W 0 OHM +-5%	
R584	RME1839CA	R, METAL 1/32W 1 MOHM +-5%	
R585	RME1839CA	R, METAL 1/32W 1 MOHM +-5%	
R586	RME1839CA	R, METAL 1/32W 1 MOHM +-5%	
R587	RME1797CA	R, METAL 1/32W 100 OHM +-5%	
R588	RME1797CA	R, METAL 1/32W 100 OHM +-5%	
R589	RME1797CA	R, METAL 1/32W 100 OHM +-5%	
R590	RME1784CA	R, METAL 1/32W 0 OHM +-5%	
R591	RME1826CA	R, METAL 1/32W 27 KOHM +-5%	
R592	RME1784CA	R, METAL 1/32W 0 OHM +-5%	
R593	RME1839CA	R, METAL 1/32W 1 MOHM +-5%	
R594	RME1839CA	R, METAL 1/32W 1 MOHM +-5%	
R595	RME0912CA	R, METAL 1/8W 0 OHM	
R596	RME1809CA	R, METAL 1/32W 1 KOHM +-5%	
R597	RME1797CA	R, METAL 1/32W 100 OHM +-5%	
R598		Not Used	
R599	RME1413CA	R, METAL 1/10W 0 OHM	
R600	RME1784CA	R, METAL 1/32W 0 OHM +-5%	
R601		Not Used	
RV500		Not Used	
RV501		Not Used	
RV502	RNE0109CD	VR, METAL EVM-7JSW30B54 (50K)	
RV503	RNE0109CD	VR, METAL EVM-7JSW30B54 (50K)	
RV504	RNE0109CD	VR, METAL EVM-7JSW30B54 (50K)	
C500	CCG0553CA	C, CERAMIC 50 V 10 PF+-0.5PF	
C501	CCG9295CA	C, CERAMIC 25 V 0.1 UF+80-20%	
C502		Not Used	
C503	CCG9295CA	C, CERAMIC 25 V 0.1 UF+80-20%	
C504	CCG0678CA	C, CERAMIC 16 V 0.1 UF+80-20%	
C505	CCG9295CA	C, CERAMIC 25 V 0.1 UF+80-20%	
C506	CCG0678CA	C, CERAMIC 16 V 0.1 UF+80-20%	
C507	CCG9295CA	C, CERAMIC 25 V 0.1 UF+80-20%	
C508	CSX0164CD	C, TA ELYC 16 V 22 UF+-20%	
C509	CCG0553CA	C, CERAMIC 50 V 10 PF+-0.5PF	NTSC
C509	CCG0566CA	C, CERAMIC 50 V 47 PF+-0.5PF	PAL
C510	CCG0561CA	C, CERAMIC 50 V 22 PF+-5%	
C511	CCG0678CA	C, CERAMIC 16 V 0.1 UF+80-20%	
C512	CEU0076CY	C, AL ELYC 6.3V 22 UF+-20%	
C513	CSX0164CD	C, TA ELYC 16 V 22 UF+-20%	

Symbol	Parts Code	Description	Remarks
C515	CCG0678CA	C, CERAMIC 16 V 0.1 UF+80-20%	
C516	CEU0071CY	C, AL ELYC 35 V 4.7 UF+-20%	
C517	CCG0553CA	C, CERAMIC 50 V 10 PF+-0.5PF	NTSC
C517	CCG0566CA	C, CERAMIC 50 V 47 PF+-0.5PF	PAL
C518	CCG0553CA	C, CERAMIC 50 V 10 PF+-0.5PF	
C519	CCG0554CA	C, CERAMIC 50 V 100 PF+-5%	
C520		Not Used	
C521	CCG0678CA	C, CERAMIC 16 V 0.1 UF+80-20%	
C522	CEU0076CY	C, AL ELYC 6.3V 22 UF+-20%	
C523	CCG0678CA	C, CERAMIC 16 V 0.1 UF+80-20%	
C524	CCG0678CA	C, CERAMIC 16 V 0.1 UF+80-20%	
C525	CCG9280CA	C, CERAMIC 50 V 330 PF+-5%	
C526	CCG9280CA	C, CERAMIC 50 V 330 PF+-5%	NTSC
C526	CCG9278CA	C, CERAMIC 50 V 220 PF+-5%	PAL
C527		Not Used	
C528	CCG0678CA	C, CERAMIC 16 V 0.1 UF+80-20%	
C529	CCG0678CA	C, CERAMIC 16 V 0.1 UF+80-20%	
C530	CCG0678CA	C, CERAMIC 16 V 0.1 UF+80-20%	
C531	CEU0080CY	C, AL ELYC 16 V 22 UF+-20%	
C532	CCG9290CA	C, CERAMIC 50 V 4700 PF+-10%	NTSC
C532	CCG9304CA	C, CERAMIC 50 V22000 PF+-10%	PAL
C533	CCG0678CA	C, CERAMIC 16 V 0.1 UF+80-20%	
C534	CEU0076CY	C, AL ELYC 6.3V 22 UF+-20%	
C535	CCU0205CA	C, CERAMIC 50 V 1 UF+80-20%	
C536	CCG0678CA	C, CERAMIC 16 V 0.1 UF+80-20%	
C537	CCG0678CA	C, CERAMIC 16 V 0.1 UF+80-20%	
C538	CCG9612CA	C, CERAMIC 50 V 0.1 UF+80-20%	
C539		Not Used	
C540	CCG9612CA	C, CERAMIC 50 V 0.1 UF+80-20%	
C541	CCG0678CA	C, CERAMIC 16 V 0.1 UF+80-20%	
C542	CCG0554CA	C, CERAMIC 50 V 100 PF+-5%	NTSC
C543	CCG0574CA	C, CERAMIC 50 V 1000 PF+-10%	
C544	CCG0575CA	C, CERAMIC 25 V10000 PF+-10%	
C545	CCG0678CA	C, CERAMIC 16 V 0.1 UF+80-20%	
C546	CEU0080CY	C, AL ELYC 16 V 22 UF+-20%	
C547	CCR0090	C, CERAMIC 50 V 0.1 UF+80-20%	
C548	CCR0090	C, CERAMIC 50 V 0.1 UF+80-20%	
C549	CCG0575CA	C, CERAMIC 25 V10000 PF+-10%	
C550	CCG9612CA	C, CERAMIC 50 V 0.1 UF+80-20%	
C551	CCG0574CA	C, CERAMIC 50 V 1000 PF+-10%	
C552	CCG0574CA	C, CERAMIC 50 V 1000 PF+-10%	
C553	CCG0562CA	C, CERAMIC 50 V 220 PF+-5%	NTSC
C553	CCG0564CA	C, CERAMIC 50 V 330 PF+-5%	PAL
C554	CCG0574CA	C, CERAMIC 50 V 1000 PF+-10%	NTSC
C554	CCG0581CA	C, CERAMIC 50 V 4700 PF+-10%	PAL
C555	CEL0106	C, AL ELYC 25 V 47 UF+-20%	
C556	CCR0090	C, CERAMIC 50 V 0.1 UF+80-20%	
C557	CCG9612CA	C, CERAMIC 50 V 0.1 UF+80-20%	
C558	CCG9612CA	C, CERAMIC 50 V 0.1 UF+80-20%	
C559	CCG9612CA	C, CERAMIC 50 V 0.1 UF+80-20%	
C560	CSS0148CA	C, TA ELYC 35 V 0.1 UF+-20%	
C561	CCG0678CA	C, CERAMIC 16 V 0.1 UF+80-20%	
C562	CCG0678CA	C, CERAMIC 16 V 0.1 UF+80-20%	
C563	CCG0678CA	C, CERAMIC 16 V 0.1 UF+80-20%	
C564	CCR0128	C, CERAMIC 50 V 0.1 UF+80-20%	PAL
CN500	JBK0007	CONNECTOR KX15-50KLD1L	
CN502	JBX2826CJ	CONNECTOR 24FLZ-RSM1	
L500	TLL0364CA	COIL LQH3C101K04 (100UH)	
L501	TLL0362CA	COIL LQH3C220K04 (22UH)	
L502	TLL0362CA	COIL LQH3C220K04 (22UH)	
L503	TLL0362CA	COIL LQH3C220K04 (22UH)	
L504	TLL0362CA	COIL LQH3C220K04 (22UH)	
L505	TLL0364CA	COIL LQH3C101K04 (100UH)	
L506	TLL0364CA	COIL LQH3C101K04 (100UH)	
L507	TLN0035CA	COIL 400 MA 1 UH+-5%	
L508	TLL0364CA	COIL LQH3C101K04 (100UH)	
L509	TLL0364CA	COIL LQH3C101K04 (100UH)	
LV500	TLL0308	COIL LC-0315A	
FL500	EZH0136CD	FIL ACF321825-101-B	
X500	AAA0009	XTAL AT-51 28.63636 MHZ	NTSC
X500	AAA0010	XTAL AT-51 28.7350 MHZ	PAL

Symbol	Parts Code	Description	Remarks

DRV-SUB UNIT

Symbol	Parts Code	Description	Remarks
IC1	IPH0004CD	IC HA178L09UA	
IC2	IDT0356CA	IC,LOGIC TC7S00FU(E1)	
Q1	HTM0094CZ	TRANSISTOR UPA674T (RA)	
D1	HDD0168CA	DIODE DCC010	
D2	HDS0381CA	DIODE 1S2837	
D3	HDS0381CA	DIODE 1S2837	
R1	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R2	RME1803CA	R,METAL 1/32W 330 OHM +-5%	
R3	RME1799CA	R,METAL 1/32W 150 OHM +-5%	
R4	RME1789CA	R,METAL 1/32W 22 OHM +-5%	
C1	CCG9612CA	C,CERAMIC 50 V 0.1 UF+80-20%	
C2	CCG9612CA	C,CERAMIC 50 V 0.1 UF+80-20%	
C3	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C4	CCG0564CA	C,CERAMIC 50 V 33 PF+-5%	
C5	CCG0564CA	C,CERAMIC 50 V 33 PF+-5%	
C6	CCG0554CA	C,CERAMIC 50 V 100 PF+-5%	
C7	CCG9612CA	C,CERAMIC 50 V 0.1 UF+80-20%	
C8		Not Used	

Symbol	Parts Code	Description	Remarks

ASP UNIT

Symbol	Parts Code	Description	Remarks
IC400	ILT0199CD	IC,ANALOG TA75W558FU	
IC401	ILD0126	IC,ANALOG DBM2601BFP	
IC402	ILC0093	IC,ANALOG CXA1310AQ	
IC403	ILD0127	IC,ANALOG DBM2129BFP	
IC404	IDT0403CX	IC,LOGIC TC74HC4053AFS(EL)	
IC405	ILT0199CD	IC,ANALOG TA75W558FU	
IC406	ILC0093	IC,ANALOG CXA1310AQ	
IC407	ILT0199CD	IC,ANALOG TA75W558FU	
IC409	ILC0093	IC,ANALOG CXA1310AQ	
IC410	IDS0753CX	IC,LOGIC SN74HCT04APW	
IC411	ISM0039CG	IC M62352GP	
IC412	ILT0199CD	IC,ANALOG TA75W558FU	
IC413	IDT0403CX	IC,LOGIC TC74HC4053AFS(EL)	
IC414	IDT0403CX	IC,LOGIC TC74HC4053AFS(EL)	
IC415	IDT0403CX	IC,LOGIC TC74HC4053AFS(EL)	
IC416	ISM0039CG	IC M62352GP	
IC417	IDT0381CD	IC,LOGIC TC7W04FU	
IC418	ILT0199CD	IC,ANALOG TA75W558FU	
IC420	IDT0403CX	IC,LOGIC TC74HC4053AFS(EL)	
IC421	ISM0039CG	IC M62352GP	
IC422	ILT0199CD	IC,ANALOG TA75W558FU	
IC424	IDT0403CX	IC,LOGIC TC74HC4053AFS(EL)	
IC425	IDT0354CA	IC,LOGIC TC7S32FU(E4)	
Q400	HTA0386CA	TRANSISTOR 2SA1611 (M5)	
Q401	HTC0947CA	TRANSISTOR 2SC4226 (R24)	
Q402	HTU0032CZ	TRANSISTOR UMZ1N (Z1)	
Q403	HTU0042CZ	TRANSISTOR UMX1N (X1)	
Q405	HTA0386CA	TRANSISTOR 2SA1611 (M5)	
Q406	HTC0947CA	TRANSISTOR 2SC4226 (R24)	
Q407	HTA0386CA	TRANSISTOR 2SA1611 (M5)	
Q408	HTC0947CA	TRANSISTOR 2SC4226 (R24)	
Q409		Not Used	
Q410	HTU0032CZ	TRANSISTOR UMZ1N (Z1)	
Q411	HTU0032CZ	TRANSISTOR UMZ1N (Z1)	
Q412	HTU0029CZ	TRANSISTOR UMD2N	
Q413	HTA0386CA	TRANSISTOR 2SA1611 (M5)	
Q414		Not Used	
Q415	HTU0042CZ	TRANSISTOR UMX1N (X1)	
Q416	HTA0386CA	TRANSISTOR 2SA1611 (M5)	
Q417	HTA0387CA	TRANSISTOR 2SA1610 (Y34)	
Q418	HTC0947CA	TRANSISTOR 2SC4226 (R24)	
Q419	HTA0386CA	TRANSISTOR 2SA1611 (M5)	
Q420	HTA0387CA	TRANSISTOR 2SA1610 (Y34)	
Q421	HTC0947CA	TRANSISTOR 2SC4226 (R24)	
Q422	HTA0386CA	TRANSISTOR 2SA1611 (M5)	
Q423	HTA0387CA	TRANSISTOR 2SA1610 (Y34)	
Q424	HTC0947CA	TRANSISTOR 2SC4226 (R24)	
Q425	HTA0387CA	TRANSISTOR 2SA1610 (Y34)	
Q426	HTA0387CA	TRANSISTOR 2SA1610 (Y34)	
Q427	HTA0387CA	TRANSISTOR 2SA1610 (Y34)	
Q428	HTU0032CZ	TRANSISTOR UMZ1N (Z1)	
Q429	HTU0032CZ	TRANSISTOR UMZ1N (Z1)	
Q430	HTU0032CZ	TRANSISTOR UMZ1N (Z1)	
Q431	HTA0387CA	TRANSISTOR 2SA1610 (Y34)	
Q432	HTA0387CA	TRANSISTOR 2SA1610 (Y34)	
Q433	HTA0387CA	TRANSISTOR 2SA1610 (Y34)	
Q434	HTK0126CZ	TRANSISTOR 2SK443-AJ6	
Q435	HTK0126CZ	TRANSISTOR 2SK443-AJ6	
D400	HDD0159CA	DIODE DCA010	
D401	HDD0159CA	DIODE DCA010	
R400	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R401	RMR4921CA	R,METAL 1/16W 27 KOHM +-0.5%	
R402	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R403		Not Used	
R404	RME1836CA	R,METAL 1/32W 330 KOHM +-5%	
R405	RMR4907CA	R,METAL 1/16W 470 OHM +-0.5%	
R406	RMR4908CA	R,METAL 1/16W 560 OHM +-0.5%	
R407	RME1805CA	R,METAL 1/32W 470 OHM +-5%	
R408	RMR4927CA	R,METAL 1/16W 12 KOHM +-0.5%	
R409	RMR4860CA	R,METAL 1/16W 10 KOHM +-0.5%	
R410	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R411	RME1819CA	R,METAL 1/32W 6.8 KOHM +-5%	
R412	RMR4891CA	R,METAL 1/16W 8.2 KOHM +-0.5%	
R413	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R414	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R415		Not Used	
R416	RME1825CA	R,METAL 1/32W 22 KOHM +-5%	
R417	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R418	RMR4910CA	R,METAL 1/16W 2.2 KOHM +-0.5%	
R419	RME1835CA	R,METAL 1/32W 220 KOHM +-5%	
R420	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R421	RME1819CA	R,METAL 1/32W 6.8 KOHM +-5%	
R422	RMR4909CA	R,METAL 1/16W 1 KOHM +-0.5%	
R424	RMR4929CA	R,METAL 1/16W 1.2 KOHM +-0.5%	
R426	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R427	RME1809CA	R,METAL 1/32W 1 KOHM +-5%	
R464		Not Used	

Symbol	Parts Code	Description	Remarks
R430		Not Used	
R431	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R432	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R433		Not Used	
R434	RMR4907CA	R,METAL 1/16W 470 OHM +-0.5%	
R435	RMR4908CA	R,METAL 1/16W 560 OHM +-0.5%	
R436	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R437	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R438	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R439	RME1825CA	R,METAL 1/32W 22 KOHM +-5%	
R440	RME1836CA	R,METAL 1/32W 330 KOHM +-5%	
R442	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R443	RME1805CA	R,METAL 1/32W 470 OHM +-5%	
R444	RMR4860CA	R,METAL 1/16W 10 KOHM +-0.5%	
R445	RME1825CA	R,METAL 1/32W 22 KOHM +-5%	
R446	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R447	RMR4909CA	R,METAL 1/16W 1 KOHM +-0.5%	
R449	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R450	RME1809CA	R,METAL 1/32W 1 KOHM +-5%	
R451	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R452	RMR4921CA	R,METAL 1/16W 27 KOHM +-0.5%	
R453		Not Used	
R454	RME1819CA	R,METAL 1/32W 6.8 KOHM +-5%	
R455	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R456		Not Used	
R457	RMR4900CA	R,METAL 1/16W 1.5 KOHM +-0.5%	
R458	RME1835CA	R,METAL 1/32W 220 KOHM +-5%	
R459	RME1825CA	R,METAL 1/32W 22 KOHM +-5%	
R460	RMR4907CA	R,METAL 1/16W 470 OHM +-0.5%	
R461	RMR4908CA	R,METAL 1/16W 560 OHM +-0.5%	
R462	RMR4927CA	R,METAL 1/16W 12 KOHM +-0.5%	
R463	RMR4860CA	R,METAL 1/16W 10 KOHM +-0.5%	
R464		Not Used	
R466	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R467	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R468	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R470	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R471	RME1809CA	R,METAL 1/32W 1 KOHM +-5%	
R472	RME1834CA	R,METAL 1/32W 150 KOHM +-5%	
R473	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R474	RME1819CA	R,METAL 1/32W 6.8 KOHM +-5%	
R475	RMR4909CA	R,METAL 1/16W 1 KOHM +-0.5%	
R476	RME1805CA	R,METAL 1/32W 470 OHM +-5%	
R479	RMR4927CA	R,METAL 1/16W 12 KOHM +-0.5%	
R480	RME1819CA	R,METAL 1/32W 6.8 KOHM +-5%	
R481	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R482	RME1836CA	R,METAL 1/32W 330 KOHM +-5%	
R483	RME1836CA	R,METAL 1/32W 330 KOHM +-5%	
R484	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R485	RME1822CA	R,METAL 1/32W 12 KOHM +-5%	
R486	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R487		Not Used	
R488	RMR4927CA	R,METAL 1/16W 12 KOHM +-0.5%	
R489	RMR4926CA	R,METAL 1/16W 1.8 KOHM +-0.5%	
R490	RMR4909CA	R,METAL 1/16W 1 KOHM +-0.5%	
R491	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R492		Not Used	
R493	RMR4900CA	R,METAL 1/16W 1.5 KOHM +-0.5%	
R494	RME1827CA	R,METAL 1/32W 33 KOHM +-5%	
R495	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R496	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R497	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R498	RMR4921CA	R,METAL 1/16W 27 KOHM +-0.5%	
R499	RME1825CA	R,METAL 1/32W 22 KOHM +-5%	
R500	RME1828CA	R,METAL 1/32W 39 KOHM +-5%	
R501	RMR4889CA	R,METAL 1/16W 4.7 KOHM +-0.5%	
R502		Not Used	
R503	RMR4908CA	R,METAL 1/16W 560 OHM +-0.5%	
R504	RMR4927CA	R,METAL 1/16W 12 KOHM +-0.5%	
R505	RMR4860CA	R,METAL 1/16W 10 KOHM +-0.5%	
R506	RME1818CA	R,METAL 1/32W 5.6 KOHM +-5%	
R507	RMR4860CA	R,METAL 1/16W 10 KOHM +-0.5%	
R510	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R511	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R512	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R513	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R514	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R515	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R516	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R517	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R518	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R519	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R520	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R521	RME1825CA	R,METAL 1/32W 22 KOHM +-5%	
R522	RMR4860CA	R,METAL 1/16W 10 KOHM +-0.5%	
R523	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R524	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R525	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R526	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R527	RME1784CA	R,METAL 1/32W 0 OHM +-5%	

Symbol	Parts Code	Description	Remarks
R528	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R529	RME1809CA	R,METAL 1/32W 1 KOHM +-5%	
R530	RMR4909CA	R,METAL 1/16W 1 KOHM +-0.5%	
R531	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R532	RME1812CA	R,METAL 1/32W 1.8 KOHM +-5%	
R533	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R534	RME1811CA	R,METAL 1/32W 1.5 KOHM +-5%	
R535		Not Used	
R536	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R537	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R538	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R539	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R540	RMR4860CA	R,METAL 1/16W 10 KOHM +-0.5%	
R541	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R542	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R543	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R544	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R545	RMR4910CA	R,METAL 1/16W 2.2 KOHM +-0.5%	
R546	RMR4909CA	R,METAL 1/16W 1 KOHM +-0.5%	
R547	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R548	RME1829CA	R,METAL 1/32W 47 KOHM +-5%	
R549	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R550	RME1811CA	R,METAL 1/32W 1.5 KOHM +-5%	
R551	RME1825CA	R,METAL 1/32W 22 KOHM +-5%	
R552	RME1819CA	R,METAL 1/32W 6.8 KOHM +-5%	
R553	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R554	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R555	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R556	RMR4860CA	R,METAL 1/16W 10 KOHM +-0.5%	
R557	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R558	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R559	RME1793CA	R,METAL 1/32W 47 OHM +-5%	
R560	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R561	RME1809CA	R,METAL 1/32W 1 KOHM +-5%	
R562	RMR4909CA	R,METAL 1/16W 1 KOHM +-0.5%	
R563	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R564	RME1812CA	R,METAL 1/32W 1.8 KOHM +-5%	
R565	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R566	RME1811CA	R,METAL 1/32W 1.5 KOHM +-5%	
R567	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R568		Not Used	
R569	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R570	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R571	RME1793CA	R,METAL 1/32W 47 OHM +-5%	
R572	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R573	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R574	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R575	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R576	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R577	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R578	RMR4910CA	R,METAL 1/16W 2.2 KOHM +-0.5%	
R579	RMR4909CA	R,METAL 1/16W 1 KOHM +-0.5%	
R580	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R581	RME1829CA	R,METAL 1/32W 47 KOHM +-5%	
R582	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R583	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R584	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R585	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R586	RME1825CA	R,METAL 1/32W 22 KOHM +-5%	
R587	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R588	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R589	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R590	RME1825CA	R,METAL 1/32W 22 KOHM +-5%	
R591	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R592	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R593	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R594	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R595	RME1809CA	R,METAL 1/32W 1 KOHM +-5%	
R596	RMR4909CA	R,METAL 1/16W 1 KOHM +-0.5%	
R597	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R598	RME1812CA	R,METAL 1/32W 1.8 KOHM +-5%	
R599	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R600	RME1811CA	R,METAL 1/32W 1.5 KOHM +-5%	
R601	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R602		Not Used	
R603	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R604	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R605	RME1793CA	R,METAL 1/32W 47 OHM +-5%	
R606	RMR4910CA	R,METAL 1/16W 2.2 KOHM +-0.5%	
R607	RMR4909CA	R,METAL 1/16W 1 KOHM +-0.5%	
R608	RME1829CA	R,METAL 1/32W 47 KOHM +-5%	
R609	RME1819CA	R,METAL 1/32W 6.8 KOHM +-5%	
R610	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R613	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R614		Not Used	
R615	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R616		Not Used	
R617	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R618		Not Used	
R619	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R620	RME1784CA	R,METAL 1/32W 0 OHM +-5%	

Symbol	Parts Code	Description	Remarks
R621	RMR4888CA	R,METAL 1/16W 3.3 KOHM +-0.5%	
R622		Not Used	
R623	RMR4909CA	R,METAL 1/16W 1 KOHM +-0.5%	
R624	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R625	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R626	RMR4888CA	R,METAL 1/16W 3.3 KOHM +-0.5%	
R627		Not Used	
R628	RMR4909CA	R,METAL 1/16W 1 KOHM +-0.5%	
R629	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R630	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R631	RMR4888CA	R,METAL 1/16W 3.3 KOHM +-0.5%	
R632		Not Used	
R633	RMR4909CA	R,METAL 1/16W 1 KOHM +-0.5%	
R634	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R635	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R636		Not Used	
R637		Not Used	
R638		Not Used	
R639	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R640	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R641	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R651	RMR4889CA	R,METAL 1/16W 4.7 KOHM +-0.5%	
R652	RMR4889CA	R,METAL 1/16W 4.7 KOHM +-0.5%	
R653	RMR4889CA	R,METAL 1/16W 4.7 KOHM +-0.5%	
RV400	RNS0015CY	VR,METAL ST-4G 2 KOHM	
RV401	RNS0015CY	VR,METAL ST-4G 2 KOHM	
RV402	RNS0015CY	VR,METAL ST-4G 2 KOHM	
C400	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C401	CSX0166CD	C,TA ELYC 16 V 10 UF+-20%	
C402	CSX0166CD	C,TA ELYC 16 V 10 UF+-20%	
C403		Not Used	
C404	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C405	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C406	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C407	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C408	CCG0553CA	C,CERAMIC 50 V 10 PF+-0.5PF	
C409	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C410	CCR0128	C,CERAMIC 50 V 0.1 UF+80-20%	
C411	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C412	CSM0034CA	C,TA ELYC 10 V 10 UF+-20%	
C413	CSM0022CA	C,TA ELYC 16 V 4.7 UF+-20%	
C414	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C415		Not Used	
C416	CSX0166CD	C,TA ELYC 16 V 10 UF+-20%	
C417	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C418		Not Used	
C419		Not Used	
C420		Not Used	
C421	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C422		Not Used	
C423	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C424	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C425	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C426	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C427	CCG0553CA	C,CERAMIC 50 V 10 PF+-0.5PF	
C428	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C429	CCR0128	C,CERAMIC 50 V 0.1 UF+80-20%	
C430	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C431	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C432	CSM0022CA	C,TA ELYC 16 V 4.7 UF+-20%	
C433	CSM0022CA	C,TA ELYC 16 V 4.7 UF+-20%	
C434	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C435		Not Used	
C436	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C437		Not Used	
C438	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C439	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C440		Not Used	
C441	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C442	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C443	CCG0553CA	C,CERAMIC 50 V 10 PF+-0.5PF	
C444	CSX0166CD	C,TA ELYC 16 V 10 UF+-20%	
C445	CSX0175CD	C,TA ELYC 10 V 33 UF+-20%	
C446	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C447	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C448	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C449	CCR0128	C,CERAMIC 50 V 0.1 UF+80-20%	
C450	CSM0022CA	C,TA ELYC 16 V 4.7 UF+-20%	
C451	CSM0022CA	C,TA ELYC 16 V 4.7 UF+-20%	
C452		Not Used	
C453	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C454	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C455		Not Used	
C456	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C457	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C458		Not Used	
C459	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C460	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C461	CCG9366CA	C,CERAMIC 50 V 680 PF+-5%	

Symbol	Parts Code	Description	Remarks
C462	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C463	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C464	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C465	CSX0166CD	C,TA ELYC 16 V 10 UF+-20%	
C466	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C467	CSX0166CD	C,TA ELYC 16 V 10 UF+-20%	
C468	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C469	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C470	CSX0166CD	C,TA ELYC 16 V 10 UF+-20%	
C471	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C472	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C473	CCG0554CA	C,CERAMIC 50 V 100 PF+-5%	
C474	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C475	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C476	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C477	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C478	CCG9366CA	C,CERAMIC 50 V 680 PF+-5%	
C479	CCG9366CA	C,CERAMIC 50 V 680 PF+-5%	
C480	CCG9366CA	C,CERAMIC 50 V 680 PF+-5%	
C481	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C482	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C483	CCG9366CA	C,CERAMIC 50 V 680 PF+-5%	
C484	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C485	CEL0109	C,AL ELYC 16 V 100 UF+-20%	
C486	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C487	CCG0554CA	C,CERAMIC 50 V 100 PF+-5%	
C488	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C489	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C490	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C491	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C492		Not Used	
C493		Not Used	
C494	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C495	CSX0166CD	C,TA ELYC 16 V 10 UF+-20%	
C496	CCG0559CA	C,CERAMIC 50 V 18 PF+-5%	
C497	CCG0573CA	C,CERAMIC 50 V 2 PF+-0.25PF	
C498	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C499	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C500	CSM0035CA	C,TA ELYC 10 V 22 UF+-20%	
C501	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C502	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C503	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C504	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C505	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C506	CCG9366CA	C,CERAMIC 50 V 680 PF+-5%	
C507	CCG9366CA	C,CERAMIC 50 V 680 PF+-5%	
C508	CCG9366CA	C,CERAMIC 50 V 680 PF+-5%	
C509	CCG9366CA	C,CERAMIC 50 V 680 PF+-5%	
C510	CSM0019CD	C,TA ELYC 10 V 10 UF+-20%	
C511	CCG0554CA	C,CERAMIC 50 V 100 PF+-5%	
C512	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C513	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C514		Not Used	
C515	CSX0166CD	C,TA ELYC 16 V 10 UF+-20%	
C516	CSX0166CD	C,TA ELYC 16 V 10 UF+-20%	
C517	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C518	CCG0559CA	C,CERAMIC 50 V 18 PF+-5%	
C519	CCG0573CA	C,CERAMIC 50 V 2 PF+-0.25PF	
C520	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C521	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C522	CSM0035CA	C,TA ELYC 10 V 22 UF+-20%	
C523	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C524	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C525	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C526	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C527	CCG9366CA	C,CERAMIC 50 V 680 PF+-5%	
C528	CCG9366CA	C,CERAMIC 50 V 680 PF+-5%	
C529	CCG9366CA	C,CERAMIC 50 V 680 PF+-5%	
C530	CCG9366CA	C,CERAMIC 50 V 680 PF+-5%	
C531	CCG0554CA	C,CERAMIC 50 V 100 PF+-5%	
C532	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C533		Not Used	
C534	CSX0166CD	C,TA ELYC 16 V 10 UF+-20%	
C535	CCG0559CA	C,CERAMIC 50 V 18 PF+-5%	
C536	CCG0573CA	C,CERAMIC 50 V 2 PF+-0.25PF	
C537	CSM0035CA	C,TA ELYC 10 V 22 UF+-20%	
C538	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C539	CCG0575CA	C,CERAMIC 25 V10000 PF+-10%	
C540	CCG0575CA	C,CERAMIC 25 V10000 PF+-10%	
C541	CCG0575CA	C,CERAMIC 25 V10000 PF+-10%	
C542	CSX0166CD	C,TA ELYC 16 V 10 UF+-20%	
C543		Not Used	
C544	CSX0166CD	C,TA ELYC 16 V 10 UF+-20%	
C545	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C546	CCG9714CA	C,CERAMIC 50 V 0.22UF+80-20%	
C547	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C548	CCG9714CA	C,CERAMIC 50 V 0.22UF+80-20%	
C549	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C550	CCG9714CA	C,CERAMIC 50 V 0.22UF+80-20%	
C554	CCG0548CA	C,CERAMIC 50 V 5 PF+-0.25PF	
C555	CCG0548CA	C,CERAMIC 50 V 5 PF+-0.25PF	
C556	CCG0548CA	C,CERAMIC 50 V 5 PF+-0.25PF	
CN400	JBK0007	CONNECTOR KX15-50KLD1L	
FL400	AFT0013CD	FIL T629LKN-1554	
FL401	AFA0018CD	FIL A353TCH-8537	
FL402	AFT0013CD	FIL T629LKN-1554	
FL403	AFA0018CD	FIL A353TCH-8537	
FL404	AFT0013CD	FIL T629LKN-1554	
FL405	AFA0018CD	FIL A353TCH-8537	
L400		Not Used	
L401		Not Used	
L402	TLN0041CA	COIL 150 MA 10 UH+-5%	
L403	TLN0041CA	COIL 150 MA 10 UH+-5%	
L404	TLN0041CA	COIL 150 MA 10 UH+-5%	
L405	TLN0040CA	COIL 110 MA 22 UH+-5%	
L406	TLN0040CA	COIL 110 MA 22 UH+-5%	
L407	TLN0040CA	COIL 110 MA 22 UH+-5%	
L408	RME1413CA	R,METAL 1/10W 0 OHM	
L409	TLL0364CA	COIL LQH3C101K04 (100UH)	
L410	TLL0362CA	COIL LQH3C220K04 (22UH)	

AMP UNIT

Symbol	Parts Code	Description	Remarks
Q11	HTC0690CA	TRANSISTOR 2SC2620B (QB)	
Q12	HTC0690CA	TRANSISTOR 2SC2620B (QB)	
Q13	HTC0969CA	TRANSISTOR 2SC4176 (B34)	
Q14	HTC0690CA	TRANSISTOR 2SC2620B (QB)	
Q15	HTC0690CA	TRANSISTOR 2SC2620B (QB)	
Q16	HTC0969CA	TRANSISTOR 2SC4176 (B34)	
Q17	HTC0690CA	TRANSISTOR 2SC2620B (QB)	
Q18	HTC0690CA	TRANSISTOR 2SC2620B (QB)	
Q19	HTC0969CA	TRANSISTOR 2SC4176 (B34)	
R11	RME1810CA	R,METAL 1/32W 1.2 KOHM +-5%	
R12	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R13	RME1829CA	R,METAL 1/32W 47 KOHM +-5%	
R14	RMR4161CA	R,METAL 1/16W 1.2 KOHM +-0.5%	
R15	RMR4889CA	R,METAL 1/16W 4.7 KOHM +-0.5%	
R16	RME1813CA	R,METAL 1/32W 2.2 KOHM +-5%	
R17	RME1810CA	R,METAL 1/32W 1.2 KOHM +-5%	
R18	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R19	RME1834CA	R,METAL 1/32W 150 KOHM +-5%	
R20	RMR4163CA	R,METAL 1/16W 1.8 KOHM +-0.5%	
R21	RMR4889CA	R,METAL 1/16W 4.7 KOHM +-0.5%	
R22	RME1813CA	R,METAL 1/32W 2.2 KOHM +-5%	
R23	RME1810CA	R,METAL 1/32W 1.2 KOHM +-5%	
R24	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R25	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R26	RMR4163CA	R,METAL 1/16W 1.8 KOHM +-0.5%	
R27	RMR4889CA	R,METAL 1/16W 4.7 KOHM +-0.5%	
R28	RME1813CA	R,METAL 1/32W 2.2 KOHM +-5%	
R29	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R30	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
C11	CCG0581CA	C,CERAMIC 50 V 4700 PF+-10%	
C12		Not Used	
C13		Not Used	
C14	CCG0581CA	C,CERAMIC 50 V 4700 PF+-10%	
C15		Not Used	
C16		Not Used	
C17		Not Used	

TRAP UNIT

Symbol	Parts Code	..... Description	Remark
Q1	HTC0947CA	TRANSISTOR 2SC4226 (R24)	
Q2	HTC0947CA	TRANSISTOR 2SC4226 (R24)	
Q3	HTC0947CA	TRANSISTOR 2SC4226 (R24)	
R1	RME1819CA	R,METAL 1/32W 6.8 KOHM +-5%	
R2	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R3	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R4	RME1825CA	R,METAL 1/32W 22 KOHM +-5%	
R5	RME1819CA	R,METAL 1/32W 6.8 KOHM +-5%	
R6	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
C1	CCG0566CA	C,CERAMIC 50 V 47 PF+-5%	
C2	CCG0566CA	C,CERAMIC 50 V 47 PF+-5%	
C3	CCG0566CA	C,CERAMIC 50 V 47 PF+-5%	
L1	TLN0041CA	COIL 150 MA 10 UH+-5%	
L2	TLN0041CA	COIL 150 MA 10 UH+-5%	
L3	TLN0041CA	COIL 150 MA 10 UH+-5%	

DSP UNIT

Symbol	Parts Code	Description	Remarks
IC200	IZM0167TA	IC MN6577H	
IC201	IZM0167TA	IC MN6577H	
IC202	IZM0167TA	IC MN6577H	
IC203	IDT0401CD	IC,LOGIC TC7WU04FU	
IC204	IDT0422CA	IC,LOGIC TC7S86FU(E8)	
IC205	IDT0422CA	IC,LOGIC TC7S86FU(E8)	
IC206	IDS0765CX	IC,LOGIC SN74AHC08PW	
IC207	IDS0766CX	IC,LOGIC SN74AHC32PW	
IC208	IPX0007CY	IC XC62FP3302P	
IC209	IDS0764CX	IC,LOGIC SN74AHC04PW	
IC210	IDS0764CX	IC,LOGIC SN74AHC04PW	
IC211	IDT0401CD	IC,LOGIC TC7WU04FU	
IC212	IDC0159TA	IC,LOGIC CXD2307R	
IC213	IDC0159TA	IC,LOGIC CXD2307R	
IC214	IDT0381CD	IC,LOGIC TC7W04FU	
Q200	HTC0686CA	TRANSISTOR 2SC2462C (LC)	
Q201	HTU0032CZ	TRANSISTOR UMZ1N (Z1)	
Q202	HTU0032CZ	TRANSISTOR UMZ1N (Z1)	
Q203	HTU0032CZ	TRANSISTOR UMZ1N (Z1)	
Q204	HTU0032CZ	TRANSISTOR UMZ1N (Z1)	
Q205	HTU0032CZ	TRANSISTOR UMZ1N (Z1)	
Q206		Not Used	
D200	HDD0168CA	DIODE DCC010	
R200	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R201	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R202	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R203	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R204	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R205	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R206	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R207		Not Used	
R208	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R209	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R210	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R211	RME1789CA	R,METAL 1/32W 22 OHM +-5%	NTSC
R211	RME1793CA	R,METAL 1/32W 47 OHM +-5%	PAL
R212	RME1789CA	R,METAL 1/32W 22 OHM +-5%	NTSC
R212	RME1793CA	R,METAL 1/32W 47 OHM +-5%	PAL
R213	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R214	RME1789CA	R,METAL 1/32W 22 OHM +-5%	NTSC
R214	RME1793CA	R,METAL 1/32W 47 OHM +-5%	PAL
R215	RME1789CA	R,METAL 1/32W 22 OHM +-5%	NTSC
R215	RME1793CA	R,METAL 1/32W 47 OHM +-5%	PAL
R216	RME1789CA	R,METAL 1/32W 22 OHM +-5%	NTSC
R216	RME1793CA	R,METAL 1/32W 47 OHM +-5%	PAL
R217	RME1789CA	R,METAL 1/32W 22 OHM +-5%	NTSC
R217	RME1793CA	R,METAL 1/32W 47 OHM +-5%	PAL
R226		Not Used	
R227	RME1789CA	R,METAL 1/32W 22 OHM +-5%	NTSC
R227	EGF0143CA	CORE ACB1608M-300	PAL
R228	RME1789CA	R,METAL 1/32W 22 OHM +-5%	NTSC
R228	EGF0143CA	CORE ACB1608M-300	PAL
R229	RME1789CA	R,METAL 1/32W 22 OHM +-5%	NTSC
R229	EGF0143CA	CORE ACB1608M-300	PAL
R230	RME1789CA	R,METAL 1/32W 22 OHM +-5%	NTSC
R230	EGF0143CA	CORE ACB1608M-300	PAL
R231	RME1789CA	R,METAL 1/32W 22 OHM +-5%	NTSC
R231	EGF0143CA	CORE ACB1608M-300	PAL
R232	RME1789CA	R,METAL 1/32W 22 OHM +-5%	NTSC
R232	EGF0143CA	CORE ACB1608M-300	PAL
R233	RMR4915CA	R,METAL 1/16W 220 OHM +-0.5%	
R234	RMR4915CA	R,METAL 1/16W 220 OHM +-0.5%	
R235	RMR4915CA	R,METAL 1/16W 220 OHM +-0.5%	
R236	RMR4915CA	R,METAL 1/16W 220 OHM +-0.5%	
R237	RMR4915CA	R,METAL 1/16W 220 OHM +-0.5%	
R238	RMR4915CA	R,METAL 1/16W 220 OHM +-0.5%	
R245	RMR4888CA	R,METAL 1/16W 3.3 KOHM +-0.5%	
R246	RMR4888CA	R,METAL 1/16W 3.3 KOHM +-0.5%	
R247	RMR4910CA	R,METAL 1/16W 2.2 KOHM +-0.5%	
R248	RMR4910CA	R,METAL 1/16W 2.2 KOHM +-0.5%	
R249	RMR4888CA	R,METAL 1/16W 3.3 KOHM +-0.5%	
R250	RMR4888CA	R,METAL 1/16W 3.3 KOHM +-0.5%	
R251	RMR4910CA	R,METAL 1/16W 2.2 KOHM +-0.5%	
R252	RMR4910CA	R,METAL 1/16W 2.2 KOHM +-0.5%	
R253	RMR4888CA	R,METAL 1/16W 3.3 KOHM +-0.5%	
R254	RMR4888CA	R,METAL 1/16W 3.3 KOHM +-0.5%	
R255	RMR4910CA	R,METAL 1/16W 2.2 KOHM +-0.5%	
R256	RMR4910CA	R,METAL 1/16W 2.2 KOHM +-0.5%	
R263	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	

Symbol	Parts Code	Description	Remarks
R264	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R270		Not Used	
R271	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R272	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R273	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R274	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R275	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R276	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R277	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R278	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R279	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R280	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R281	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R282	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R283	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R284		Not Used	
R285	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R286	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R287	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R288	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R289	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R290	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R291	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R292	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R293	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R294		Not Used	
R295	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R296		Not Used	
R297	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R298		Not Used	
R299	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R300	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R304	RME0912CA	R,METAL 1/8W 0 OHM	
R305	RME0912CA	R,METAL 1/8W 0 OHM	
R306	RME0912CA	R,METAL 1/8W 0 OHM	
R307	RME1789CA	R,METAL 1/32W 22 OHM +-5%	
R308	RME1789CA	R,METAL 1/32W 22 OHM +-5%	
R309	RME1789CA	R,METAL 1/32W 22 OHM +-5%	
R312	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R313	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R314	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R315		Not Used	
R316		Not Used	
R317	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R318	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R319	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R320		Not Used	
R321		Not Used	
RZ200	RZA0414CA	R,BLOCK MNR14-E0AB-J-220	NTSC
RZ200	RZA0415CA	R,BLOCK MNR14-E0AB-J-470	PAL
RZ201	RZA0414CA	R,BLOCK MNR14-E0AB-J-220	NTSC
RZ201	RZA0415CA	R,BLOCK MNR14-E0AB-J-470	PAL
RZ202	RZA0414CA	R,BLOCK MNR14-E0AB-J-220	NTSC
RZ202	RZA0415CA	R,BLOCK MNR14-E0AB-J-470	PAL
RZ203	RZA0414CA	R,BLOCK MNR14-E0AB-J-220	NTSC
RZ203	RZA0415CA	R,BLOCK MNR14-E0AB-J-470	PAL
RZ204	RZA0414CA	R,BLOCK MNR14-E0AB-J-220	NTSC
RZ204	RZA0415CA	R,BLOCK MNR14-E0AB-J-470	PAL
RZ205	RZA0414CA	R,BLOCK MNR14-E0AB-J-220	NTSC
RZ205	RZA0415CA	R,BLOCK MNR14-E0AB-J-470	PAL
C200	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C201	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C202	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C203	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C204	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C205	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C206	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C207	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C208	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C209	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C210	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C211	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C212	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C214	CCG0553CA	C,CERAMIC 50 V 10 PF+-0.5PF	
C215	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C216	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C217	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C218	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C219	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C220	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	

Symbol	Parts Code	Description	Remarks
C221	CSX0175CD	C,TA ELYC 10 V 33 UF+-20%	
C222	CSX0175CD	C,TA ELYC 10 V 33 UF+-20%	
C223	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C224	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C232	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C233	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C234	CSX0166CD	C,TA ELYC 16 V 10 UF+-20%	
C235	CSX0166CD	C,TA ELYC 16 V 10 UF+-20%	
C236	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C237	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C238	CSX0166CD	C,TA ELYC 16 V 10 UF+-20%	
C239	CSX0166CD	C,TA ELYC 16 V 10 UF+-20%	
C240	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C241	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C242	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C243	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C244	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C245	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C246	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C247	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C248	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C249	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C250	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C251	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C252	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C253	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C254	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C255	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C256		Not Used	
C257	CCG0554CA	C,CERAMIC 50 V 100 PF+-5%	
C258		Not Used	
C259	CCG0554CA	C,CERAMIC 50 V 100 PF+-5%	
C260		Not Used	
C261	CCG0554CA	C,CERAMIC 50 V 100 PF+-5%	
C262		Not Used	
C270	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C271	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C272	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C273	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C274	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C275	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C276	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
L200	TLL0362CA	COIL LQH3C220K04 (22UH)	
L201	TLL0362CA	COIL LQH3C220K04 (22UH)	
L202	TLL0362CA	COIL LQH3C220K04 (22UH)	
L203	TLL0362CA	COIL LQH3C220K04 (22UH)	
L204		Not Used	
L205		Not Used	
L206		Not Used	
T200	AFA0017CA	FIL ACM3225-102-2P	
T201	AFA0017CA	FIL ACM3225-102-2P	
CN200	JBK0008	CONNECTOR KX15-70KLD1L	
CN201	JBF0096	CONNECTOR FX6-80P-0.8SV1	
CN202	JBF0096	CONNECTOR FX6-80P-0.8SV1	

Symbol	Parts Code	Description	Remarks

DSPSUB UNIT

Symbol	Parts Code	Description	Remark
IC1	ISH0049TA	IC HDL4F23AFR901	
IC2	INM0105CX	IC M66280FP	
IC3	INM0105CX	IC M66280FP	
IC4	INM0105CX	IC M66280FP	
IC5	INM0105CX	IC M66280FP	
IC6	INM0105CX	IC M66280FP	
IC7	INM0105CX	IC M66280FP	
IC8	INM0105CX	IC M66280FP	
IC9	INM0105CX	IC M66280FP	
R1	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R2	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R3	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R4	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R5	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R6	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R7	RME1793CA	R,METAL 1/32W 47 OHM +-5%	
R8	RME1793CA	R,METAL 1/32W 47 OHM +-5%	
R9	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R10	RME1809CA	R,METAL 1/32W 1 KOHM +-5%	
R11	RME1809CA	R,METAL 1/32W 1 KOHM +-5%	
R12	RME1809CA	R,METAL 1/32W 1 KOHM +-5%	
R13	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R14	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R15	RME1793CA	R,METAL 1/32W 47 OHM +-5%	
R16	RME1793CA	R,METAL 1/32W 47 OHM +-5%	
R17	RME0912CA	R,METAL 1/8W 0 OHM	
R18	RME0912CA	R,METAL 1/8W 0 OHM	
R19	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
RZ1	RZA0417CA	R,BLOCK MNR14-E0AB-J-104	
RZ2	RZA0417CA	R,BLOCK MNR14-E0AB-J-104	
RZ3	RZA0417CA	R,BLOCK MNR14-E0AB-J-104	
RZ4	RZA0417CA	R,BLOCK MNR14-E0AB-J-104	
RZ5	RZA0417CA	R,BLOCK MNR14-E0AB-J-104	
RZ6	RZA0417CA	R,BLOCK MNR14-E0AB-J-104	
RZ7	RZA0417CA	R,BLOCK MNR14-E0AB-J-104	
RZ8	RZA0417CA	R,BLOCK MNR14-E0AB-J-104	
RZ9	RZA0417CA	R,BLOCK MNR14-E0AB-J-104	
RZ10	RZA0417CA	R,BLOCK MNR14-E0AB-J-104	
RZ11	RZA0417CA	R,BLOCK MNR14-E0AB-J-104	
RZ12	RZA0415CA	R,BLOCK MNR14-E0AB-J-470	
RZ13	RZA0415CA	R,BLOCK MNR14-E0AB-J-470	
RZ14	RZA0415CA	R,BLOCK MNR14-E0AB-J-470	
RZ15	RZA0415CA	R,BLOCK MNR14-E0AB-J-470	
RZ16	RZA0415CA	R,BLOCK MNR14-E0AB-J-470	
RZ17	RZA0415CA	R,BLOCK MNR14-E0AB-J-470	
RZ18	RZA0415CA	R,BLOCK MNR14-E0AB-J-470	
RZ19	RZA0417CA	R,BLOCK MNR14-E0AB-J-104	
RZ20	RZA0415CA	R,BLOCK MNR14-E0AB-J-470	
RZ21	RZA0415CA	R,BLOCK MNR14-E0AB-J-470	
RZ22	RZA0415CA	R,BLOCK MNR14-E0AB-J-470	
RZ23	RZA0415CA	R,BLOCK MNR14-E0AB-J-470	
RZ24	RZA0415CA	R,BLOCK MNR14-E0AB-J-470	
RZ25	RZA0415CA	R,BLOCK MNR14-E0AB-J-470	
RZ26	RZA0415CA	R,BLOCK MNR14-E0AB-J-470	
C1	CSX0162CD	C,TA ELYC 10 V 15 UF+-20%	
C2	CSX0162CD	C,TA ELYC 10 V 15 UF+-20%	
C3	CSX0162CD	C,TA ELYC 10 V 15 UF+-20%	
C4	CSX0162CD	C,TA ELYC 10 V 15 UF+-20%	
C5	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C6	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C7	CSX0162CD	C,TA ELYC 10 V 15 UF+-20%	
C8	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C9	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C10	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C11	CSX0175CD	C,TA ELYC 10 V 33 UF+-20%	
C12	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C13	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C14	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C15	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C16	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C17	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C18	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C19	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C20	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C21	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C22	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
L1	TLL0362CA	COIL LQH3C220K04 (22UH)	
L2	TLL0362CA	COIL LQH3C220K04 (22UH)	
L3	TLL0362CA	COIL LQH3C220K04 (22UH)	
L4	TLL0362CA	COIL LQH3C220K04 (22UH)	

Symbol	Parts Code	Description	Remark
L5	TLL0362CA	COIL LQH3C220K04 (22UH)	
L6	TLL0362CA	COIL LQH3C220K04 (22UH)	
FL1	EZH0136CD	FIL ACF321825-101-B	
CN1	JBF0094	CONNECTOR FX6-80S-0.8SV2	
CN2	JBF0094	CONNECTOR FX6-80S-0.8SV2	

SG/CPU UNIT

Symbol	Parts Code	Description	Remark
IC1	IDT0401CD	IC,LOGIC TC7WU04FU	
IC2	IDT0401CD	IC,LOGIC TC7WU04FU	
IC3	ISL0002CY	IC LM1881M	
IC4	INE0087SA	IC EPM7064LC44-15 15NCLK1	NTSC
IC4		IC EPM7064LC44-15 15PCLK1	PAL
IC5	IDT0402CD	IC,LOGIC TC4W53FU	
IC6	IDT0402CD	IC,LOGIC TC4W53FU	
IC7	ISM0007MA	IC MN6761S (GL)	
IC8	IDT0355CA	IC,LOGIC TC7S08FU(E2)	
IC9	ISC0020TA	IC CXD1217Q	
IC10	IDT0400CD	IC,LOGIC TC7W32FU	
IC11	IDT0402CD	IC,LOGIC TC4W53FU	
IC12	INE0088SA	IC EPM7064LC44-15 15NSG1	NTSC
IC12	INE0088SA	IC EPM7064LC44-15 15PSG1	PAL
IC13	IDT0402CD	IC,LOGIC TC4W53FU	
IC14	IDT0401CD	IC,LOGIC TC7WU04FU	
IC15	INH0162	IC HM62256BLTM-8	
IC16	INM0106	IC M5M28F101AVP-10	
IC17	ILM0631CZ	IC,ANALOG MN1382-R	
IC18		Not Used	
IC19		Not Used	
IC20	INB0003MA	IC BR9041ARF	
IC21	INB0003MA	IC BR9041ARF	
IC22		Not Used	
IC23		Not Used	
IC24	IMH0097TA	IC HD6413002F	
IC25	ISM0055	IC UPD6453GT-101	
IC26	ILT0199CD	IC,ANALOG TA75W558FU	
IC27	IDT0470CD	IC,LOGIC TC7W34FU	
IC28		Not Used	
IC29	ISM0039CG	IC M62352GP	
IC30	ISM0039CG	IC M62352GP	
IC31	IDT0409CX	IC,LOGIC TC74HC595AF	
IC32	IDT0409CX	IC,LOGIC TC74HC595AF	
IC33	ILT0199CD	IC,ANALOG TA75W558FU	
IC34	IDT0355CA	IC,LOGIC TC7S08FU(E2)	
IC35	IDT0402CD	IC,LOGIC TC4W53FU	
IC36	ILT0199CD	IC,ANALOG TA75W558FU	
IC37		Not Used	
IC38	IDT0402CD	IC,LOGIC TC4W53FU	NTSC
IC39	IDT0355CA	IC,LOGIC TC7S08FU(E2)	
IC40	IDT0357CA	IC,LOGIC TC7SU04FU(E6)	
Q1	HTU0023CA	TRANSISTOR UMX1 (X1)	
Q2	HTA0318CA	TRANSISTOR 2SA1462 (Y34)	
Q3	HTK0126CZ	TRANSISTOR 2SK443-AJ6	
Q4	HTA0318CA	TRANSISTOR 2SA1462 (Y34)	
Q5	HTC0968CA	TRANSISTOR 2SC4177 (L5)	
Q6	HTU0023CA	TRANSISTOR UMX1 (X1)	
Q7	HTC0968CA	TRANSISTOR 2SC4177 (L5)	
Q8	HTC0968CA	TRANSISTOR 2SC4177 (L5)	
Q9	HTC0968CA	TRANSISTOR 2SC4177 (L5)	
Q10	HTK0126CZ	TRANSISTOR 2SK443-AJ6	
Q11	HTC0969CA	TRANSISTOR 2SC4176 (B34)	
Q12	HTD0160CZ	TRANSISTOR DTA124EKA	
Q13	HTU0029CZ	TRANSISTOR UMD2N	
Q14		Not Used	
Q15		Not Used	
Q16	HTD0161CA	TRANSISTOR DTC124EKA	
Q17	HTC0968CA	TRANSISTOR 2SC4177 (L5)	PAL
Q18	HTK0126CZ	TRANSISTOR 2SK443-AJ6	PAL
Q19	HTD0160CZ	TRANSISTOR DTA124EKA	
D1	HDH0270CA	DIODE HVR100	
D2	HDH0270CA	DIODE HVR100	
D3	HDD0168CA	DIODE DCC010	
D4	RME1450CA	R,METAL 1/10W 10 KOHM +-5%	
D5	HDD0168CA	DIODE DCC010	
D6	HDH0311CZ	DIODE HVU-359	
D7	HDD0167CA	DIODE DCB010	NTSC
D8	HDH0311CZ	DIODE HVU-359	
D9	HDD0168CA	DIODE DCC010	
D10	HDD0168CA	DIODE DCC010	
D11	HDD0159CA	DIODE DCA010	
D12	HDD0168CA	DIODE DCC010	
D13	HTD0160CZ	TRANSISTOR DTA124EKA	
D14	HDD0168CA	DIODE DCC010	
RZ1	RZA0416CA	R,BLOCK MNR14-E0AB-J-101	
RZ2	RZA0416CA	R,BLOCK MNR14-E0AB-J-101	
RZ3	RZA0416CA	R,BLOCK MNR14-E0AB-J-101	
RZ4	RZA0416CA	R,BLOCK MNR14-E0AB-J-101	

Symbol	Parts Code	Description	Remark
RZ5	RZA0416CA	R,BLOCK MNR14-E0AB-J-101	
RZ6	RZA0416CA	R,BLOCK MNR14-E0AB-J-101	
RZ7	RZA0416CA	R,BLOCK MNR14-E0AB-J-101	
RZ8	RZA0416CA	R,BLOCK MNR14-E0AB-J-101	
RZ9	RZA0416CA	R,BLOCK MNR14-E0AB-J-101	
RZ10	RZA0416CA	R,BLOCK MNR14-E0AB-J-101	
RZ11	RZA0416CA	R,BLOCK MNR14-E0AB-J-101	
RZ12	RZA0416CA	R,BLOCK MNR14-E0AB-J-101	
RZ13	RZA0416CA	R,BLOCK MNR14-E0AB-J-101	
R3	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R4	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R5	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R7	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R8	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R9	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R10	RME1487CA	R,METAL 1/10W 75 OHM +-5%	
R11	RME1487CA	R,METAL 1/10W 75 OHM +-5%	
R13	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R14	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R16	RME1487CA	R,METAL 1/10W 75 OHM +-5%	
R17	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R18	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R19	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R20	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R23	RME1828CA	R,METAL 1/32W 39 KOHM +-5%	
R25	RME1828CA	R,METAL 1/32W 39 KOHM +-5%	
R27	RMR4916CA	R,METAL 1/16W 150 OHM +-0.5%	
R28	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R29	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R30	RME1809CA	R,METAL 1/32W 1 KOHM +-5%	
R31	RME1818CA	R,METAL 1/32W 5.6 KOHM +-5%	
R32	RME0912CA	R,METAL 1/8W 0 OHM	
R33	RME1828CA	R,METAL 1/32W 39 KOHM +-5%	
R34	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R35	RME1813CA	R,METAL 1/32W 2.2 KOHM +-5%	
R36	RME1828CA	R,METAL 1/32W 39 KOHM +-5%	
R37	RME1801CA	R,METAL 1/32W 220 OHM +-5%	NTSC
R37	RME1814CA	R,METAL 1/32W 2.7 KOHM +-5%	PAL
R38	RME1813CA	R,METAL 1/32W 2.2 KOHM +-5%	
R39	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R40	RME1801CA	R,METAL 1/32W 220 OHM +-5%	
R41	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	NTSC
R41	RME1825CA	R,METAL 1/32W 22 KOHM +-5%	PAL
R42	RME1818CA	R,METAL 1/32W 5.6 KOHM +-5%	
R43	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R44	RME1813CA	R,METAL 1/32W 2.2 KOHM +-5%	
R45	RME1838CA	R,METAL 1/32W 680 KOHM +-5%	
R46	RME1805CA	R,METAL 1/32W 470 OHM +-5%	
R47	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R48	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R49	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R50	RME1828CA	R,METAL 1/32W 39 KOHM +-5%	NTSC
R50	RME1830CA	R,METAL 1/32W 56 KOHM +-5%	PAL
R51	RME1999CA	R,METAL 1/32W 120 KOHM +-5%	
R52	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R53	RME1813CA	R,METAL 1/32W 2.2 KOHM +-5%	
R54	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R55	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	NTSC
R56	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R57	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R58	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R59	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R60	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R61	RME0912CA	R,METAL 1/8W 0 OHM	
R62	RME0912CA	R,METAL 1/8W 0 OHM	NTSC
R63	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R64	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R65	RME0876CA	R,METAL 1/8W 1 KOHM +-5%	
R66	RME1816CA	R,METAL 1/32W 3.9 KOHM +-5%	
R67	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	PAL
R68	RME1818CA	R,METAL 1/32W 5.6 KOHM +-5%	
R69	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R70	RME0912CA	R,METAL 1/8W 0 OHM	NTSC
R71	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	PAL
R72	RME0912CA	R,METAL 1/8W 0 OHM	PAL
R73		Not Used	
R74	RME1835CA	R,METAL 1/32W 220 KOHM +-5%	NTSC
R74	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	PAL
R75	RME1818CA	R,METAL 1/32W 5.6 KOHM +-5%	NTSC
R75	RME1809CA	R,METAL 1/32W 1 KOHM +-5%	PAL
R77	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	

Symbol	Parts Code	..... Description.....	Remark
R79	RME1835CA	R,METAL 1/32W 220 KOHM +-5%	
R80	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R81	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	NTSC
R82	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R85	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R86	RME0912CA	R,METAL 1/8W 0 OHM	
R87	RME0912CA	R,METAL 1/8W 0 OHM	
R88	RME0912CA	R,METAL 1/8W 0 OHM	
R89		Not Used	
R90	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R91	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R92	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R93	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R94	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R95	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R96	RMR4916CA	R,METAL 1/16W 150 OHM +-0.5%	NTSC
R96	RMR4915CA	R,METAL 1/16W 220 OHM +-0.5%	PAL
R98	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R99	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R100	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R101	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R102	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R103		Not Used	
R104		Not Used	
R105		Not Used	
R106		Not Used	
R107		Not Used	
R108		Not Used	
R109	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R110	RME1825CA	R,METAL 1/32W 22 KOHM +-5%	
R111		Not Used	
R112		Not Used	
R113		Not Used	
R114		Not Used	
R115		Not Used	
R116	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R117	RME1826CA	R,METAL 1/32W 27 KOHM +-5%	
R118	RME1811CA	R,METAL 1/32W 1.5 KOHM +-5%	
R119	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R120		Not Used	
R121	RMR4131CA	R,METAL 1/10W 30.1 KOHM +-1%	
R122	RME1827CA	R,METAL 1/32W 33 KOHM +-5%	
R123		Not Used	
R124		Not Used	
R125	RME1827CA	R,METAL 1/32W 33 KOHM +-5%	
R126		Not Used	
R127		Not Used	
R128		Not Used	
R129	RMR4131CA	R,METAL 1/10W 30.1 KOHM +-1%	
R130		Not Used	
R131	RME1803CA	R,METAL 1/32W 330 OHM +-5%	
R132	RME1820CA	R,METAL 1/32W 8.2 KOHM +-5%	
R133	RME1827CA	R,METAL 1/32W 33 KOHM +-5%	
R134		Not Used	
R135	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R136		Not Used	
R137	RME1805CA	R,METAL 1/32W 470 OHM +-5%	
R138	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R139		Not Used	
R140		Not Used	
R141		Not Used	
R142	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R143	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R144	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R145	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R146	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R147		Not Used	
R148	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R149	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R150	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R151		Not Used	
R152	RME0912CA	R,METAL 1/8W 0 OHM	
R153	RMR4860CA	R,METAL 1/16W 10 KOHM +-0.5%	NTSC
R153	RMR4869CA	R,METAL 1/16W 33 KOHM +-0.5%	PAL
R154	RMR4900CA	R,METAL 1/16W 1.5 KOHM +-0.5%	
R155		Not Used	
R156	RME0912CA	R,METAL 1/8W 0 OHM	PAL
R157	RME1818CA	R,METAL 1/32W 5.6 KOHM +-5%	PAL
R158	RME1818CA	R,METAL 1/32W 5.6 KOHM +-5%	PAL
R159	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	PAL
R160	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	PAL
R161	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	PAL
R162	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	

Symbol	Parts Code	..... Description.....	Remark
R163	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R164	RME0912CA	R,METAL 1/8W 0 OHM	
R165		Not Used	
R171	RME1797CA	R,METAL 1/32W 100 OHM +-5%	NTSC
R171	RME1784CA	R,METAL 1/32W 0 OHM +-5%	PAL
R172	RME1802CA	R,METAL 1/32W 271 KOHM +-5%	NTSC
R172	RME1784CA	R,METAL 1/32W 0 OHM +-5%	PAL
R173	RME1784CA	R,METAL 1/32W 0 OHM +-5%	NTSC
R173	EGF0143CA	CORE ACB1608M-300	PAL
R185	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R189	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R190	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R191		Not Used	
R192	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R193		Not Used	
R194		Not Used	
R195		Not Used	
R196		Not Used	
R197	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R198	RME1813CA	R,METAL 1/32W 2.2 KOHM +-5%	
R199	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
C1	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C2	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C3	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C4	CCG9295CA	C,CERAMIC 25 V 0.1 UF+80-20%	
C5	CCG0558CA	C,CERAMIC 50 V 150 PF+-5%	
C6	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	NTSC
C6	CCG0575CA	C,CERAMIC 25 V10000 PF+-10%	PAL
C7	CCG0580CA	C,CERAMIC 50 V 470 PF+-10%	
C8	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C9	CCG0565CA	C,CERAMIC 50 V 39 PF+-5%	NTSC
C9	CCG0563CA	C,CERAMIC 50 V 27 PF+-5%	PAL
C10	CEU0076CY	C,AL ELYC 6.3V 22 UF+-20%	
C11	CCG0581CA	C,CERAMIC 50 V 4700 PF+-10%	NTSC
C11	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	PAL
C12	CSM0022CA	C,TA ELYC 16 V 4.7 UF+-20%	
C13	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C14	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C15	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C16	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	NTSC
C16	CCG0575CA	C,CERAMIC 25 V10000 PF+-10%	PAL
C17	CEU0077CY	C,AL ELYC 6.3V 47 UF+-20%	
C18	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	NTSC
C18	CCG0575CA	C,CERAMIC 25 V10000 PF+-10%	PAL
C20	CCG0574CA	C,CERAMIC 50 V 1000 PF+-10%	
C21	CSS0148CA	C,TA ELYC 35 V 0.1 UF+-20%	
C22	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C23	CCG0560CA	C,CERAMIC 50 V 180 PF+-5%	NTSC
C23	CCG0558CA	C,CERAMIC 50 V 150 PF+-5%	PAL
C24	CCG0575CA	C,CERAMIC 25 V10000 PF+-10%	
C25	CCG0575CA	C,CERAMIC 25 V10000 PF+-10%	
C26	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C27	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	NTSC
C27	CCG0575CA	C,CERAMIC 25 V10000 PF+-10%	PAL
C29	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C30	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C31	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C32		Not Used	
C33	CCG0566CA	C,CERAMIC 50 V 47 PF+-5%	
C35		Not Used	
C36	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C37	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	NTSC
C37	CCG0575CA	C,CERAMIC 25 V10000 PF+-10%	PAL
C38	CCG0689CA	C,CERAMIC 16 V22000 PF+-10%	NTSC
C38	CCG0705CA	C,CERAMIC 16 V47000 PF+-10%	PAL
C39	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C40	CQA0122	C,PLASTIC 50 V47000 PF+-10%	NTSC
C40	CSC0176	C,TA ELYC 16 V 3.3 UF+-20%	PAL
C41	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C42	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	PAL
C43	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C44	CCG0577CA	C,CERAMIC 50 V 2200 PF+-10%	NTSC
C44	CCG0574CA	C,CERAMIC 50 V 1000 PF+-10%	PAL
C45	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	NTSC
C45	CCG0575CA	C,CERAMIC 25 V10000 PF+-10%	PAL
C47	CEU0077CY	C,AL ELYC 6.3V 47 UF+-20%	
C48	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	NTSC
C48	CCG0575CA	C,CERAMIC 25 V10000 PF+-10%	PAL
C50	CSM0022CA	C,TA ELYC 16 V 4.7 UF+-20%	
C52	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C53	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C54	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	NTSC

Symbol	Parts Code	Description	Remark
C54	CCG0575CA	C,CERAMIC 25 V10000 PF+-10%	PAL
C55	RME0900CA	R,METAL 1/8W 100 KOHM +-5%	NTSC
C57	CCG0554CA	C,CERAMIC 50 V 100 PF+-5%	NTSC
C57	CCG0566CA	C,CERAMIC 50 V 47 PF+-5%	PAL
C58	CEU0076CY	C,AL ELYC 6.3V 22 UF+-20%	
C59	CEU0076CY	C,AL ELYC 6.3V 22 UF+-20%	
C60		Not Used	
C61		Not Used	
C62	CCG0574CA	C,CERAMIC 50 V 1000 PF+-10%	NTSC
C62	CCG0566CA	C,CERAMIC 50 V 47 PF+-5%	PAL
C63		Not Used	
C64	CEU0076CY	C,AL ELYC 6.3V 22 UF+-20%	
C65	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C66		Not Used	
C67	CEU0069CY	C,AL ELYC 16 V 10 UF+-20%	
C68	CEU0069CY	C,AL ELYC 16 V 10 UF+-20%	
C69	CEU0069CY	C,AL ELYC 16 V 10 UF+-20%	
C70		Not Used	
C71		Not Used	
C72		Not Used	
C73	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C74	CEU0073CY	C,AL ELYC 50 V 1 UF+-20%	
C75		Not Used	
C77	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C78	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C79	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C80	CCG0561CA	C,CERAMIC 50 V 22 PF+-5%	
C81	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C82		Not Used	
C83	CEU0076CY	C,AL ELYC 6.3V 22 UF+-20%	
C84	CCG0561CA	C,CERAMIC 50 V 22 PF+-5%	
C85	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C86		Not Used	
C87	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C88	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C89	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C90	CEU0076CY	C,AL ELYC 6.3V 22 UF+-20%	
C91	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C92		Not Used	
C93	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C94	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C95	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C96		Not Used	
C97	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C98	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C99		Not Used	
C100		Not Used	
C101	CEU0077CY	C,AL ELYC 6.3V 47 UF+-20%	
C102	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C103	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C104	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C105	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C106	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C107	CEU0077CY	C,AL ELYC 6.3V 47 UF+-20%	
C108	CEU0077CY	C,AL ELYC 6.3V 47 UF+-20%	
C109		Not Used	
C110		Not Used	
C111	CEU0080CY	C,AL ELYC 16 V 22 UF+-20%	
C112	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C113	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C114	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	PAL
C115	CSS0170CA	C,TA ELYC 16 V 3.3 UF+-20%	PAL
C116	CEU0077CY	C,AL ELYC 6.3V 47 UF+-20%	PAL
C117	CCG0575CA	C,CERAMIC 25 V10000 PF+-10%	
C118	CCG0575CA	C,CERAMIC 25 V10000 PF+-10%	NTSC
C118	RME1784CA	R,METAL 1/32W 0 OHM +-5%	PAL
C120	CCC1025	C,CERAMIC 50 V 100 PF+-5%	PAL
C121	CCC1364	C,CERAMIC 50 V 330 PF+-5%	PAL
C122	CCR0128	C,CERAMIC 50 V 0.1 UF+80-20%	PAL
L3	TLN0038CA	COIL 60 MA 47 UH+-5%	
L4	TLL0363CA	COIL LQH3C470K04 (47UH)	
L7	TLL0363CA	COIL LQH3C470K04 (47UH)	
L9	TLL0363CA	COIL LQH3C470K04 (47UH)	
L11	RME1413CA	R,METAL 1/10W 0 OHM	
L12	TLL0363CA	COIL LQH3C470K04 (47UH)	
L13	TLL0363CA	COIL LQH3C470K04 (47UH)	
L14	TLL0363CA	COIL LQH3C470K04 (47UH)	
L15	TLL0363CA	COIL LQH3C470K04 (47UH)	
L16	TLL0363CA	COIL LQH3C470K04 (47UH)	
L17	TLL0363CA	COIL LQH3C470K04 (47UH)	

Symbol	Parts Code	Description	Remark
TH1	HDX0065	THERMISTOR 112-103-2	PAL
TP1	ETS0174CA	CHECK,CHIP EYF6C(2125)/RCT00000C001A	
TP2	ETS0174CA	CHECK,CHIP EYF6C(2125)/RCT00000C001A	
TP3	ETS0174CA	CHECK,CHIP EYF6C(2125)/RCT00000C001A	
TP4	ETS0174CA	CHECK,CHIP EYF6C(2125)/RCT00000C001A	
TP5	ETS0174CA	CHECK,CHIP EYF6C(2125)/RCT00000C001A	
X1	AAA0002	XTAL AT-51A 14.31818 MHZ	NTSC
X1	AAA0002	XTAL AT-51A 17.734475 MHZ	PAL
X2	ACC0017CD	CERA OSC CSACS12.0MT	
SW1	SSV0309CD	SW,SLIDE SSQ-022M	
SW2		Not Used	
CN1	JBK0007	CONNECTOR KX15-50KLD1L	
CN2	JBK0008	CONNECTOR KX15-70KLD1L	
CN3	JBX2823MA	CONNECTOR 32FLZ-SM1-R	

VDA UNIT

Symbol	Parts Code	..... Description	Remark
IC700	IDT0401CD	IC,LOGIC TC7WU04FU	
IC701	IDT0399CD	IC,LOGIC TC7W08FU	
IC702	IDT0355CA	IC,LOGIC TC7S08FU(E2)	
IC703	ILD0117CG	IC,ANALOG DBM2121BFP	
IC704	IDT0402CD	IC,LOGIC TC4W53FU	
IC705	IDT0402CD	IC,LOGIC TC4W53FU	
IC706	ILA0194CX	IC,ANALOG AD8044AR-14-REEL7	
Q700	HTC0968CA	TRANSISTOR 2SC4177 (L5)	
Q701	HTC0968CA	TRANSISTOR 2SC4177 (L5)	
Q702	HTA0386CA	TRANSISTOR 2SA1611 (M5)	
Q703	HTU0032CZ	TRANSISTOR UMZ1N (Z1)	
Q704	HTU0032CZ	TRANSISTOR UMZ1N (Z1)	
Q705	HTU0029CZ	TRANSISTOR UMD2N	
Q706	HTU0032CZ	TRANSISTOR UMZ1N (Z1)	
Q707	HTC0968CA	TRANSISTOR 2SC4177 (L5)	
Q708	HTC0968CA	TRANSISTOR 2SC4177 (L5)	
Q709	HTC0968CA	TRANSISTOR 2SC4177 (L5)	
R700	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R701	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R702	RME1810CA	R,METAL 1/32W 1.2 KOHM +-5%	
R703	RME1820CA	R,METAL 1/32W 8.2 KOHM +-5%	
R704	RMR4907CA	R,METAL 1/16W 470 OHM +-0.5%	
R705	RMR4923CA	R,METAL 1/16W 270 OHM +-0.5%	
R706	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R707		Not Used	
R708		Not Used	
R709	RMR4910CA	R,METAL 1/16W 2.2 KOHM +-0.5%	
R710	RMR4900CA	R,METAL 1/16W 1.5 KOHM +-0.5%	
R711	RMR4916CA	R,METAL 1/16W 150 OHM +-0.5%	
R712	RME1818CA	R,METAL 1/32W 5.6 KOHM +-5%	
R713	RME1818CA	R,METAL 1/32W 5.6 KOHM +-5%	
R714	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R715	RME1805CA	R,METAL 1/32W 470 OHM +-5%	
R716	RME1820CA	R,METAL 1/32W 8.2 KOHM +-5%	
R717	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R718	RMR4900CA	R,METAL 1/16W 1.5 KOHM +-0.5%	
R719	RME1809CA	R,METAL 1/32W 1 KOHM +-5%	
R721	RMR4907CA	R,METAL 1/16W 470 OHM +-0.5%	
R722	RME1795CA	R,METAL 1/32W 68 OHM +-5%	NTSC
R722	RME1796CA	R,METAL 1/32W 82 OHM +-5%	PAL
R723	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R724	RME1784CA	R,METAL 1/32W 0 OHM +-5%	PAL
R726		Not Used	
R727	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R728	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R729	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R730	RME1820CA	R,METAL 1/32W 8.2 KOHM +-5%	
R731	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R732	RME1820CA	R,METAL 1/32W 8.2 KOHM +-5%	
R733	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R734	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R736	RME1820CA	R,METAL 1/32W 8.2 KOHM +-5%	
R737	RME1820CA	R,METAL 1/32W 8.2 KOHM +-5%	
R738	RME1810CA	R,METAL 1/32W 1.2 KOHM +-5%	
R739	RME1820CA	R,METAL 1/32W 8.2 KOHM +-5%	
R740	RMR4907CA	R,METAL 1/16W 470 OHM +-0.5%	
R741	RMR4907CA	R,METAL 1/16W 470 OHM +-0.5%	
R742	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R743	RMR4906CA	R,METAL 1/16W 120 OHM +-0.5%	
R744	RMR4910CA	R,METAL 1/16W 2.2 KOHM +-0.5%	
R745	RMR4916CA	R,METAL 1/16W 150 OHM +-0.5%	
R746	RME1793CA	R,METAL 1/32W 47 OHM +-5%	
R747	RMR4910CA	R,METAL 1/16W 2.2 KOHM +-0.5%	
R748	RMR4928CA	R,METAL 1/16W 680 OHM +-0.5%	
R749	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R750	RME1820CA	R,METAL 1/32W 8.2 KOHM +-5%	
R751	RME1805CA	R,METAL 1/32W 470 OHM +-5%	
R752	RME1805CA	R,METAL 1/32W 470 OHM +-5%	
R753	RMR4907CA	R,METAL 1/16W 470 OHM +-0.5%	
R754	RME1793CA	R,METAL 1/32W 47 OHM +-5%	
R755	RMR4910CA	R,METAL 1/16W 2.2 KOHM +-0.5%	
R756	RMR4928CA	R,METAL 1/16W 680 OHM +-0.5%	
R757	RMR4909CA	R,METAL 1/16W 1 KOHM +-0.5%	
R758	RME1805CA	R,METAL 1/32W 470 OHM +-5%	
R759	RMR4929CA	R,METAL 1/16W 1.2 KOHM +-0.5%	
R760	RME1809CA	R,METAL 1/32W 1 KOHM +-5%	
R761	RME1829CA	R,METAL 1/32W 47 KOHM +-5%	
R762	RME1809CA	R,METAL 1/32W 1 KOHM +-5%	
R763	RME1829CA	R,METAL 1/32W 47 KOHM +-5%	
R764	RME1822CA	R,METAL 1/32W 12 KOHM +-5%	
R765	RME1809CA	R,METAL 1/32W 1 KOHM +-5%	

Symbol	Parts Code	..... Description	Remark
R766	RME1805CA	R,METAL 1/32W 470 OHM +-5%	
R767	RME1829CA	R,METAL 1/32W 47 KOHM +-5%	
R768	RMR4907CA	R,METAL 1/16W 470 OHM +-0.5%	
R769		Not Used	
R770	RME1487CA	R,METAL 1/10W 75 OHM +-5%	
R771	RME1487CA	R,METAL 1/10W 75 OHM +-5%	
R772	RME1487CA	R,METAL 1/10W 75 OHM +-5%	
R773	RMR4891CA	R,METAL 1/16W 8.2 KOHM +-0.5%	
R774	RMR4889CA	R,METAL 1/16W 4.7 KOHM +-0.5%	
R775	RMR4906CA	R,METAL 1/16W 120 OHM +-0.5%	
R776	RMR4915CA	R,METAL 1/16W 220 OHM +-0.5%	
R777	RME1808CA	R,METAL 1/32W 820 OHM +-5%	
R778	RME1793CA	R,METAL 1/32W 47 OHM +-5%	NTSC
R778	RMR4909CA	R,METAL 1/16W 1 KOHM +-0.5%	PAL
R779	RMR4889CA	R,METAL 1/16W 4.7 KOHM +-0.5%	
R780		Not Used	
R781	RMR4906CA	R,METAL 1/16W 120 OHM +-0.5%	
R782	RMR4915CA	R,METAL 1/16W 220 OHM +-0.5%	
R783	RMR4891CA	R,METAL 1/16W 8.2 KOHM +-0.5%	
R784	RME1808CA	R,METAL 1/32W 820 OHM +-5%	
R785	RMR4889CA	R,METAL 1/16W 4.7 KOHM +-0.5%	
R786	RMR4912CA	R,METAL 1/16W 47 KOHM +-0.5%	
R787	RMR4909CA	R,METAL 1/16W 1 KOHM +-0.5%	
R788	RMR4909CA	R,METAL 1/16W 1 KOHM +-0.5%	
R789	RMR4889CA	R,METAL 1/16W 4.7 KOHM +-0.5%	
R790	RMR4912CA	R,METAL 1/16W 47 KOHM +-0.5%	
R791	RMR4929CA	R,METAL 1/16W 1.2 KOHM +-0.5%	
R792	RMR4888CA	R,METAL 1/16W 3.3 KOHM +-0.5%	
R793	RMR4930CA	R,METAL 1/16W 6.8 KOHM +-0.5%	
R794	RMR4899CA	R,METAL 1/16W 330 OHM +-0.5%	
R795	RMR4929CA	R,METAL 1/16W 1.2 KOHM +-0.5%	
R796	RMR4888CA	R,METAL 1/16W 3.3 KOHM +-0.5%	
R797	RME1820CA	R,METAL 1/32W 8.2 KOHM +-5%	NTSC
R797	RMR4930CA	R,METAL 1/16W 6.8 KOHM +-0.5%	PAL
R798	RMR4930CA	R,METAL 1/16W 6.8 KOHM +-0.5%	
R799	RMR4912CA	R,METAL 1/16W 47 KOHM +-0.5%	
R800	RMR4909CA	R,METAL 1/16W 1 KOHM +-0.5%	
R801	RMR4909CA	R,METAL 1/16W 1 KOHM +-0.5%	
R802	RMR4909CA	R,METAL 1/16W 1 KOHM +-0.5%	
R803	RMR4909CA	R,METAL 1/16W 1 KOHM +-0.5%	
R804	RME1487CA	R,METAL 1/10W 75 OHM +-5%	
R805	RME1487CA	R,METAL 1/10W 75 OHM +-5%	
R806	RME1487CA	R,METAL 1/10W 75 OHM +-5%	
R807	RME1487CA	R,METAL 1/10W 75 OHM +-5%	
C700	CCG0553CA	C,CERAMIC 50 V 10 PF+-0.5PF	NTSC
C700	CCG0559CA	C,CERAMIC 50 V 18 PF+-0.5PF	PAL
C701	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C702	CCG0553CA	C,CERAMIC 50 V 10 PF+-0.5PF	NTSC
C702	CCG0559CA	C,CERAMIC 50 V 18 PF+-0.5PF	PAL
C703		Not Used	
C704	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C705	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C706	CSS0168CA	C,TA ELYC 16 V 1 UF+-20%	
C707	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C708	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C709	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C710	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C711	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C712	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C713	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C714	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C715	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C716	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C717	CSX0203CD	C,TA ELYC 16 V 47 UF+-20%	
C718	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C719	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C720	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C721	CSX0203CD	C,TA ELYC 16 V 47 UF+-20%	
C722	CSX0186CY	C,TA ELYC 25 V 15 UF+-20%	
C723		Not Used	
C724	CCG0556CA	C,CERAMIC 50 V 120 PF+-5%	
L700		Not Used	
L701	TLL0362CA	COIL LQH3C220K04 (22UH)	
L702	TLL0362CA	COIL LQH3C220K04 (22UH)	
L703	TLN0035CA	COIL 400 MA 1 UH+-5%	
FL700	AFT0013CD	FIL T629LKN-1554	
FL701	AFX0110CD	FIL 630BJN-1635	NTSC
FL701	AFX0111CD	FIL 630BJN-1636	PAL
FL702		Not Used	
FL703	AFT0013CD	FIL T629LKN-1554	

Symbol	Parts Code	..... Description	Remark
FL704	AFT0013CD	FIL T629LKN-1554	
FL705	AFT0013CD	FIL T629LKN-1554	
DL700	EDG0007	DELAY LINE G355ENK-8243	NTSC
CN700	JBK0007	CONNECTOR KX15-50KLD1L	

Symbol	Parts Code	..... Description	Remark

PS UNIT

Symbol	Parts Code	..... Description	Remark
IC300	IPM0078CY	IC MC33063AD	
IC301	IPM0077CX	IC MAX786EAI	
IC302	ILT0102CX	IC,ANALOG TL1451ACNS	
IC303	IPH0010CD	IC HA178L15UA	
Q300	HTC0968CA	TRANSISTOR 2SC4177 (L5)	
Q301	HTC0968CA	TRANSISTOR 2SC4177 (L5)	
Q302	HTU0031CZ	TRANSISTOR UMX3N	
Q303	HTA0401CD	TRANSISTOR 2SA1213Y (NY)	
Q304	HTA0387CA	TRANSISTOR 2SA1610 (Y34)	
Q306	HTA0401CD	TRANSISTOR 2SA1213Y (NY)	
Q307	HTH0022CY	TRANSISTOR HAT2016R	
Q308	HTH0022CY	TRANSISTOR HAT2016R	
Q309	HTH0022CY	TRANSISTOR HAT2016R	
D300	HDD0159CA	DIODE DCA010	
D301	HDS0634CD	DIODE SFPB-74 (D4XX)	
D302	HDS0634CD	DIODE SFPB-74 (D4XX)	
D303	HDS0634CD	DIODE SFPB-74 (D4XX)	
D304	HDD0159CA	DIODE DCA010	
D305	HDD0159CA	DIODE DCA010	
D306	HDD0167CA	DIODE DCB010	
D307	HDS0634CD	DIODE SFPB-74 (D4XX)	
D308	HDS0578CZ	DIODE SB05-05CP	
D309	HNP0003CY	DIODE,ZEN PTZ 24A	
D310	HNP0001CY	DIODE,ZEN PTZ 6.8A	
D311	HNH0033CA	DIODE,ZEN HZM3.9NB	
D312	HNH0032CA	DIODE,ZEN HZM20NB1	
D313	HDD0147	DIODE DS135D	
R300	RMN0007CG	R,METAL 1 W 0.12 OHM +-5%	
R301	RME1429CA	R,METAL 1/10W 180 OHM +-5%	
R302	RMN0008CG	R,METAL 1 W 0.82 OHM +-5%	
R303	RMN0010CG	R,METAL 1 W 0.068OHM +-10%	
R304	RMR4889CA	R,METAL 1/16W 4.7 KOHM +-0.5%	
R305	RMR4892CA	R,METAL 1/16W 15 KOHM +-0.5%	
R306	RMR4870CA	R,METAL 1/16W 56 KOHM +-0.5%	
R307	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R308	RMR4889CA	R,METAL 1/16W 4.7 KOHM +-0.5%	
R309	RMR4910CA	R,METAL 1/16W 2.2 KOHM +-0.5%	
R310	RMR4911CA	R,METAL 1/16W 3.9 KOHM +-0.5%	
R311	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R312		Not Used	
R313	RME1413CA	R,METAL 1/10W 0 OHM	
R314	RMR4920CA	R,METAL 1/16W 33 KOHM +-0.5%	
R315		Not Used	
R316	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R317	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R318	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R319	RMR4921CA	R,METAL 1/16W 27 KOHM +-0.5%	
R320	RMR4860CA	R,METAL 1/16W 10 KOHM +-0.5%	
R321	RMR4888CA	R,METAL 1/16W 3.3 KOHM +-0.5%	
R322	RME1818CA	R,METAL 1/32W 5.6 KOHM +-5%	
R323	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R324	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R325	RMR4910CA	R,METAL 1/16W 2.2 KOHM +-0.5%	
R326	RMR4920CA	R,METAL 1/16W 33 KOHM +-0.5%	
R327	RMR4926CA	R,METAL 1/16W 1.8 KOHM +-0.5%	
R328	RME1818CA	R,METAL 1/32W 5.6 KOHM +-5%	
R329	RMR4860CA	R,METAL 1/16W 10 KOHM +-0.5%	
R330	RME1810CA	R,METAL 1/32W 1.2 KOHM +-5%	
R331	RMR4920CA	R,METAL 1/16W 33 KOHM +-0.5%	
R332	RME1435CA	R,METAL 1/10W 560 OHM +-5%	
R333	RME1436CA	R,METAL 1/10W 680 OHM +-5%	
R334	RME1436CA	R,METAL 1/10W 680 OHM +-5%	
R335	RME1807CA	R,METAL 1/32W 680 OHM +-5%	
R336	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R337	RMR4860CA	R,METAL 1/16W 10 KOHM +-0.5%	
R338	RME1832CA	R,METAL 1/32W 82 KOHM +-5%	
R339	RME1999CA	R,METAL 1/32W 120 KOHM +-5%	
R340	RMR4930CA	R,METAL 1/16W 6.8 KOHM +-0.5%	
R341	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R342	RME1807CA	R,METAL 1/32W 680 OHM +-5%	
R343	RME1813CA	R,METAL 1/32W 2.2 KOHM +-5%	
R345	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R346	RMR4892CA	R,METAL 1/16W 15 KOHM +-0.5%	
R347	RME1825CA	R,METAL 1/32W 22 KOHM +-5%	
R348	RMR4920CA	R,METAL 1/16W 33 KOHM +-0.5%	
R349	RMR4920CA	R,METAL 1/16W 33 KOHM +-0.5%	
R350	RME1812CA	R,METAL 1/32W 1.8 KOHM +-5%	
R351	RME1807CA	R,METAL 1/32W 680 OHM +-5%	
R352	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R353	RME1413CA	R,METAL 1/10W 0 OHM	

Symbol	Parts Code	..... Description	Remark
R354	RME1825CA	R,METAL 1/32W 22 KOHM +-5%	
R355	RME1825CA	R,METAL 1/32W 22 KOHM +-5%	
R356	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R357	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R358	RME1813CA	R,METAL 1/32W 2.2 KOHM +-5%	
R359	RME0912CA	R,METAL 1/8W 0 OHM	
R360	RME0912CA	R,METAL 1/8W 0 OHM	
R361	RME1835CA	R,METAL 1/32W 220 KOHM +-5%	
R362	RME1835CA	R,METAL 1/32W 220 KOHM +-5%	
R363	RME1816CA	R,METAL 1/32W 3.9 KOHM +-5%	
R364		Not Used	
R365	RME1413CA	R,METAL 1/10W 0 OHM	
R366	RME1413CA	R,METAL 1/10W 0 OHM	
R367	RME1413CA	R,METAL 1/10W 0 OHM	
R368	RME1413CA	R,METAL 1/10W 0 OHM	
R369	RME1413CA	R,METAL 1/10W 0 OHM	
R370	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R371	RCR3068	R,CARBON 1/4W 4.7 KOHM +-5%	
R372	RCR3068	R,CARBON 1/4W 4.7 KOHM +-5%	
C300	CCE0134CA	C,CERAMIC 50 V 0.22UF+80%-20%	
C301	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C302	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C303	CEL0174	C,AL ELYC 25 V 820 UF+-20%	
C304	CCE0121CA	C,CERAMIC 16 V 1 UF+80-20%	
C305	CCG9714CA	C,CERAMIC 50 V 0.22UF+80-20%	
C306	CSX0219CY	C,TA ELYC 10 V 47 UF+-20%	
C307	CEL0117	C,AL ELYC 35 V 100 UF+-20%	
C308	CEL0117	C,AL ELYC 35 V 100 UF+-20%	
C309	CCT0109CA	C,CERAMIC 25 V 1 UF+80-20%	
C312	CEL0172	C,AL ELYC 25 V 820 UF+-20%	
C313	CSX0166CD	C,TA ELYC 16 V 10 UF+-20%	
C314	CCE0121CA	C,CERAMIC 16 V 1 UF+80-20%	
C315	CCE0121CA	C,CERAMIC 16 V 1 UF+80-20%	
C316	CCG9714CA	C,CERAMIC 50 V 0.22UF+80-20%	
C317	CSX0164CD	C,TA ELYC 16 V 22 UF+-20%	
C318	CSX0164CD	C,TA ELYC 16 V 22 UF+-20%	
C319	CSX0165CA	C,TA ELYC 16 V 3.3 UF+-20%	
C320	CEL0106	C,AL ELYC 25 V 47 UF+-20%	
C321	CCG0587CA	C,CERAMIC 50 V 330 PF+-5%	
C322	CCT0109CA	C,CERAMIC 25 V 1 UF+80-20%	
C323	CCG9714CA	C,CERAMIC 50 V 0.22UF+80-20%	
C327	CEL0173	C,AL ELYC 25 V 1000 UF+-20%	
C329	CEL0106	C,AL ELYC 25 V 47 UF+-20%	
C330	CCG0575CA	C,CERAMIC 25 V10000 PF+-10%	
C331	CCG0575CA	C,CERAMIC 25 V10000 PF+-10%	
C332	CSS0171CD	C,TA ELYC 16 V 10 UF+-20%	
C333	CSS0171CD	C,TA ELYC 16 V 10 UF+-20%	
C334	CCG0562CA	C,CERAMIC 50 V 220 PF+-5%	
C335	CSM0021CA	C,TA ELYC 16 V 2.2 UF+-20%	
C336	CCT0109CA	C,CERAMIC 25 V 1 UF+80-20%	
C337	CCE0121CA	C,CERAMIC 16 V 1 UF+80-20%	
C338	CCG0587CA	C,CERAMIC 50 V 330 PF+-5%	
C339	CSX0168CA	C,TA ELYC 16 V 2.2 UF+-20%	
C340	CEL0108	C,AL ELYC 10 V 220 UF+-20%	
C341	CSX0219CY	C,TA ELYC 10 V 47 UF+-20%	
C342	CCG0587CA	C,CERAMIC 50 V 330 PF+-5%	
C343	CCG0574CA	C,CERAMIC 50 V 1000 PF+-10%	
C344	CCG0583CA	C,CERAMIC 50 V 680 PF+-10%	
C345	CCG0574CA	C,CERAMIC 50 V 1000 PF+-10%	
C346	CCG0574CA	C,CERAMIC 50 V 1000 PF+-10%	NTSC
C346	CCG0577CA	C,CERAMIC 50 V 2200 PF+-10%	PAL
C347	CCT0109CA	C,CERAMIC 25 V 1 UF+80-20%	
C348	CCT0109CA	C,CERAMIC 25 V 1 UF+80-20%	
C349	CEL0106	C,AL ELYC 25 V 47 UF+-20%	
C350	CEL0106	C,AL ELYC 25 V 47 UF+-20%	
C351	CCG9714CA	C,CERAMIC 50 V 0.22UF+80-20%	
C352	CCR0090	C,CERAMIC 50 V 0.1 UF+80-20%	
C353	CCR0090	C,CERAMIC 50 V 0.1 UF+80-20%	
C354	CEL0107	C,AL ELYC 25 V 100 UF+-20%	
C355	CEL0107	C,AL ELYC 25 V 100 UF+-20%	
C356		Not Used	
C357	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C358		Not Used	
C359	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C360	CEL0107	C,AL ELYC 25 V 100 UF+-20%	
C370	CCG9714CA	C,CERAMIC 50 V 0.22UF+80-20%	
C371	CSC0231	C,TA ELYC 16 V 47 UF+-20%	
C363	CSX0182CD	C,TA ELYC 35 V 6.8 UF+-20%	
C364		Not Used	
C365	CCG0575CA	C,CERAMIC 25 V10000 PF+-10%	
C366	CSX0166CD	C,TA ELYC 16 V 10 UF+-20%	
C367	CCG9714CA	C,CERAMIC 50 V 0.22UF+80-20%	

Symbol	Parts Code	..... Description	Remark
C368	CCG9714CA	C,CERAMIC 50 V 0.22UF+80-20%	
C369	CCU0205CA	C,CERAMIC 50 V 1 UF+80-20%	
L300	TLS0120	COIL SK-5M-4W (2A 48UH)	
L301	TLR0035	COIL 1.6 A 22 UH+-15%	
L302	TLH0070	COIL HK-05S040-1010X (1A 100UH)	
L303	TLR0033	COIL 410 MA 330 UH+-10%	
L304	TLR0035	COIL 1.6 A 22 UH+-15%	
L305	TLH0098	COIL HK-05S035-3510A(0.6A350UH)	
L306		Not Used	
L307	TLH0072	COIL HK-08S070-6500	
L308	TLH0098	COIL HK-05S035-3510A(0.6A350UH)	
L309	TLR0035	COIL 1.6 A 22 UH+-15%	
L310	TLR0038	COIL 120 MA 3900 UH+-10%	
L311	TLR0033	COIL 410 MA 330 UH+-10%	
F300	EFL0221	FUSE NT3 UL,CSA 250V 1.6A	
CN300	JBK0007	CONNECTOR KX15-50KLD1L	

Symbol	Parts Code	..... Description	Remark

REAR UNIT

Symbol	Parts Code	..... Description	Remark
IC400	IDT0355CA	IC,LOGIC TC7S08FU(E2)	
IC401	IDT0381CD	IC,LOGIC TC7W04FU	
IC402	ILN0048MA	IC,ANALOG NJM311M	
IC403	ISM0063	IC MAX202ESE	
IC404	IDT0354CA	IC,LOGIC TC7S32FU(E4)	
Q400	HTK0126CZ	TRANSISTOR 2SK443-AJ6	
Q401	HTC0686CA	TRANSISTOR 2SC2462C (LC)	
D400	HLG0042	LED GL3KG8 (GRN)	
D401	HDD0168CA	DIODE DCC010	
D402	HDD0168CA	DIODE DCC010	
D403	HDD0147	DIODE DS135D	
D405		Not Used	
D406		Not Used	
D407		Not Used	
D408		Not Used	
D409		Not Used	
D410		Not Used	
D411		Not Used	
R400	RME1833CA	R,METAL 1/32W 100 KOHM +-5%	
R401	RME1808CA	R,METAL 1/32W 820 OHM +-5%	
R402	RME1809CA	R,METAL 1/32W 1 KOHM +-5%	
R403	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R404	RME1795CA	R,METAL 1/32W 68 OHM +-5%	
R405	RME1815CA	R,METAL 1/32W 3.3 KOHM +-5%	
R406	RMR4901CA	R,METAL 1/16W 22 KOHM +-0.5%	
R407	RMR4926CA	R,METAL 1/16W 1.8 KOHM +-0.5%	
R408	RME1836CA	R,METAL 1/32W 330 KOHM +-5%	
R409	RME1827CA	R,METAL 1/32W 33 KOHM +-5%	
R410	RME1819CA	R,METAL 1/32W 6.8 KOHM +-5%	
R411	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R412	RMR4910CA	R,METAL 1/16W 2.2 KOHM +-0.5%	
R413	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R414	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R415	RME1797CA	R,METAL 1/32W 100 OHM +-5%	
R416	RMR4920CA	R,METAL 1/16W 33 KOHM +-0.5%	
R417		Not Used	
R418		Not Used	
R419	RME1821CA	R,METAL 1/32W 10 KOHM +-5%	
R420	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R421	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R422	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R423	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R424	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R425	RME1784CA	R,METAL 1/32W 0 OHM +-5%	
R426		Not Used	
R427		Not Used	
R428		Not Used	
R429		Not Used	
R430		Not Used	
R431		Not Used	
R432		Not Used	
C400	CSX0164CD	C,TA ELYC 16 V 22 UF+-20%	
C401	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C402	CCG0556CA	C,CERAMIC 50 V 120 PF+-5%	
C403	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C404	CCG0556CA	C,CERAMIC 50 V 120 PF+-5%	
C405	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C406	CCG0556CA	C,CERAMIC 50 V 120 PF+-5%	
C407	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C408	CCG0556CA	C,CERAMIC 50 V 120 PF+-5%	
C409	CSX0166CD	C,TA ELYC 16 V 10 UF+-20%	
C410	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C411	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C412	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C413	CCG0556CA	C,CERAMIC 50 V 120 PF+-5%	
C414	CSX0164CD	C,TA ELYC 16 V 22 UF+-20%	
C415	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C416	CCG0556CA	C,CERAMIC 50 V 120 PF+-5%	
C417	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C418	CCG0556CA	C,CERAMIC 50 V 120 PF+-5%	
C419	CCG0556CA	C,CERAMIC 50 V 120 PF+-5%	
C420	CCG0556CA	C,CERAMIC 50 V 120 PF+-5%	
C421	CCG0556CA	C,CERAMIC 50 V 120 PF+-5%	
C422	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
L400	TLL0362CA	COIL LQH3C220K04 (22UH)	
L401	TLN0035CA	COIL 400 MA 1 UH+-5%	
L402	TLN0035CA	COIL 400 MA 1 UH+-5%	

Symbol	Parts Code	..... Description	Remark
L403	TLN0035CA	COIL 400 MA 1 UH+-5%	
L404	TLN0035CA	COIL 400 MA 1 UH+-5%	
L405	TLN0035CA	COIL 400 MA 1 UH+-5%	
CN400	JBX2837MA	CONNECTOR 30FLZ-RSM1	
CN401	JBX2838MA	CONNECTOR 046214030010800	
SW400	SSP0738	SW,PB SKHHAP	
SW401	SSP0738	SW,PB SKHHAP	
SW402	SSP0738	SW,PB SKHHAP	
SW403	SSP0738	SW,PB SKHHAP	
SW404	SSP0738	SW,PB SKHHAP	
SW405	SSV0309CD	SW,SLIDE SSQ-022M	
	HYL0009	SPACER,LED LH-5-4 (H=4MM)	

MB UNIT

Symbol	Parts Code	.....Description	Remark
IC700	IDT0401CD	IC,LOGIC TC7WU04FU	
IC701	IPH0003CD	IC HA178L05UA	
Q700	HTC0968CA	TRANSISTOR 2SC4177 (L5)	
Q701	HTC0968CA	TRANSISTOR 2SC4177 (L5)	
R701	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R703	RME1817CA	R,METAL 1/32W 4.7 KOHM +-5%	
R704		Not Used	
R705	RME1839CA	R,METAL 1/32W 1 MOHM +-5%	
R706	RME1413CA	R,METAL 1/10W 0 OHM	
R707	RME1413CA	R,METAL 1/10W 0 OHM	
R708	RME1413CA	R,METAL 1/10W 0 OHM	
R709	RME1413CA	R,METAL 1/10W 0 OHM	
R711	RME0912CA	R,METAL 1/8W 0 OHM	
R712	RME0912CA	R,METAL 1/8W 0 OHM	
R713	RME1784CA	R,METAL 1/32W 0 OHM +-5%	NTSC
R713	EGF0143CA	CORE ACB1608M-300	PAL
C700	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C701	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C702	CCG0556CA	C,CERAMIC 50 V 120 PF+-5%	
C703	CCG0556CA	C,CERAMIC 50 V 120 PF+-5%	
C704	CCG0556CA	C,CERAMIC 50 V 120 PF+-5%	
C705	CCG0556CA	C,CERAMIC 50 V 120 PF+-5%	
C706	CCG0678CA	C,CERAMIC 16 V 0.1 UF+80-20%	
C707	CCG9613CA	C,CERAMIC 25 V 0.22UF+80-20%	
C708	CCG9613CA	C,CERAMIC 25 V 0.22UF+80-20%	
C709	CEL0163	C,AL ELYC 10 V 1000 UF+-20%	
C710	CCR0107	C,CERAMIC 50 V 0.01 UF+-10%	PAL
L700	TLN0035CA	COIL 400 MA 1 UH+-5%	
L701	TLN0035CA	COIL 400 MA 1 UH+-5%	
L702	TLL0306CD	COIL 320MA 22 UH+-10%	
T700		Not Used	
CN700	JBK0004NA	CONNECTOR KX14-50K5D1	
CN701	JBK0004NA	CONNECTOR KX14-50K5D1	
CN702	JBK0004NA	CONNECTOR KX14-50K5D1	
CN703	JBB0084	CONNECTOR B6B-ZR	
CN704	JBK0005PA	CONNECTOR KX14-70K5D1	
CN705	JBK0005PA	CONNECTOR KX14-70K5D1	
CN706	JBK0004NA	CONNECTOR KX14-50K5D1	
CN707	JBK0004NA	CONNECTOR KX14-50K5D1	
CN708	JMT0047	CON,MULTI TCS7547-01-401	
CN709	JBX2838MA	CONNECTOR 046214030010800	
CN710	JBX2838MA	CONNECTOR 046214030010800	
CN711	JBB0083	CONNECTOR B5B-ZR	

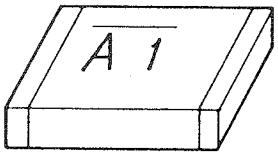
Symbol	Parts Code	.....Description	Remark

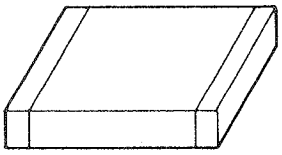
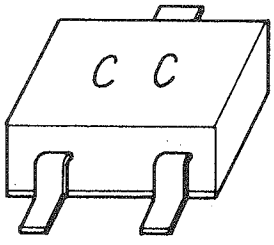
CHASSIS

Symbol	Parts Code	Description	Remarks
C425	CCR0104	C,CERAMIC 50 V 0.1 UF+-10%	
L410	EGF0074	CORE Q5B RID 7.5X7X13 H3.8R	
L411	EGF0134	CORE HF70SH20X0.7X12	
L412	EGF0134	CORE HF70SH20X0.7X12	
J50	BBH0153	WIRE,RIBBN SML2CD-24*30-BD*6-P0.5-S3	
J51	BBH0152	WIRE,RIBBN SML2CD-20*30-BD*6-P0.5-S3	
J52	BBH0152	WIRE,RIBBN SML2CD-20*30-BD*6-P0.5-S3	
J401	8604019	CABLE ASSY ZHR-5 L=85	
J402	BBH0151	WIRE,RIBBN SML2CD-30*45 (8597306-AG)	
J403	BBH0150	WIRE,RIBBN SML2CD-30*30 (8597306-AE)	
CN402	JHH0011	CON,COAX HXC0324-01-310	
CN403	JMH0109	CON,MULTI HR10A-10R-12PB(01)	
CN404	JMH0096	CON,MULTI HR10A-10R-12SB(01)	
CN405	JMS0396	CON,MULTI SDEB-9S(05)	
CN406	JMH0111	CON,MULTI HR10A-7R-4SB(01)	
CN407	JHH0011	CON,COAX HXC0324-01-310	
CN408	JPR0021	CONNECTOR RM12BRD-3PH	
CNL403	JYR0045	LOCK RDG-LNA(4-40)-W2(01)	U,E/K
CNL405	JYR0044	LOCK RDG-LNA-W2(01)	J

Symbol	Parts Code	Description	Remarks

12. REPLACEMENT PROCEDURE FOR CHIP COMPONENTS

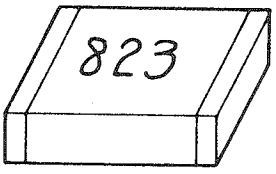
<table>
<tr><th>Component</th><th>Marking on chips</th><th>Specifications</th></tr>
<tr><td>Capacitor (cont'ed)</td><td>Capacitance</td><td>
<table>
<tr><td>Number</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr>
<tr><td>Multiplier</td><td>10^0</td><td>10^1</td><td>10^2</td><td>10^3</td><td>10^4</td><td>10^5</td></tr>
<tr><td>Number</td><td>6</td><td>7</td><td>8</td><td>9</td><td></td><td></td></tr>
<tr><td>Multiplier</td><td>10^6</td><td>10^7</td><td>10^8</td><td>10^{-1}</td><td></td><td></td></tr>
</table>
Example:


A1: $\boxed{1.0} \times 10^{\boxed{1}}$ = 10 pF
E3: $\boxed{1.5} \times 10^{\boxed{3}}$ = 1500 pF
</td></tr>
<tr><td>Capacitor</td><td>Not marking</td><td>Note:
Mount the chip component not marked with capacitance right after it is unpacked.
Do not use a chip component which is released from one's hold.
Example:

</td></tr>
<tr><td>Tran. sistor, diode, and FET</td><td>Tape No.</td><td>Example:


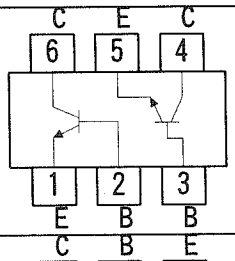
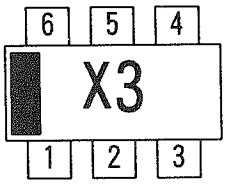
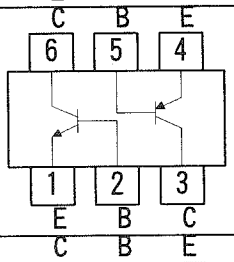
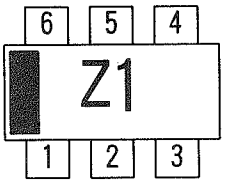
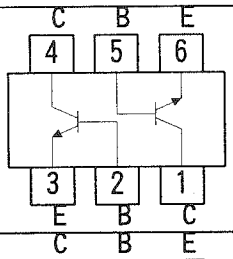
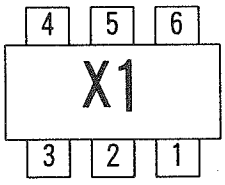
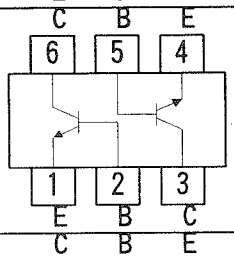
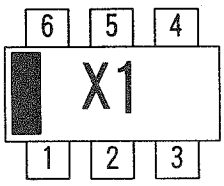
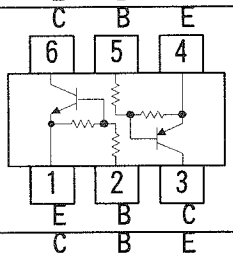
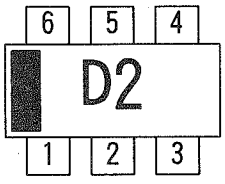
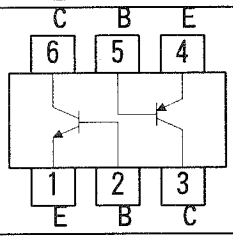
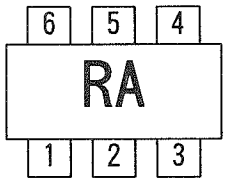
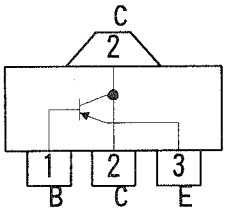
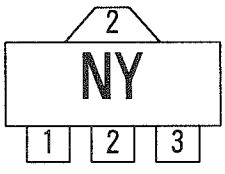
</td></tr>
</table>

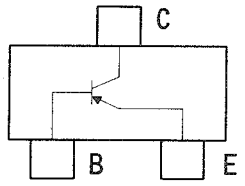
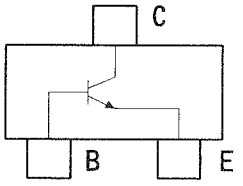
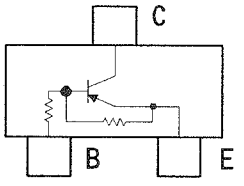
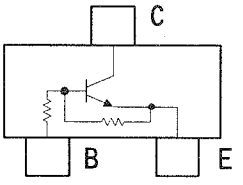
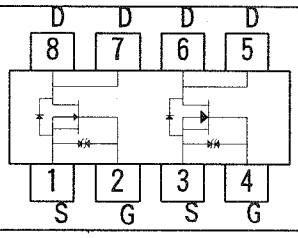
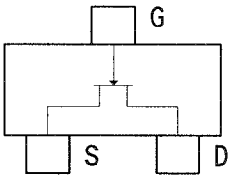
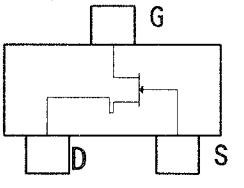
1. Resistance for capacitance of chip components and type No. marking
Chip components used in the camera are resistors, capacitors, transistors, diodes, FETs and ICs.
Table1 shows the chip component specifications.

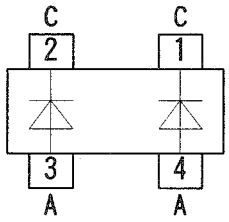
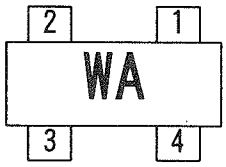
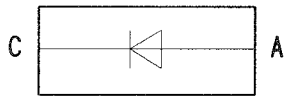
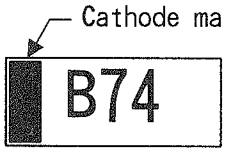
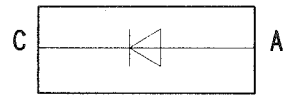
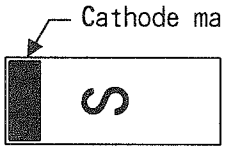
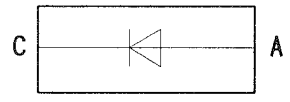
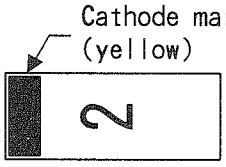
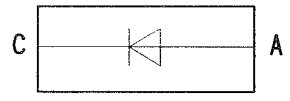
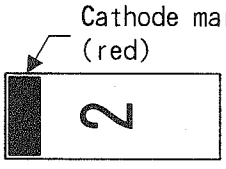
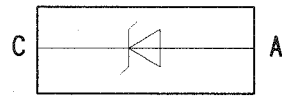
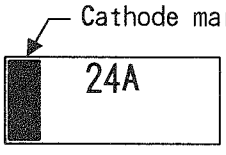
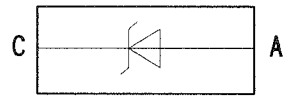
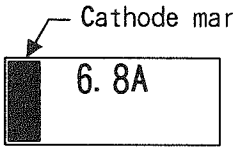
Table 1

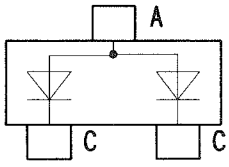
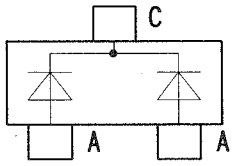
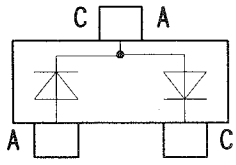
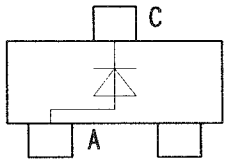
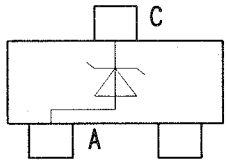
<table>
<tr><th>Component</th><th>Marking on chips</th><th>Specifications</th></tr>
<tr><td>Resistor</td><td>Resistance</td><td>Example:
 

8 2 x 10^{3} Ω
= 82 kΩ</td></tr>
<tr><td>Capacitor</td><td>Capacitance</td><td>The capacitance is expressed in combination of a letter and a figure as shown below, and the unit is picofarad (pF).
<table>
<tr><td>Letter</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr>
<tr><td>Figure</td><td>1.0</td><td>1.1</td><td>1.2</td><td>1.3</td><td>1.5</td><td>1.6</td></tr>
<tr><td>Letter</td><td>G</td><td>H</td><td>J</td><td>K</td><td>L</td><td>M</td></tr>
<tr><td>Figure</td><td>1.8</td><td>2.0</td><td>2.2</td><td>2.4</td><td>2.7</td><td>3.0</td></tr>
<tr><td>Letter</td><td>N</td><td>P</td><td>Q</td><td>R</td><td>S</td><td>T</td></tr>
<tr><td>Figure</td><td>3.3</td><td>3.6</td><td>3.9</td><td>4.3</td><td>4.7</td><td>5.1</td></tr>
<tr><td>Letter</td><td>U</td><td>V</td><td>W</td><td>X</td><td>Y</td><td>Z</td></tr>
<tr><td>Figure</td><td>5.6</td><td>6.2</td><td>6.8</td><td>7.5</td><td>8.2</td><td>9.1</td></tr>
</table></td></tr>
</table>

Item	Type	Pin connection(Top view)	Marking
Transistor	UMX3N		
	UMZ1N		
	UMX1		
	UMX1N		
	UMD2N		
	μPA674T		
	2SA1213Y		

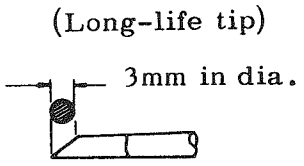
Item	Type	Pin connection(Top view)	Marking
Transistor	2SA1122C 2SA1462 2SA1610 2SA1611		CC :2SA1122C Y34:2SA1462 Y34:2SA1610 M5 :2SA1611
	2SC2462C 2SC2618C 2SC4226 2SC4176 2SC4177		LC :2SC2462C RC :2SC2618C R24:2SC4226 B34:2SC4176 L5 :2SC4177
	DTA124EKA		15 :DTA124EKA
	DTC124EKA		25 :DTC124EKA
FET	HAT2016R		2016:HAT2016R
	2SK443		AJ6:2SK443
	2SK302GR		GR :2SK302GR

Item	Type	Pin connection(Top view)	Marking
Diode	DWA010		
	SFPB-74V		
	HVU-359		
	HVU-200A		
	HVR100-3		
	PTZ24A		
	PTZ6.8A		

Item	Type	Pin connection(Top view)	Marking
Diode	DCA010		W5:DCA010
	DCB010		W6:DCB010
	DCC010		W7:DCC010
	SB05-05CP		B :SB05-05CP
	HZM3.9NB HZM20NB1		391:HZM3.9NB 201:HZM20NB1

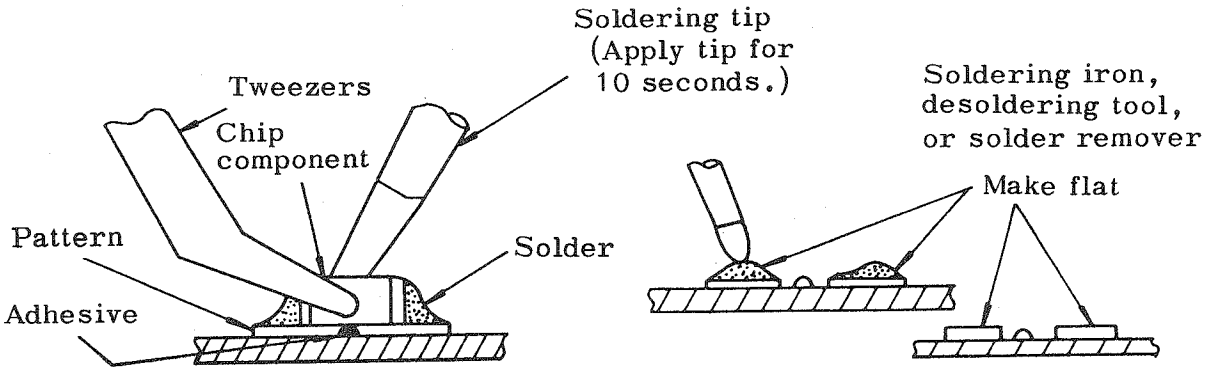
2. Replacement procedure

2.1 Resistor, capacitor, transistor, and diode



1. Preparations
   a. Soldering iron: 25 W as shown right.
   b. Soldering iron tip: 270 ±10 °C
   c. Coiled solder: 60 % tin, 40 % lead, 0.8 mm in dia.
   d. Tip cleaner
   e. Desoldering tool or solder remover
   f. Tweezers

2. How to remove

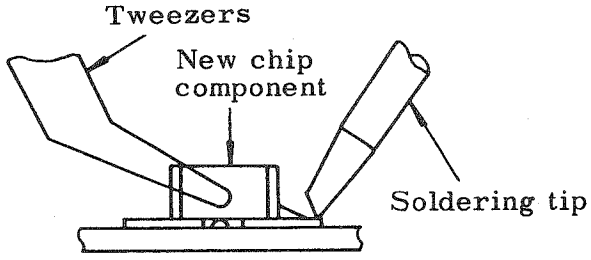


① Directly apply soldering iron tip to chip component for 10 seconds, then remove the component with tweezers after adhesive becomes weak. Do not use the removed component.

② Remove the remaining solder from the pattern with soldering iron or desoldering tool to make the pattern flat and clean.

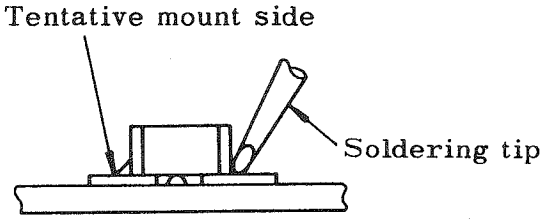
3. How to mount

①



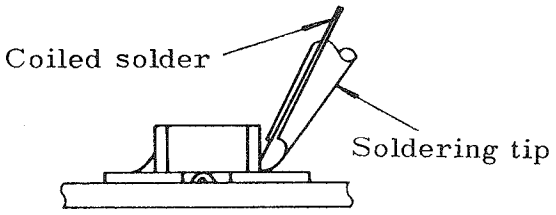
Tentatively mount a chip component in place while fixing the component.

②

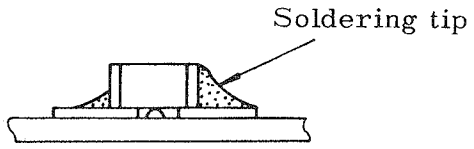


Do not apply soldering tip to the component.

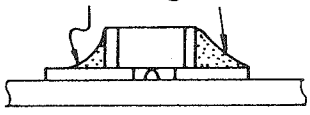
③



④



⑤



① Mount a new chip component in place with tweezers and solve the remaining solder to tentatively mount the component on one side of the pattern.
Notes: Do not contact the iron tip to the chip.
Supply a little more solder if the remaining solder is insufficient.

② Apply the soldering tip between the pattern and the electrode of the component and then heat them for a couple of seconds.
Note: Do not directly contact the soldering tip to ceramic part of the component.

③ Supply the coiled solder between the pattern and the component. Then, apply the iron tip to between them for 1 to 1.5 seconds.
Note: Little supplying solder makes soldering fillet clean.

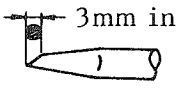
④ Check the soldering after the fillet comes cool.

⑤ Take the steps ② to ④ for the other tentative mount side.

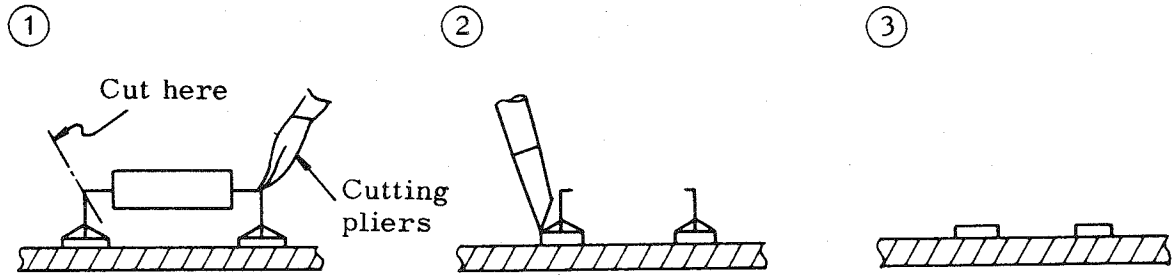
2.2 IC (flat package)

1) Preparations
   a. Soldering iron: 25 W as shown right.
   b. Soldering iron tip: 270 $\pm$10 °C
   c. Tip cleaner
   d. Cutting pliers
   e. Tweezers
   f. Coiled solder: 60 % tin, 40 % lead, 0.8 mm in dia.

Long-life tip



2) How to remove



① Cut the leads, with the degignated cutting pliers.

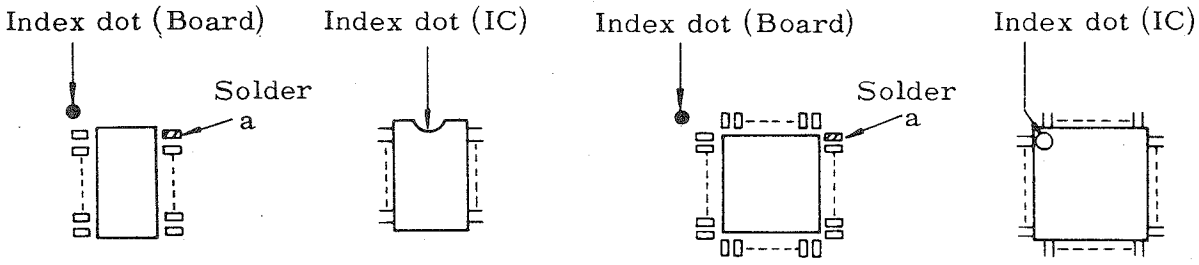
② Hold the remaining lead with tweezers, and unsolder the solder with soldering iron to remove leads from the land.

③ Remove the remaining solder from the land with soldering iron to make the land flat and clean.

Note: Use care not to peel off the pattern, scatter solder bits, or contact the soldering tip to other chip components.

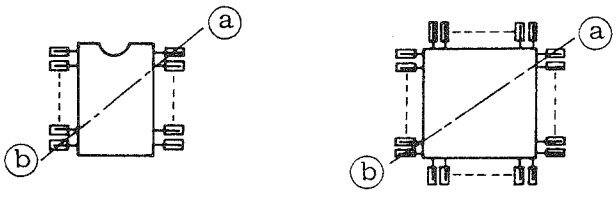
3) How to mount

① and ② : IC positioning



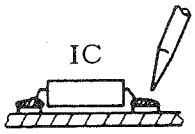
Match index dot directions of the board and IC.

③ through ⑥ : Tentative soldering



Positions (a) and (b) are diagonal.

⑦ :



Note: Mount IC correctly without causing soldering pridge and soldering tip contact to other chip components.

① Tentatively solder ⓐ land.

② Take out IC from a chip case with tweezers.

③ Confirm that the direction of IC matches with that of the board, and mount IC on the board so that all leads of the IC are positioned at the center of each land.

④ Solder IC lead ⓐ to land ⓐ , holding IC.

⑤ Turn the board so that ⓑ land is upper right.

⑥ Apply a bit solder to the soldering tip, and solder IC lead ⓑ to land ⓑ, holding IC.

⑦ Solder the other leads by moving the board so that soldering can be performed with ease.

14. OPERATION MANUAL

Standard composition

Check when unpacking.

Camera, HV-D15		1
Lens mount cap		1
Power plug, RM12BPG-3S	(JMR0152*)	1
Remote plug, HR10A-7P-4P (01)	(JMH2011*)	1
Operation Manual		1
Function labels for RC-C10 Remote Control Box		1

* Part code

Overview

The Hitachi HV-D15 is an advanced color camera utilizing three 1/2-inch 410,000 pixel CCDs and industry-leading digital technology that unitizes the circuits from processor to encoder into a single high performance chip. Extensive experience in broadcast and industrial color cameras is combined with independently developed digital processing technology to offer a broad repertoire of functions, together with picture quality and stability unattainable with conventional analog cameras. The result is a versatile camera ready to perform in a wide range of applications.

Notes to users

Important safety notes

- Use this camera with a 12 VDC power supply.
- Observe that flammable objects, water or metal do not enter the camera interior. These may lead to failure or accident.
- Do not modify the camera or use the camera with external covers removed. These may cause failure, void any warranties and pose a safety hazard.
- Stop using the camera at the approach of an electrical storm (thunder audible). Protect the camera from rain if using it outdoors.
- In event the camera shows any abnormality, switch off the camera and disconnect the power cord. Contact a Hitachi Denshi service representative.

Operating considerations

- Power supply

  Check that the supplied voltage is between 10.5 and 17 VDC. Inadequate voltage can affect color fidelity and cause noise, while voltage over 17 V can damage the camera.

- Connectors

  Confirm the power is off before connecting or disconnecting a signal cable. Grasp connectors by the body, not the attached wires.

- Lens

  The correct lens is important for deriving optimum performance from the camera. Consult a Hitachi Denshi dealer for a selection of fine lenses according to the application.

- Installation and storage sites

  The following types of environment can impair performance, lead to damage, pose safety hazards and shorten the useful life of the camera. Select the sites for installing the storing the camera carefully.

  - Direct sunlight, rain or snow
  - Flammable or corrosive gasses
  - Very hot or cold (beyond 0 to 40 ℃ operating, -20 to 60 ℃ storage)
  - Humid or dusty
  - Exposed to vibration or shock
  - Strong electrical or magnetic fields
  - Exceptionally strong light

Continuous operation

In situations where the camera is used continuously for long periods of time, the ambient temperature should be kept below 40 ℃ in order to avoid accelerated deterioration of internal parts and to derive maximum long-term reliability.

Cleaning

- A photographers blower or lens brush can be used for clearing dust from the lens and optical filters.
- Wipe dust from the case with a soft dry cloth. If soiling is severe, moisten the cloth with a solution of neutral detergent. Afterwards, wipe the cover with a dry cloth.
- Do not use petroleum distillates, alcohol or spray type cleaners.

Transportation

Remove the lens (install lens mount cap) and other attachments. Pack the camera carefully in its original or equivalent container. Use ample cushioning to protect the camera from physical shock.

CCD properties

The following phenomena are inherent to a charge coupled device imaging element and do not indicate malfunction.

1) Smear and blooming

Vertical bands are visible when a strong light enters the scene. Adjust the camera aiming direction carefully to avoid strong direct or reflected light.

2) Fixed pattern noise

High ambient temperature can cause fixed pattern noise to appear throughout the scene.

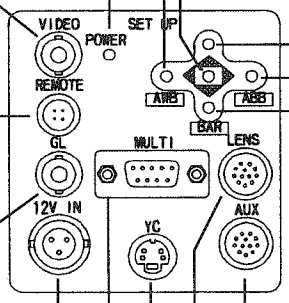
3) Moire

Interaction between patterns can produce an additional "phantom" pattern to appear. The CCD picture elements (pixels) are arranged in a pattern, which can interact with a pattern in the scene (e.g., a performer wearing a finely striped necktie) to result in a Moire pattern. The effect should be considered when selecting costumes, props and other scene elements.

4) Ghosting

Strong direct or reflected light near an object of interest can cause ghosting of the object to appear in the picture. The effect is more obtrusive with certain iris settings and lens types. Select the scene layout and camera pointing direction carefully in order to avoid this effect.

Rear panel facilities



AWB/L button
Direct mode (menu not displayed):
Hold the button depressed for more than 2 seconds for auto white balance.
Menu mode (menu displayed):
Left direction button.

Pilot lamp

SETUP button
Press to display the camera setup menu. The direction (U, D, L, R) button functions differ in the menu and direct modes.

VIDEO connector
Composite video signal output (1Vp-p/75 ohms).

U button
Direct mode: Not used
Menu mode: Press to shift cursor upwards.

REMOTE connector
Connect a remote control box (RC-C10) or a personal computer.

ABB/R button
Direct mode: Hold the button depressed for more than 2 seconds for auto black.
Menu mode: Right direction button

GL IN connector
Black burst or composite video signal input when operating with external sync

BAR/D button
Direct mode: Color bar signal on/off button
Menu mode: Down direction button

12V IN connector
Power supply connection (e.g., AC adaptor)

AUX connector
Control signal output for external equipment.
HD/VD input for external sync operation.

MULTI connector
Output for RGB, Y, R-Y, B-Y, YC and sync signals

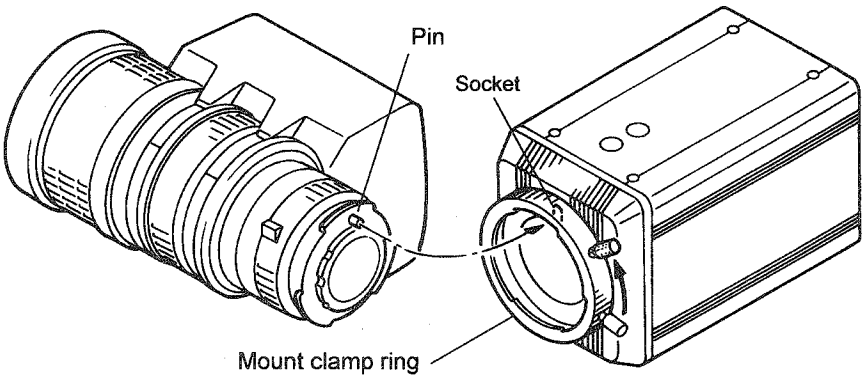
Y/C connector
YC signal output (S connector)

LENS connector
Control signal output for auto iris type lens

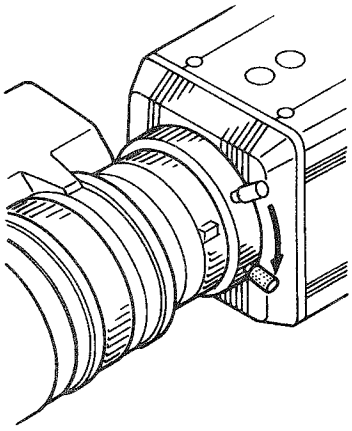
For details of each connector, refer to the description of connectors (p. 34).

Installation of lens

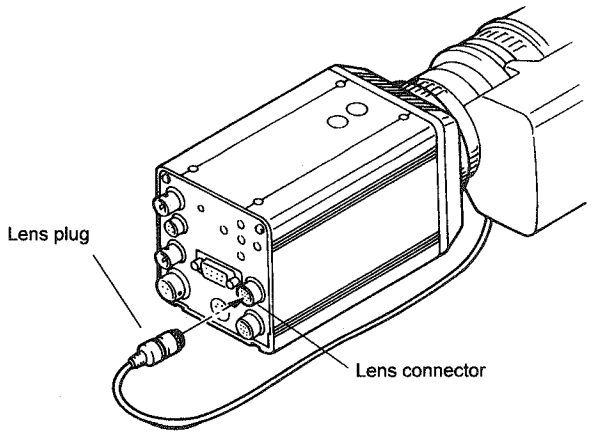
- Remote the mount clamp ring in the direction of arrow. Then, engage the pin of the lens with the recessed portion of the mount section, and insert the lens.



- Rotate the mount clamp ring in the direction of arrow, and fix the lens securely.



● Connect the lens connector to the LENS terminal.

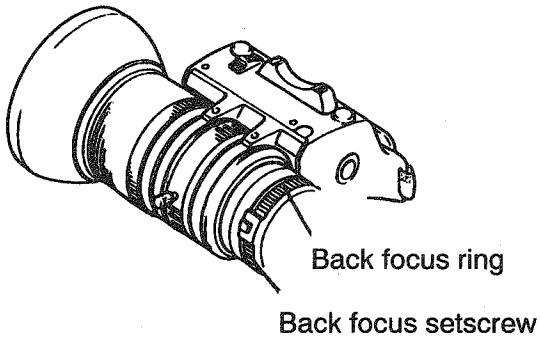


Note: Some lens cable may be too short to reach the camera lens connector. In this case, use the lens iris extension cable (see Page 39).

Adjustment of back focus

When a lens is not properly focused in the telephoto or the wide angle mode during zooming, adjust the lens according to the following steps.

1. Open the iris of the lens fully. Illuminate an object so that the proper video output level can be obtained with the iris of the lens fully open.
2. Loosen the screw fixing the back focus ring.
3. Turn the manual zoom lever to get the telephoto mode.
4. Shoot an object 3m or more away, then turn the manual zoom lever to focus the lens on the object.
5. Turn the manual zoom lever to get the wide angle mode.
6. Turn the back focus ring, then focus the camera on the same object as that in step 4. At this point, use care not to move the focus ring.
7. Repeat steps 3 to 6 until the lens is properly focused both in the telephoto and the wide angle modes.
8. Secure the screw fixing the back focus ring.



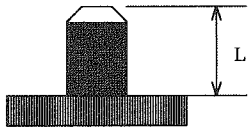
Camera mounting

The camera is provided with threaded screw holes at the top and bottom. These allow mounting to either a tripod or a mounting bracket.

Screw type

U 1/4-20

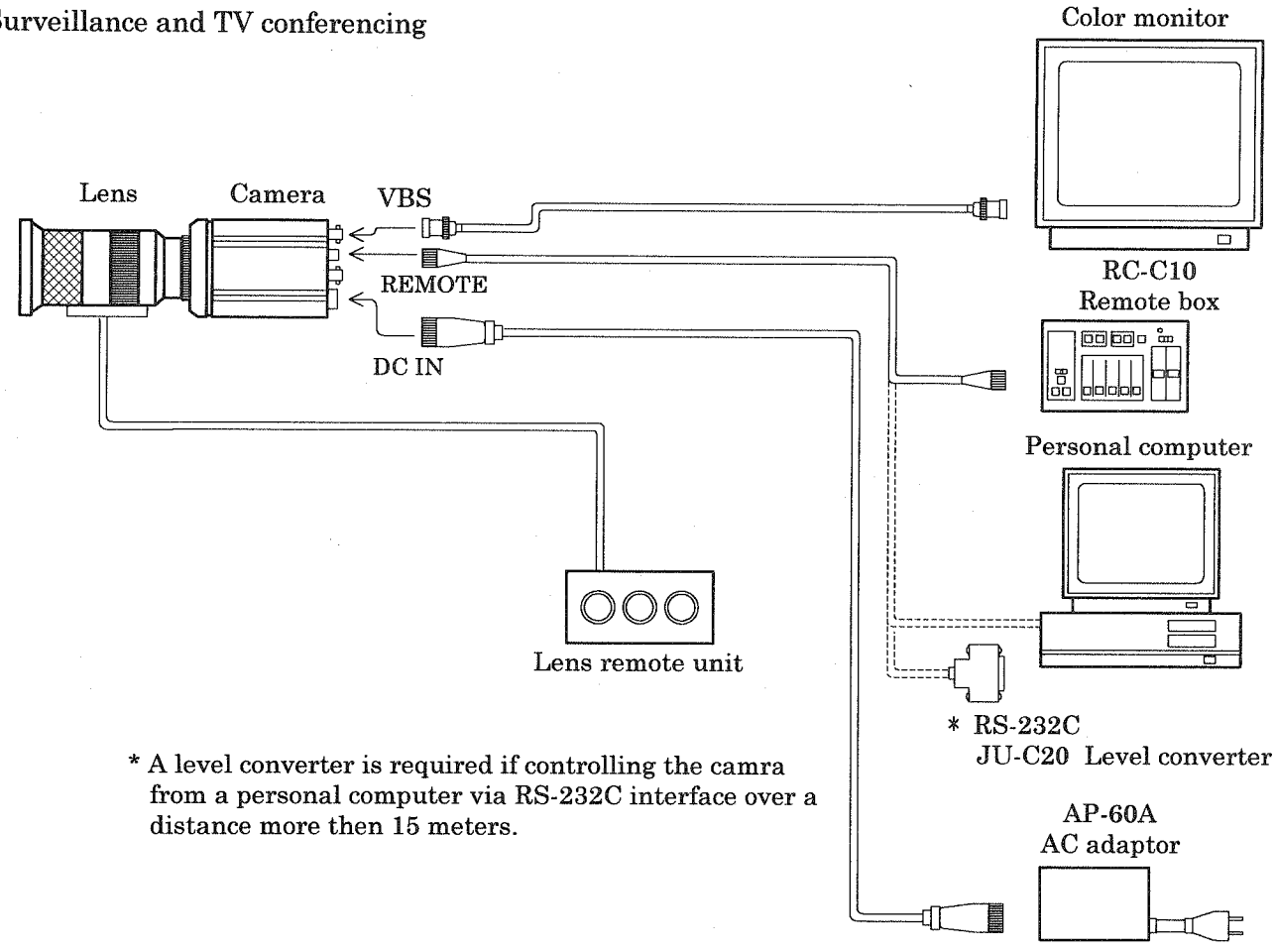
Length: 4.5 to 6 mm



Screws longer than 6 mm can cause internal damage, while less than 5 mm prevents secure fastening and risks dropping to cause damage and injury.

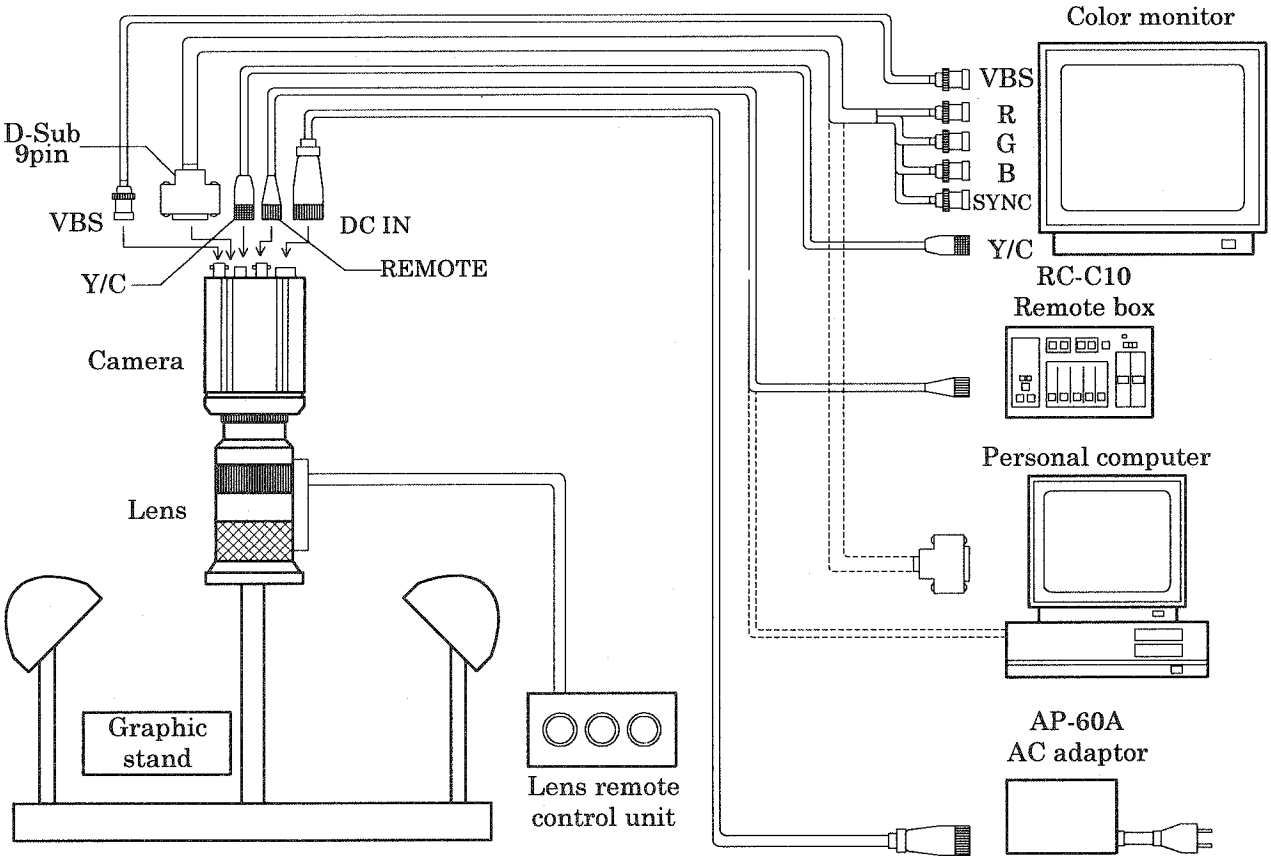
System examples

Surveillance and TV conferencing

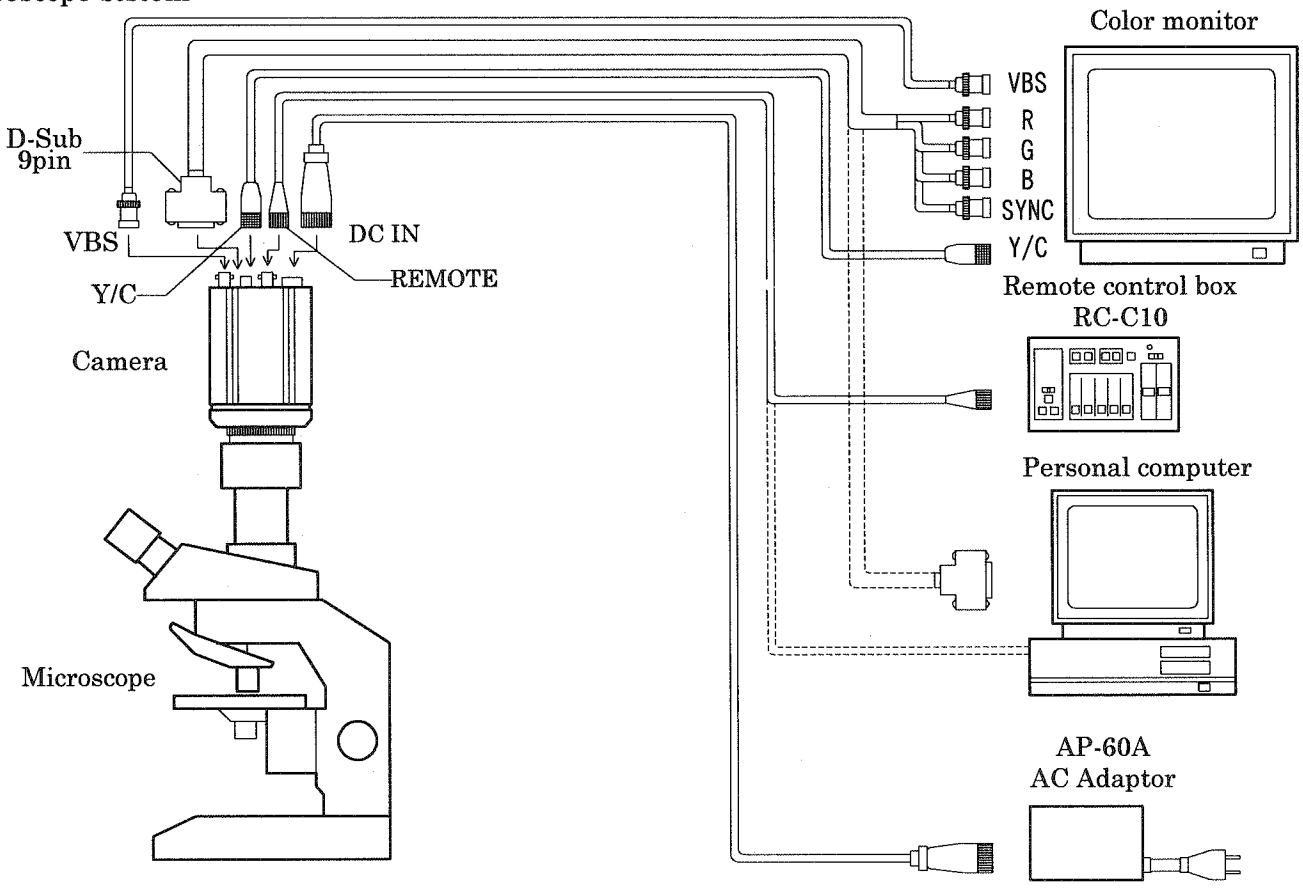


* A level converter is required if controlling the camra from a personal computer via RS-232C interface over a distance more then 15 meters.

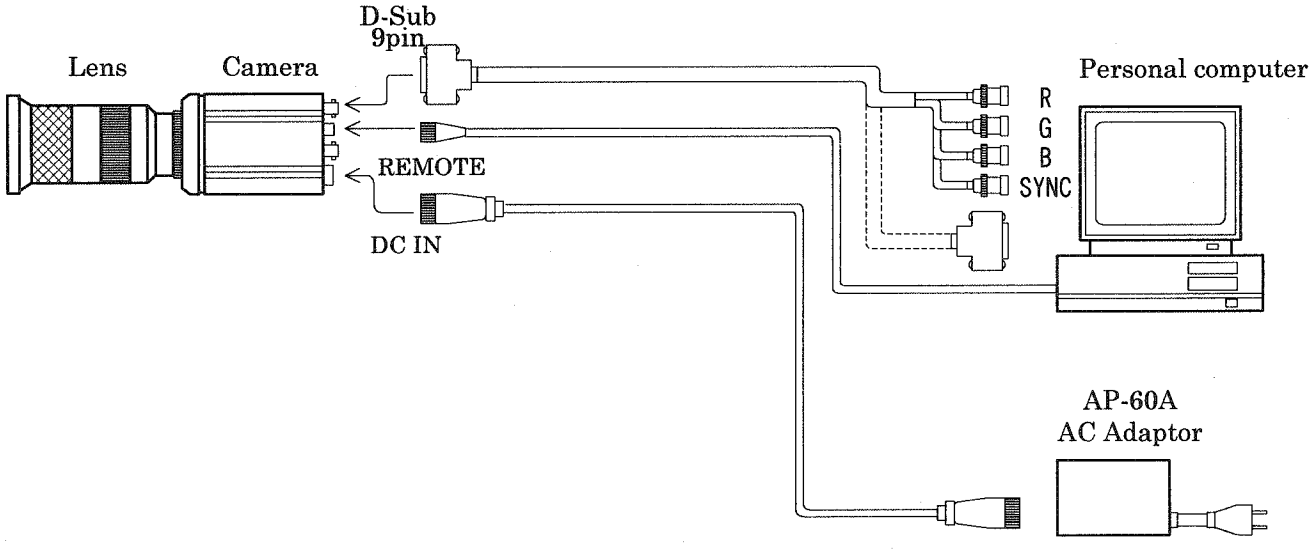
Graphic stand camera



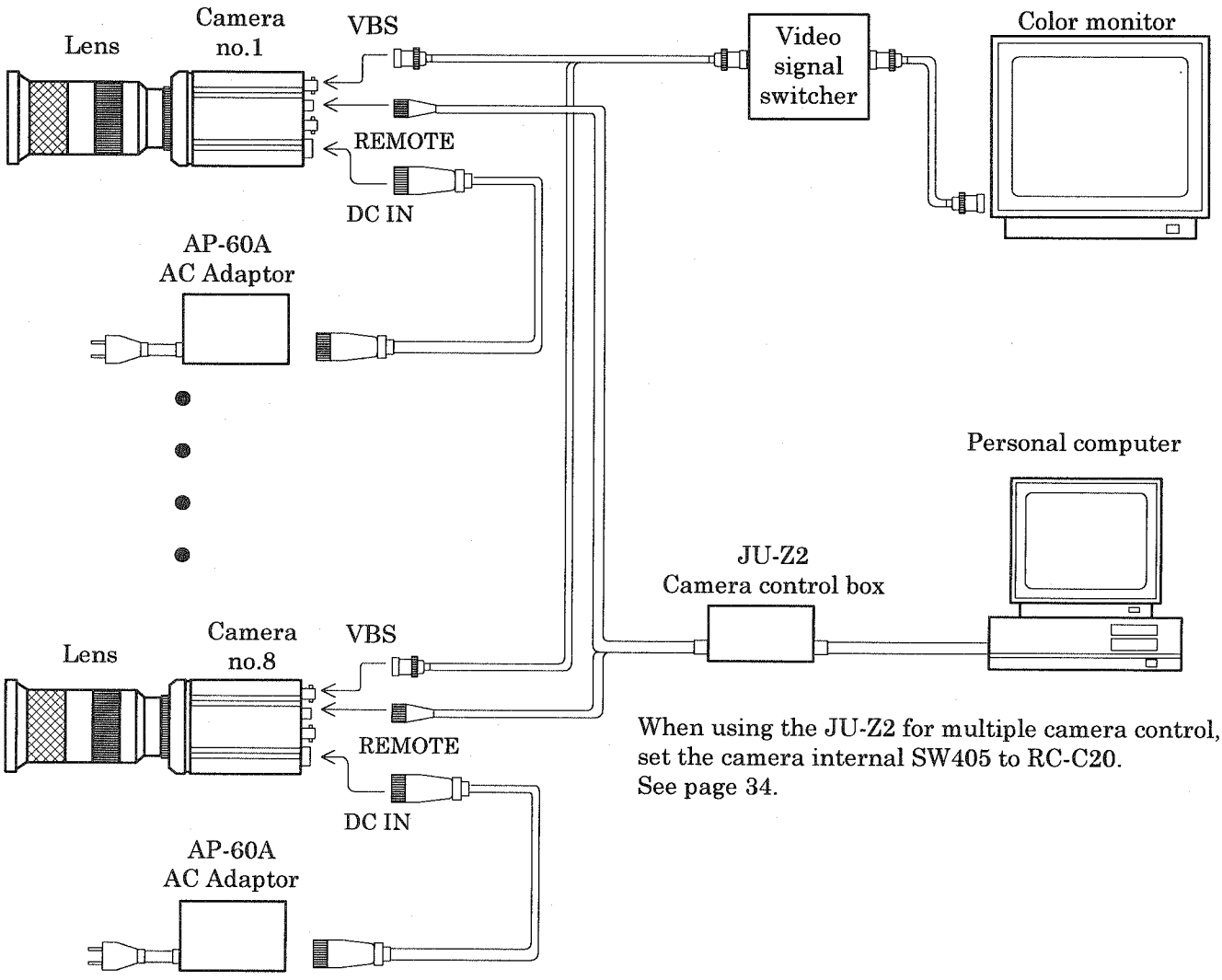
Microscope ststem



Computer image processing



Multi-camera computer control



When using the JU-Z2 for multiple camera control, set the camera internal SW405 to RC-C20.
See page 34.

Menu Screen Operation

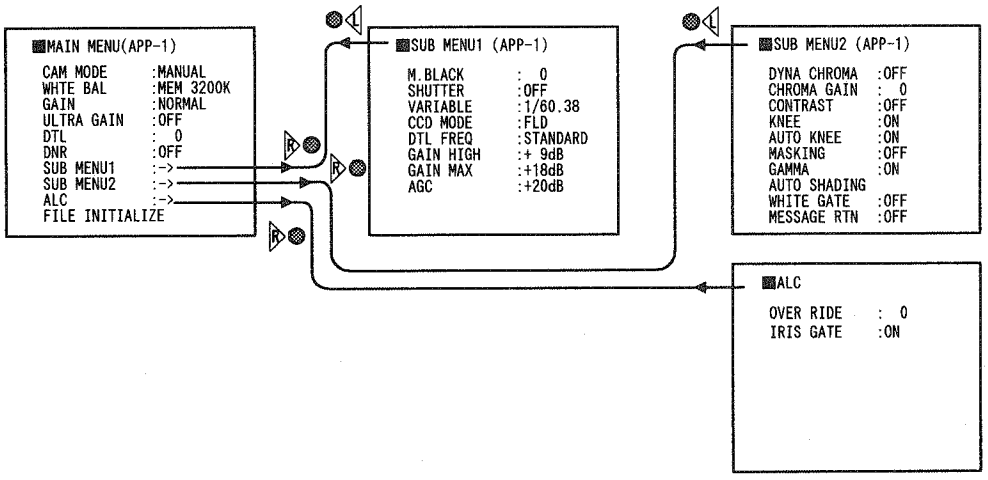
1. Menu Structure

For settings in the camera, the MAIN and SPECIAL menus are available.

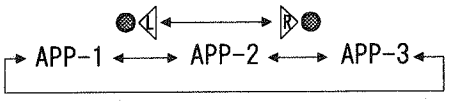
1-1 MAIN Menu Structure

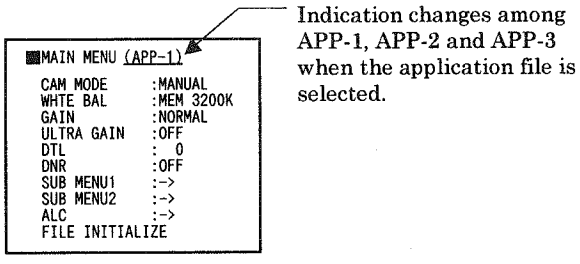
Press the SEUTP button and MAIN MENU appears on the screen to indicate the main menu mode. Again press the SETUP button to extinguish the menu and enter the direct mode. There are a main function setup menu and three sub-menus, which are arranged hierarchically as shown below. On the MAIN menu, bring the cursor to SUB MENU 1, SUB MENU 2 or ALC and press the R button, and the desired subsidiary menu will come up. To return to the MAIN menu from the SUB menu 1, SUB menu 2 or ALC, bring the cursor to the top line (title line of SUB MENU 1, SUB MENU 2or ALC) and press the L button.

On each menu screen, bring the cursor to any desired item using the U or D button. For mode change/data setting, use the L or R button.



At the first line of the main menu, press the R and L buttons to select the application file.
The indication changes to show the selected file.





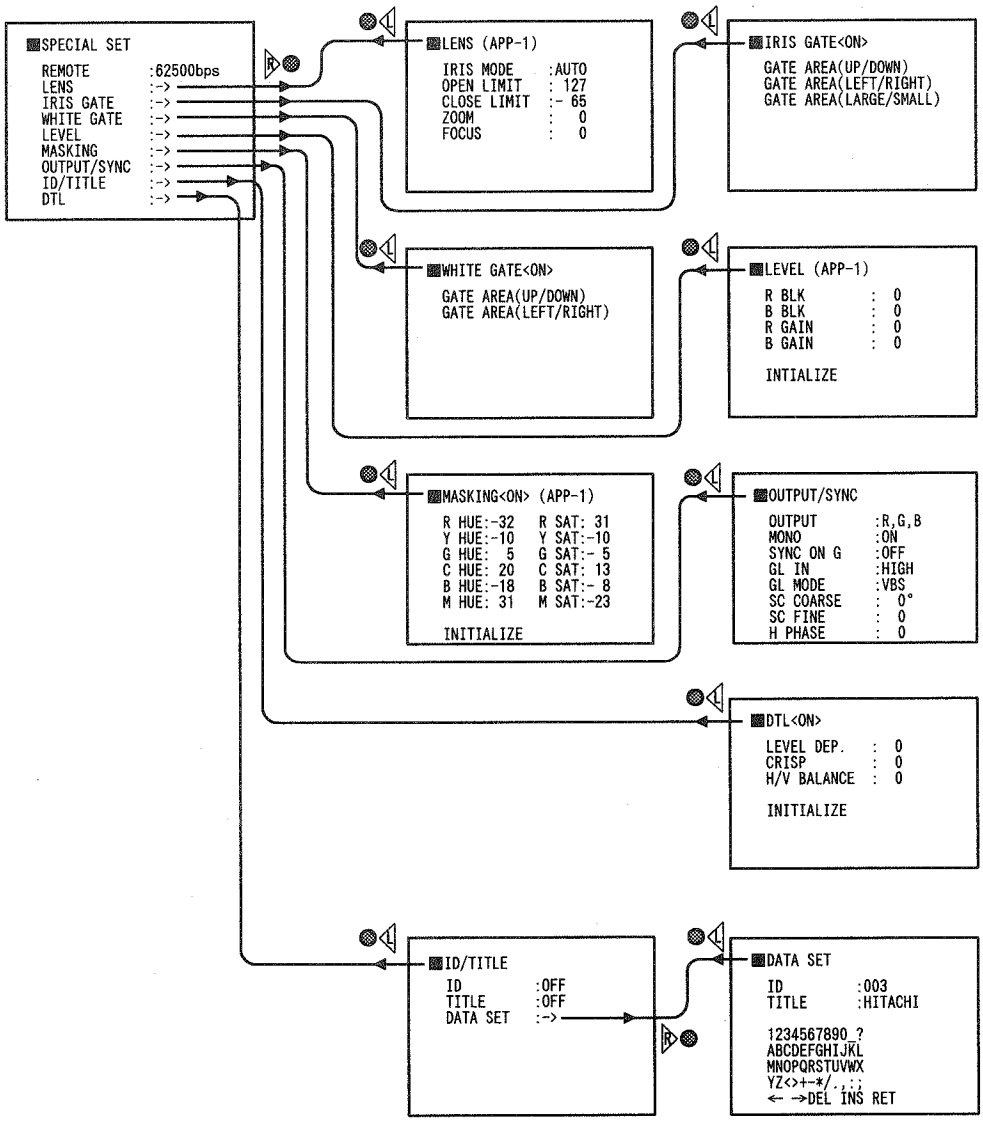
Indication changes among APP-1, APP-2 and APP-3 when the application file is selected.

Refer to Page 26 for a detailed description of the application file.

1-2 SPECIAL Menu Structure

To select the SPECIAL SET mode, press the SETUP button for 2 seconds while holding down the U button. Thus, the SPECIAL SET menu can be displayed. To return to the DIRECT mode, press the SETUP button again. The SPECIAL SET menu indicates a list of items, and each special items subsidiary menus are available. These menus are arranged hierarchically as shown below. On the SPECIAL SET menu, most items have '->' mark at the right side. For these items, press the R button, and the relevant item setup menu will come up. To return to the SPECIAL SET menu, bring the cursor to the top line (title line of each subsidiary menu) and press the L button.

On each menu screen, bring the cursor to any desired item using the U or D button. For mode change/data setting, use the L or R button.



2 . MAIN MENU

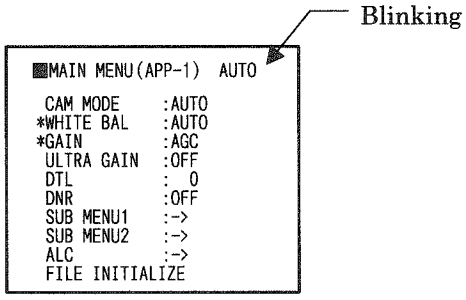
1) CAM MODE : Camera mode

· MANUAL : In this mode, you can set up most functions. Use the MANUAL mode for detail settings.

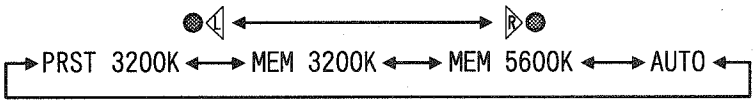
· AUTO : The video level and white balance are adjusted automatically. Without having to make detail settings, you can display images under standard conditions.

On the Main menu, some function items have the asterisk (*) mark. In the AUTO mode, the default settings shown below are given and the cursor skips over these items. When the AUTO mode is selected, 'AUTO' blinks at the upper right corner of each screen.

Menu	Function and Mode	
MAIN MENU	WHITE BAL	: AUTO
	GAIN	: AGC
SUB MENU 1	SHUTTER	: AES
	VARIABLE	: Not settable
	CCD MODE	: FLD
	GAIN HIGH	: Not settable
	GAIN MAX	: Not settable
SUB MENU 2	KNEE	: ON
	AUTO KNEE	: ON
	GAMMA	: ON
LEVEL	R BLK	: Not effective
	B BLK	: Not effective
	R GAIN	: Not effective
	B GAIN	: Not effective



2) WHITE BAL : White balance mode



· PRST 3200K : The white balance condition is optimized at a color temperature of 3200K.

· MEM 3200K : White balance is automatically adjusted by the direct mode AWB button. Use in the color temperature range from halogen to fluorescent lighting.

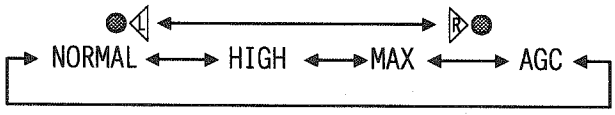
· MEM5600K : White balance is automatically adjusted by the direct mode AWB button. Use in the high color temperature range from xenon to mercury lighting.

· AUTO : The white balance condition is set through realtime auto white balancing (automatic tracking).

Note: If selecting MEM 3200K and MEM 5600K, set to the direct mode (extinguish the menu) and press the AWB button for auto white balance adjustment.

In the Auto CAM mode, white balance is fixed at AUTO.

3) GAIN : Gain mode

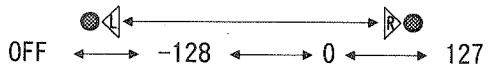


- NORMAL : The gain level is set to 0 dB.
- HIGH : The gain level is set to a value specified at GAIN HIGH on the SUB menu 1.
- MAX : The gain level is set to a value specified at GAIN MAX on the SUB menu 1.
- AGC : An increase in gain is controlled automatically. The upper limit of gain to be increased corresponds to a value specified at AGC on the SUB menu 2.
  In the Auto CAM mode, gain is fixed at AGC.

4) ULTRA GAIN : ULTRA GAIN ON/OFF

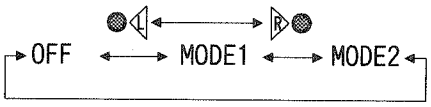
The on setting increases the sensitivity about 12 dB (but there is some loss of resolution).

5) DTL : DTL level setup



The DTL level can be set to OFF or in a range of -128 to 127. The degree of contour correction increases in the positive value setting, and it decreases in the negative value setting. For zero (0) setting, hold down both the L and R buttons for approx. two seconds. However, if setting is OFF, 0 is not set over if the buttons are pressed.

6) DNR : Digital noise reduction mode



OFF, MODE 1 or MODE 2 is selectable. In MODE 2, noise becomes lower than that in MODE 1 but a feel of image resolution becomes lower slightly.

7) SUB MENU 1 : The SUB menu 1 is brought up.

8) SUB MENU 2 : The SUB menu 2 is brought up.

9) ALC : The ALC is brought up.

10) FILE INITIALIZE : Returns main menu items of application file to factory settings.
Simultaneously press the L and R buttons for about 2 seconds to initialize the selected application file. The Special menu items are not initialized.

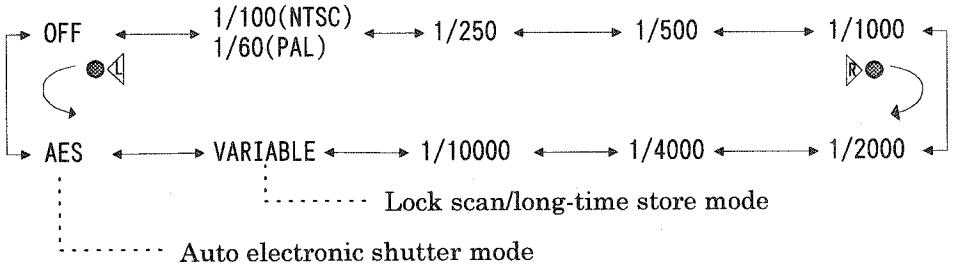
3. SUB MENU 1

1) M BLACK : Master black level setting

The master black level can be set in a range of -128 to 127. Pressing the R button increases a set value to make the black level higher, and pressing the L button decreases a set value to make the black level lower. For zero (0) setting, hold down both the L and R buttons for approx. two seconds.

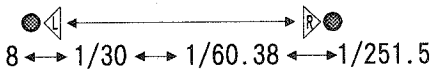
2) SHUTTER : Electronic shutter mode

When the shutter speed is Variable, operation is at the speed selected by the Variable setting (see below). In the Auto CAM mode, the shutter is set to AES.



(Note) In the AES mode, FLD operation is performed even if 'CCD MODE:FRM' is specified.

3) VARIABLE : Variable electronic shutter speed setting



- 8~1/30 (1/25 : PAL) : Long-time store mode

  The camera delivers intermittent video signal output. So, to view continuous images, it is required to use the video memory. A clear image can be attained even if the subject is illuminated with a faint light source. As the store time increases, the degree of after-image becomes higher.

  (Note) With an increase in store time, the degree of characteristic pattern noise, white scratch, etc. of the CCD image sensor will become higher.

- 1/60.38 (1/50.31: PAL)~1/251.5 (1/253.8: PAL) : Lock scan mode

  When an image of a subject display screen having a different scan frequency is taken, a bright or dark horizontal bar appears to roll up or down the screen.

  When the shutter speed is Variable, operation is at the speed selected by the Variable setting (see below). In the Auto CAM mode, the shutter is set to AES.

  The shutter speed can be adjusted to where the horizontal bars are minimized in the display.

  (Note) If the display screen scanning frequency is less than 60Hz (50Hz PAL), the rolling horizontal bars cannot be stopped. Not settable in the Auto CAM mode.

4) CCD MODE : CCD store mode changeover

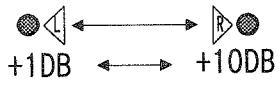
- FLD : The field store mode operation is performed (for ordinary purpose of application).
- FRM : Frame store mode operation is performed. The vertical resolution can be increased but the degree of after-image becomes slightly higher. It is therefore recommended to use the FRM function when taking a still image.

  (Note) When the shutter mode is AES, even if set to frame, the camera operates in the field mode. In the Auto CAM mode, The CCD mode is set to FLD.

5) DTL FREQ : DTL amplifying frequency changeover.

- LOW : The lower band frequency is amplified.
- STANDARD : The standard amplification is performed.
- HIGH : The high band frequency is amplified. Finer contour correction is carried out.

6) GAIN HIGH : Gain setting in GAIN HIGH mode (At the time of AGC:OFF mode)



The gain level can be set in a range of +1 to +10 dB.
Cannot be set in the Auto CAM MODE.

7) GAIN MAX : Gain setting in GAIN MAX mode (At the time of AGC:OFF mode)
The gain level can be set in a range of +11 to +20 dB.
Cannot be set in the Auto CAM MODE.

8) AGC : Upper gain limit setting in AGC mode (At the time of AGC:ON mode)
The upper limit of gain increase in AGC operation can be set in a range of +6 to +20 dB.

4 .SUB MENU 2

1) DYNA CHROMA : Dynamic chroma ON/OFF

With knee on, setting the dynamic chroma on improves coloration in bright portions of the scene.

2) CHROMA GAIN : Level setting in chroma signal

The chroma signal level can be set in the range of -128 to +127. Respectively press the R button to increase and the L button to decrease the chroma signal level. Set the level to 0 by simultaneously pressing both L and R buttons for about 2 seconds.

3) CONTRAST : Contrast OFF/NORMAL/HIGH

Contrast can be set in two steps of Normal and High.

HIGH enhances the contrast more than NORMAL.

4) KNEE : KNEE ON/OFF

The on setting provides natural gradation in bright portions.

Knee is fixed to on in the Auto CAM mode.

5) AUTO KNEE : AUTO KNEE ON/OFF

At the on setting, gradation in bright components is automatically optimized even with scene changes.

6) MASKING : Masking ON/OFF

At the on setting, the overall screen gradation is set by the Special Set Masking menu.

Standard setting is on.

7) GAMMA : Gamma ON/OFF

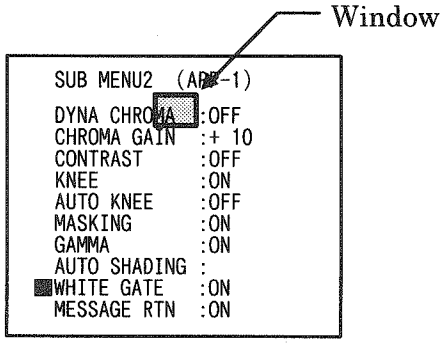
Gamma on/off setting. In the Auto CAM mode, gamma is fixed at on.

8) AUTO SHADING : Automatic shading correction is carried out.

Pressing the R button performs automatic shading correction. For details, refer to 'How to Attain Better Images' (p. 28).

9) WHITE GATE : White gate ON/OFF

ON : In realtime auto white balance operation or execution of memory auto white balance, a video signal appearing in the window on screen is detected for white balancing.
In the MENU mode, the window is presented over the video signal. For the setting procedure, refer to 'WHITE GATE Menu of SPECIAL SET Menu' (p. 21).
Even under WHITE GATE:ON condition, the window disappears when the cursor is moved to another item. In the DIRECT mode, the window does not appear but white balance control is conducted by the white gate function.



OFF : A video signal of the entire image is detected for carrying out white balance control. The window does not appear.

10) MESSAGE RTN : Message display ON/OFF

- ON : A message indicating the result of AWB/ABB execution in the DIRECT mode is displayed.
- OFF : A message indicating the result of AWB/ABB execution in the DIRECT mode is not displayed.

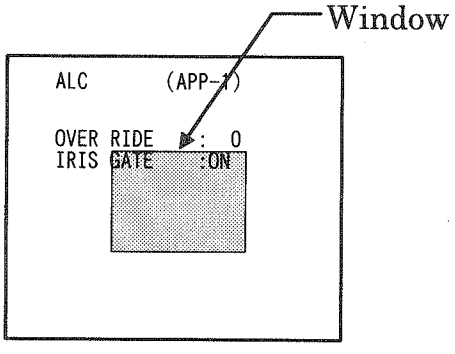
5. ALC

1) OVER RIDE : Auto iris level setting

The auto iris level can be set in a range of -128 to +127. Pressing the R button increases a value of auto iris level to open the lens iris more. Pressing the L button decreases it to close the lens iris more. For zero (0) setting, hold down both the L and R button for approx. two seconds.

2) IRIS GATE : Iris gate ON/OFF

- ON : A video signal appearing in the window on screen is detected for AGC and lens/auto electronic shutter ALC control. In the MENU mode, the window is presented over the video signal. For the setting procedure, refer to 'IRIS GATE Menu' of 'SPECIAL SET Menu' (p. 21).
Even under IRIS GATE:ON condition, the window disappears when the cursor is moved to another item. In the DIRECT mode, the window does not appear but ALC control is conducted by the iris gate function.



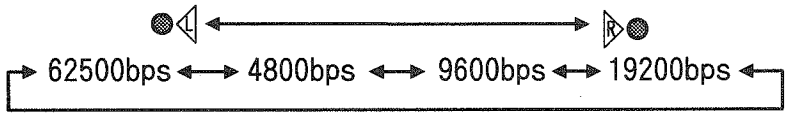
- OFF : A video signal of the entire image is detected for carrying out ALC control. The window does not appear.

6 . SPECIAL SET

1) REMOTE : Remote control baud rate setting

For baud rate setting, use the L and R buttons.

(Note) When setting a baud rate, do not connect the communication cable with the REMOTE terminal.



- 62500bps : Select this baud rate when using the RC-C10 remote control box. In this case, be sure to also set the RC-C10 baud rate to 65200 bps. Refer to the RC-C10 operating instructions.
- 19200bps, 9600bps, 4800bps : Select any one of these baud rates when controlling the camera from a personal computer through RS-232C interfacing. For details, refer to 'Function Selection by Internal Switch Setting'. Contact us for details of the control procedure using a personal computer. Technical documents including protocol data will be supplied.

2) LENS : Change to LENS menu.

3) IRIS GATE : Change to IRIS GATE menu.

4) WHITE GATE : Change to WHITE GATE menu.

5) LEVEL : Change to LEVEL menu.

6) MASKING : Change to Masking menu.

7) OUTPUT/SYNC : Change to OUTPUT/SYNC menu.

8) ID/TITLE : Change to ID/TITLE menu.

9) DTL : Change to DTL menu.

7 . LENS

This menu screen allows you to make lens settings.

1) IRIS MODE : Lens iris mode.

- AUTO : Set to Auto when using an automatic iris lens.

  (Note) Be sure to set the Open Limit and Close Limit when using the camera for the first time or after exchanging the lens.

- MANUAL : Set to Manual when using a manually operated iris or an optical system such as a microscope.

  (Note) When AGC and AES are used in conjunction, be sure to set the iris mode.

2) OPEN LIMIT : Open limit setting

This function item is available to let the camera recognize that the lens is opened.
While observing aperture, make adjustment to a level where the iris is just opened.
The allowable setting range is 0 (in closing direction) to 127 (in opening direction).
If the lens employed causes deterioration in picture quality when the iris is almost fully opened, adjust OPEN LIMIT so that the iris will not be opened fully.

(Notes) 1 . Be sure to set the AGC to Off, Gain to Normal, and Shutter to Off when performing this adjustment. After the adjustment, return these settings to their required states.

2 . If the Open Limit is not set properly, the AGC and related functions will not operate correctly.

3) CLOSE LIMIT : Close limit setting

While observing aperture, make adjustment to a level where the maximum closing value (minimum diameter of opening) is provided. The allowable setting range is -128 (in closing direction) to -1 (in opening direction).

(Notes) 1 . Be sure to set the Gain to Normal, and Shutter to Off when performing this adjustment. After the adjustment, return these settings to their required states.

2 . If the Close Limit is not set properly, the AES and related functions will not operate correctly.

4) Zoom and Focus : Lens controls

By connecting an interface box between the lens and camera, the zoom and focus can be adjusted from menu.

(Note) A special interface box is not made by Hitachi Denshi. If menu-operated zoom and focus are required, please obtain a suitable interface box from another manufacturer (consult dealer).

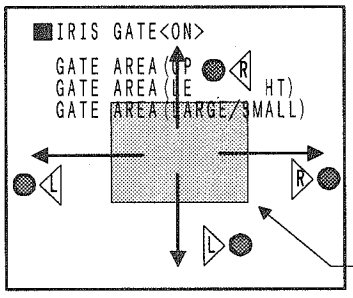
8. IRIS GATE

This menu screen allows you to make iris gate (window) settings.

1) GATE AREA <UP/DOWN> : The window can be shifted up/down.
To shift the window up, press the R button. To shift it down, press the L button.

2) GATE AREA<LEFT/RIGHT> : The window can be shifted left/right.
To shift the window rightward, press the R button. To shift it leftward, press the L button.

3) GATE AREA<LARGE/SMALL> : The size of the window can be adjusted.
Using the L or R button, you can select one of four window sizes.



::::::

Press R button to increase size.

Press L button to decrease size.

9. WHITE GATE

Sets the area (window) position for use as white balance control data. Adjust the window to a white or grey monochrome portion of the screen. Setting operation is the same as Iris Gate.

1) GATE AREA<UP/DOWN> : The window can be shifted up/down.
To shift the window up, press the R button. To shift it down, press the L button.

2) GATE AREA<LEFT/RIGHT> : The window can be shifted left/right.
To shift the window rightward, press the R button. To shift it leftward, press the L button.

10. LEVEL

This menu screen allows you to set up a black level and gain of R/B video signal.

1) R BLK : R black level setting
The allowable setting range is -128 to 127.
Pressing the R button increases a numeric value to make the R video signal black level higher. Pressing the L button decreases a numeric value to lower the R video signal black level. For 0 (zero) setting, hold down both the L and R buttons for approx. two seconds.

2) B BLK : B black level setting

The allowable setting range is -128 to 127.

Pressing the R button increases a numeric value to make the B video signal black level higher. Pressing the L button decreases a numeric value to lower the B video signal black level. For 0 (zero) setting, hold down both the L and R buttons for approx. two seconds.

3) R GAIN : R gain level setting

The allowable setting range is -128 to 127.

Pressing the R button increases a numeric value to make the R video signal gain higher. Pressing the L button decreases a numeric value to lower the R video signal gain. For 0 (zero) setting, hold down both the L and R buttons for approx. two seconds.

4) B GAIN : B gain level setting

The allowable setting range is -128 to 127.

Pressing the R button increases a numeric value to make the B video signal gain higher. Pressing the L button decreases a numeric value to lower the B video signal gain. For 0 (zero) setting, hold down both the L and R buttons for approx. two seconds.

(Note) CAM MODE : In case of AUTO, numeric values of R BLK, B BLK, R GAIN and B GAIN become ineffective.

WHITE BAL : In case of AUTO, numeric values of R GAIN and B GAIN become ineffective.

5) INITIALIZE

Red and blue gain settings are initialized for each application. Simultaneously press the L and R buttons for about 2 seconds to return the selected files to the factory settings. See Page 25 for the factory settings of each application file.

11. MASKING

Menu for setting the masking.

1) R HUE: Change red color phase

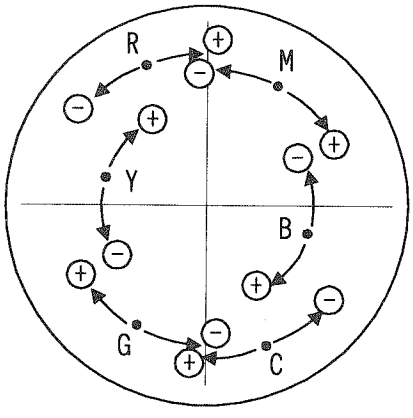
2) Y HUE: Change yellow color phase

3) G HUE: Change green color phase

4) C HUE: Change cyan color phase

5) B HUE: Change blue color phase

6) M HUE: Change magenta color phase



The above items can be set in the range of -32 to +31. Respectively press the R button to increase and the L button to decrease the vector color hue as indicated in the figure. Each item can be set to 0 by simultaneously pressing the L and R buttons for about 2 seconds.

7) R SAT: Increase red color level
8) Y SAT: Increase yellow color level
9) G SAT: Increase green color level
10) C SAT: Increase cyan color level
11) B SAT: Increase blue color level
12) M SAT: Increase magenta color level

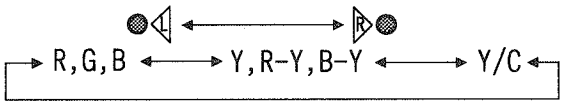
The above items can be set in the range of -32 to +31. Respectively press the R button to increase and the L button to decrease the color level. Each item can be set to 0 by simultaneously pressing the L and R buttons for about 2 seconds.

13) INITIALIZE: Mask settings are initialized to factory values for each application file. Simultaneously press the L and R buttons for about 2 seconds to return the selected files to the factory settings. See Page 25 for the factory settings of each application file.

12. OUTPUT/SYNC

On this menu screen, you can make signal changeover for output to the D-SUB connector and phase adjustment for external synchronization.

1) OUTPUT : Output mode changeover



- R, G, B : The R, G and B video signals are output to the D-SUB connector.
- Y, R-Y, B-Y : The Y, R-Y and B-Y signals are output to the D-SUB connector.
- Y/C : The Y/C signal is output to the D-SUB connector. It can be delivered simultaneously with the Y/C signal output from the Y/C connector (S terminal).

2) MONO : Monochrome (black and white) ON/OFF for the video output signal from the VIDEO connector

Set to ON for monochrome. Setting ineffective during color bar.

3) SYNC ON G : G video signal synchronization ON/OFF (In the R/G/B mode only)

When output is RGB with Sync on and G on, Sync is added to the G video signal.

4) GL IN : Impedance changeover of input to the GL IN connector.

- HIGH : The high impedance level is provided.
- 75Ω : An impedance of 75 ohms is provided.

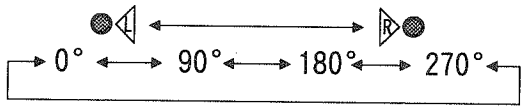
(Note) When power to the camera is turned off, the high impedance level is provided. So, do not use this function in a system where power is turned off for the camera unit only.

5) GL MODE :

- VBS : The VBS signal or BBS (black burst) signal is input as an external synchronizing signal.
- HD/VD : The HD/VD signal is input as an external synchronizing signal.

(Note) During external sync with HD and VD signals, be sure to use either RGB or Y, B-Y, R-Y output signals. Although VBS and Y/C output signals are also produced, these cannot be used as normal output signals.

6) SC.COARSE : Coarse adjustment of subcarrier phase



Using the L or R button, select one of the following phases; 0°, 90°, 180° and 270°.

7) SC.FINE : Fine adjustment of subcarrier phase

The allowable setting range is -128 to 127.

There is no direct relationship between a numeric value and a degree of phase. If the relevant range is exceeded, the SC COARSE setting is updated automatically to permit continuous adjustment.

8) H.PHASE : Adjustment of horizontal synchronization phase

The allowable setting range is -128 to 127.

13. ID/TITLE

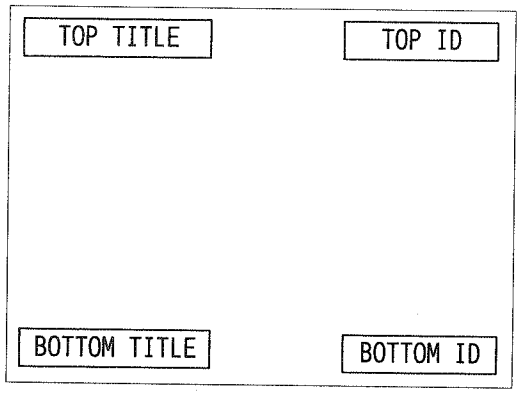
ID and title display position and data setting menu.

1) ID : ID display position setting

Once an ID is assigned, it becomes possible to control a particular camera unit remotely from a personal computer according to its ID. That is, multiple camera units can be remote-controlled individually from one personal computer.

At this function item, specify whether the ID is displayed on screen or not. In case that the ID is displayed on screen, specify its display position also.

- OFF : Not displayed.
- TOP : Displayed at the upper right corner of screen.
- BOTTOM : Displayed at the lower right corner of screen.



ID/TITLE Display Position

2) At this function item, specify whether the TITLE is displayed on screen or not. In case that the TITLE is displayed on screen, specify its display position also.

- OFF : Not displayed.
- TOP : Displayed at the upper left corner of screen.
- BOTTOM : Displayed at the lower left corner of screen.

3) DATA SET : The DATA SET screen comes up.

ID : Enter an ID code consisting of three characters.

Alphanumeric upper-case characters and a space character are permitted.

TITLE : Enter a TITLE consisting of up to 12 characters. ␣

Alphanumeric upper-case characters, special symbols and a space character are permitted.

(Note) The symbol " ␣ " in the data represents a space character. On the actual screen, a space character is given as a blank in an ID code or TITLE.

<ID/TITLE Setup Procedure>

① With the cursor located at DATA SET, press the D button. The cursor moves to the ID data set position an the first character flashes.

② Using the L, R, U and D buttons, select an input character.

③ Press the SET UP button, and the selected character will be entered. (The cursor will then move to the next character position.)

④ In the same manner, repeat the above steps ② and ③ to enter an ID code and TITLE.

⑤ On completion of character input, bring the cursor to RET using the L, R, U or D button. Then, press the SET UP button.

The cursor is returned to DATA SET.

⑥ To quit the SPECIAL SET mode, press the SET UP button.

← : Flashing shifts one character toward the left.

→ : Flashing shifts one character toward the right.

DEL : Flashing character is deleted, and the subsequent character string is shifted left.

INS : A space is inserted at the flashing character position, and the subsequent character string is shifted right.

RET : The cursor is returned to DATA SET.

14. DTL

Menu for setting detail parameters

1) LEVEL DEP : Dependent level setting

Detail amount, and noise, can be reduced in scene dark components.

Setting range is -128 to +127. Press the R button to increase the value, reduce the detail amount and expand the video signal level range. Press L button to decrease the value and reduce the range. Set to 0 by simultaneously pressing the L and R buttons for about 2 seconds.

2) CRISP : Crispness level setting

Reduces noise when DTL setting is in the range of -128 to 127. However, at high settings, some loss of sharpness occurs in detailed scene components. Setting range is -128 to +127. Press the R button to increase the value and the detail noise. Press the L button to decrease the value and reduce detail noise. Set to 0 by simultaneously pressing the L and R buttons for about 2 seconds.

3) H/V BALANCE : Balance setting for horizontal and vertical detail amount

Setting range is -128 to +127. Press the R button to increase the value and reduce the H DTL amount. Press the L button to decrease the value and reduce the V DTL amount. Set to 0 by simultaneously pressing the L and R buttons for about 2 seconds.

4) INITIALIZE : Return each item to factory settings by simultaneously pressing the L and R buttons for about 2 seconds.

Application Files (APP-1,APP-2,APP-3)

Camera setting data can be stored in three application files. These enable optimizing the camera for specific scene and lighting conditions, then storing the setting data in memory for quick recall at the appropriate time. The application files have been set at the factory as follows.

APP-1: Standard type camera settings

APP-2: General purpose surveillance and TV conferencing

APP-3: Microscope settings. Particularly the masking is suitable for good color reproduction with a light source of about 5000 K combined with a 9200 K color monitor.

Select the file according to the application. If the settings are changed for finer control, the setting data can be stored is each file.

1. Items saved to application files

The following items can b saved to each file. The factory data are shown.

Menu item	Application file		
	APP-1	APP-2	APP-3
MAIN MENU			
WHITE BAL	MEM 3200K	MEM 3200K	MEM 3200K
GAIN	NORMAL	NORMAL	NORMAL
DTL	0	25	0
DNR	OFF	OFF	OFF
SUB MENU 1			
M.BLACK	0	0	0
SHUTTER	OFF	OFF	AES
DTL FREQ	STANDARD	STANDARD	HIGH
SUB MENU 2			
DYNA CHROMA	OFF	ON	OFF
CHROMA GAIN	0	25	0
AUTO KNEE	ON	ON	ON
MASKING	ON	ON	ON
LENS			
IRIS MODE	AUTO	AUTO	MANUAL

Menu item	Application file		
	APP-1	APP-2	APP-3
LEVEL			
R GAIN	0	0	0
B GAIN	0	0	0
MASKING			
R HUE	2	2	-9
Y HUE	0	0	-4
G HUE	0	0	0
C HUE	0	0	0
B HUE	2	2	10
M HUE	9	9	-16
R SAT	11	11	5
Y SAT	0	0	3
G SAT	2	2	0
C SAT	7	7	0
B SAT	12	12	-13
M SAT	-2	-2	3

2 . Common file settings

The settings of these items apply to all files. They cannot be set differently for each file. The table indicates the factory settings.

Menu item	Setting data
MAIN MENU	
CAM MODE	MANUAL
ULTRA GAIN	OFF
SUB MENU 1	
VARIABLE	NTSC:1/60.38
	PAL :1/50.31
CCD MODE	FLD
GAIN HIGH	+9dB
GAIN MAX	+18dB
AGC	+20dB
SUB MENU 2	
CONTRAST	OFF
KNEE	ON
GAMMA	ON
AUTO SHADING	Adjustment data
WHITE GATE	OFF
MESSAGE RTN	ON
ALC	
OVER RIDE	0
IRIS GATE	OFF

Menu item	Setting data
SEPECIAL SET	
REMOTE	62500bps
LENS	
OPEN LIMIT	127
CLOSE LIMIT	Factory adjustment
ZOOM	0
FOCUS	0
IRIS GATE	
UP/DOWN	CENTER
LEFT/RIGHT	CENTER
LARGE/SMALL	MIN SMALL
WHITE GATE	
UP/DOWN	CENTER
LEFT/RIGHT	CENTER
LEVEL	
R BLK	0
B BLK	0

Menu item	Setting data
OUTPUT/SYNC	
OUTPUT	R,G,B
MONO	OFF
SYNC ON G	OFF
GL IN	75 Ω
GL MODE	VBS
SC COARSE	0°
SC FINE	0
H PHASE	0
DTL	
LEVEL DEP.	0
CRISP	0
H/V BALANCE	0
ID/TITLE	
ID	OFF
TITLE	OFF
ID DATA	(Blank)
TITLE DATA	(Blank)

How to Attain Better Images

Black Balance Adjustment

Adjust black balance to provide proper color tone at a dark part of video image. In the following cases, be sure to carry out black balance adjustment.

- When using the camera first after purchasing it.
- When using the camera after it has been unused for a long time.
- When the camera operating environment is changed (e.g., when the ambient temperature varies significantly).

Under normal condition, it is not required to make black balance adjustment at power-on.

1. In the Direct mode, hold the ABB button pressed for about 2 seconds for automatic black balance adjustment. With MESSAGE RTN:ON, AUTO BLACK appears. At the end of successful adjustment AUTO BLACK:OK appears.

   (Notes) 1) Where the lens having the auto iris function is used, the iris is closed automatically during adjustment. Sometimes occurs when adjusted with the lens iris in the manual mode (lens iris switch set to M). Open the iris for better exposure.

   2) In combinational use with the manual iris lens or microscope, a full-black screen image is provided from the CCD image sensor during adjustment. When picturing after adjustment, a white screen image appears momentarily. This phenomenon is not a symptom of trouble, however.

   3) In case that the manual iris lens is used, do not attempt auto black balance adjustment while taking an image of subject having extremely high luminance such as the sun. This may deteriorate black balance accuracy.

2. If black balance adjustment cannot be made, any one of the following messages will appear. Take a proper procedure according to the error message, and then try black balance adjustment again.

Error message	Procedure
AUTO BLACK : NG CHANGE TO CAM TRY AGAIN	• Turn off the color bar.
AUTO BLACK : NG IRIS NOT CLOSE TRY AGAIN	• Close the lens iris. • Avoid taking an image of subject having high luminance such as the sun, or decrease illumination on the microscope.
AUTO BLACK : NG ??? TRY AGAIN	• Carry out ABB again. If this message appears in repeated attempts, it is necessary to inspect the inside of the camera. In this case, notify your local Hitachi Denshi sales agent or Hitachi Denshi service office

White Balance Adjustment

Carry out white balance adjustment when the illumination condition (color temperature) is changed.

1. In the MENU mode, set up WHITE BAL: MEM 3200K or MEM 5600K.
2. Turn off the MENU screen to select the DIRECT mode.
3. Provide a proper aperture value of lens using the auto iris function or manually.
4. Put an white object in the subject image, and zoom it up.
5. Hold the AWB button pressed for about 2 seconds for automatic white balance adjustment. With MESSAGE RTN:ON, AUTO WHITE appears. At the end of successful adjustment AUTO WHITE:OK appears.
6. If white balance adjustment cannot be made, any of the following messages will appear. Take a proper

procedure according to the error message, and then try white balance adjustment again.

Error message	Procedure
AUTO WHITE : NG CHANGE TO CAM TRY AGAIN	• Turn off the color bar.
AUTO WHITE : NG CHANGE TO MEMORY MODE TRY AGAIN	• Set up WHITE BAL:MEM 3200K or MEM 5600K.
AUTO WHITE : NG LOW LIGHT TRY AGAIN	• White balance cannot be made due to insufficient illumination. • Increase the intensity of illumination, turn lens iris toward open direction, or increase the gain to provide a proper video level. • Press the AWB switch again.
AUTO WHITE : NG HIGH LIGHT TRY AGAIN	• White balance cannot be made due to excess illumination. • Increase the intensity of illumination, turn lens iris toward closed direction, or increase the gain to provide a proper video level. • Press the AWB switch again.
AUTO WHITE : NG C.TEMP HIGH TRY AGAIN	• The color temperature is too high, making it impossible to reach the optimum value in adjustment. (If there is no problem in practical application, use the camera under the current condition.) • Add a filter to the lens or illumination to decrease the color temperature.
AUTO WHITE : NG C.TEMP LOW TRY AGAIN	• The color temperature is too low, making it impossible to reach the optimum value. (If there is no problem in practical application, use the camera under the current condition.) • Add a filter to the lens or illumination to increase the color temperature.
AUTO WHITE : NG C. TEMP HIGH CHANGE TO MEM 5600K TRY AGAIN	• Color temperature too high for optimum adjustment. • Set WHITE BAL to MEM 5600 K mode.
AUTO WHITE : NG C. TEMP LOW CHANGE TO MEM 3200K TRY AGAIN	• Color temperature too low for optimum adjustment. • Set WHITE BAL to MEM 3200 K mode.

Realtime Auto White

The camera detects a white part in the image by itself, and its internal microcomputer automatically adjusts white balance in realtime. Use this function in case that the color temperature varies with time (e.g., from morning to day to night).

1. In the MENU mode, set up WHITE BAL:AUTO.

(Note) If the color temperature of the scene being taken is changed abruptly (when the camera is oriented from indoor side to outdoor side), the image may become bluish or reddish momentarily. This phenomenon is not a symptom of trouble, however. Immediately after it, the optimum white balance condition is set.

Where the camera is mounted fixedly and the orientation and image-taking range of the camera remain unchanged. it is advisable to use the white gate function in combination for attaining higher accuracy in white balance.

1. In the MENU mode, set up WHITE GATE:ON.
2. Using the WHITE GATE menu in the MENU mode, bring the display window to a monochrome part (white or gray part) in the image.

For details of the WHITE GATE function, refer to p. 18. Be sure to set the WHITE GATE window to a white or gray part in the image. Do not set it to a colored part.

Auto Shading Correction

Color shading may occur in the vertical direction on screen due to any characteristic of lens. This camera is equipped with a function for correcting color shading automatically.

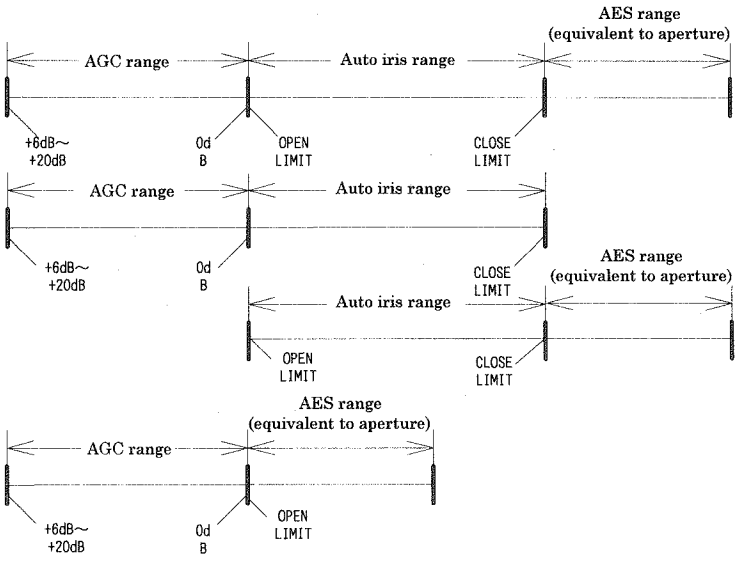
1. Provide a proper aperture value of lens using the auto iris function or manually.
2. Take an white image fully on screen. At this step, take care so that uneven brightness will not occur in the vertical direction.
3. In the DIRECT mode, press the AWB button. White balance is adjusted automatically.
4. In the MENU mode, carry out AUTO SHADING. Thus, color shading in the image is corrected automatically.

Note: Be sure to adjust auto shading when using the camera for the first time or after exchanging the lens.

A L C

In combination of GAIN:AGC, SHUTTER:AES and AUTO IRIS, the following four kinds of ALC (auto level control) can be performed. This feature ensures stable video signal output according to a wide-range change in illumination.

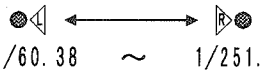
(Note) In case that the auto iris lens is not used, select the LENS menu and set IRIS MODE to MANUAL.



Lock scan mode shutter speed setting

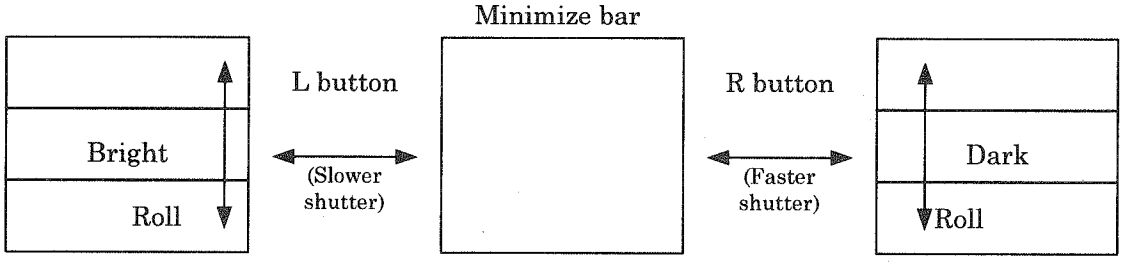
① Press the Setup button and open the main menu, then open Sub menu 1. Set the cursor to SHUTTER by pressing D, select the VARIABLE position with the L-R buttons, again press D to shift to the variable items.

② Press the L and R buttons to set the shutter speed in the range indicated below. Set the desired shutter speed.



1/60.38 ~ 1/251.5
(1/50.31:PAL) (1/253.8:PAL)

When picking up e.g., a computer screen having a different scanning frequency, bright or dark horizontal bars roll vertically across the screen (see figure). The shutter speed can be adjusted to minimize this effect in most cases.



Notes

1. Each pressing of the L or R button changes the shutter speed by 1 H. Hold the button depressed for continuous change.

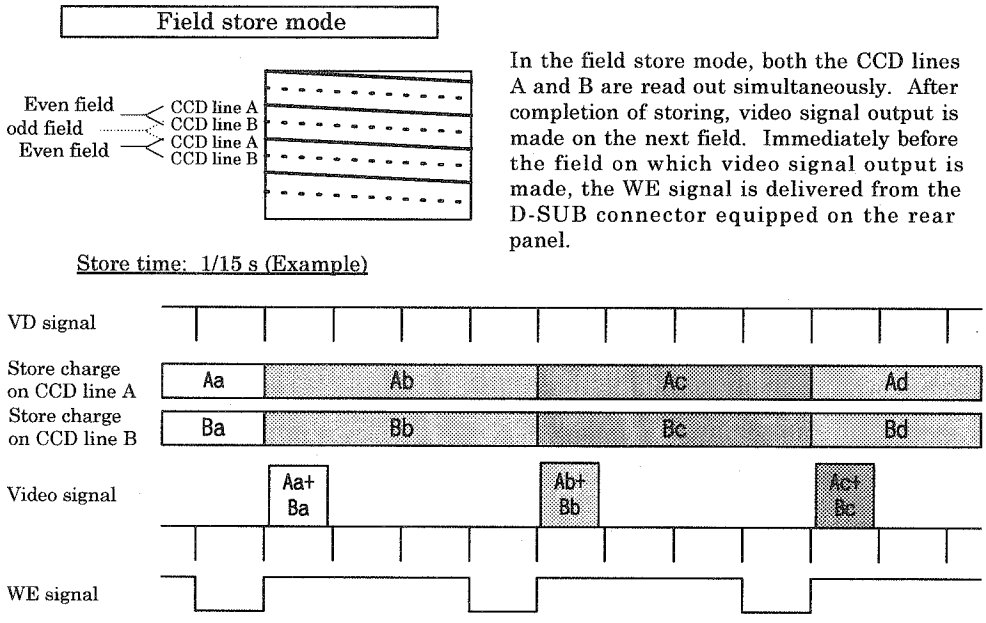
2. If the display scanning frequency is below 60 Hz, the rolling horizontal bar cannot be stopped.

3. Raising the shutter speed improves resolution of moving objects, but loses sensitivity to the extent auxiliary lighting may be needed for outdoor scenes. Also, vertical smear increases with higher shutter speeds due to the physical properties of CCD cameras.

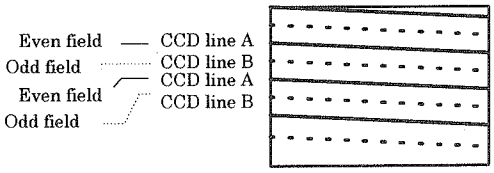
Long-Time Store Mode

In case that illumination on the subject is insufficient, just increasing the gain of the camera may cause an increase in noise, resulting in an unclear image. In such a situation, it is advisable to select the long-time store mode using the external memory. Thereby, the image can be brighter and clearer according to the stored amount of image. This camera is provided with two kinds of image store functions (CCD MODE:FLD/FRM in SUB MENU 1). When one of these image store functions is used, video signal output is delivered from the camera with the timing shown below.

Since the degree of after-image increases for a moving subject because of image storing, it is recommended to use the image store function when taking a still picture or scene.

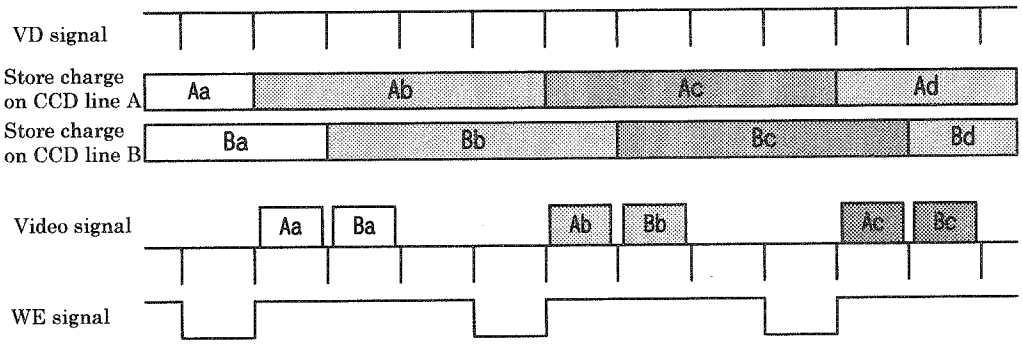


Frame store mode



In the frame store mode, each of the CCD lines A and B is read out individually. Therefore, the vertical resolution is superior. After completion storing, video signal output is made between two fields. Immediately before the field on which video signal output is made, the WE signal is delivered from the D-SUB connector equipped on the rear panel.

Store time: 1/15 s (Example)



RC-C10 Remote Control Box

The RC-C10 enables operation of all camera menu items by remote control. Before connecting the remote control box, check the camera settings as follows.

(1) SW405 : Camera internal switch SW405 should be set to RC-C10 (factory setting).
See Page 34 for internal switch setting details.

(2) Baud rate : Open the Special set menu and set the baud rate to 62500 bps (factory setting).

Operation

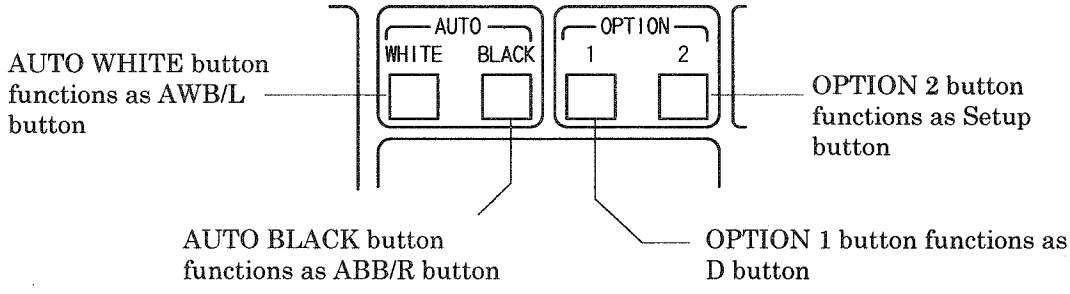
(1) Direct control

The following items can be controlled directly from the RC-C10 buttons. Refer to the RC-C10 operating instructions.

- BAR/CAM
- WHITE BAL
- GAIN
- DTL
- IRIS MODE
- IRIS
- M.BLK
- R GAIN
- B GAIN
- R BLK
- B BLK
- H PHASE
- SC COARSE
- SC FINE

(2) Menu control

Items not mentioned in the above list are controlled by menu settings. The control box Option 1, Option 2, Auto White and Auto Black buttons are assigned to menu operating buttons. When AUTO WHITE and AUTO BLK are not indicated in the menu, the functions are conducted directly from the control box buttons.



Refer to menu operation.

Note: Hold OPTION 1 depressed and press OPTION 2 for 2 seconds to produce the Special Set menu, the SPECIAL SET menu appears on the screen.

The accessory labels can be affixed to the controller buttons if required.

(3) Setting data storage

Data (menu and direct control items) set by remote control from the RC-C10 are not automatically saved. When setting data need to be stored, press the SET button (of the RC-C10).

Note: Use care since settings are lost if the application file is changed or power switched off without operating SET.

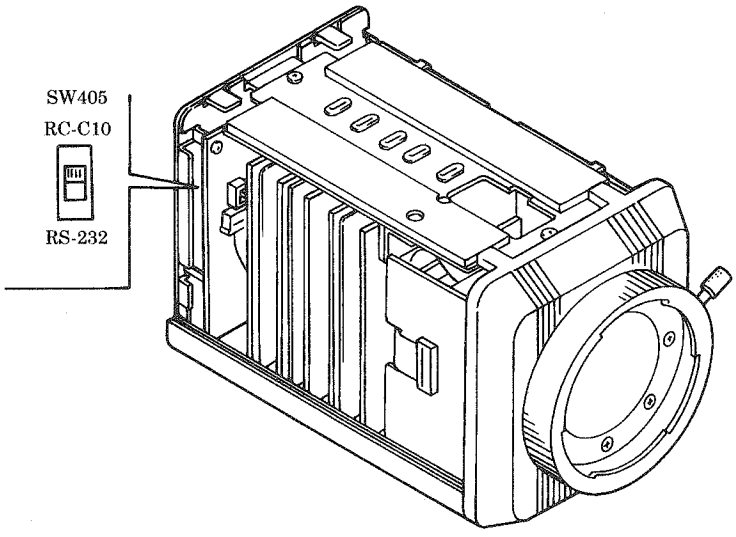
Function Selection by Internal Switch Setting

SW405

For connection with the remote control box RC-C10, set SW405 to the RC-C10 position.

For connection with the personal computer, set SW405 to the RS-232C position.

At shipment from factory, SW405 is set at the RC-C10 position.



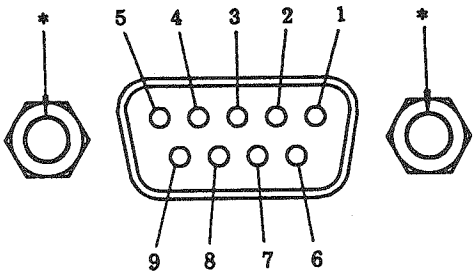
Connectors

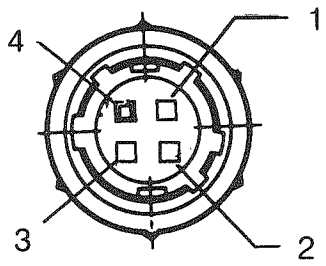
MULTI connector (SDEB-9S)

Pin No.	Signal designation
1	GND
2	WE
3	R/R-Y/C output
4	G/Y output
5	B/B-Y output
6	VBS output
7	SYNC output
8	HD output
9	VD output

REMOTE connector (HR10A-7R-4S)

Pin No.	Signal designation
1	+12V output
2	RXD/SD input
3	TXD/SD output
4	GND

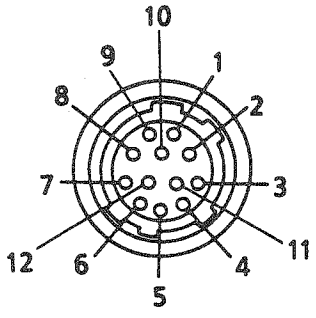




* Use M2.6 plug retaining screws.

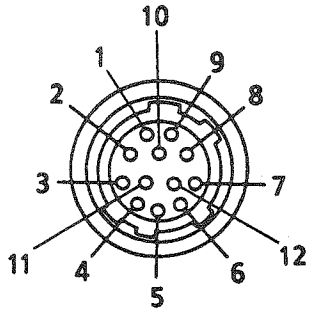
LENS connector (HR10A-10R-12SB)

Pin No.	Signal designation
1	NC
2	NC
3	GND
4	ENF AUTO output
5	IRIS CONT output
6	+12V output
7	IRIS POS input
8	IRIS A/R output
9	NC
10	NC
11	NC
12	NC



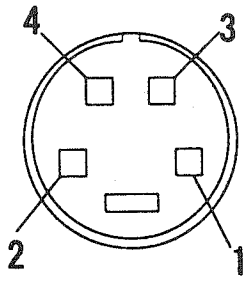
AUX connector (HR10A-10R-12PB)

Pin No.	Signal designation
1	GND
2	NC
3	ZOOM output
4	FOCUS output
5	GND
6	HD input
7	VD input
8	PAN output
9	TILT output
10	GND
11	NC
12	GND



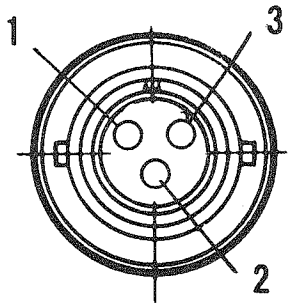
Y/C connector (TCS-7547-01-401)

Pin No.	Signal designation
1	Y GND
2	C GND
3	Y output
4	C output



12V-IN connector (RM12BRD-3PH)

Pin No.	Signal designation
1	+12V input
2	GND
3	NC



Input/Output Signals

1. Input signal

(1) Genlock input

・VBS 1.0 Vp-p ± 3 dB or black burst, 75 Ω or high impedance (BNC)

(Sync 0.3 ± 0.1 Vp-p, burst 0.3 ± 0.1 Vp-p)

・HD/VD TTL level (AUX connector)

(2) Serial data (4 pin connector)

・1.5 Vp-p ± 3 dB, high impedance (in connection with RC-C10)

・RS-232C level (in connection with personal computer)

(Note) Set internal switch according to connected equipment.

2. Output signal ratings

(1) Composite video (BNC, D-sub connector)

VBS 1.0 Vp-p, 75 Ω

(2) Y/C (D-sub, Y/C connectors)

Y : 1.0 Vp-p, 75 Ω

C : 0.28 Vp-p (burst), 75 Ω (NTSC),

0.3 Vp-p (burst), 75 Ω (PAL)

(3) Component (D-sub connector)

Y : 1.0 Vp-p, 75 Ω

R-Y: 0.7 Vp-p, 75 Ω

B-Y: 0.7 Vp-p, 75 Ω

(4) RGB (D-sub connector)

R : 0.7 Vp-p, 75 Ω

G : 0.7 Vp-p, 75 Ω

B : 0.7 Vp-p, 75 Ω

(Note) Menu settings select the D-sub connector output for Y/C, component or RGB.

(5) Sync (D-sub connector)

HD : 2 Vp-p, 75 Ω

VD : 2 Vp-p, 75 Ω

SYNC: 2 Vp-p, 75 Ω

(6) Serial data (4 pin connector)

・1.5 Vp-p/ Low (in connection with RC-C10)

・RS-232C level (in connection personal computer)

(Note) Set internal switch according to connected equipment.

(7) Lens control

Zoom : 0 Vdc (Wide) to 5 Vdc (Tele), 1 kΩ

Focus: 0 Vdc (Near) to 5 Vdc (Far), 1 kΩ

Pan : 0 Vdc (Left) to 5 Vdc (Right, 1kΩ

Tilt : 0 Vdc (Down) to 5 Vdc (Up, 1kΩ

(8) Lens iris control

2.5 Vdc (Close) to 7.5 Vdc (Open)

Major accessories

13x zoom lens (ENG type), YH13x7.5 KRS

14x zoom lens (Remote control type), S14x7.5BMD-D24

Lens remote control units (for S14x7.5BMD-D24), RMD10

Lens remote control units (for S14x7.5BMD-D24), RMD20

Lens remote control units (for S14x7.5BMD-D24), RMD30

Lens remote control cables (for S14x7.5BMD-D24), ECM-005M (5m)

Lens remote control cables (for S14x7.5BMD-D24), ECM-010M (10m)

Lens remote control cables (for S14x7.5BMD-D24), ECM-020M (20m)

Lens remote control cables (for S14x7.5BMD-D24), ECM-050M (50m)

Lens remote control cables (for S14x7.5BMD-D24), ECM-100M (100m)

Lens iris extension cable, ECE-R22 (220mm)

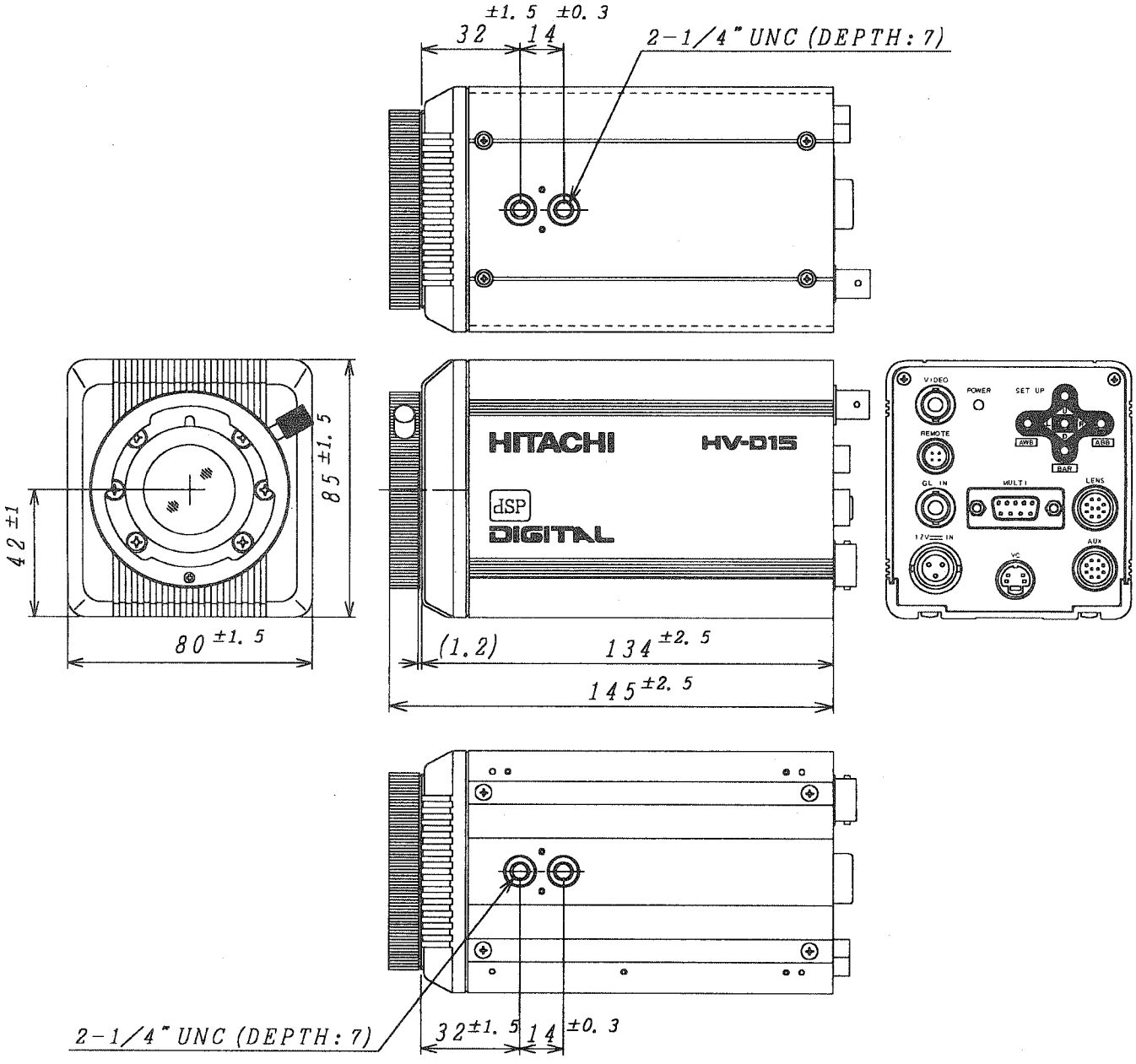
AC adaptor, AP-60A

Camera control box, RC-C10

Junction box, JU-Z2

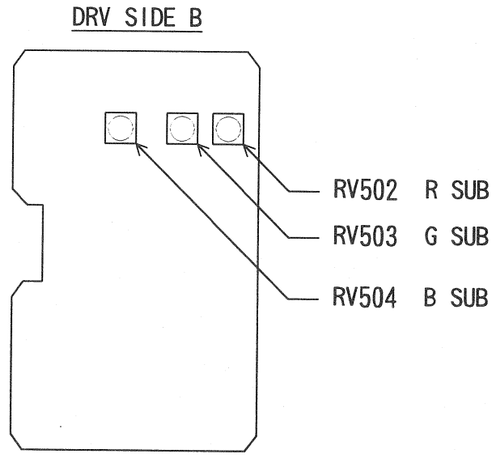
1/2"-2/3" lens mount conversion adaptor, LM-C10

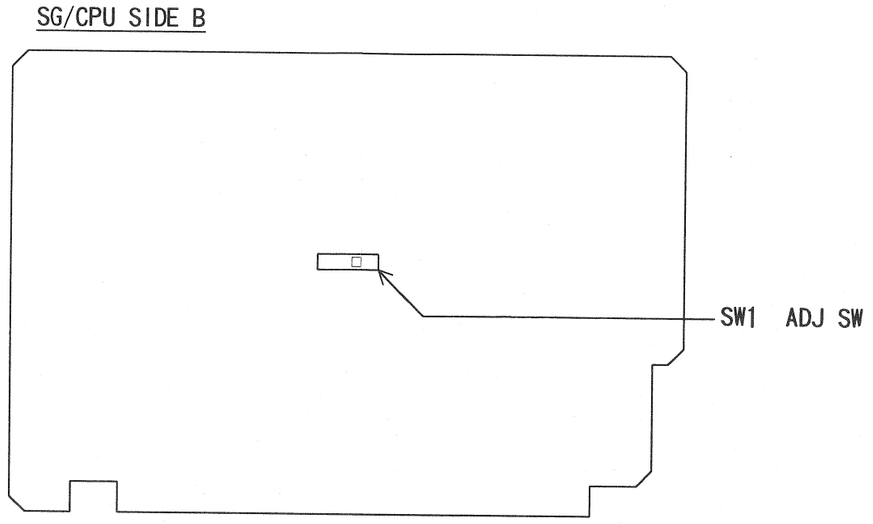
Dimensions

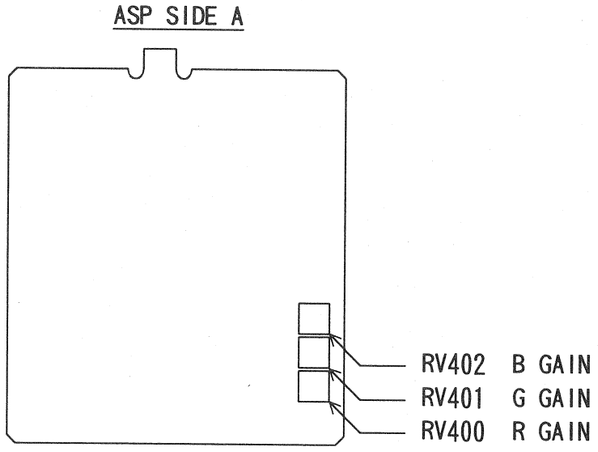

±1.5 ±0.3
32
14
2-1/4" UNC (DEPTH: 7)
HITACHI
HV-D15
dSP
DIGITAL
VIDEO
POWER
SET UP
REMOTE
AWB
ABB
BAR
GL IN
MULTI
LENS
12V IN
VC
AUX
42±1
85±1.5
80±1.5
(1.2)
134±2.5
145±2.5
2-1/4" UNC (DEPTH: 7)
32±1.5
14
±0.3

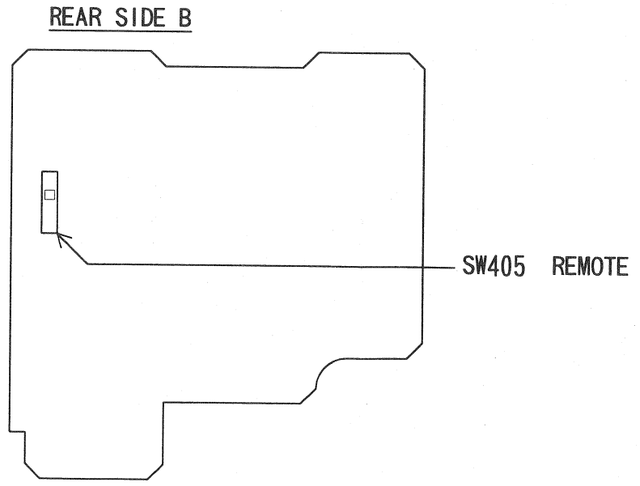
4. ADJUSTMENT

4-1. Location of adjustments

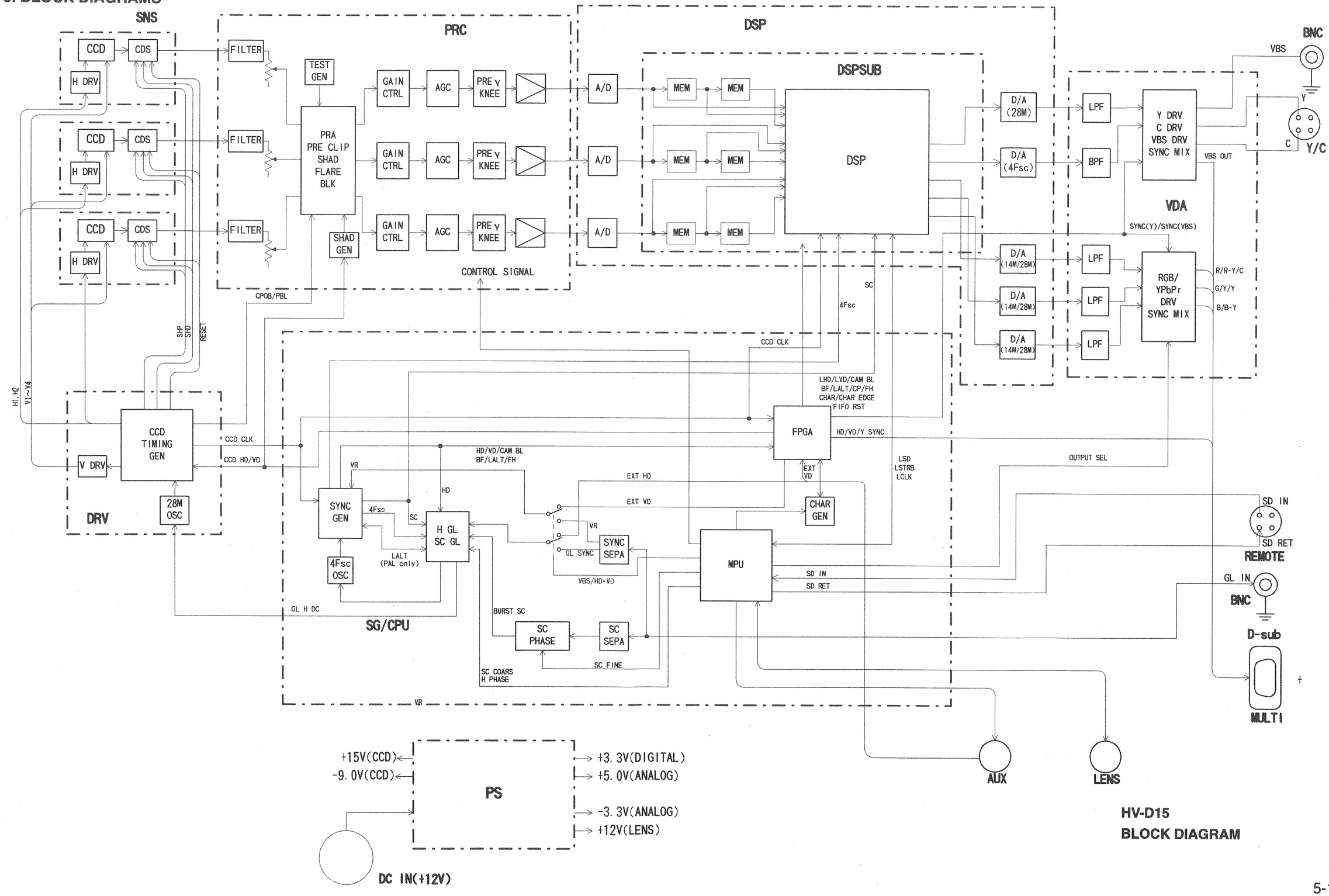




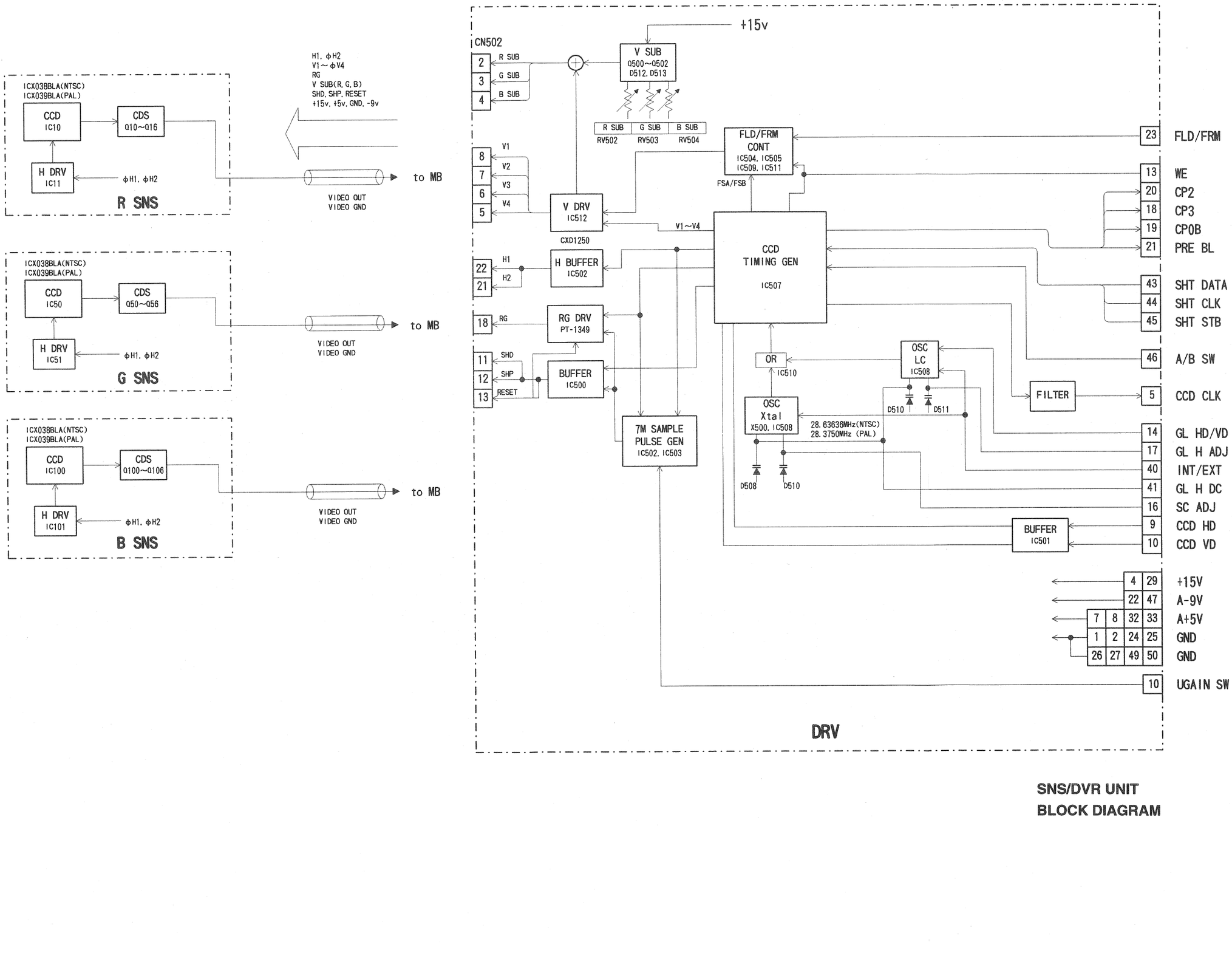




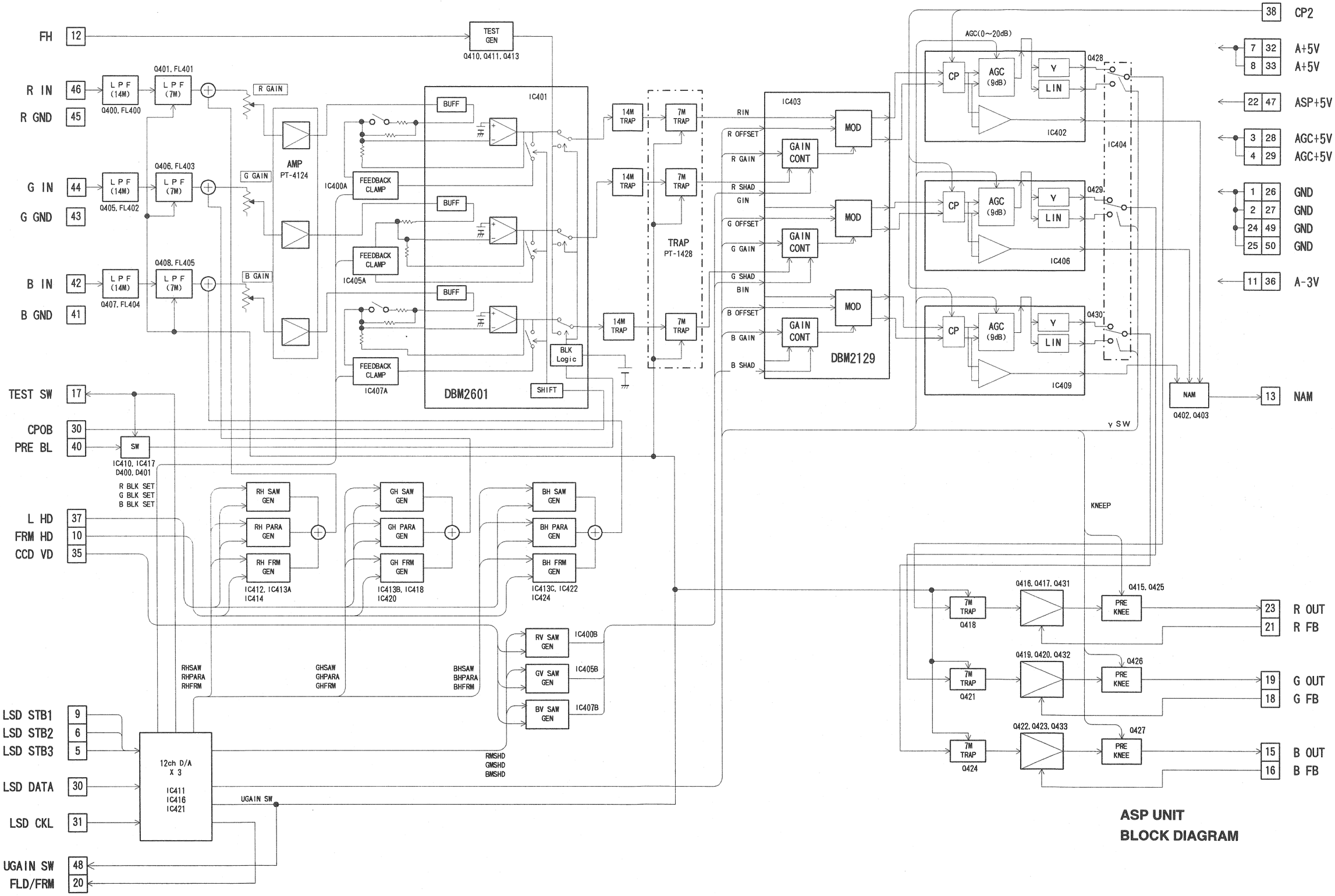
5. BLOCK DIAGRAMS



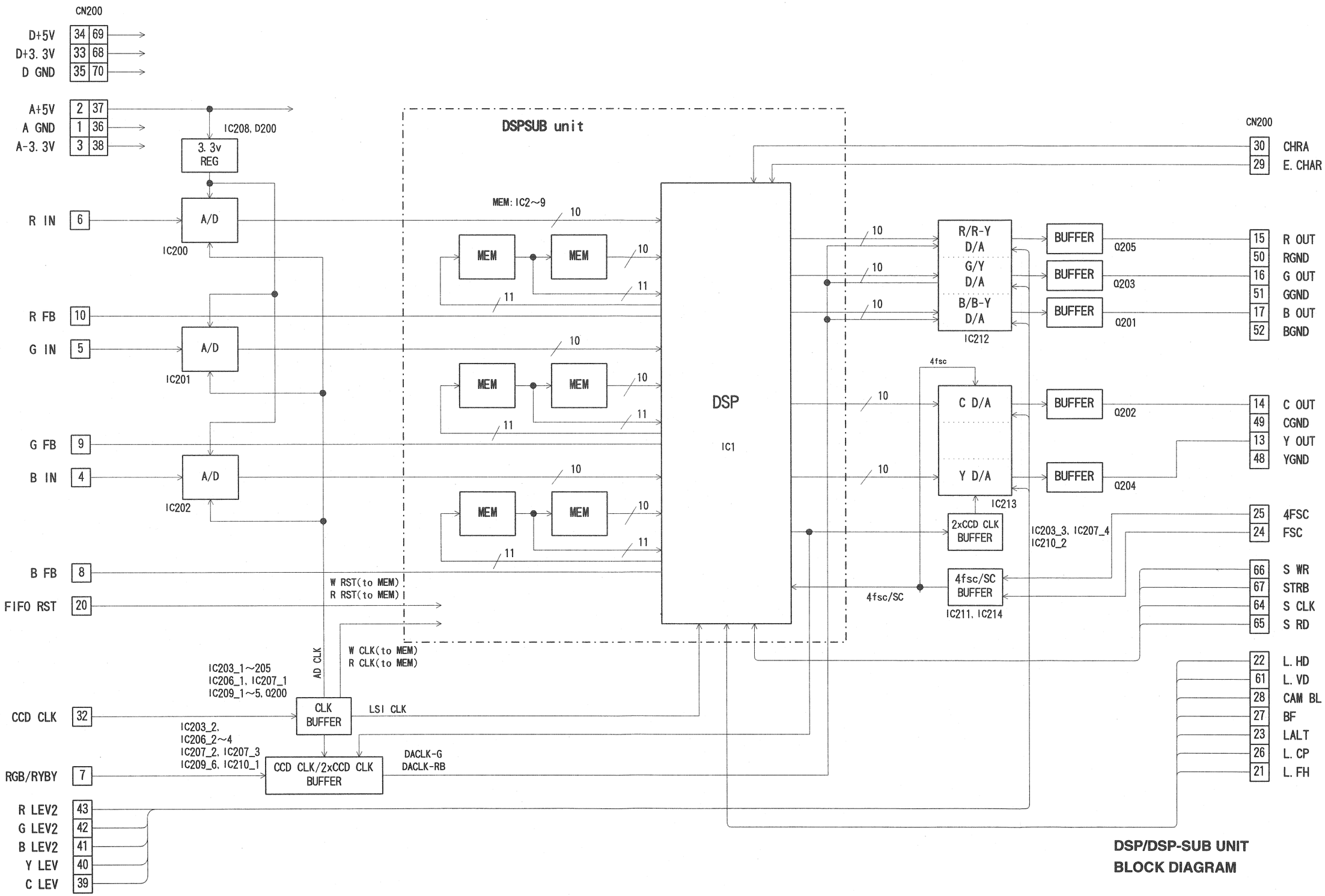
HV-D15
BLOCK DIAGRAM



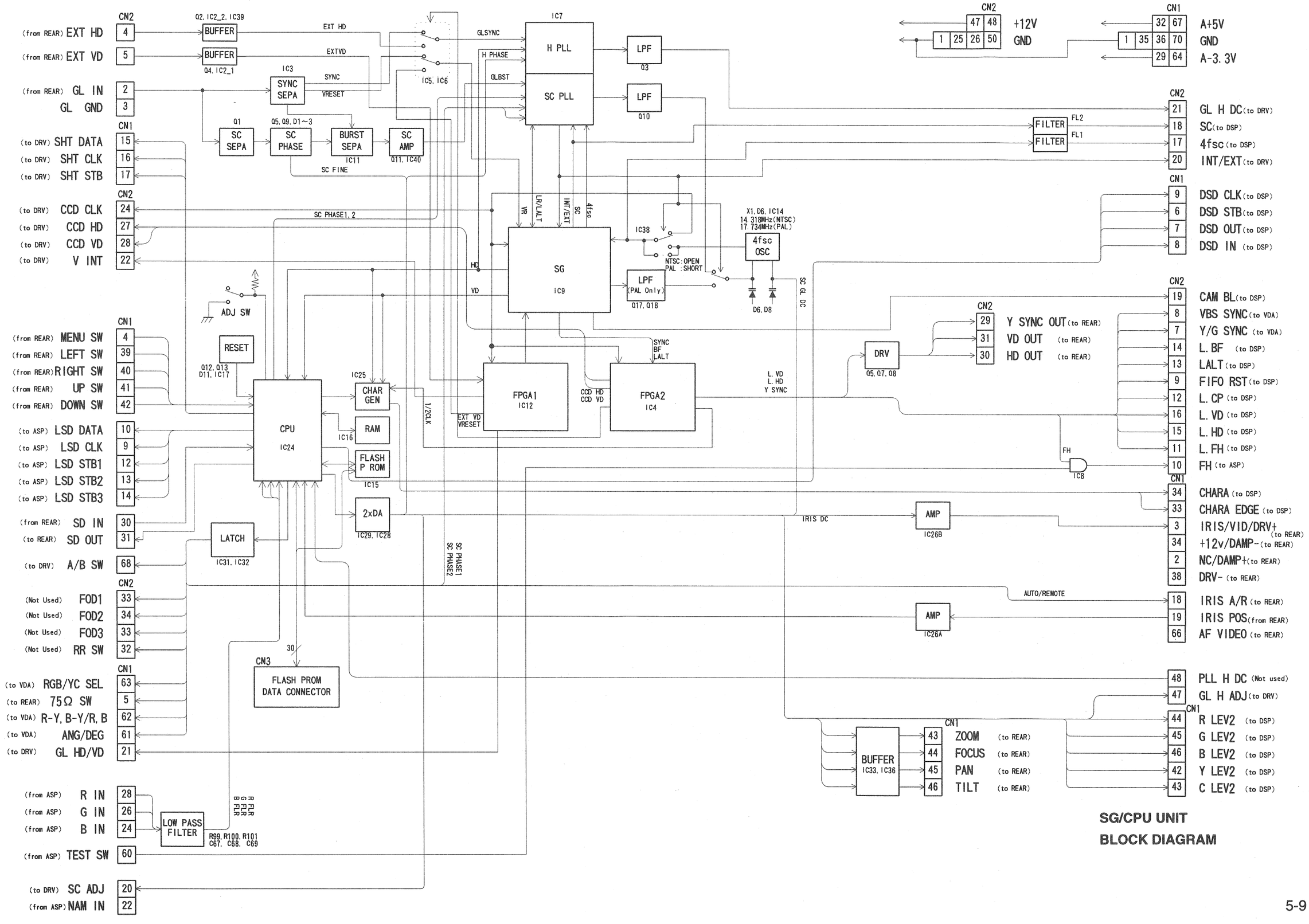
SNS/DVR UNIT
BLOCK DIAGRAM



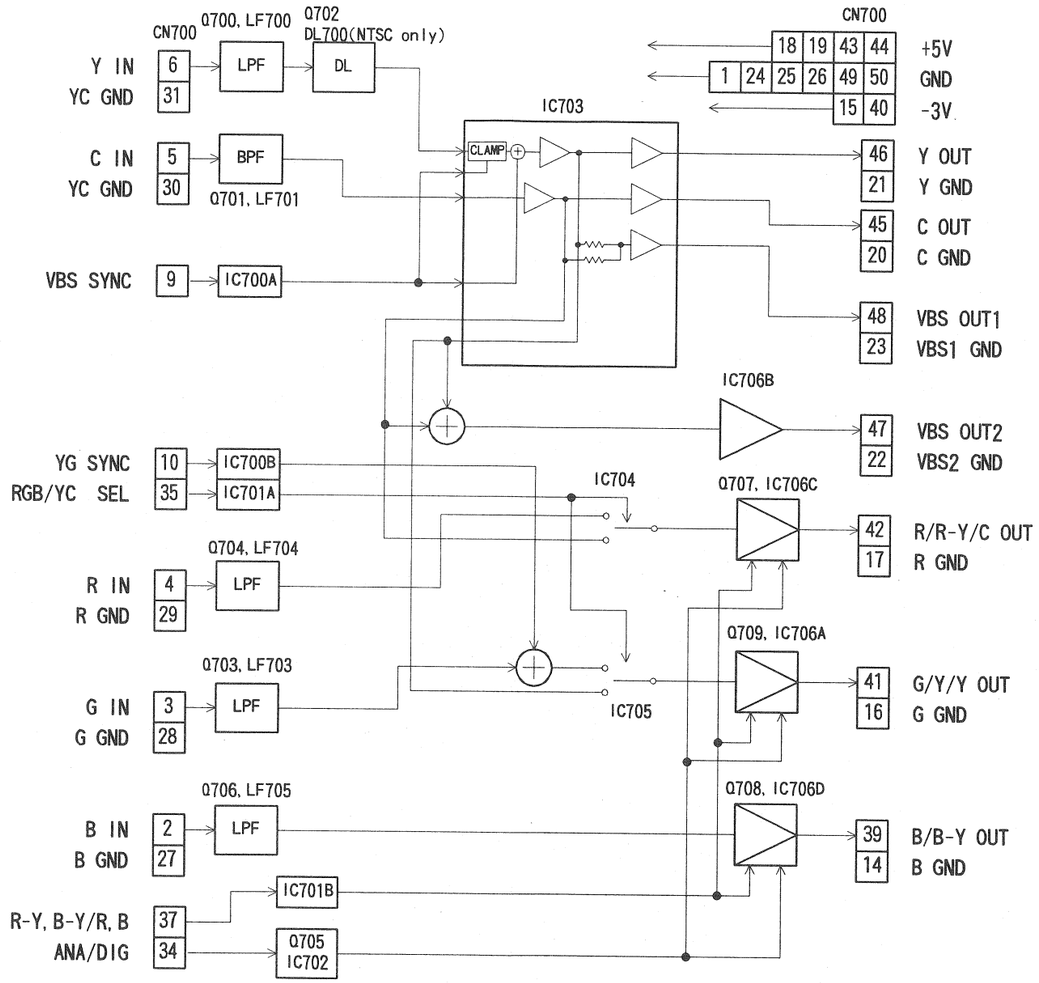
ASP UNIT
BLOCK DIAGRAM



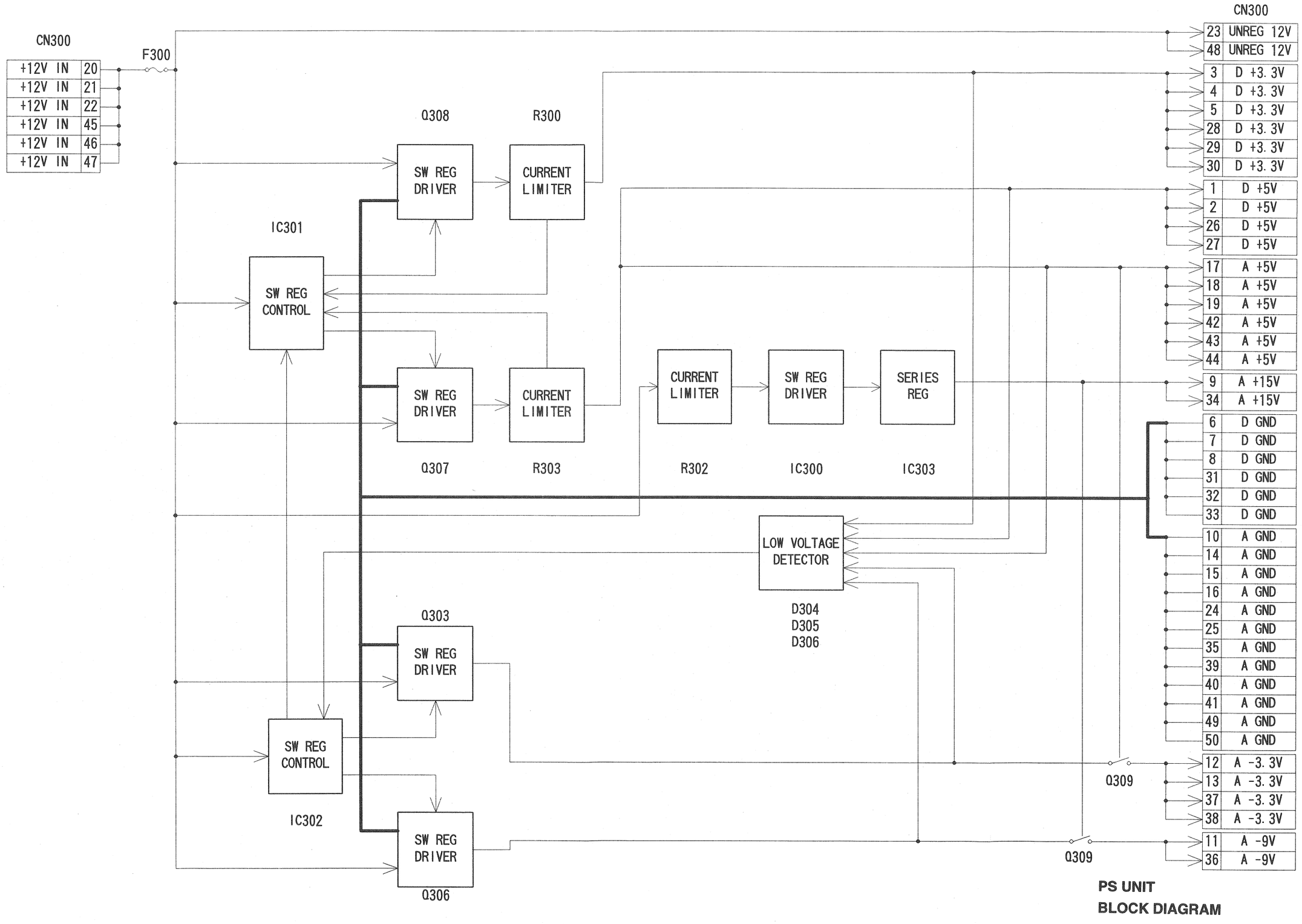
DSP/DSP-SUB UNIT BLOCK DIAGRAM



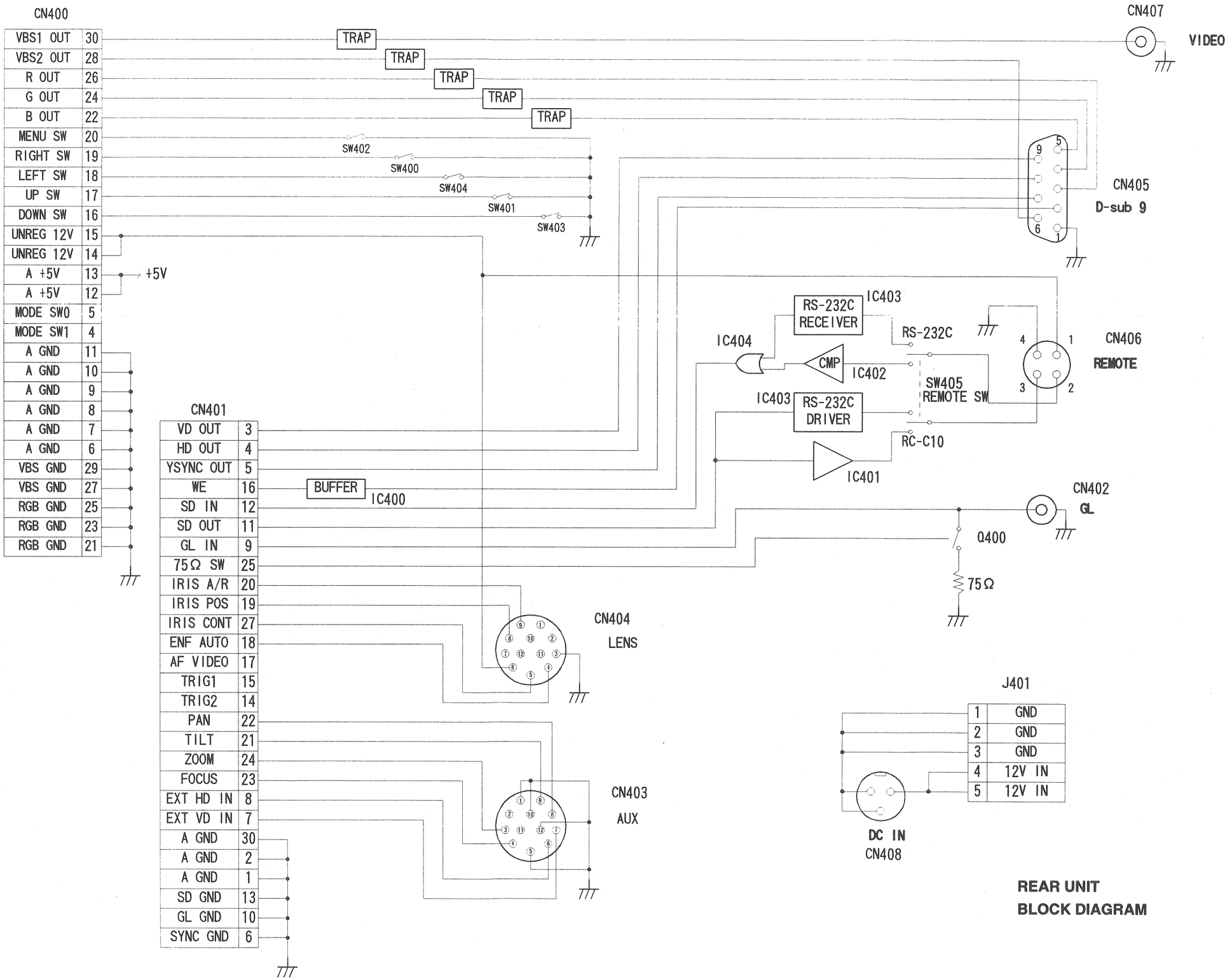
SG/CPU UNIT
BLOCK DIAGRAM



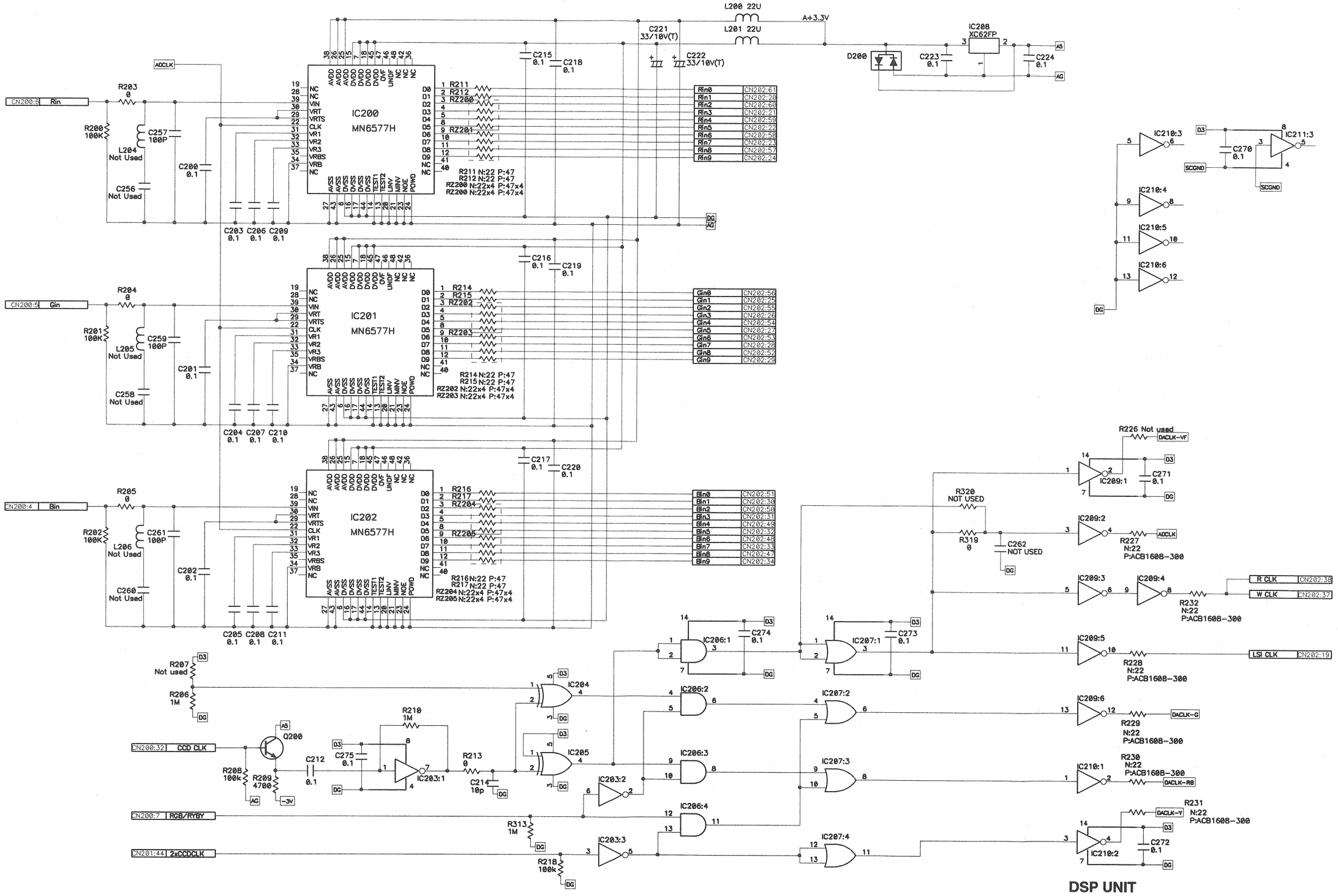
VDA UNIT
BLOCK DIAGRAM



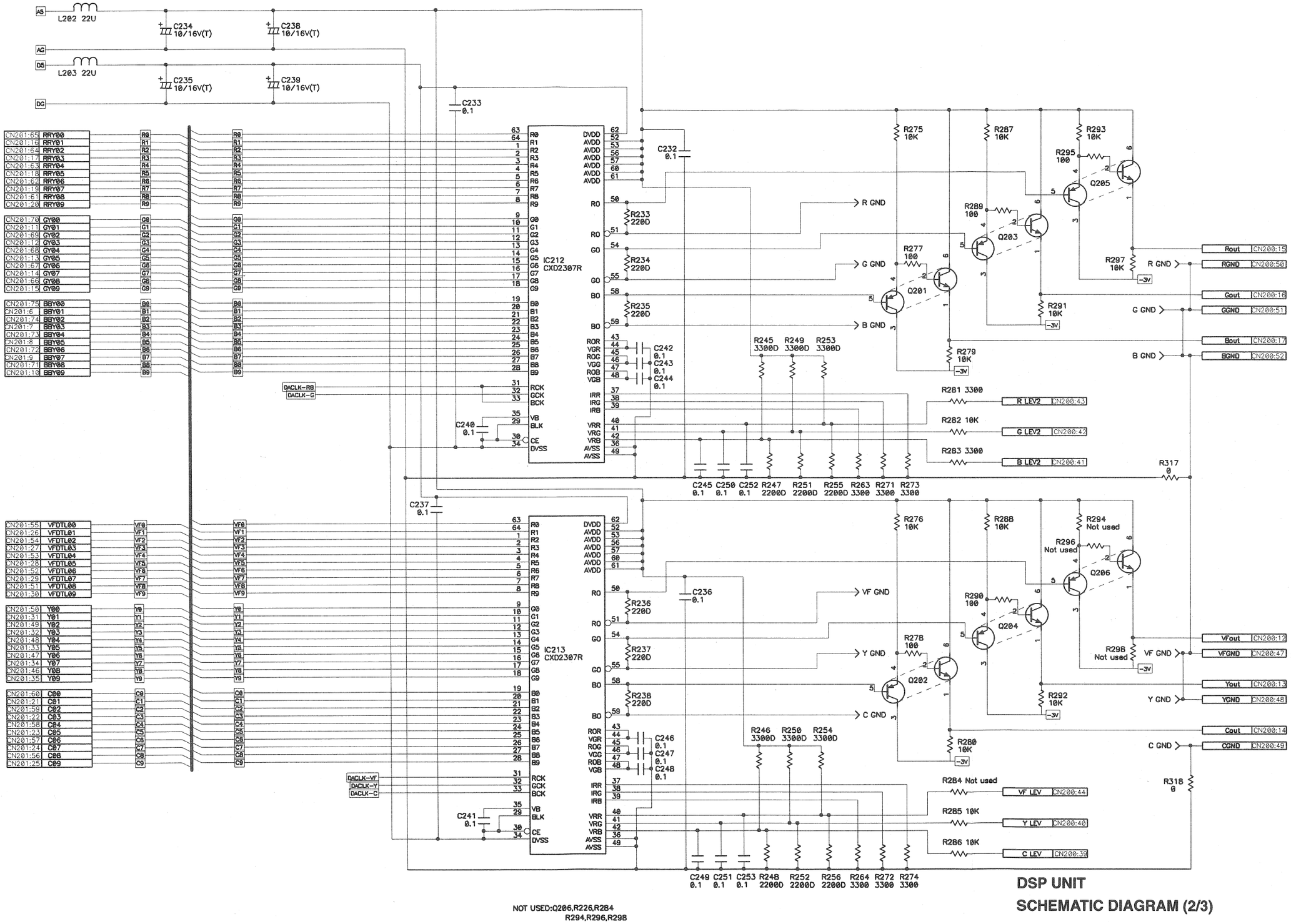
PS UNIT
BLOCK DIAGRAM



REAR UNIT
BLOCK DIAGRAM

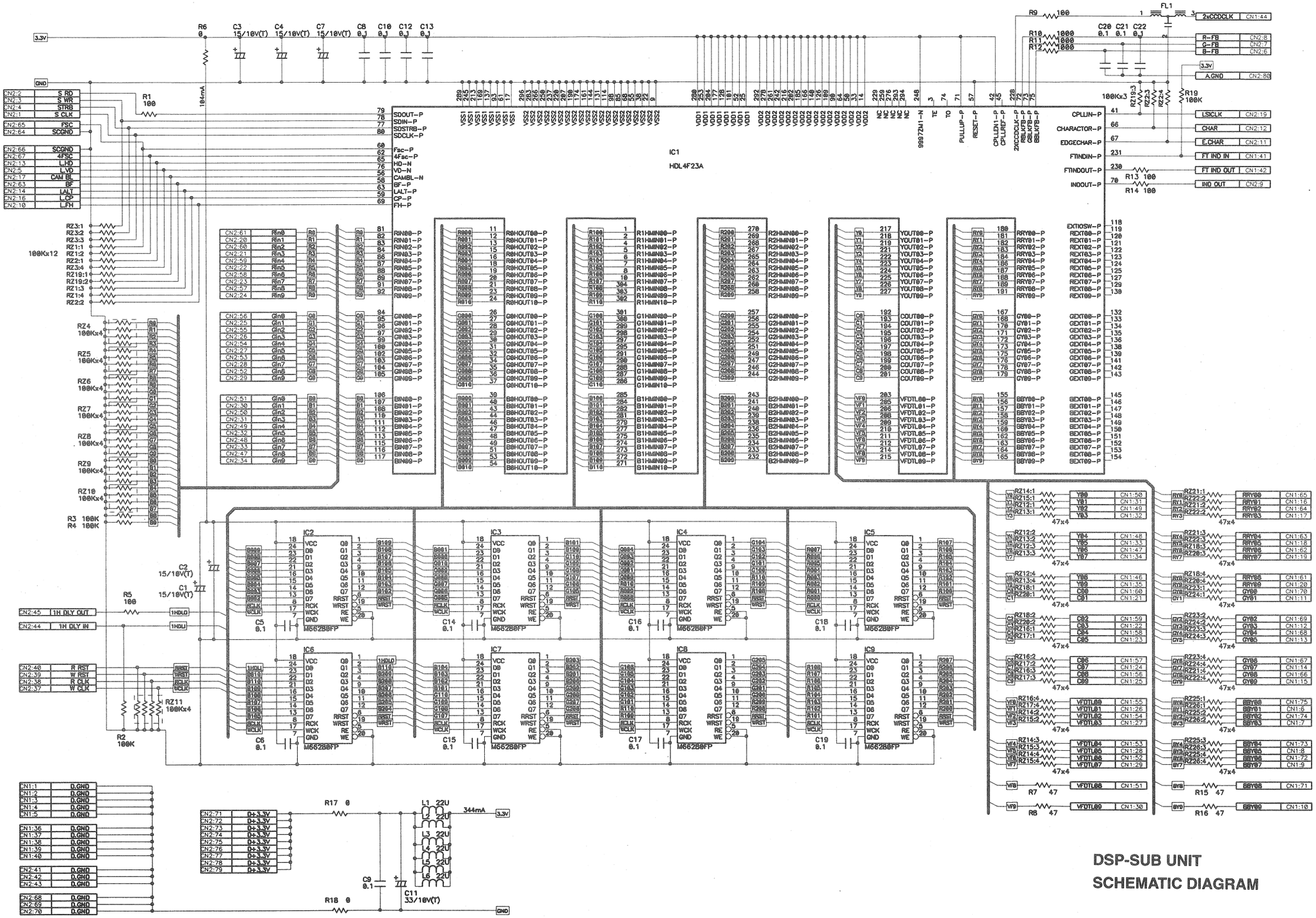


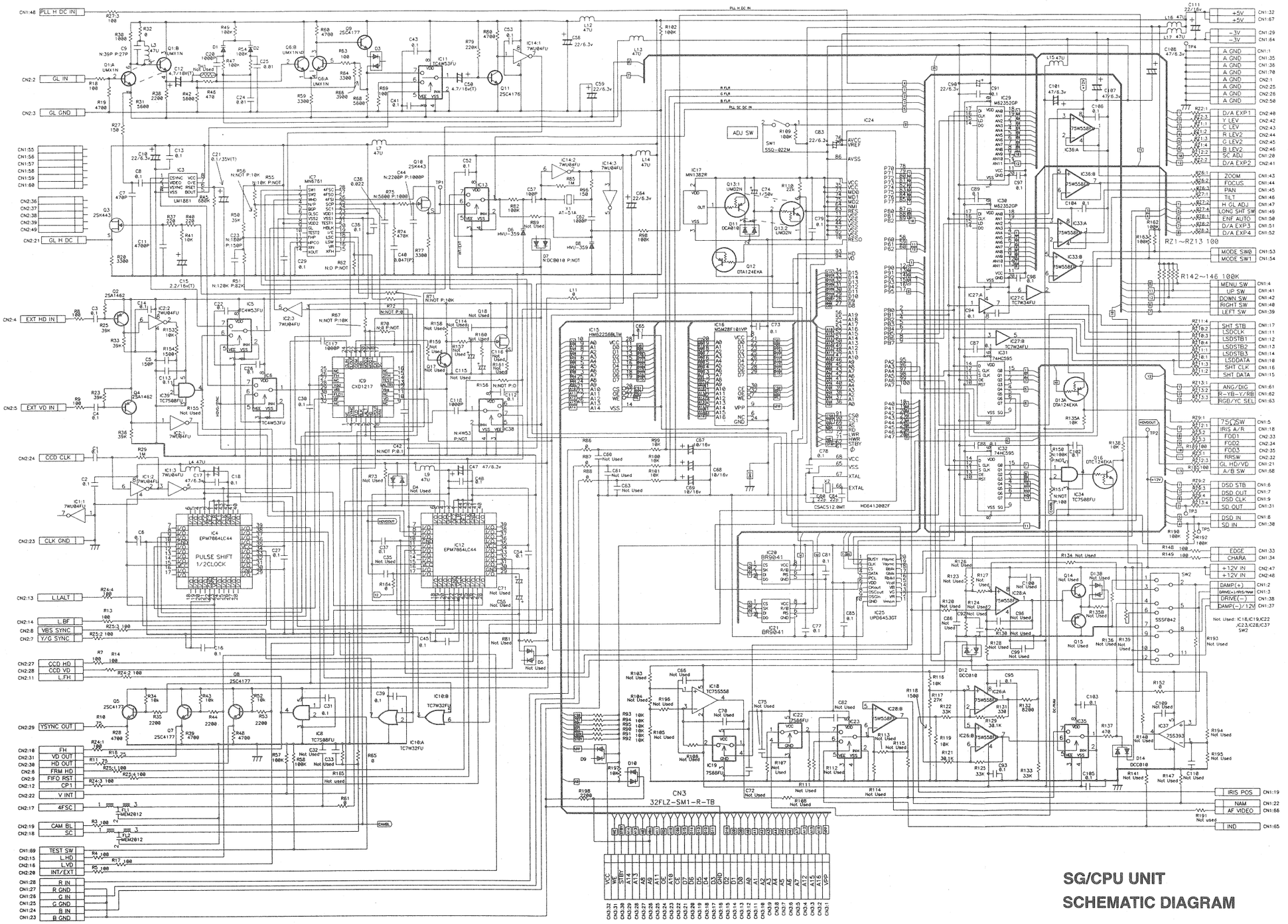
DSP UNIT
SCHEMATIC DIAGRAM (1/3)

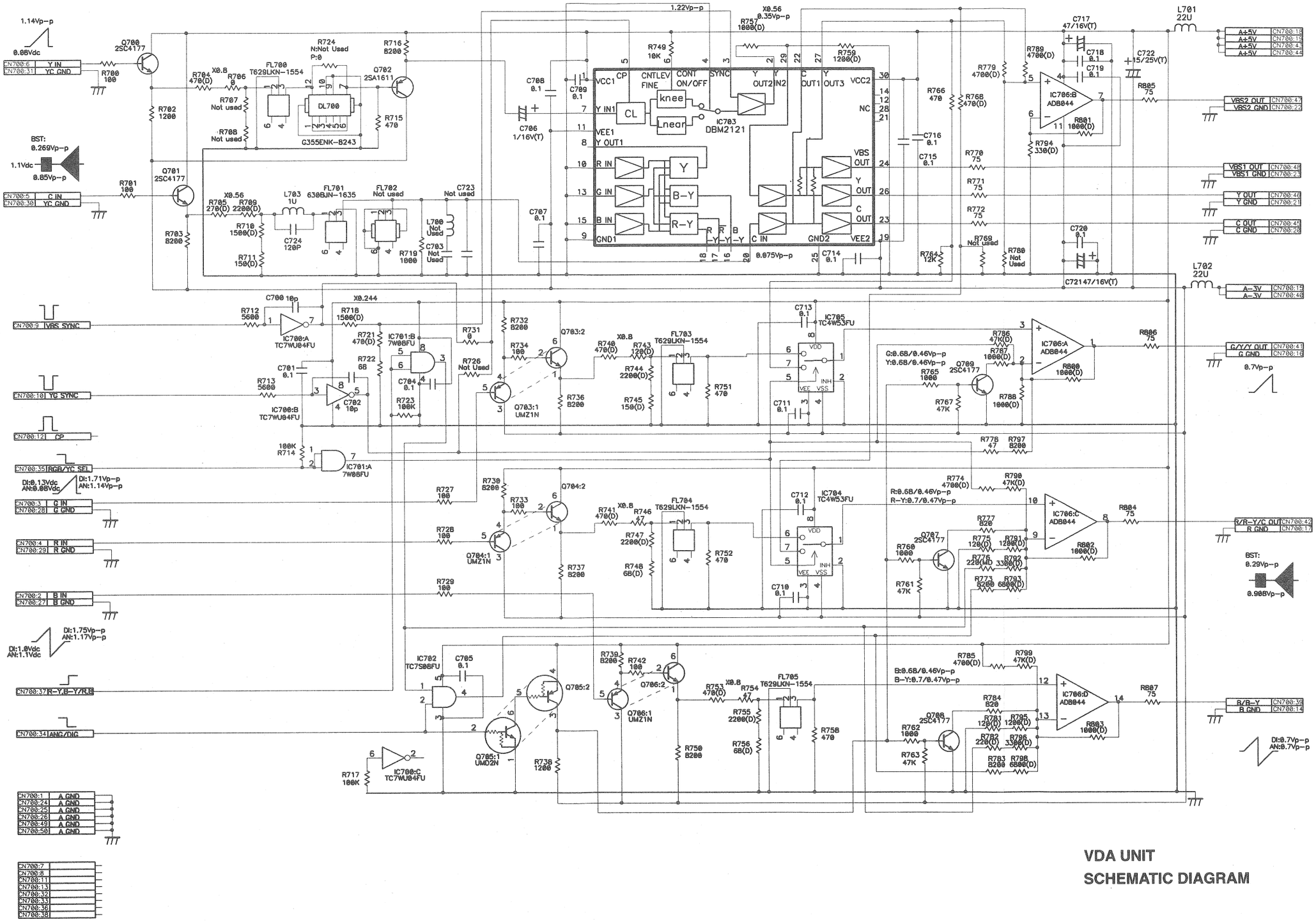


NOT USED:Q206,R226,R284
R294,R296,R298

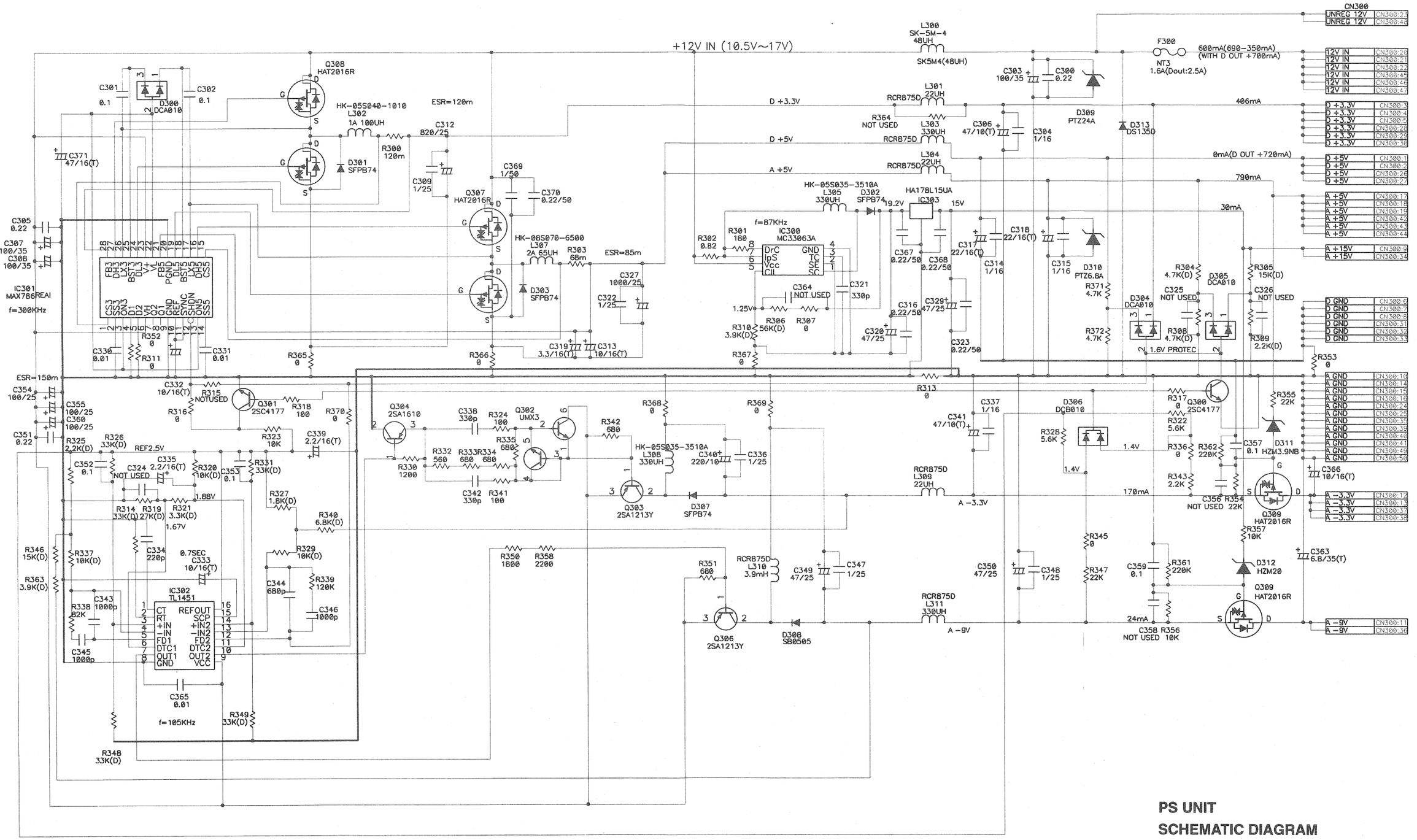
DSP UNIT
SCHEMATIC DIAGRAM (2/3)


IC1
HDL4F23A
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
M65288FP
DSP-SUB UNIT
SCHEMATIC DIAGRAM

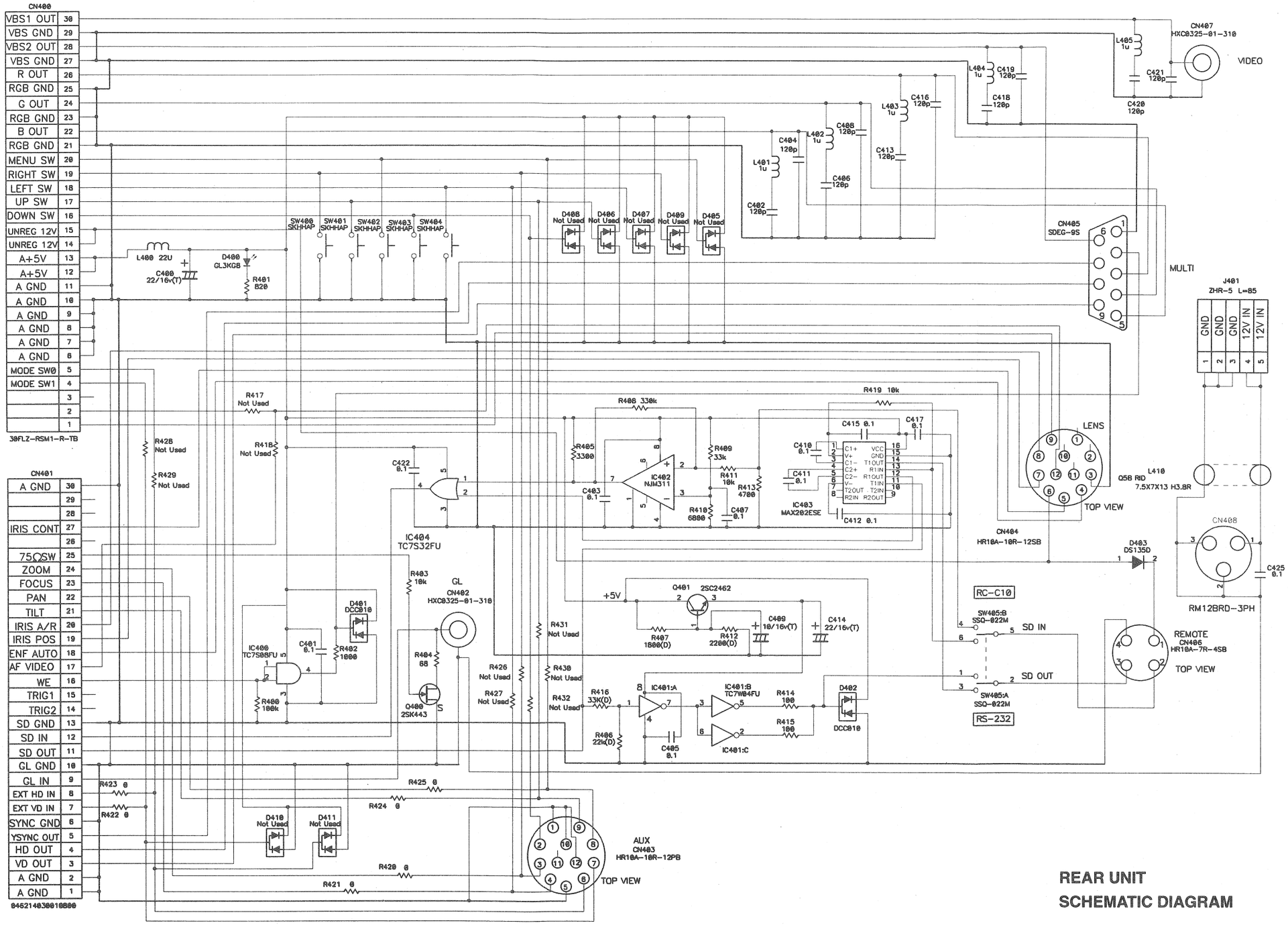

PLL H DC IN
ADJ SW
CN3
32FLZ-SM1-R-TB
PULSE SHIFT
1/2CLOCK
+5V
-3V
A GND
D/A EXP1
Y LEV
C LEV
R LEV2
G LEV2
B LEV2
SC ADJ
D/A EXP2
ZOOM
FOCUS
PAN
TILT
H GL ADJ
LONG SHT SW
ENF AUTO
D/A EXP3
D/A EXP4
RZ1~RZ13 100
MODE SW0
MODE SW1
R142~146 100K
MENU SW
UP SW
DOWN SW
RIGHT SW
LEFT SW
SHT STB
LSDCLK
LSDSTB1
LSDSTB2
LSDSTB3
LSDDATA
SHT CLK
SHT DATA
ANG/DIG
R-YB-Y/RB
RGB/YC SEL
75ΩSW
IRIS A/R
FOD1
FOD2
FOD3
RPSW
GL HD/VD
A/B SW
DSD STB
DSD OUT
DSD CLK
SD OUT
DSD IN
SD IN
EDGE
CHARA
+12V IN
+12V IN
DAMP(+)
DRIVE(−)
DAMP(−)/12V
IRIS POS
NAM
AF VIDEO
IND
SG/CPU UNIT
SCHEMATIC DIAGRAM



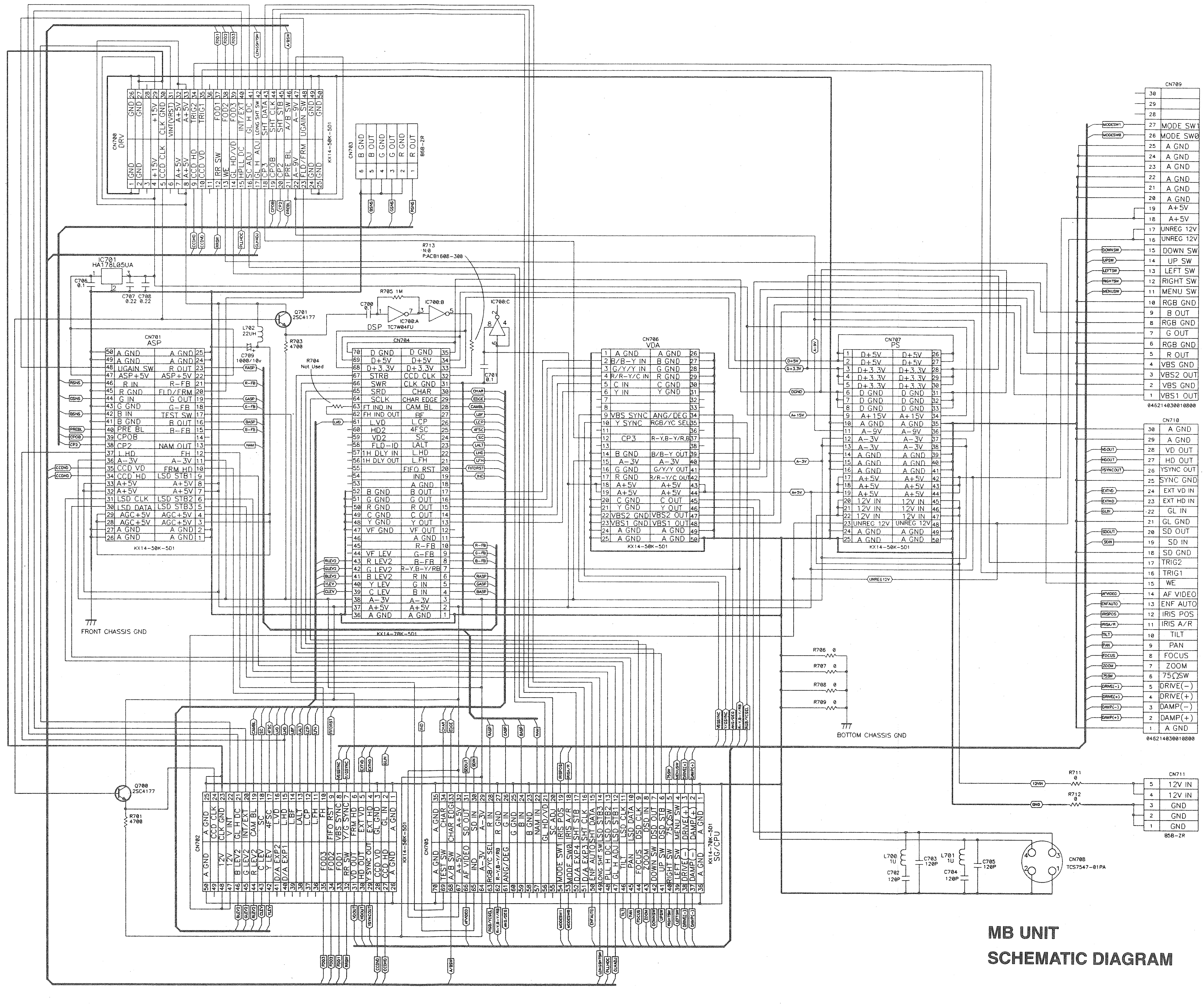
VDA UNIT
SCHEMATIC DIAGRAM



PS UNIT
SCHEMATIC DIAGRAM

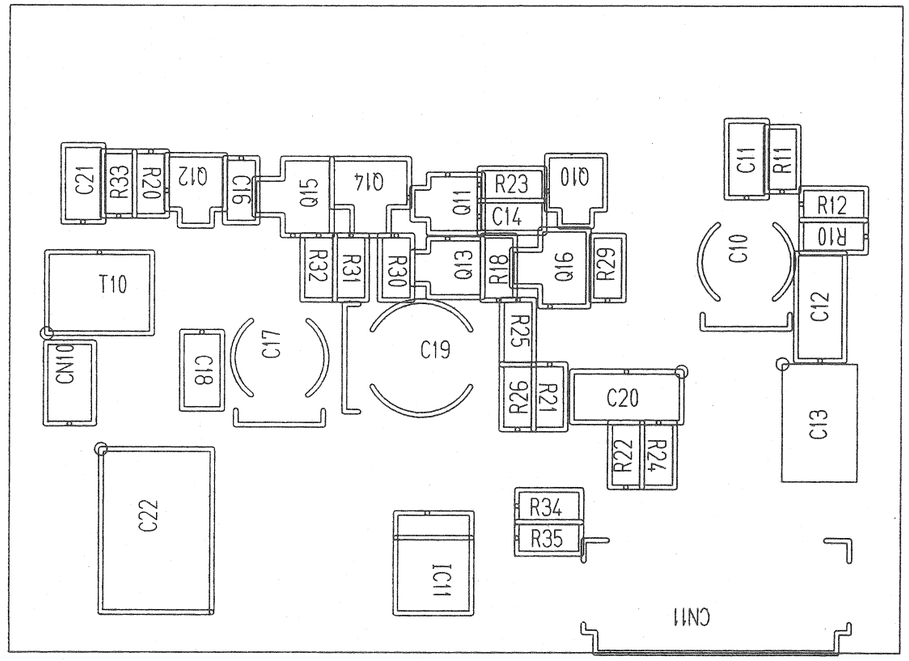


REAR UNIT
SCHEMATIC DIAGRAM

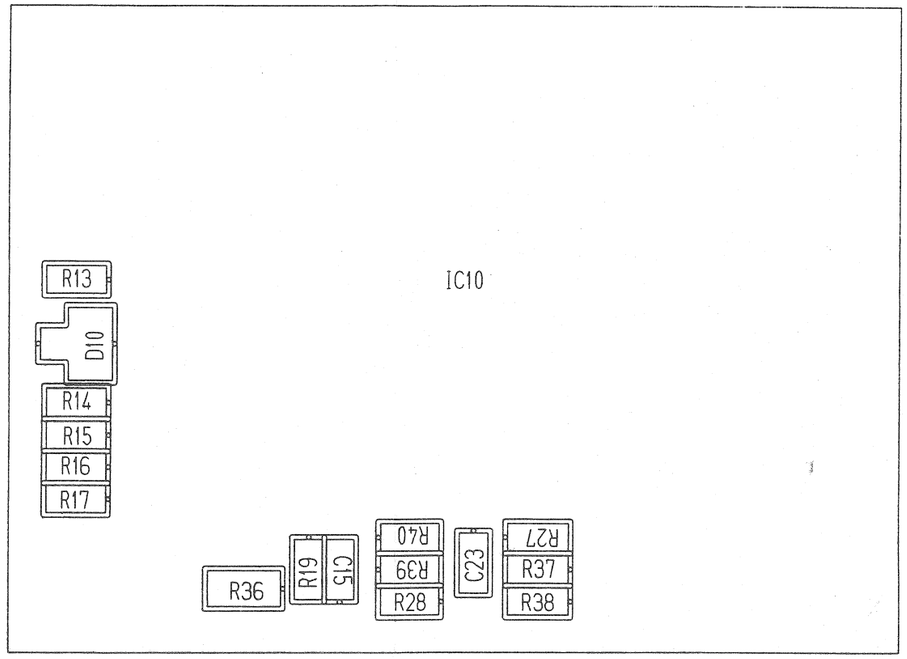


MB UNIT
SCHEMATIC DIAGRAM

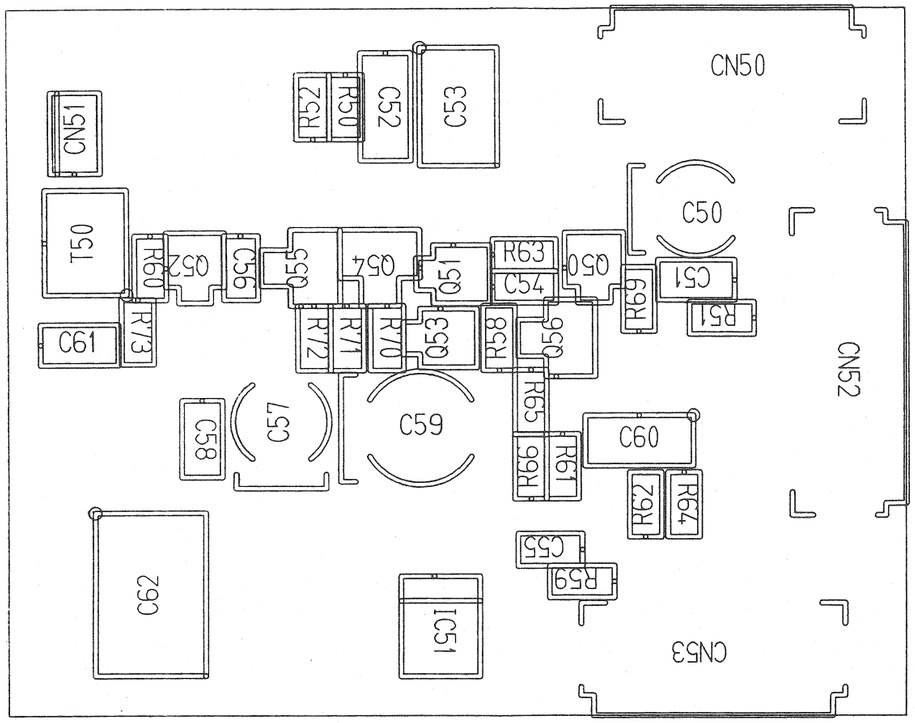
8. ELECTRICAL PARTS ARRANGEMENT



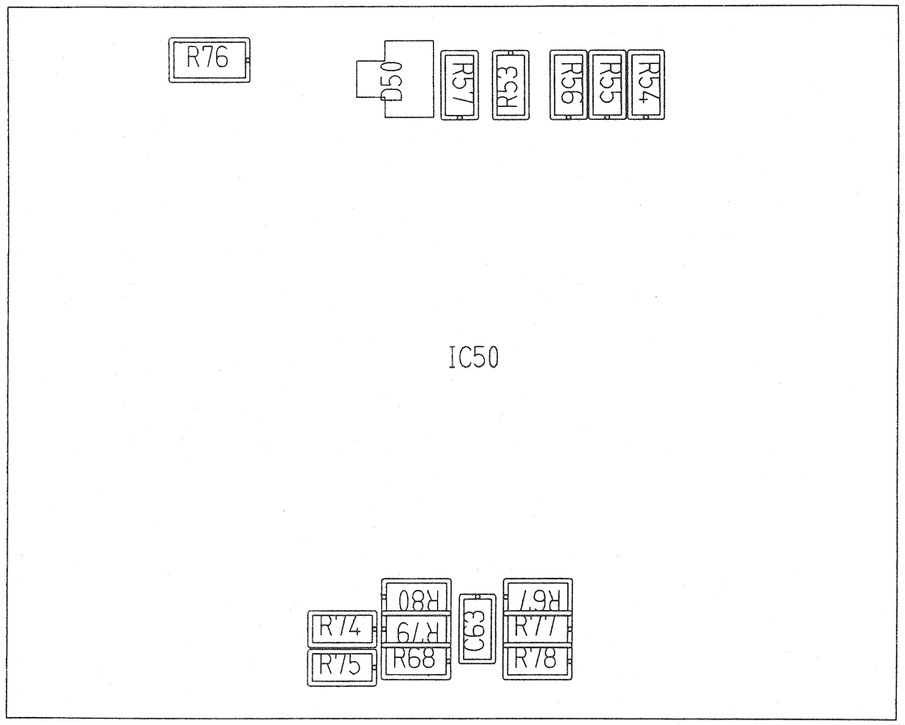
SNS R SIDE (A)



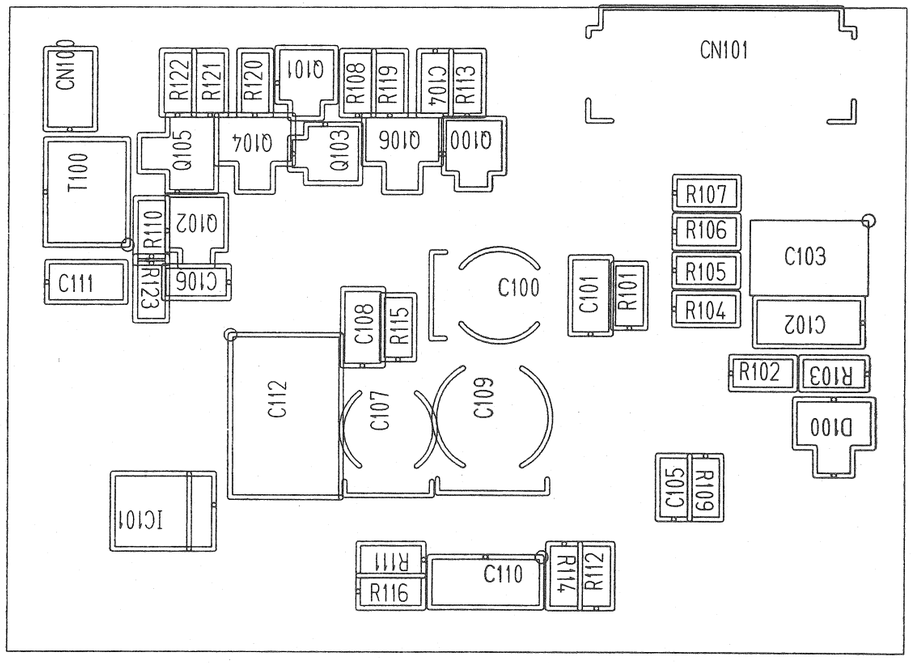
SNS R SIDE (B)



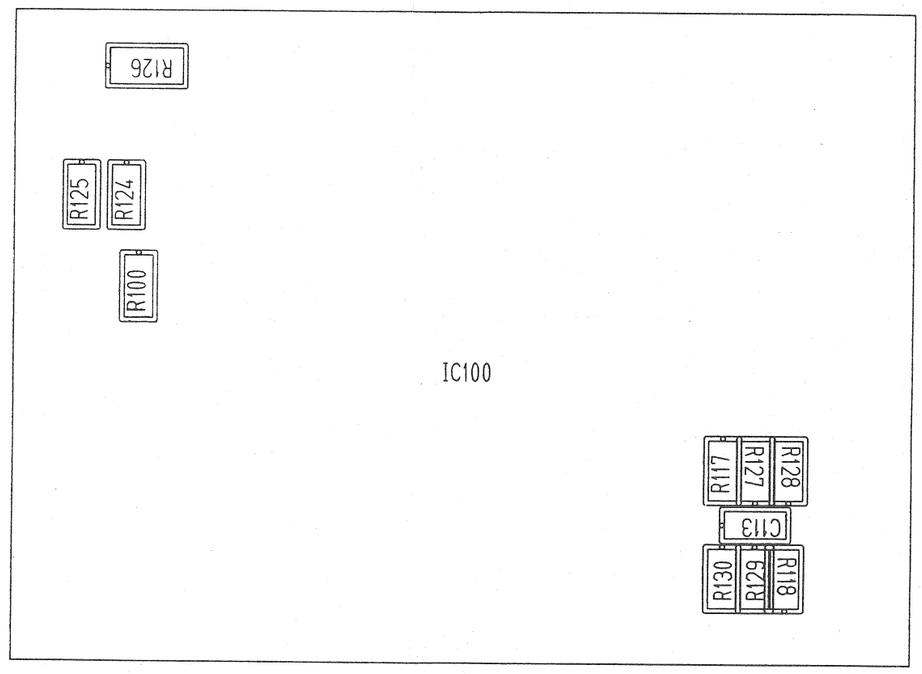
SNS G SIDE (A)



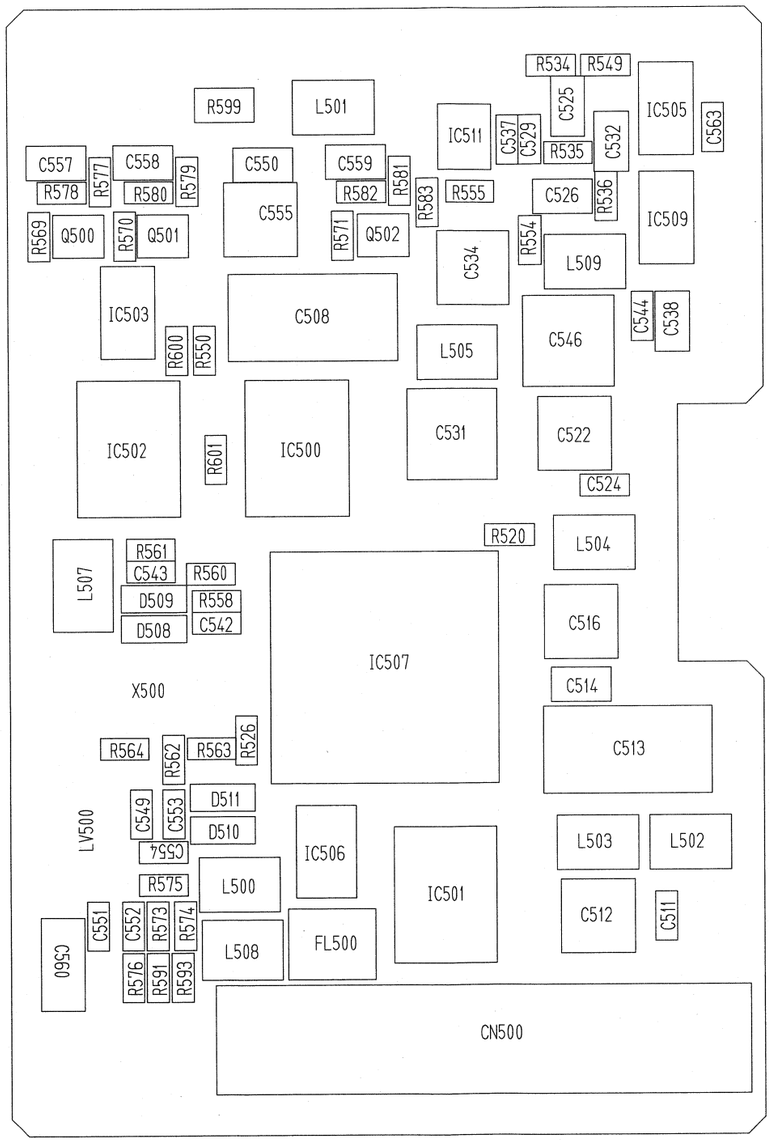
SNS G SIDE (B)



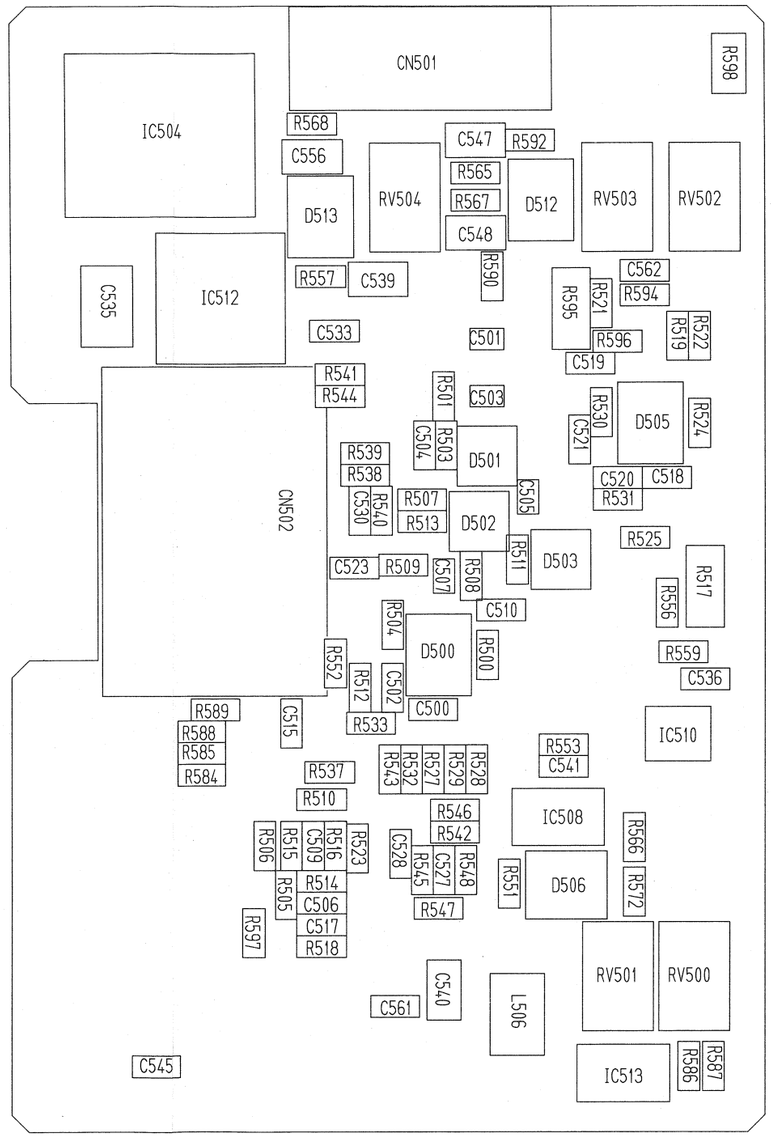
SNS B SIDE (A)



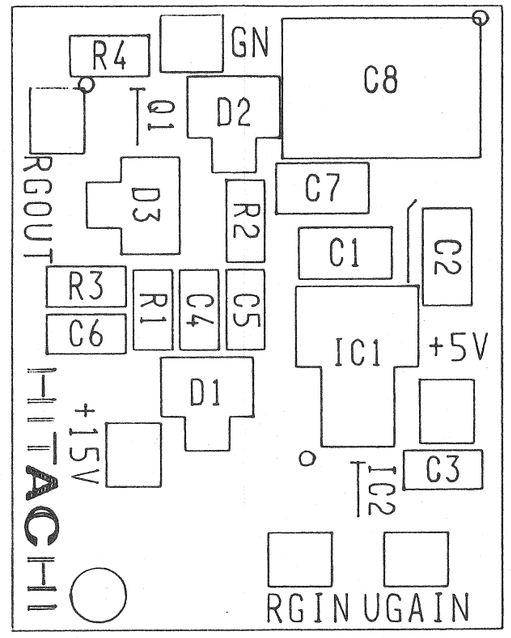
SNS B SIDE (B)



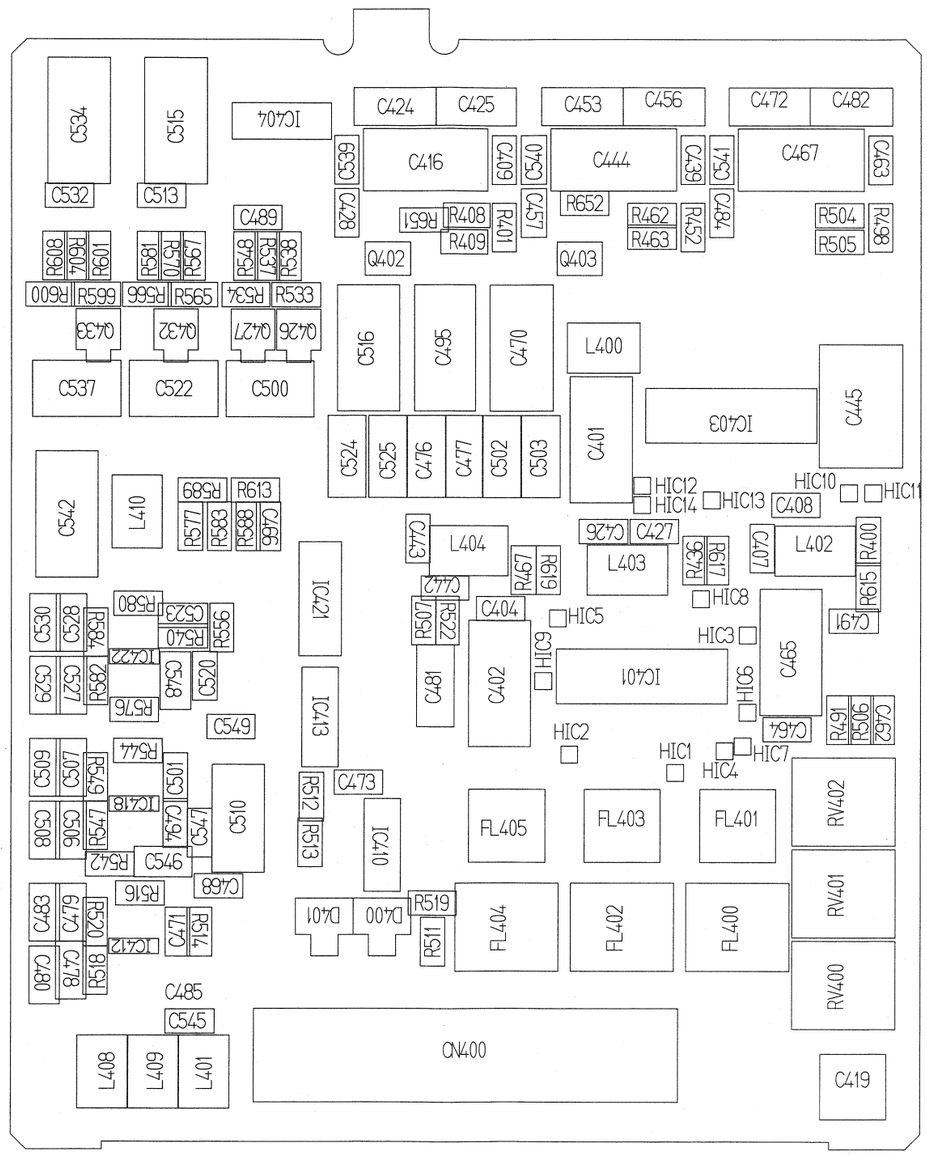
DRV SIDE (A)



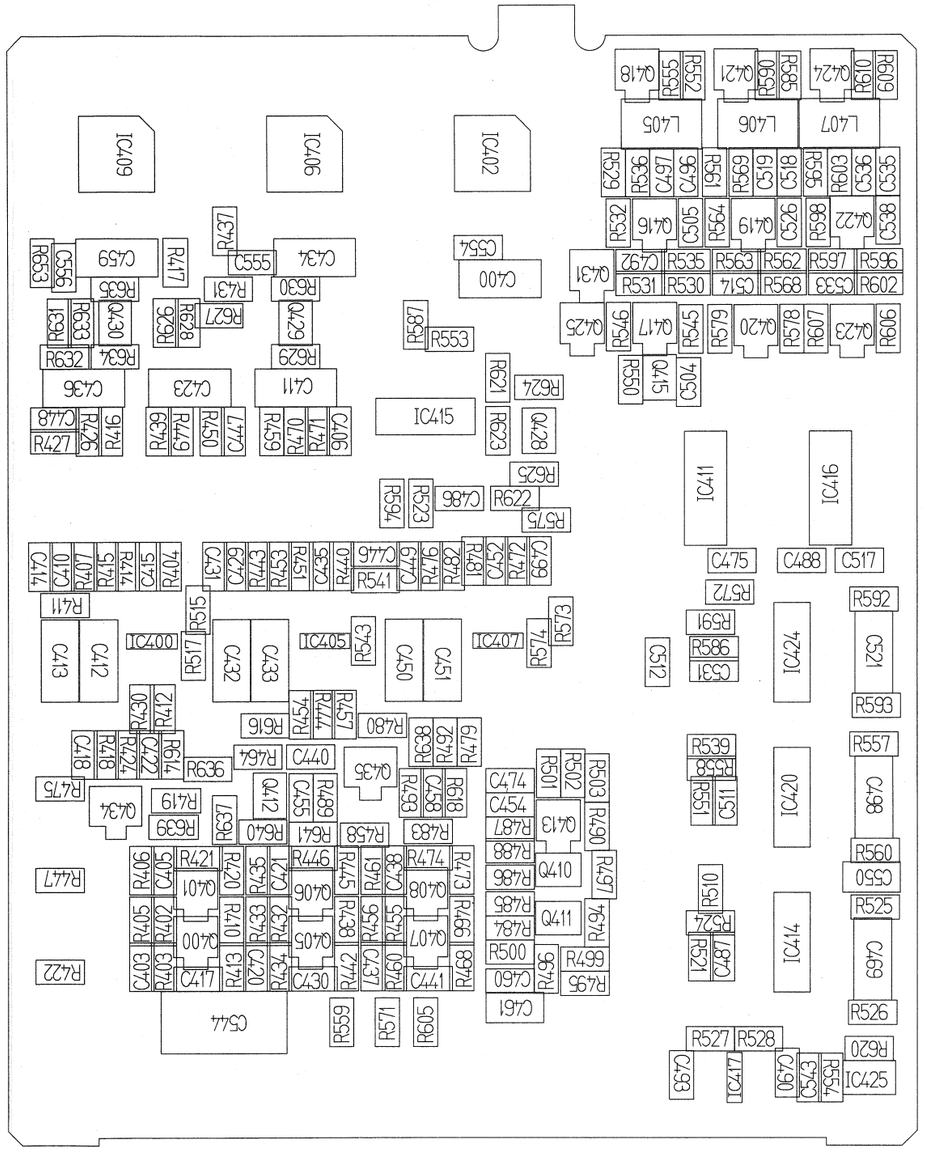
DRV SIDE (B)


R4
GN
C8
Q1
D2
C7
D3
R2
C1
C2
RGOUT
R3
R1
C4
C5
IC1
+5V
C6
D1
+15V
C3
IC2
TACHI
RGIN
UGAIN

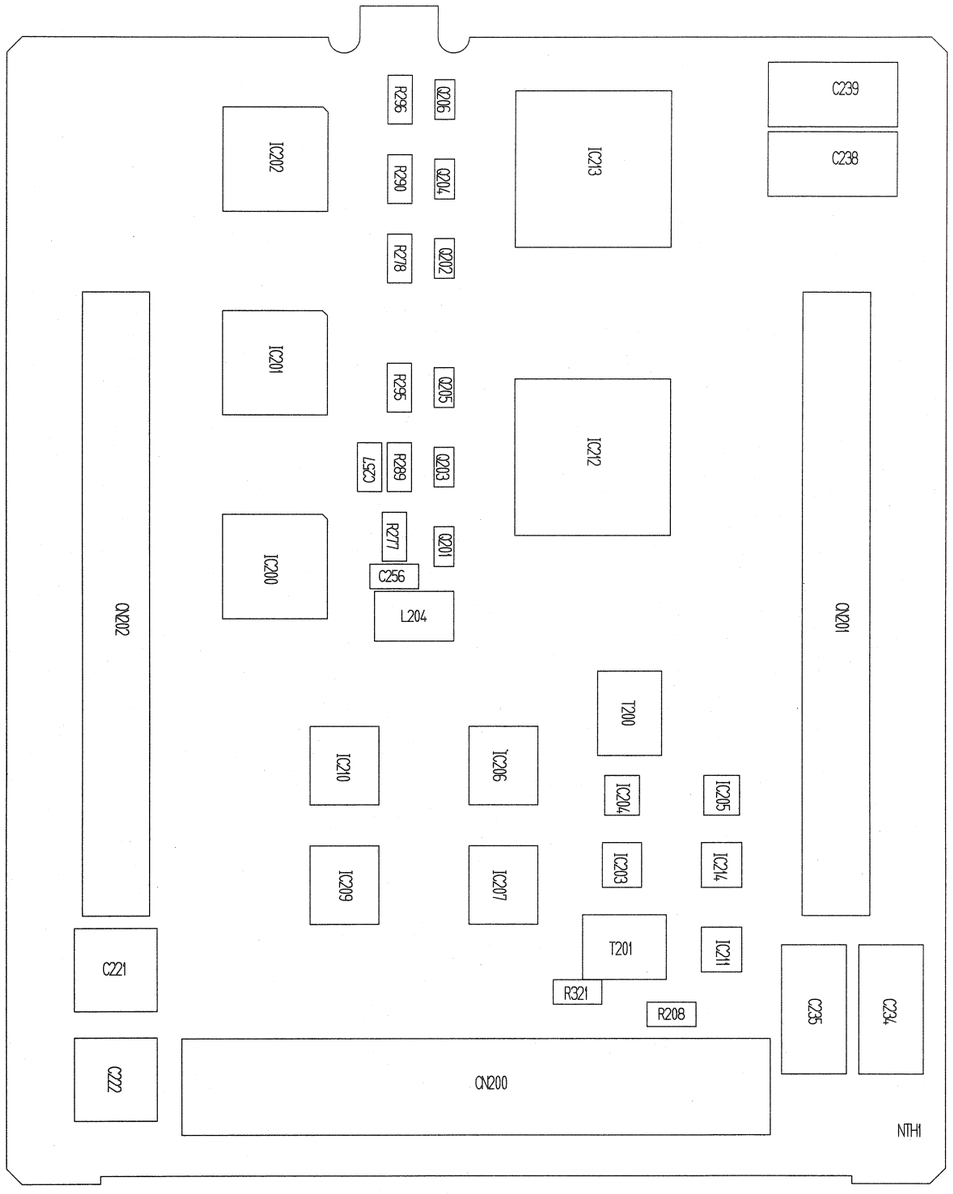
DRV-SUB



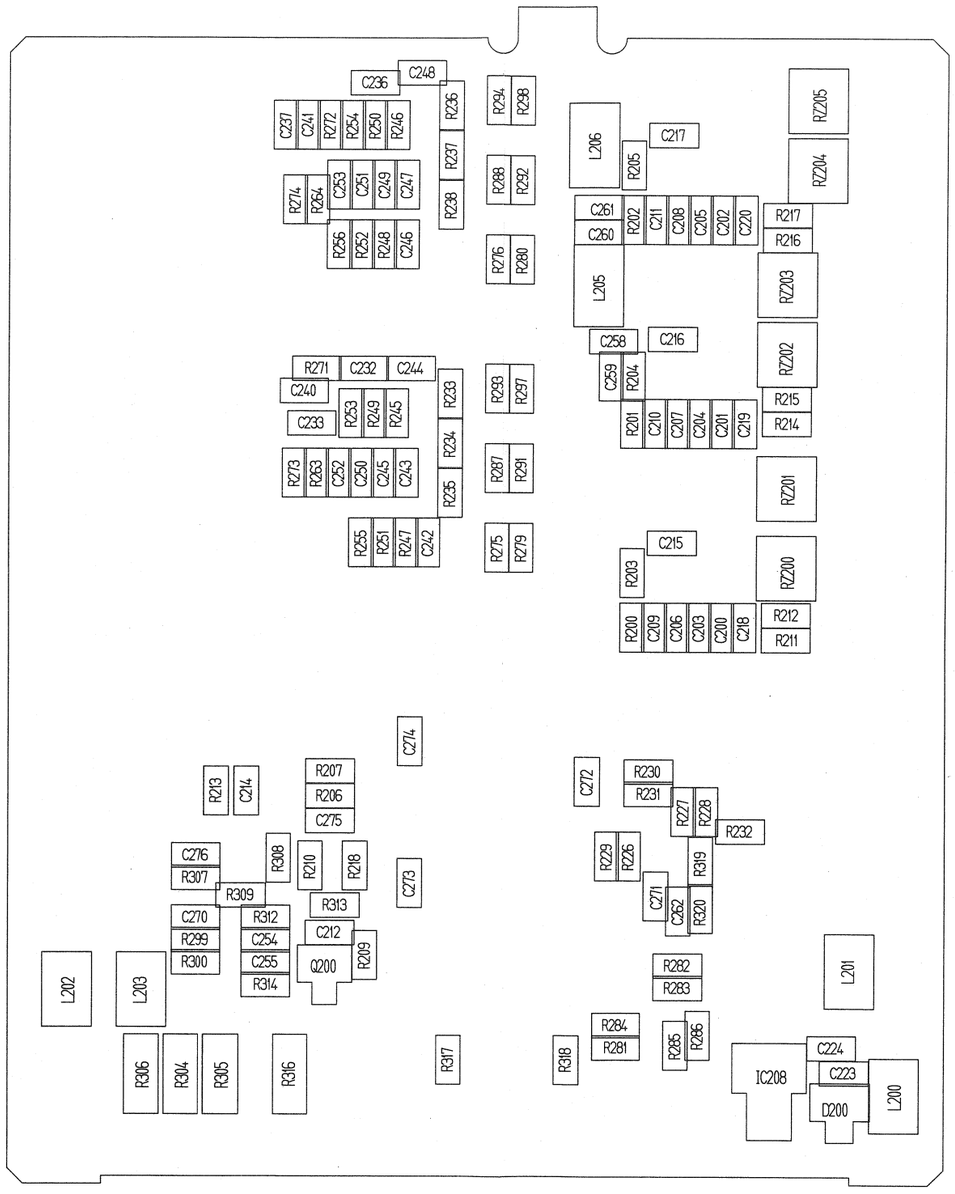
ASP SIDE (A)



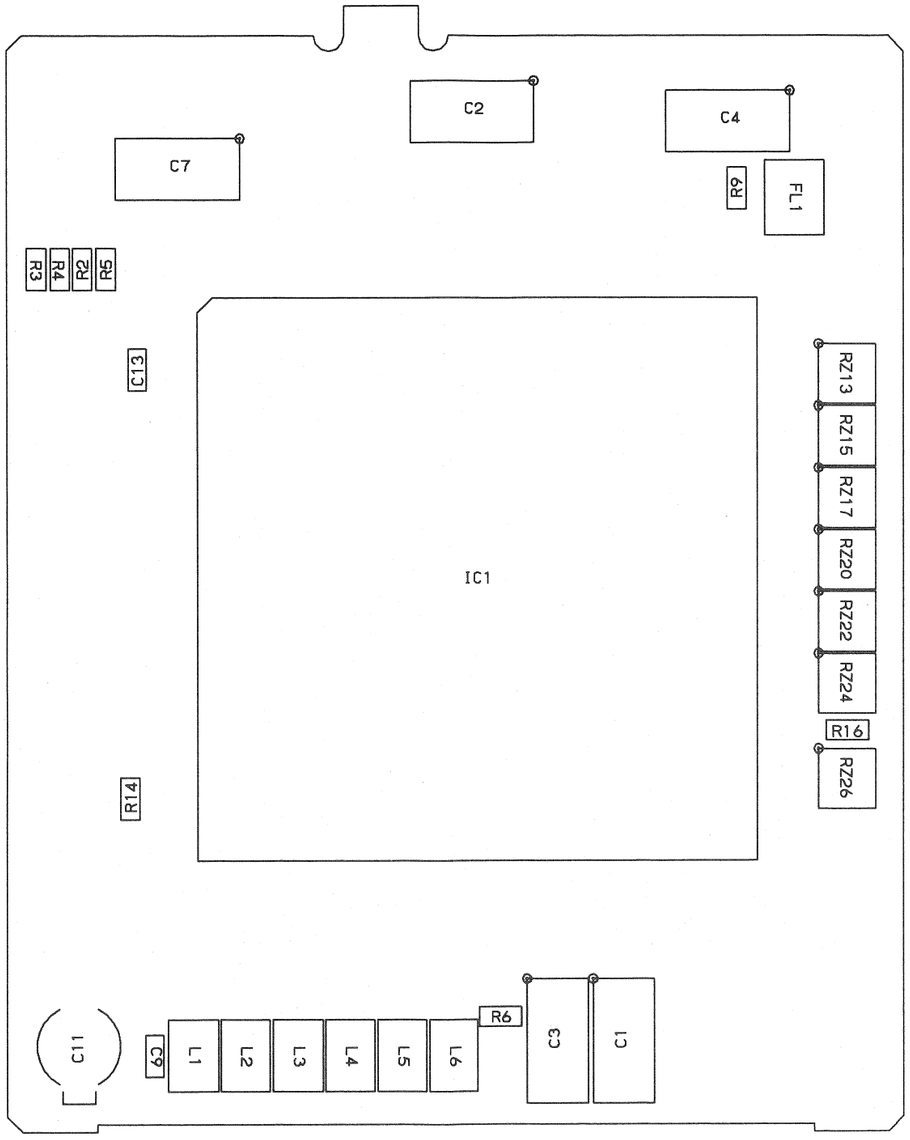
ASP SIDE (B)



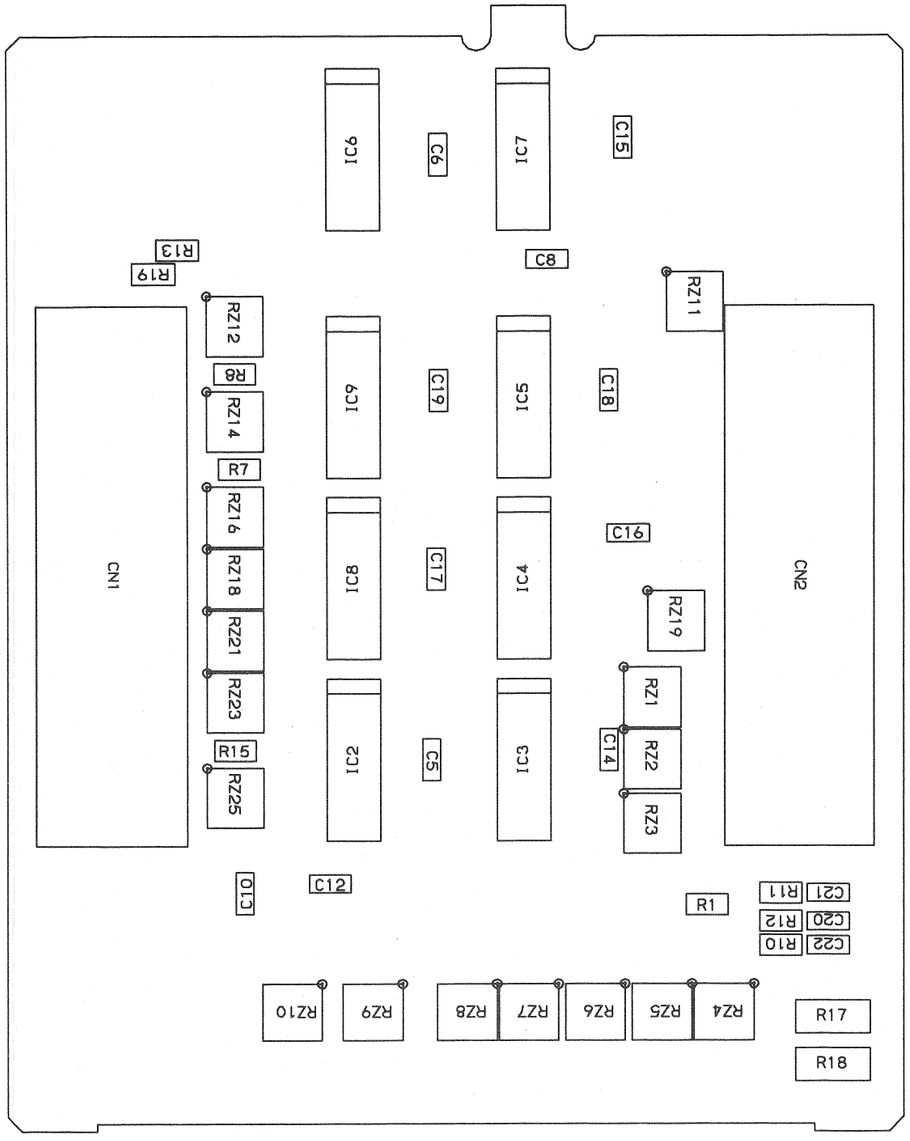
DSP SIDE (A)



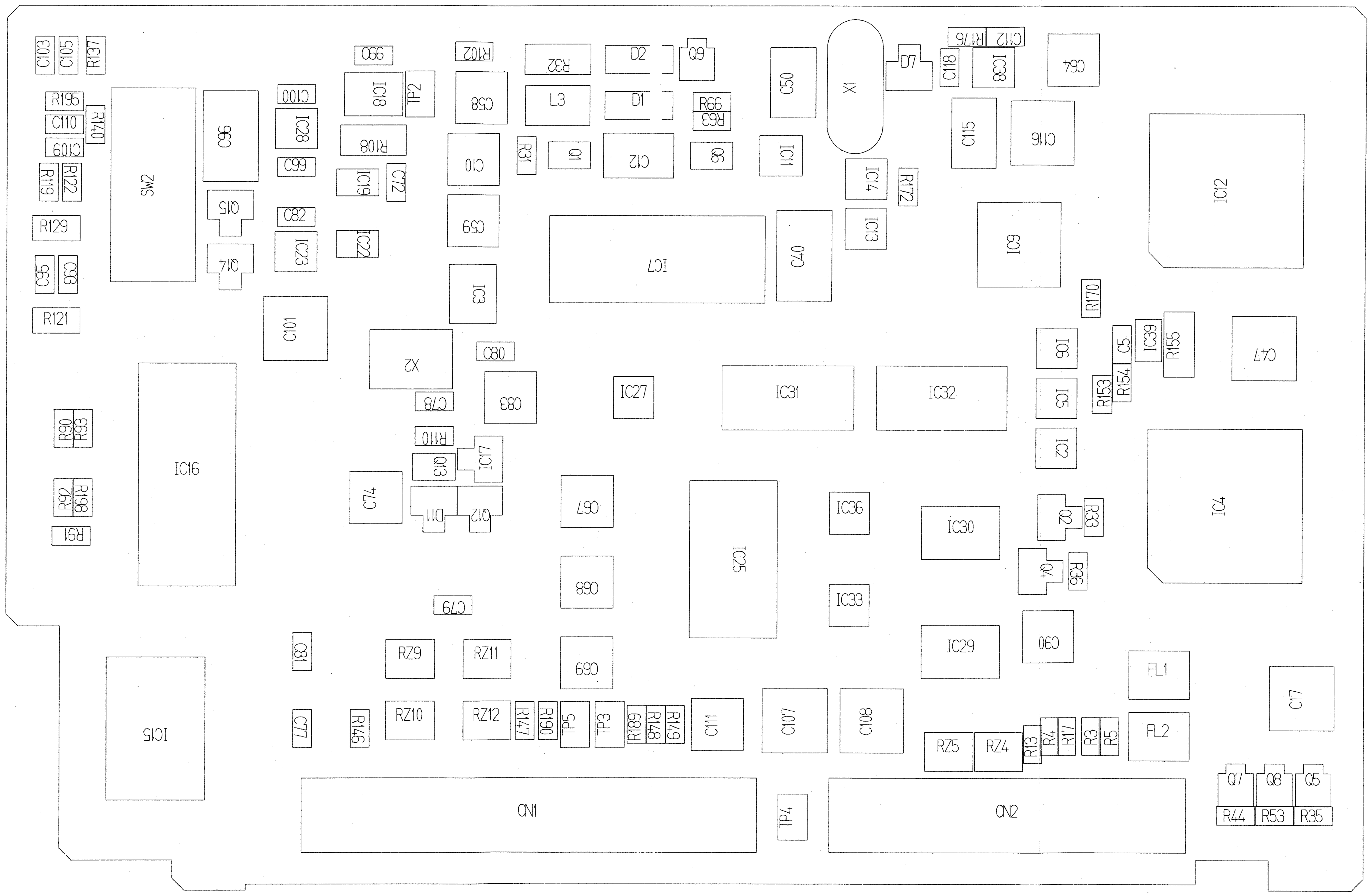
DSP SIDE (B)



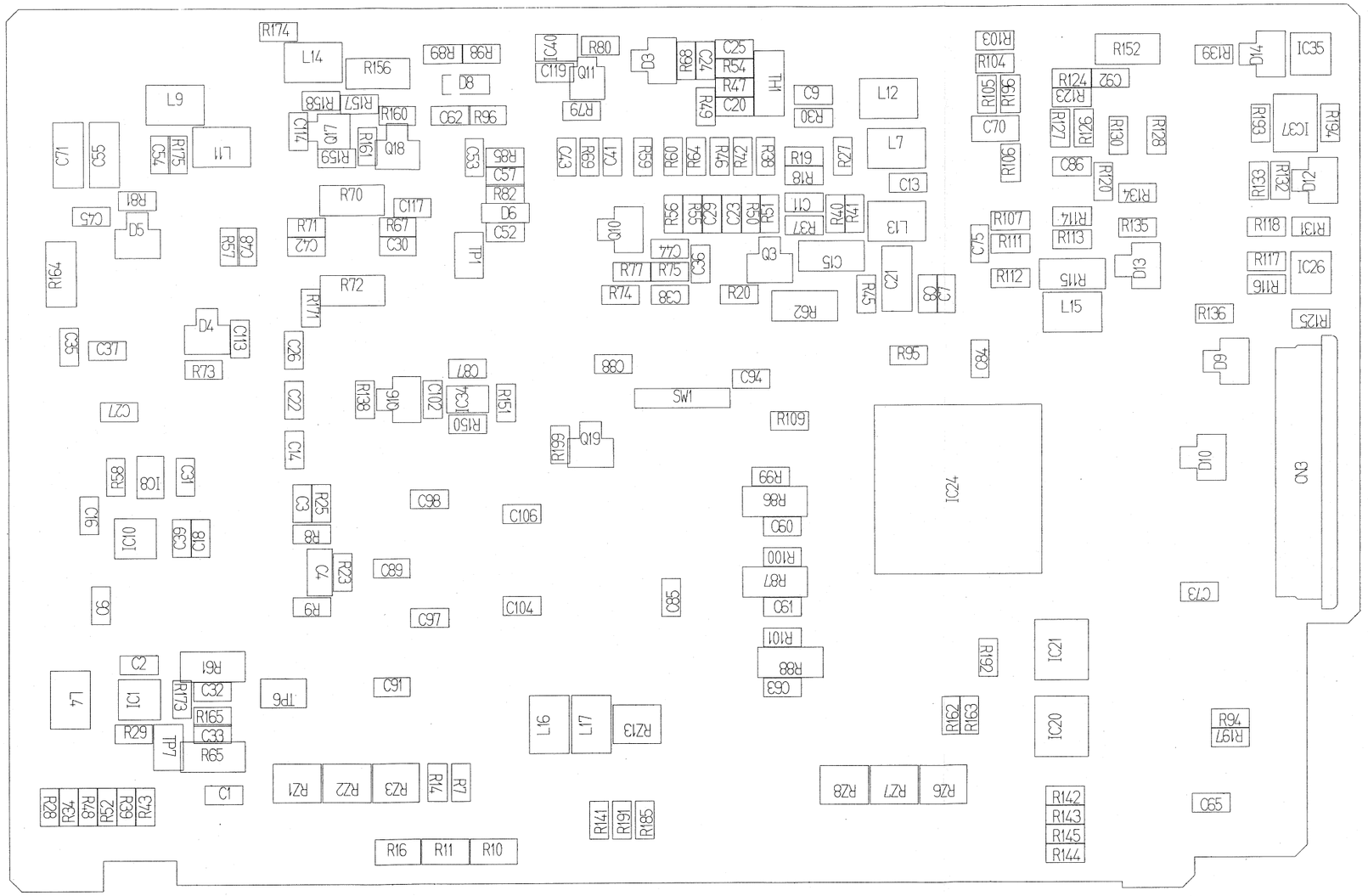
DSP-SUB SIDE (A)



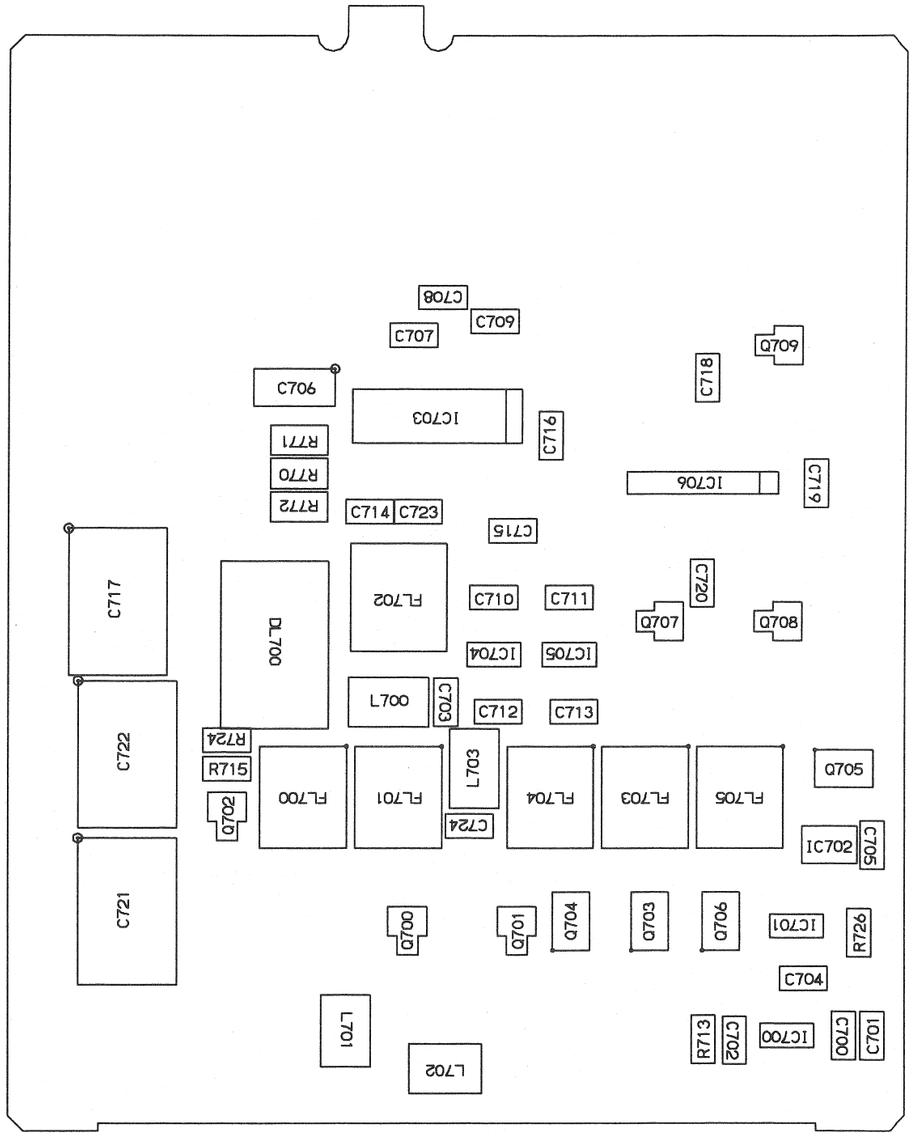
DSP-SUB SIDE (B)


C103
C105
R137
C96
R102
R32
D2
Q9
C50
X1
D7
C118
R176
C112
IC38
C64
R195
C110
C109
R140
R119
R122
SW2
C95
C100
IC28
IC18
TP2
C58
L3
D1
R66
R63
C115
C116
IC12
R108
C99
IC19
C72
C10
R31
Q1
C12
Q6
IC11
IC14
R172
R129
Q15
C82
IC22
C59
IC7
C40
IC13
IC9
C93
Q14
IC23
IC3
R121
C101
X2
C80
R170
IC6
C5
IC39
R155
C47
IC27
IC31
IC32
R153
R154
IC5
C78
C83
R90
R93
IC16
R110
Q13
IC17
IC2
C74
D11
Q12
C67
IC36
IC30
Q2
R33
IC1
R92
R198
R91
IC25
Q4
R36
C68
IC33
C79
IC29
C90
C81
RZ9
RZ11
C69
FL1
C17
IC15
C77
R146
RZ10
RZ12
R147
R190
TP5
TP3
R189
R148
R149
C111
C107
C108
RZ5
RZ4
R13
R4
R17
R3
R5
FL2
Q7
Q8
Q5
CN1
TP4
CN2
R44
R53
R35

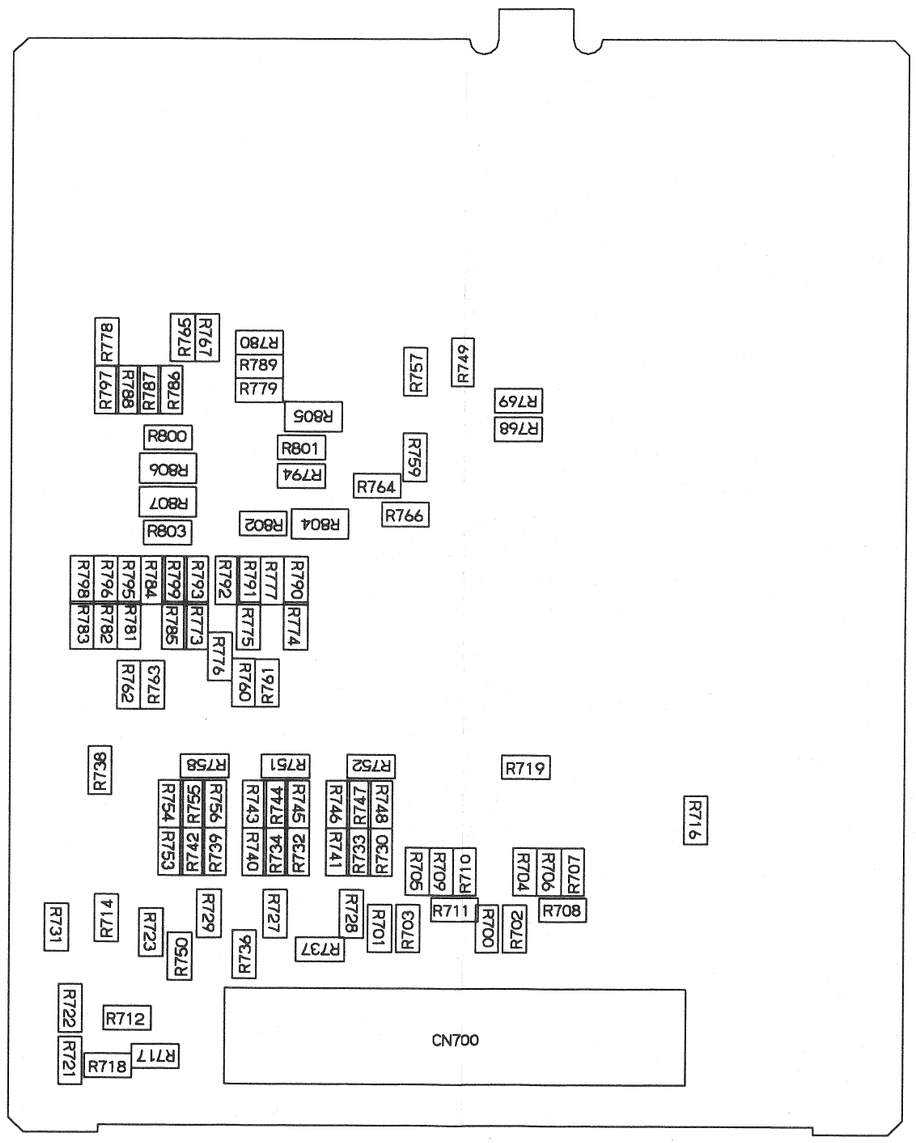
SG/CPU SIDE (A)


R174
L14
R156
L9
L11
C71
C55
C54
R175
R81
C75
D5
R57
C48
R164
C35
C37
D4
C113
R73
C27
R58
IC8
C31
C6
IC10
C39
C18
C9
C2
R61
L4
IC1
C32
R173
R165
R29
C33
TP7
R65
C1
R28
R34
R49
R52
R53
R43
R160
R161
Q18
C14
Q17
R159
R157
R158
R70
C117
R71
C42
R67
C30
R72
R77
C26
C22
C4
R25
C3
R8
C7
R23
R9
C98
C97
C102
C34
R150
R151
Q16
R138
C87
C40
C119
Q11
R79
R80
D8
C52
R96
R98
R89
C33
C57
R85
R82
D6
C52
TP1
C43
C41
R59
R60
R64
R66
R42
R38
R19
R18
R27
C13
L12
L7
C9
R30
C10
R56
R55
C29
C23
R50
R51
C11
R37
R40
R41
L13
C44
C36
R75
C38
R74
Q3
C15
R62
R20
C21
C8
C7
R25
C95
C94
SW1
R109
C88
R199
Q19
R99
R86
C90
R100
R87
C91
R101
R88
C63
C106
C104
C85
IC24
R103
R104
R105
R196
C70
R106
R107
R111
R112
C75
R152
C92
R124
R123
R127
R126
R130
R128
C86
R120
R134
R114
R113
R135
R115
L15
C96
R136
D9
D10
R139
D14
IC35
IC37
R193
R194
R133
R132
D12
R118
R131
R117
R116
IC26
R125
CN3
C73
R192
IC21
IC20
R162
R163
R94
R197
R142
R143
R145
R144
C90
RZ8
RZ7
RZ6
RZ1
RZ2
RZ3
R14
R7
RZ13
L16
L17
R141
R191
R185
R16
R11
R10

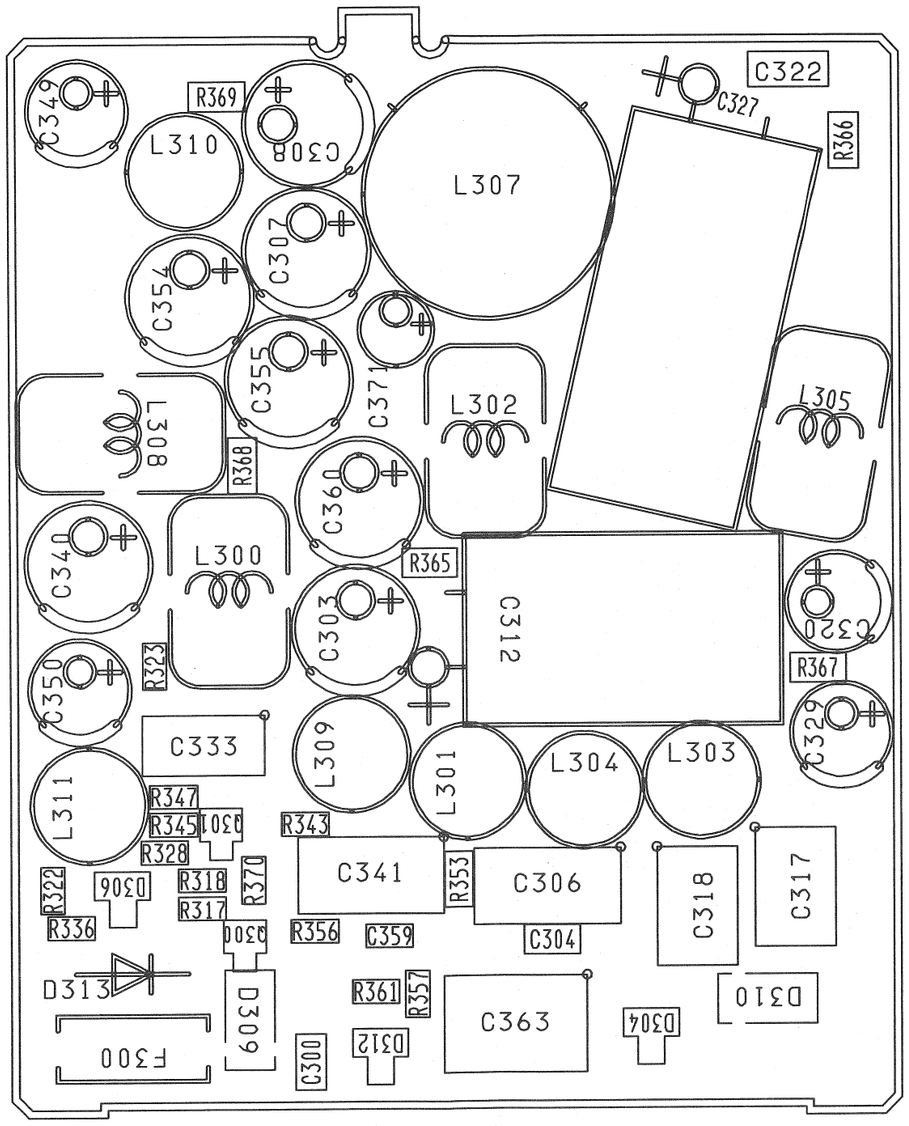
SG/CPU SIDE (B)



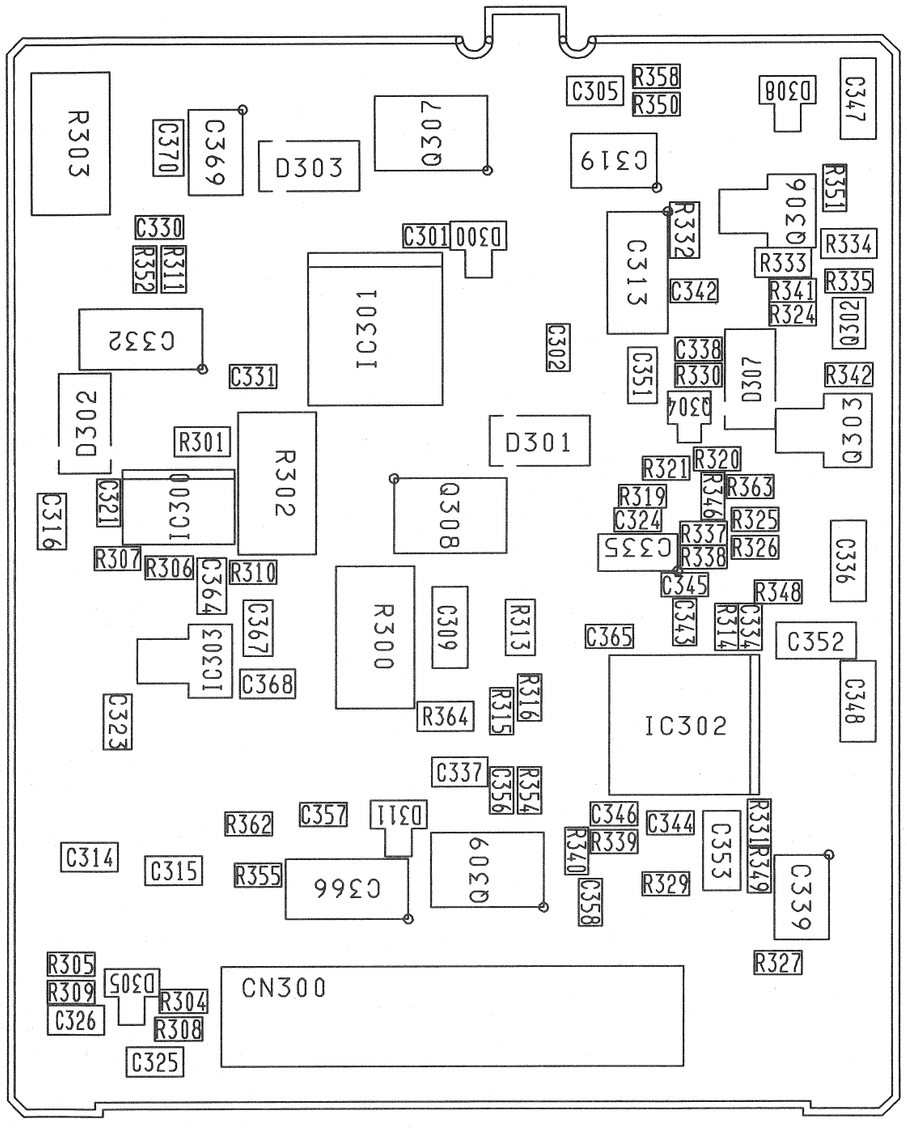
VDA SIDE (A)



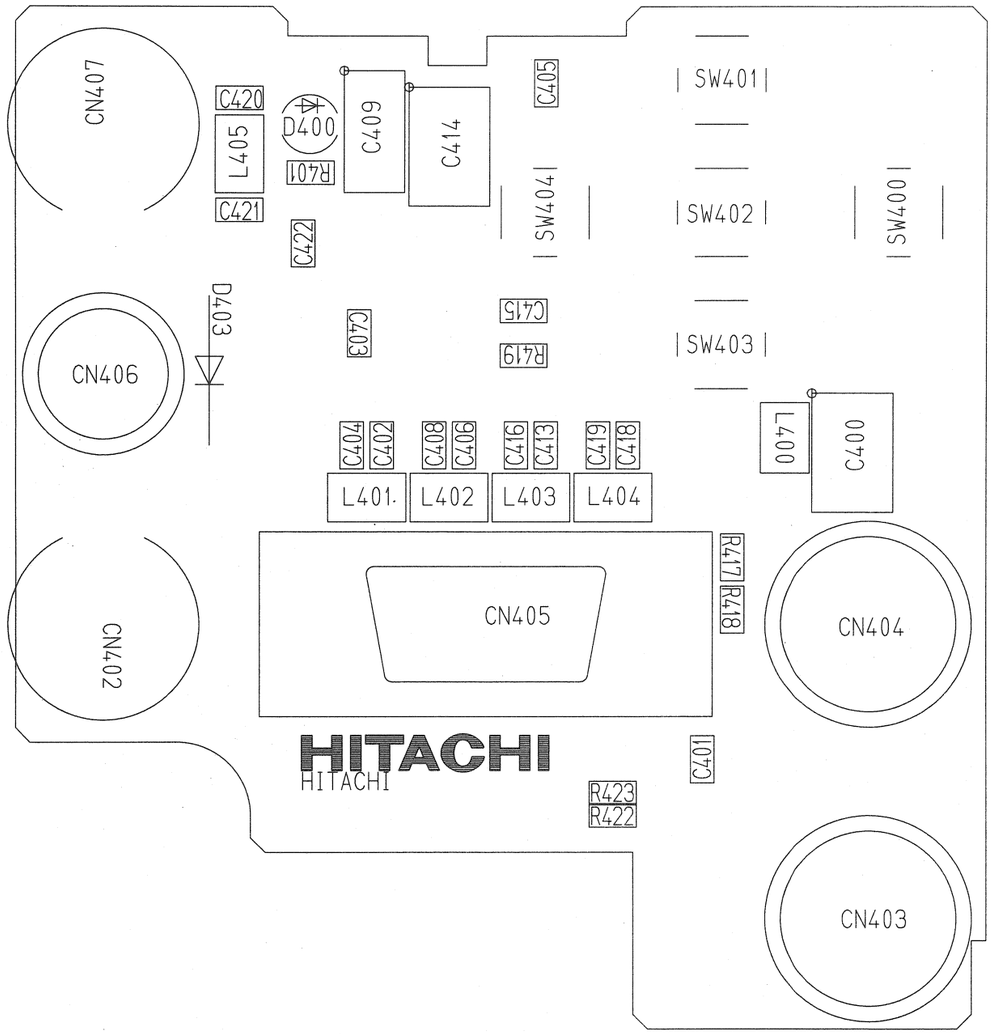
VDA SIDE (B)



PS SIDE (A)



PS SIDE (B)



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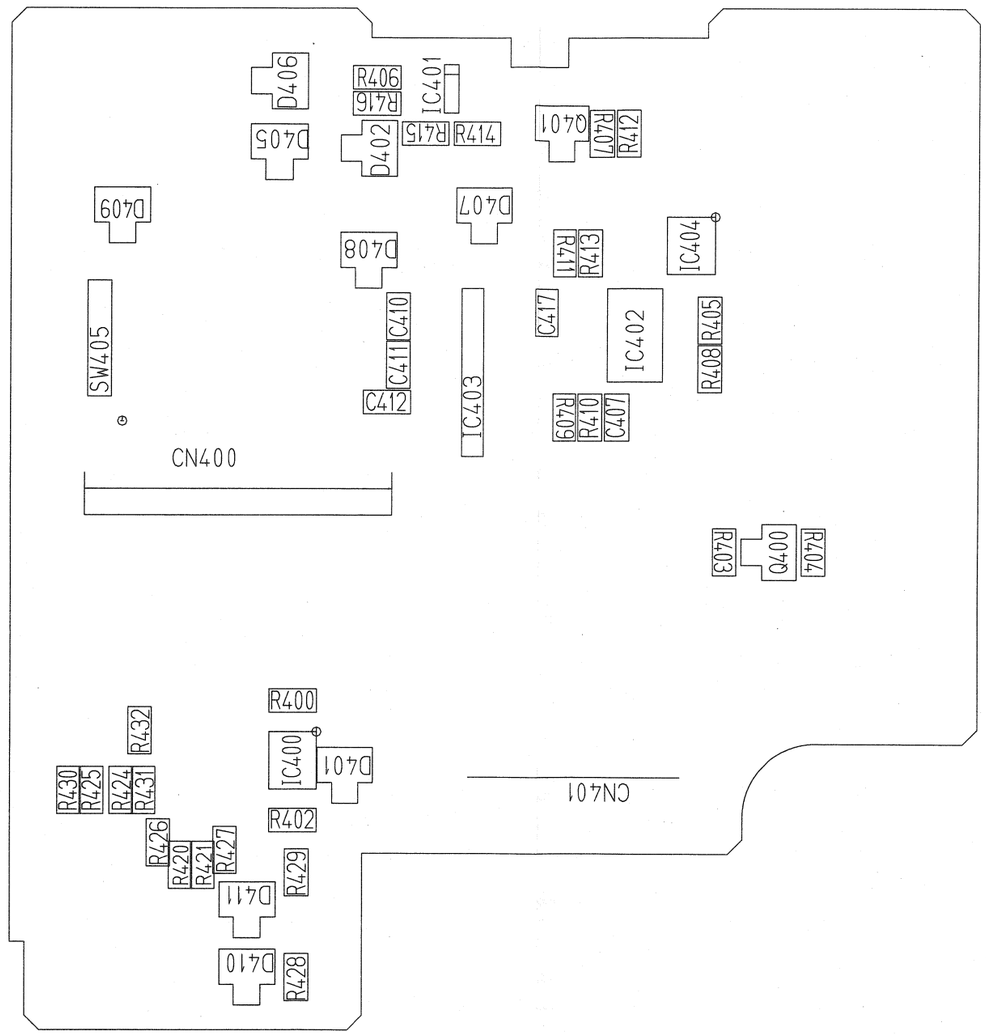
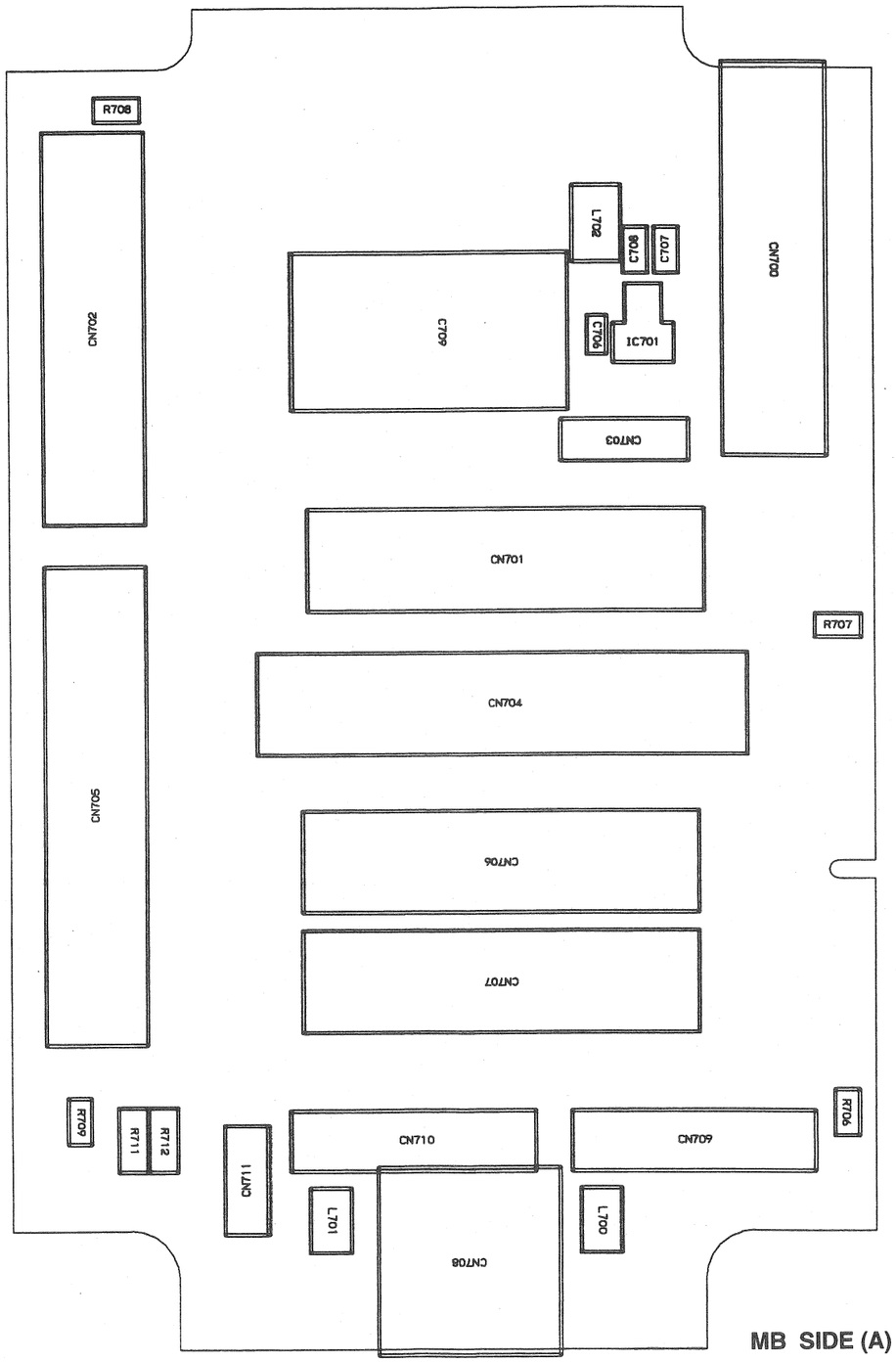
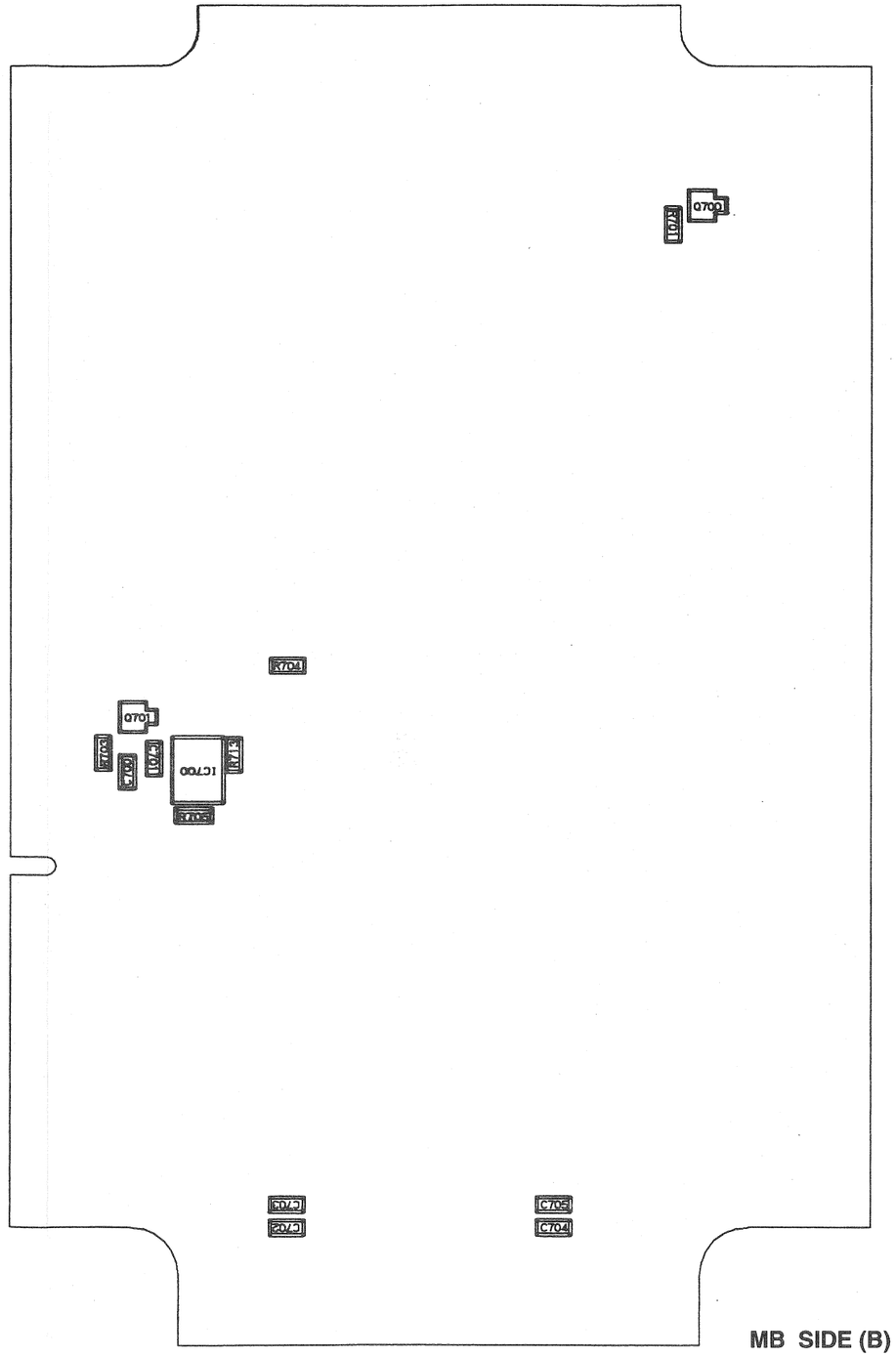


REAR SIDE (B)

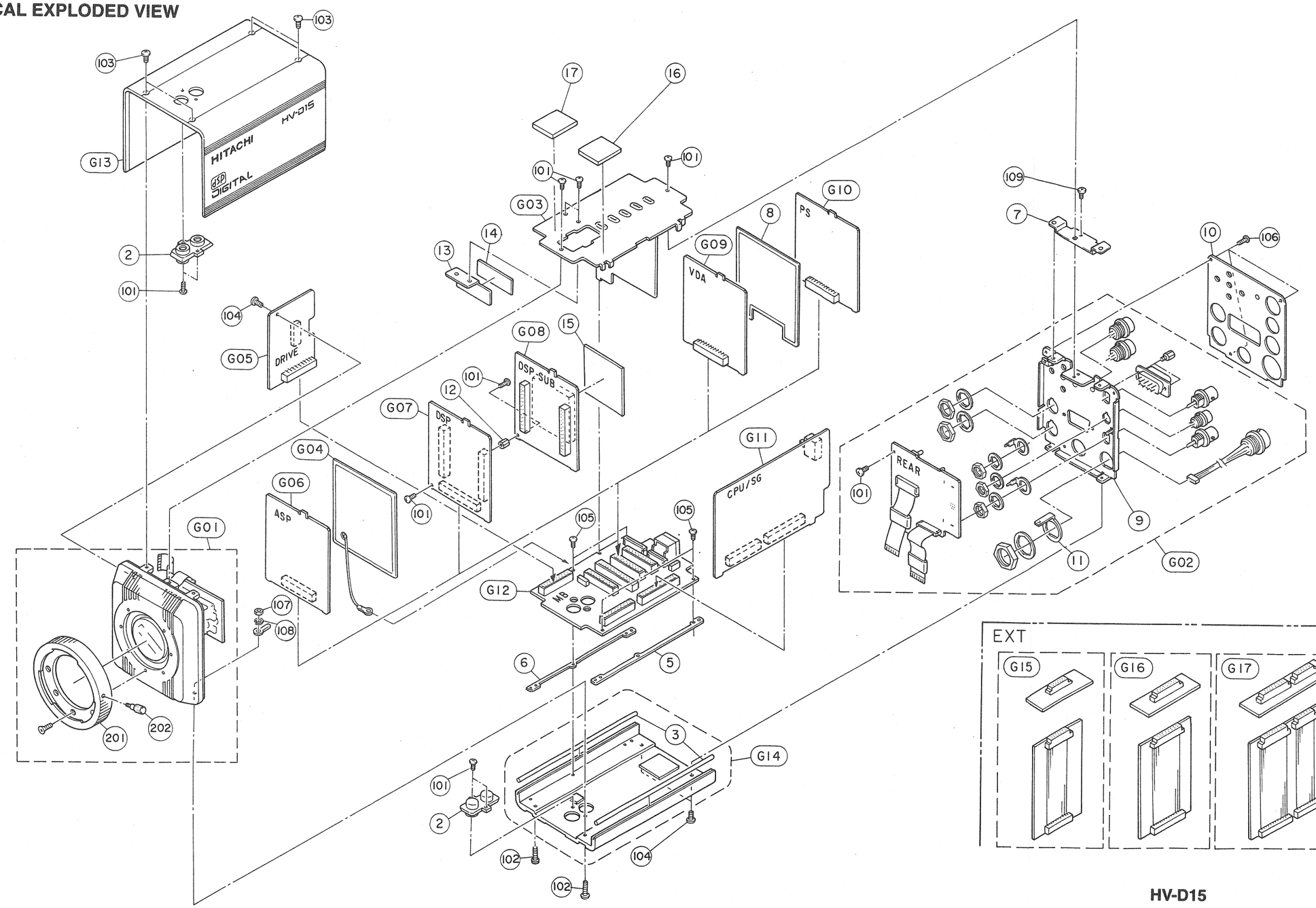


MB SIDE (A)



MB SIDE (B)

10. MECHANICAL EXPLODED VIEW



HV-D15
EXPLODED VIEW

13. IC's INTERNAL VIEW

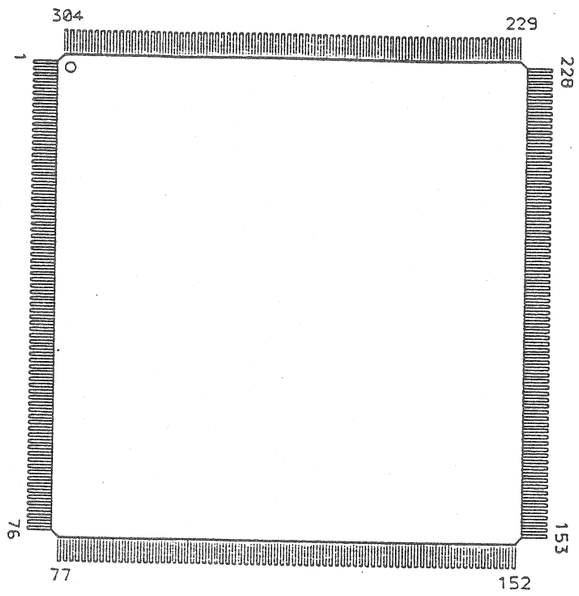
1	R1HMIN 00-P	CCD CLK	I
2	R1HMIN 01-P	CCD CLK	I
3	**TE**		
4	R1HMIN 02-P	CCD CLK	I
5	R1HMIN 03-P	CCD CLK	I
6	R1HMIN 04-P	CCD CLK	I
7	R1HMIN 05-P	CCD CLK	I
8	R1HMIN 06-P	CCD CLK	I
9	**VSS2**		
10	R1HMIN 07-P	CCD CLK	I
11	ROHOUT 00-P	CCD CLK	O
12	ROHOUT 01-P	CCD CLK	O
13	ROHOUT 02-P	CCD CLK	O
14	**VDD2**		
15	ROHOUT 03-P	CCD CLK	O
16	ROHOUT 04-P	CCD CLK	O
17	**VSS1**		
18	ROHOUT 05-P	CCD CLK	O
19	ROHOUT 06-P	CCD CLK	O
20	ROHOUT 07-P	CCD CLK	O
21	ROHOUT 08-P	CCD CLK	O
22	**VSS2**		
23	ROHOUT 09-P	CCD CLK	O
24	ROHOUT 10-P	CCD CLK	O
25	**VDD1**		
26	GOHOUT 00-P	CCD CLK	O
27	GOHOUT 01-P	CCD CLK	O
28	GOHOUT 02-P	CCD CLK	O
29	GOHOUT 03-P	CCD CLK	O
30	GOHOUT 04-P	CCD CLK	O
31	GOHOUT 05-P	CCD CLK	O
32	GOHOUT 06-P	CCD CLK	O
33	**VDD2**		
34	GOHOUT 07-P	CCD CLK	O
35	GOHOUT 08-P	CCD CLK	O
36	GOHOUT 09-P	CCD CLK	O
37	GOHOUT 10-P	CCD CLK	O
38	**VSS2**		
39	BOHOUT 00-P	CCD CLK	O
40	BOHOUT 01-P	CCD CLK	O
41	CPLLIN	CCD CLK	I
42	CPLLEN1-P		I
43	BOHOUT 02-P	CCD CLK	O
44	BOHOUT 03-P	CCD CLK	O
45	CPLLREF-P		O
46	BOHOUT 04-P	CCD CLK	O
47	BOHOUT 05-P	CDD CLK	O
48	BOHOUT 06-P	CCD CLK	O
49	BOHOUT 07-P	CCD CLK	O
50	**VDD2**		
51	BOHOUT 08-P	CCD CLK	O
52	**VDD1**		
53	BOHOUT 09-P	CCD CLK	O
54	BOHOUT 10-P	CCD CLK	O
55	**VSS2**		
56	CAMBL-N		I
57	RESET-P		I
58	BF-P		I
59	CP-P		I
60	Fsc-P		I
61	**VSS1**		
62	4Fsc-P		I
63	LALT-P		I
64	**VDD2**		
65	HD-N		I
66	CHRACTOR-P		I
67	EDGECHAR-P		I
68	**VSS2**		
69	FH-P		I
70	INDOUT-P		O
71	PULLUP-P		I
72	RBLKFB-P		O
73	GBLKFB-P		O
74	**TO**		
75	BBLKFB-P		O
76	VD-N		I

77	SD STB-P	SD CLK	I
78	SD IN-P	SD CLK	I
79	SD OUT-P	SD CLK	O
80	SD CLK-P	SD CLK	I
81	RIN 00-P	CCD CLK	I
82	RIN 01-P	CCD CLK	I
83	RIN 02-P	CCD CLK	I
84	RIN 03-P	CCD CLK	I
85	V		
86	RIN 04-P	CCD CLK	I
87	RIN 05-P	CCD CLK	I
88	RIN 06-P	CCD CLK	I
89	RIN 07-P	CCD CLK	I
90	V		
91	RIN 08-P	CCD CLK	I
92	RIN 09-P	CCD CLK	I
93	V		
94	GIN 00-P	CCD CLK	I
95	GIN 01-P	CCD CLK	I
96	GIN 02-P	CCD CLK	I
97	GIN 03-P	CCD CLK	I
98	V		
99	GIN 04-P	CCD CLK	I
100	GIN 05-P	CCD CLK	I
101	V		
102	GIN 06-P	CCD CLK	I
103	GIN 07-P	CCD CLK	I
104	GIN 08-P	CCD CLK	I
105	GIN 09-P	CCD CLK	I
106	BIN 00-P	CCD CLK	I
107	BIN 01-P	CCD CLK	I
108	BIN 02-P	CCD CLK	I
109	V		
110	BIN 03-P	CCD CLK	I
111	BIN 04-P	CCD CLK	I
112	BIN 05-P	CCD CLK	I
113	BIN 06-P	CCD CLK	I
114	V		
115	BIN 07-P	CCD CLK	I
116	BIN 08-P	CCD CLK	I
117	BIN 09-P	CCD CLK	I
118	EXTIOSW -P	CCD CLK	O
119	REXT 00-P	CCD CLK	I/O
120	REXT 01-P	CCD CLK	I/O
121	REXT 02-P	CCD CLK	I/O
122	REXT 03-P	CCD CLK	I/O
123	REXT 04-P	CCD CLK	I/O
124	REXT 05-P	CCD CLK	I/O
125	REXT 06-P	CCD CLK	I/O
126	V		
127	REXT 07-P	CCD CLK	I/O
128	V		
129	REXT 08-P	CCD CLK	I/O
130	REXT 09-P	CCD CLK	I/O
131	V		
132	GEXT 00-P	CCD CLK	I/O
133	GEXT 01-P	CCD CLK	I/O
134	GEXT 02-P	CCD CLK	I/O
135	GEXT 03-P	CCD CLK	I/O
136	GEXT 04-P	CCD CLK	I/O
137	V		
138	GEXT 05-P	CCD CLK	I/O
139	GEXT 06-P	CCD CLK	I/O
140	V		
141	GEXT 07-P	CCD CLK	I/O
142	GEXT 08-P	CCD CLK	I/O
143	GEXT 09-P	CCD CLK	I/O
144	V		
145	BEXT 00-P	CCD CLK	I/O
146	BEXT 01-P	CCD CLK	I/O
147	BEXT 02-P	CCD CLK	I/O
148	BEXT 03-P	CCD CLK	I/O
149	BEXT 04-P	CCD CLK	I/O
150	BEXT 05-P	CCD CLK	I/O
151	BEXT 06-P	CCD CLK	I/O
152	BEXT 07-P	CCD CLK	I/O

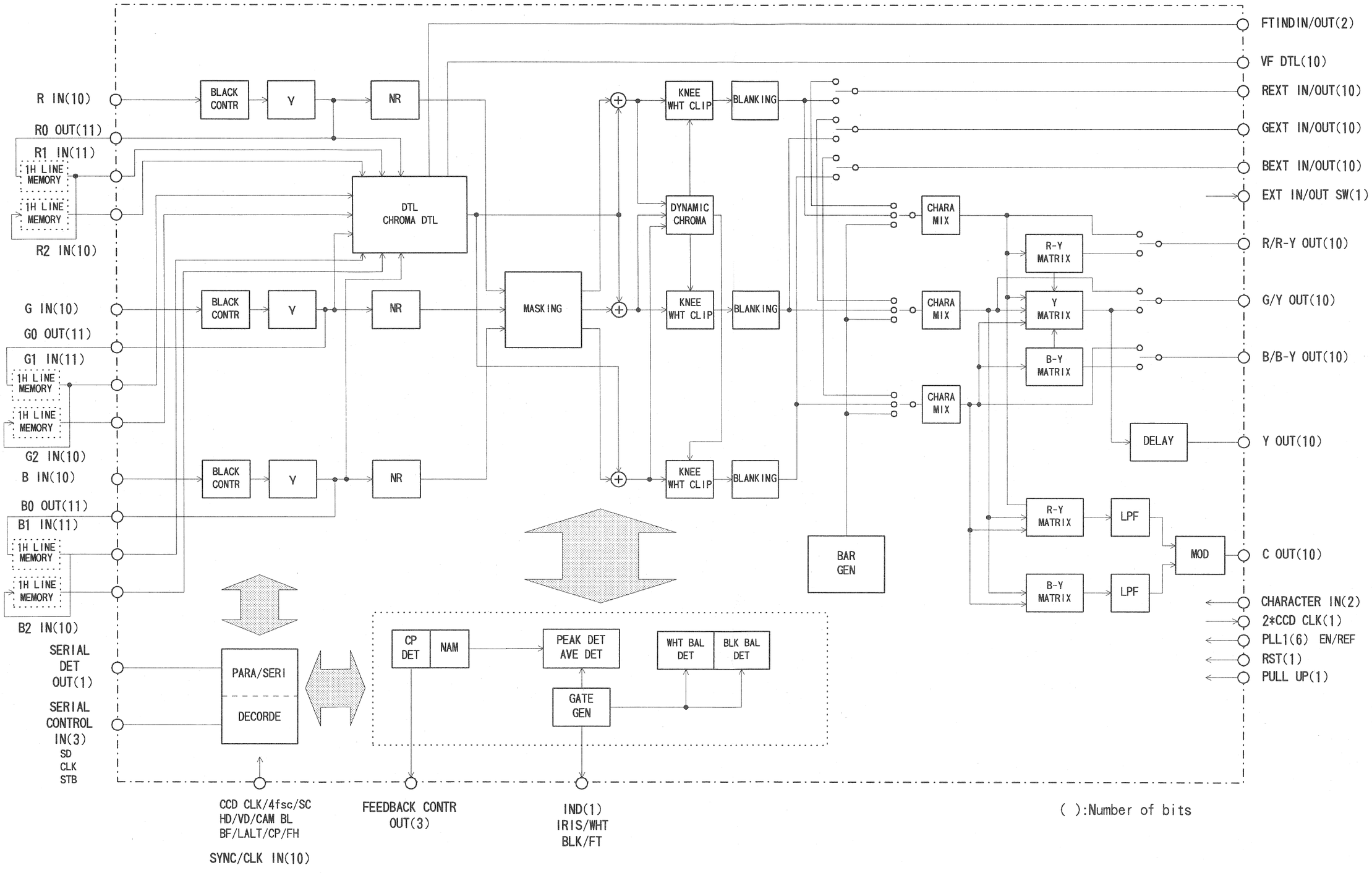
I	CCD CLK	R1HMIN 08-P	304
I	CCD CLK	R1HMIN 09-P	303
I	CCD CLK	R1HMIN 10-P	302
I	CCD CLK	G1HMIN 00-P	301
I	CCD CLK	G1HMIN 01-P	300
I	CCD CLK	G1HMIN 02-P	299
I	CCD CLK	G1HMIN 03-P	298
I	CCD CLK	G1HMIN 04-P	297
		V	296
I	CCD CLK	G1MIN 05-P	295
		99977M3-P	294
		99977M2-P	293
		V	292
I	CCD CLK	G1HMIN 06-P	291
I	CCD CLK	G1HMIN 07-P	290
		V	289
I	CCD CLK	G1HMIN 08-P	288
I	CCD CLK	G1HMIN 09-P	287
I	CCD CLK	G1MIN 10-P	286
I	CCD CLK	B1HMIN 00-P	285
I	CCD CLK	B1HMIN 01-P	284
		V	283
I	CCD CLK	B1HMIN 02-P	282
I	CCD CLK	B1HMIN 03-P	281
		V	280
I	CCD CLK	B1HMIN 04-P	279
		V	278
I	CCD CLK	B1HMIN 05-P	277
		99977C1-P	276
I	CCD CLK	B1MIN 06-P	275
I	CCD CLK	B1HMIN 07-P	274
I	CCD CLK	B1HMIN 08-P	273
I	CCD CLK	B1HMIN 09-P	272
I	CCD CLK	B1HMIN 10-P	271
I	CCD CLK	R2HMIN 00-P	270
I	CCD CLK	R2HMIN 01-P	269
I	CCD CLK	R2HMIN 02-P	268
I	CCD CLK	R2HMIN 03-P	267
		V	266
I	CCD CLK	R2HMIN 04-P	265
I	CCD CLK	R2HMIN 05-P	264
I	CCD CLK	R2HMIN 06-P	263
I	CCD CLK	R2HMIN 07-P	262
		V	261
I	CCD CLK	R2HMIN 08-P	260
		99977C2-N	259
I	CCD CLK	R2HMIN 09-P	258
I	CCD CLK	G2HMIN 00-P	257
I	CCD CLK	G2HMIN 01-P	256
I	CCD CLK	G2HMIN 02-P	255
I	CCD CLK	G2HMIN 03-P	254
		V	253
I	CCD CLK	G2HMIN 04-P	252
I	CCD CLK	G2HMIN 05-P	251
		V	250
I	CCD CLK	G2HMIN 06-P	249
		99977M1-N	248
I	CCD CLK	G2MIN 07-P	247
I	CCD CLK	G2MIN 08-P	246
		V	245
I	CCD CLK	G2MIN 09-P	244
I	CCD CLK	B2MIN 00-P	243
		V	242
I	CCD CLK	B2MIN 01-P	241
I	CCD CLK	B2MIN 02-P	240
I	CCD CLK	B2MIN 03-P	239
I	CCD CLK	B2MIN 04-P	238
		V	237
I	CCD CLK	B2MIN 05-P	236
I	CCD CLK	B2MIN 06-P	235
I	CCD CLK	B2MIN 07-P	234
I	CCD CLK	B2MIN 08-P	233
I	CCD CLK	B2MIN 09-P	232
I		FTINDIN-P	231
O		FTINDOUT-P	230
			229

0		2xCLKOUT-P	228
0	2*CLK	YOUT 09-P	227
0	2*CLK	YOUT 08-P	226
0	2*CLK	YOUT 07-P	225
0	2*CLK	YOUT 06-P	224
0	2*CLK	YOUT 05-P	223
0	2*CLK	YOUT 04-P	222
0	2*CLK	YOUT 03-P	221
		VSS2	220
0	2*CLK	YOUT 02-P	219
0	2*CLK	YOUT 01-P	218
0	2*CLK	YOUT 00-P	217
		VDD2	216
0	CCD CLK	VFDTL 09-P	215
0	CCD CLK	VFDTL 08-P	214
		VSS1	213
0	CCD CLK	VFDTL 07-P	212
0	CCD CLK	VFDTL 06-P	211
0	CCD CLK	VFDTL 05-P	210
0	CCD CLK	VFDTL 04-P	209
0	CCD CLK	VFDTL 03-P	208
		VSS2	207
0	CCD CLK	VFDTL 02-P	206
0	CCD CLK	VFDTL 01-P	205
		VDD1	204
0	CCD CLK	VFDTL 00-P	203
		VDD2	202
0	4fsc	COUT 09-P	201
0	4fsc	COUT 08-P	200
0	4fsc	COUT 07-P	199
0	4fsc	COUT 06-P	198
0	4fsc	COUT 05-P	197
0	4fsc	COUT 04-P	196
0	4fsc	COUT 03-P	195
0	4fsc	COUT 02-P	194
0	4fsc	COUT 01-P	193
0	4fsc	COUT 00-P	192
0	CCD CLK	RRY 09-P	191
		VSS2	190
0	CCD CLK	RRY 08-P	189
0	CCD CLK	RRY 07-P	188
0	CCD CLK	RRY 06-P	187
0	CCD CLK	RRY 05-P	186
		VDD2	185
0	CCD CLK	RRY 04-P	184
0	CCD CLK	RRY 03-P	183
0	CCD CLK	RRY 02-P	182
0	CCD CLK	RRY 01-P	181
0	CCD CLK	RRY 00-P	180
0	CCD CLK	GY 09-P	179
0	CCD CLK	GY 08-P	178
		VDD1	177
0	CCD CLK	GY 07-P	176
0	CCD CLK	GY 06-P	175
		VSS2	174
0	CCD CLK	GY 05-P	173
0	CCD CLK	GY 04-P	172
0	CCD CLK	GY 03-P	171
0	CCD CLK	GY 02-P	170
		VSS1	169
0	CCD CLK	GY 01-P	168
0	CCD CLK	GY 00-P	167
		VDD2	166
0	CCD CLK	BBY 09-P	165
0	CCD CLK	BBY 08-P	164
0	CCD CLK	BBY 07-P	163
0	CCD CLK	BBY 06-P	162
		VSS2	161
0	CCD CLK	BBY 05-P	160
0	CCD CLK	BBY 04-P	159
0	CCD CLK	BBY 03-P	158
0	CCD CLK	BBY 02-P	157
0	CCD CLK	BBY 01-P	156
0	CCD CLK	BBY 00-P	155
I/O	CCD CLK	BEXT 09-P	154
I/O	CCD CLK	BEXT 08-P	153

HDL4F23AFR901

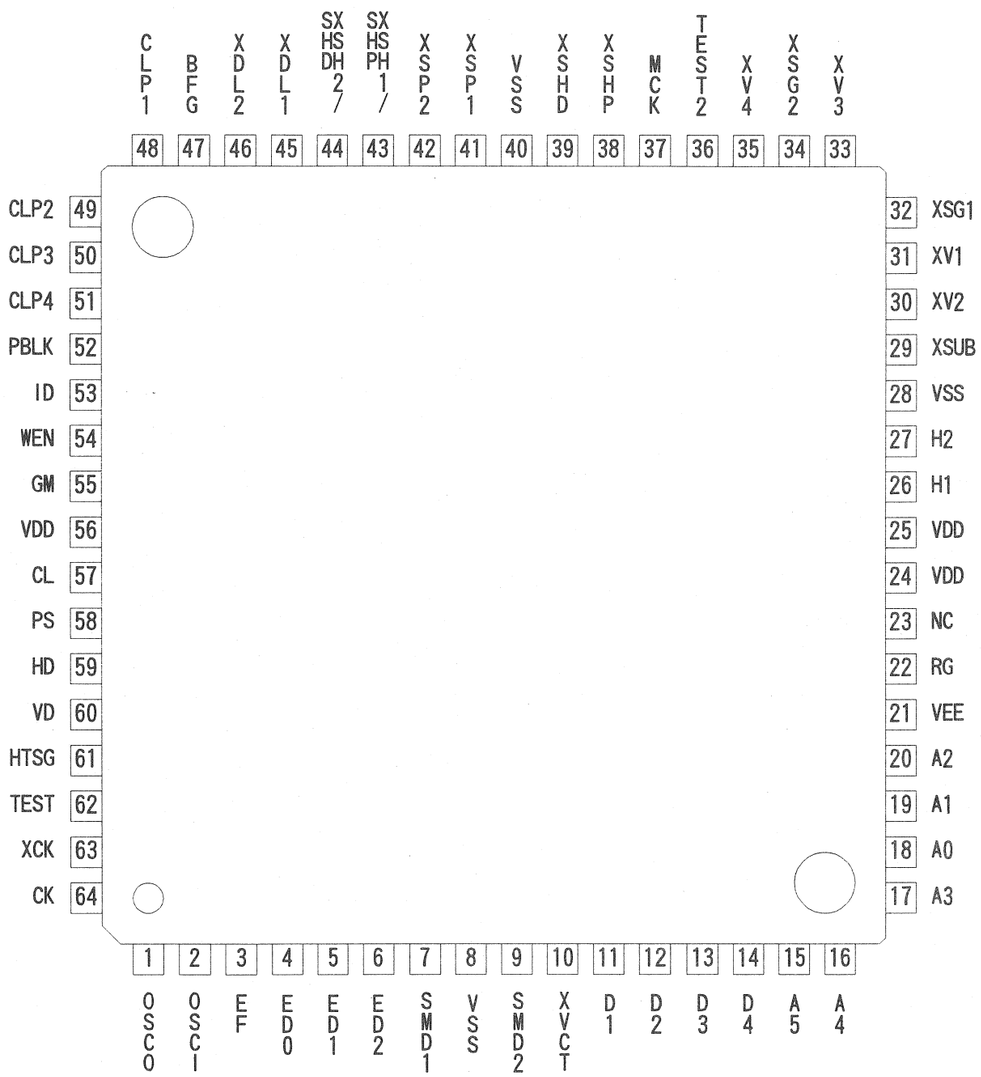


(TOP VIEW)

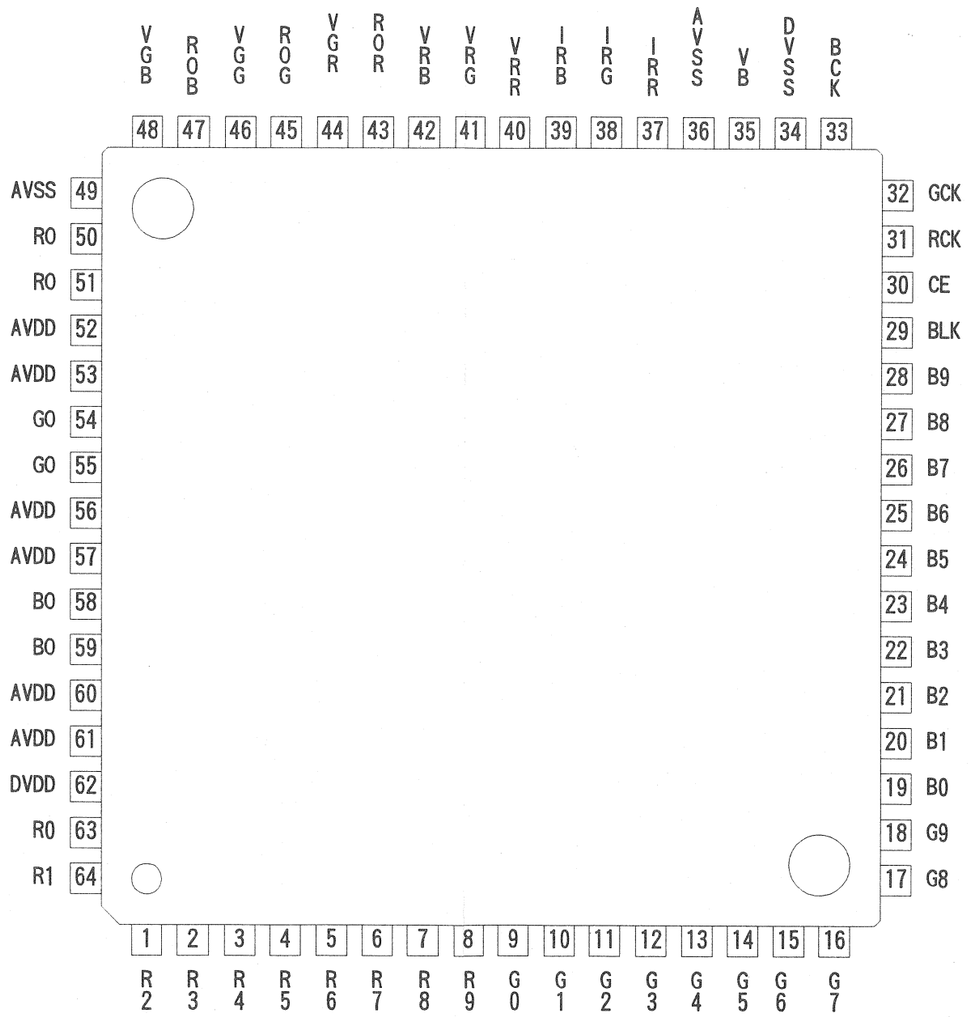


DSP (HDL4F23A)
BLOCK DIAGRAM

CXD1265R



CXD1265R



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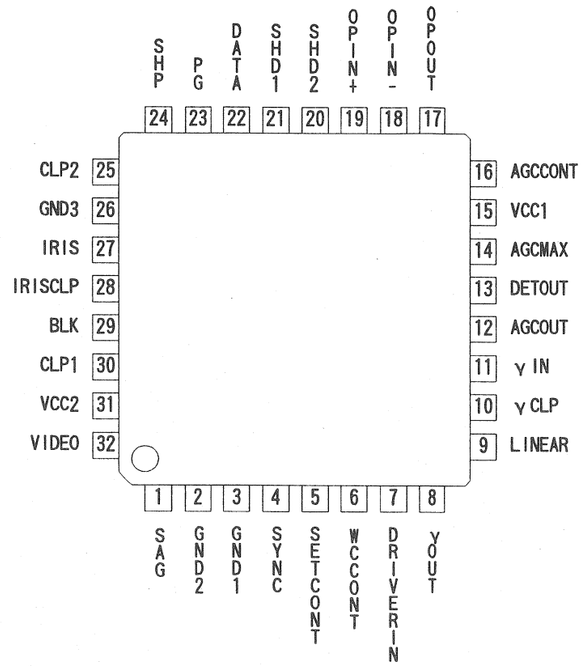

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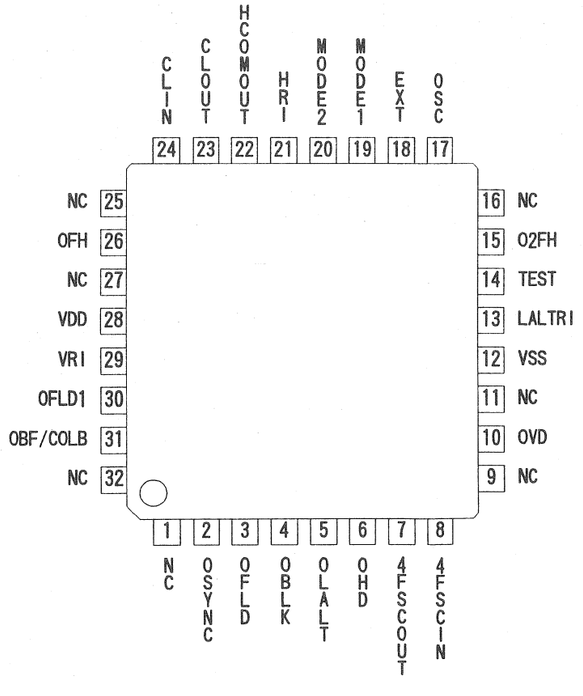

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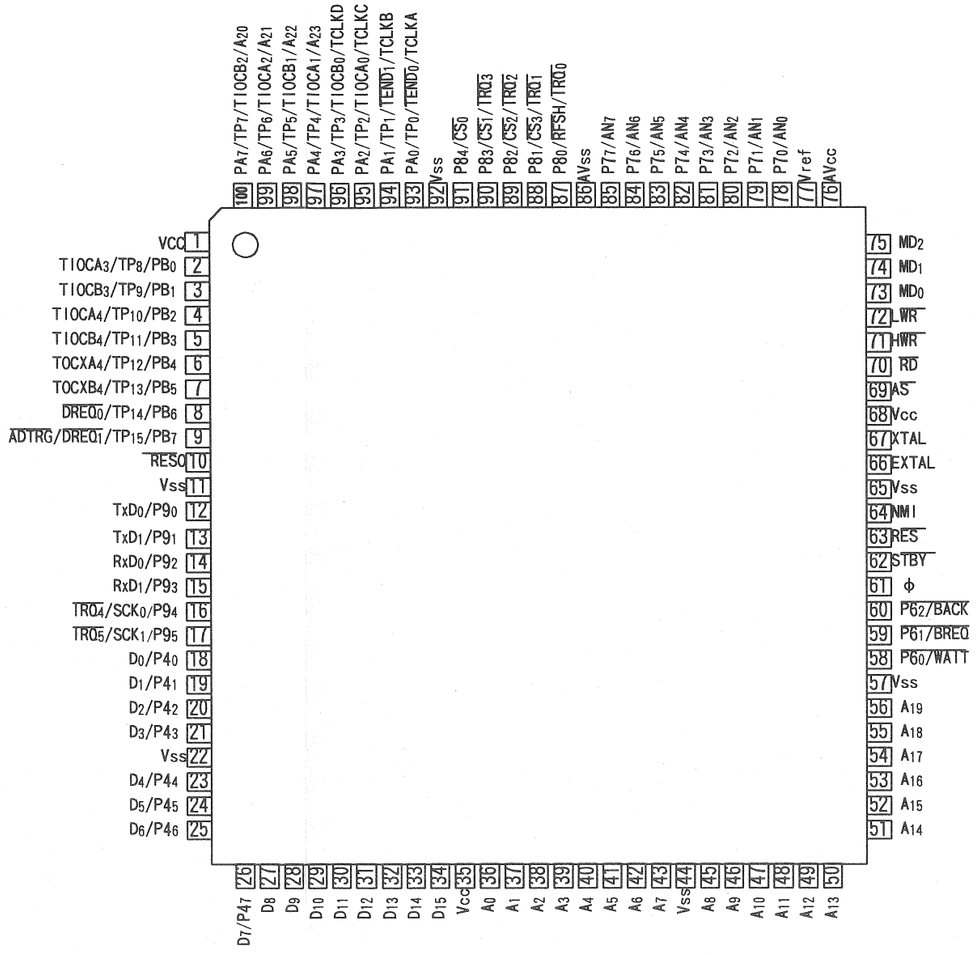

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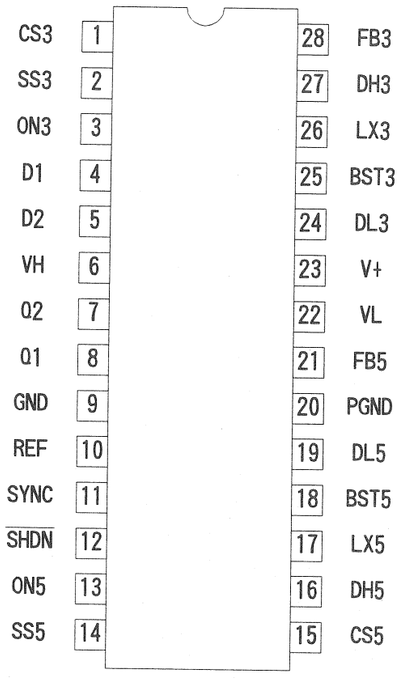

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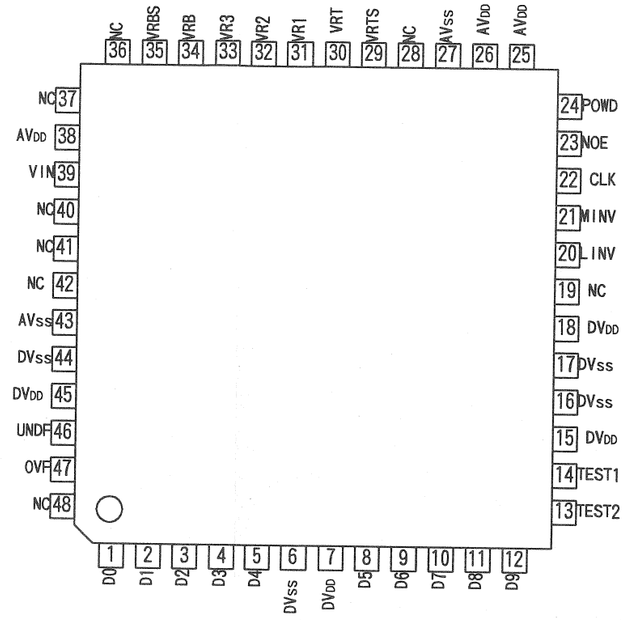

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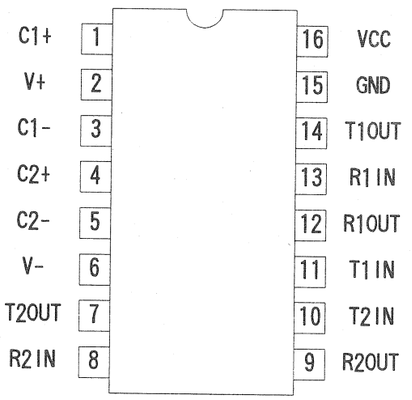

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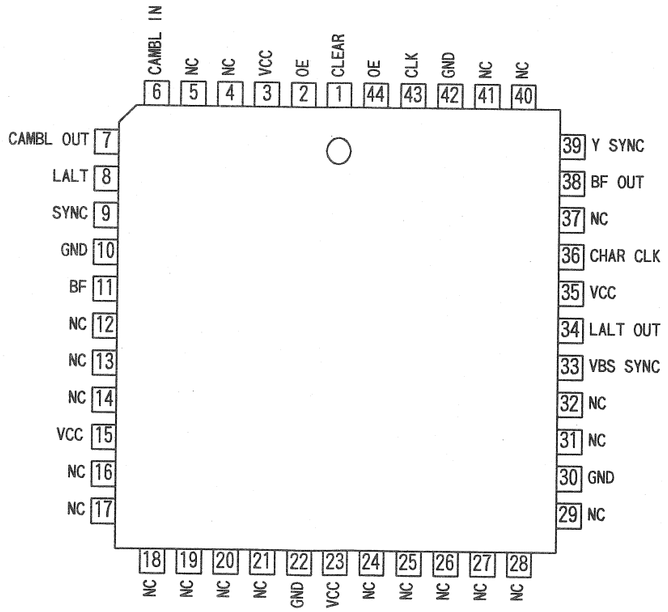

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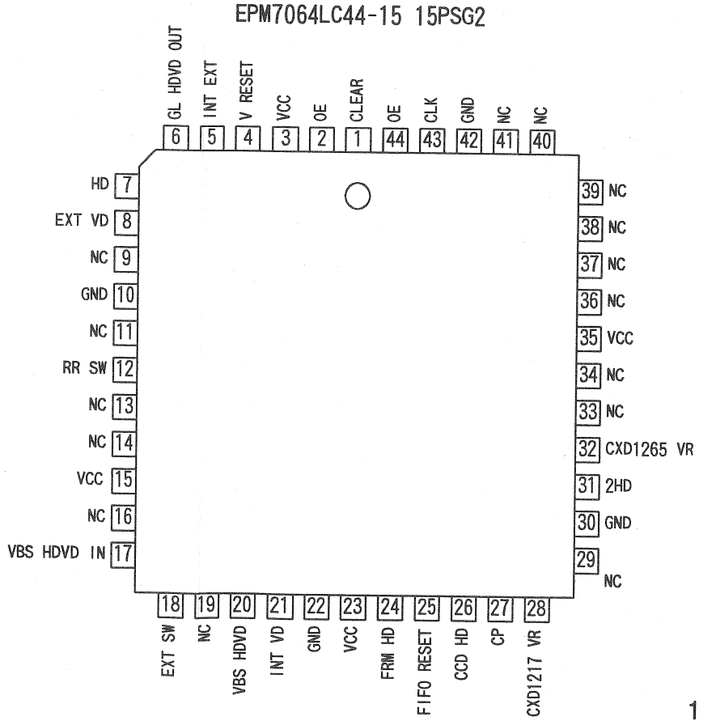

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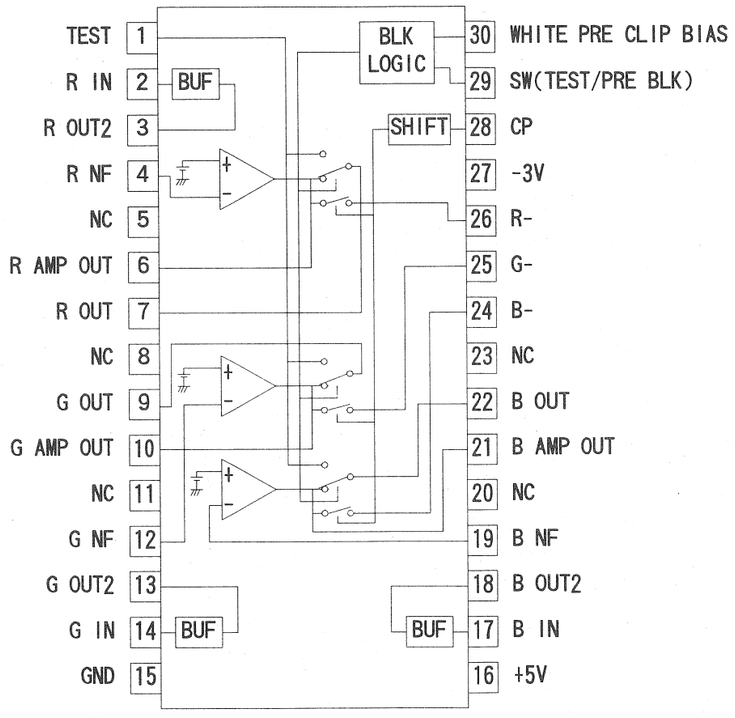

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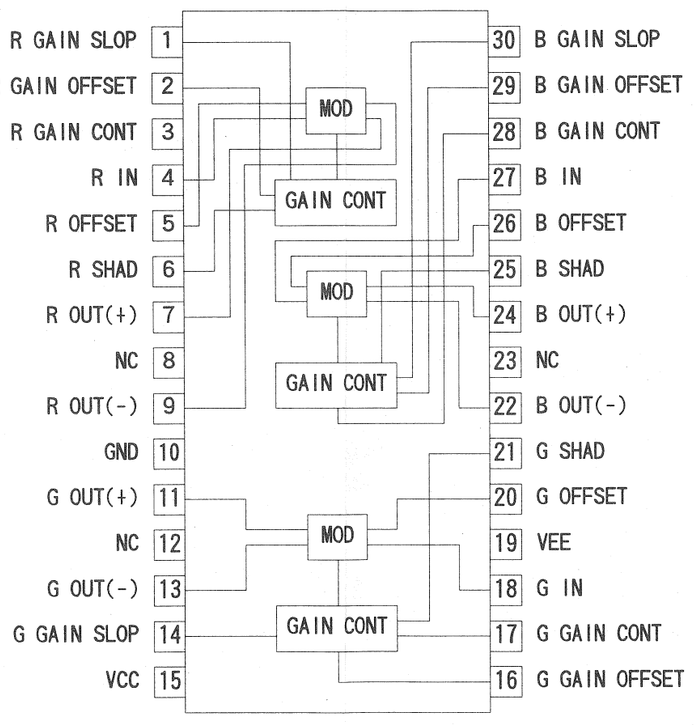

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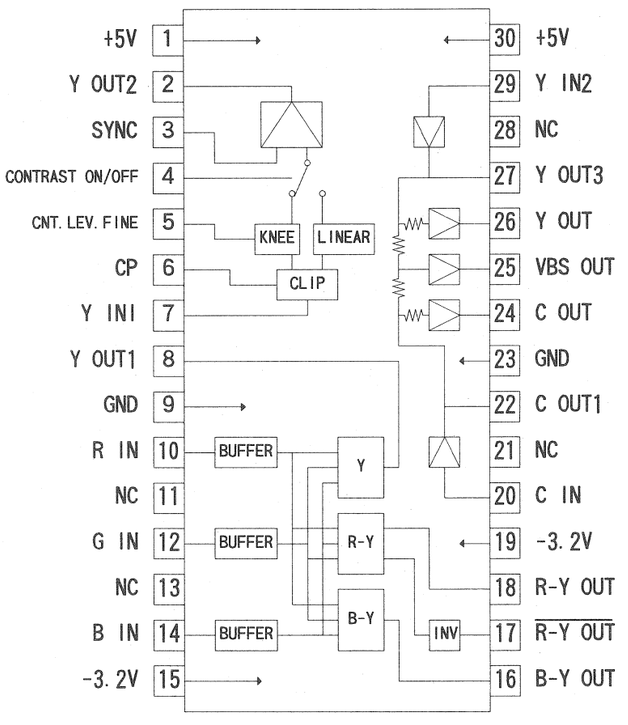

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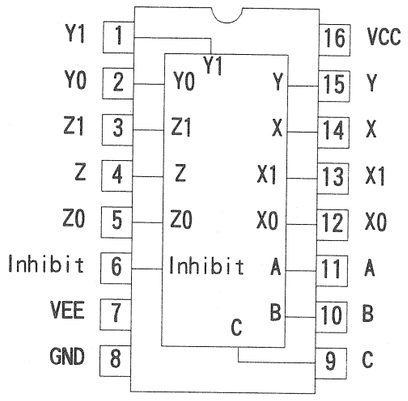

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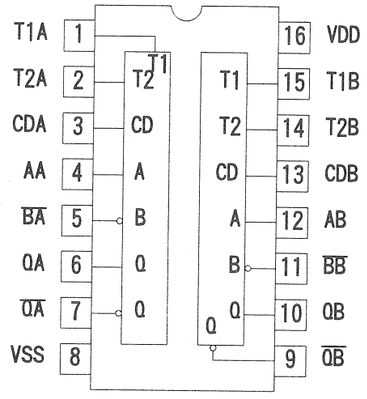

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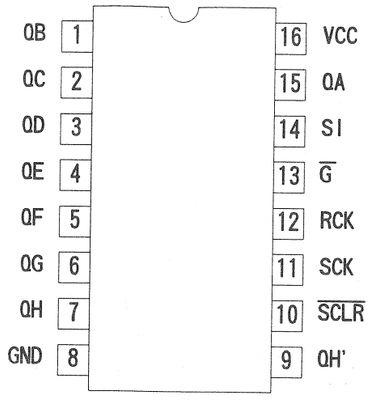

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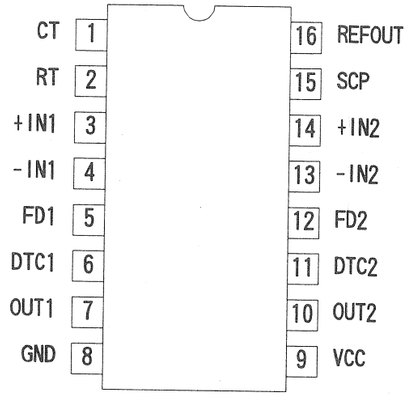

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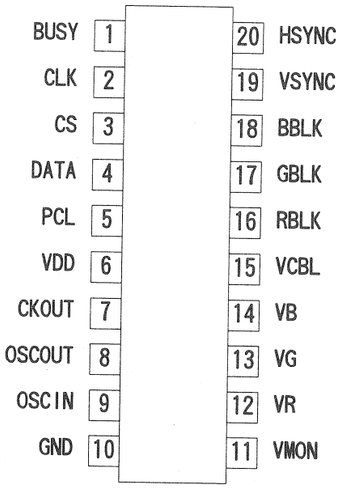

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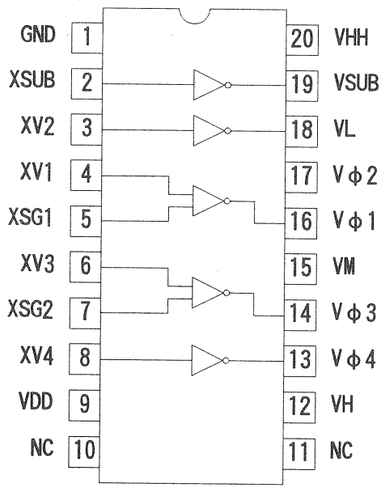

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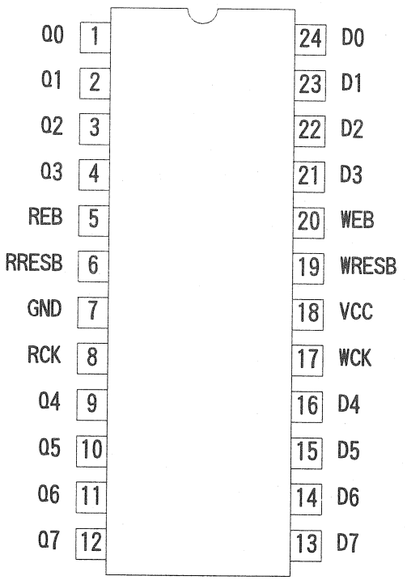

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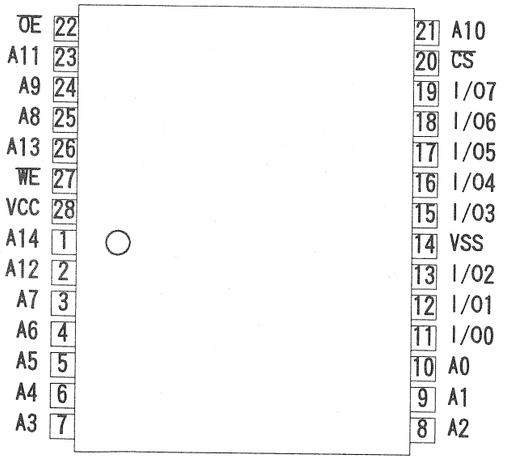

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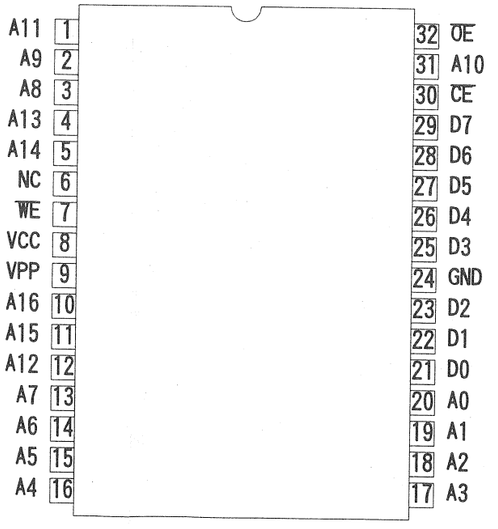

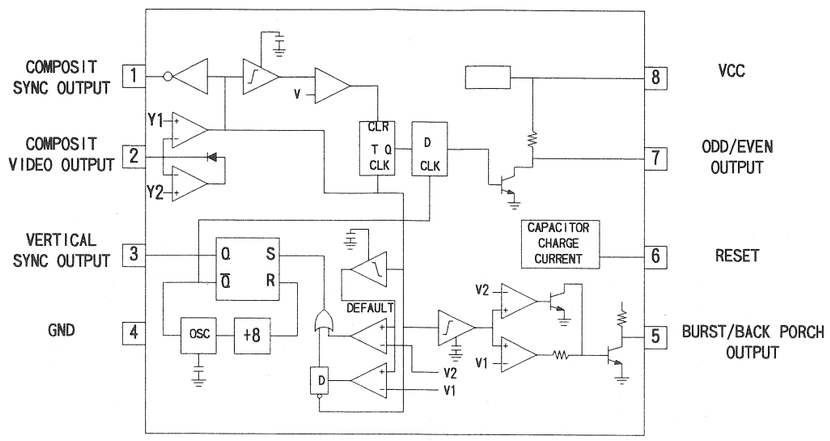

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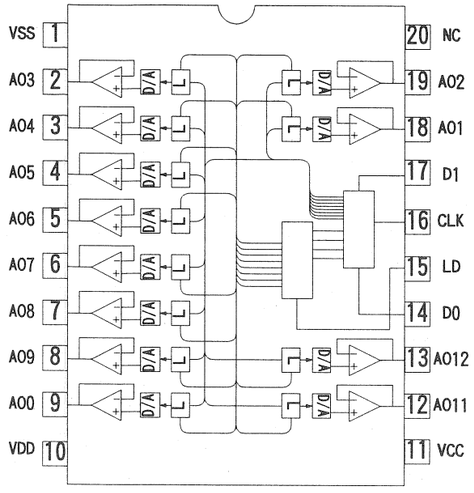

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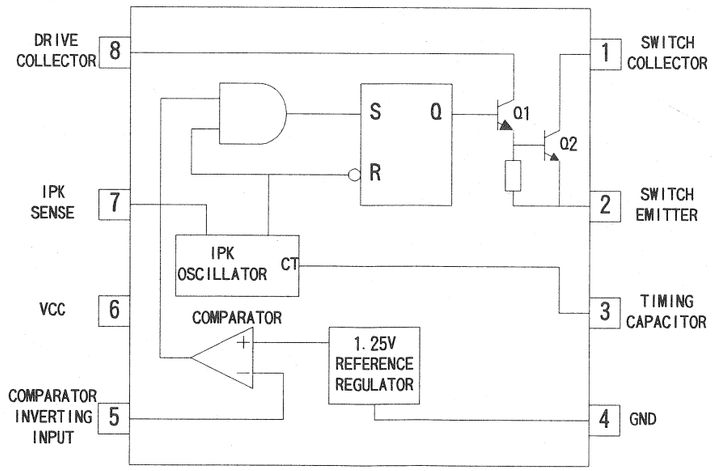

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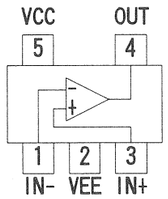

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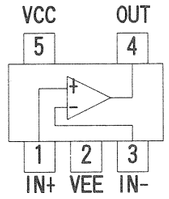

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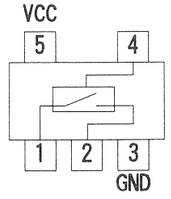

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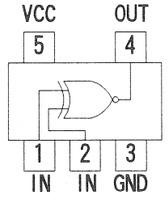

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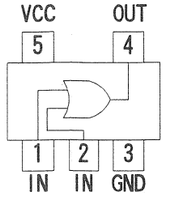

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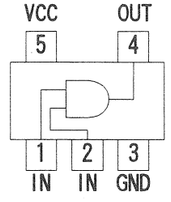

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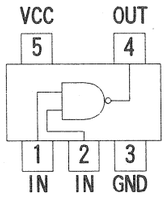

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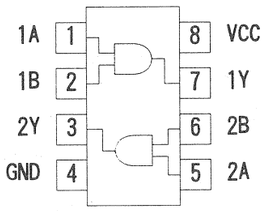

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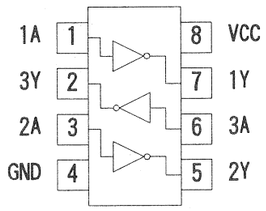

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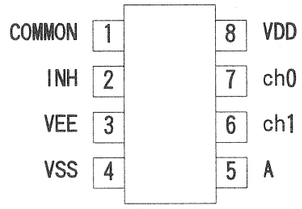

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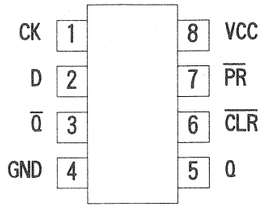

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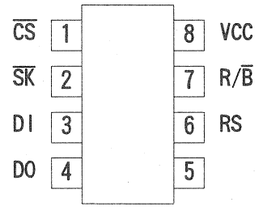

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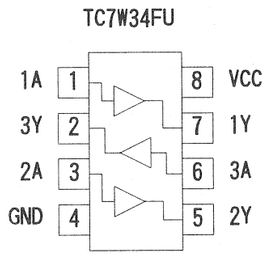

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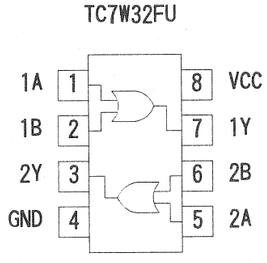

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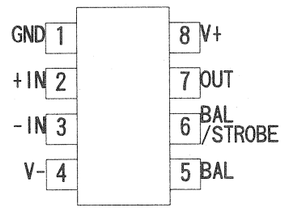

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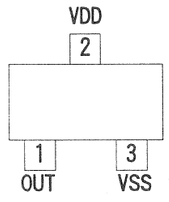

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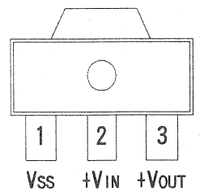

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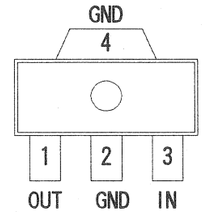

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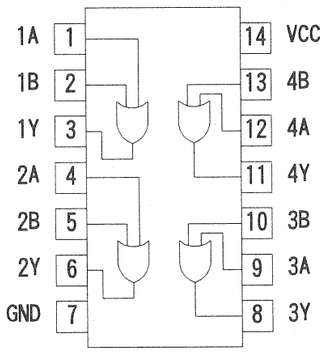

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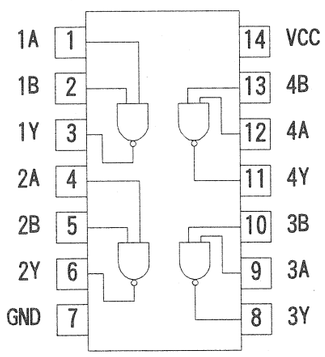

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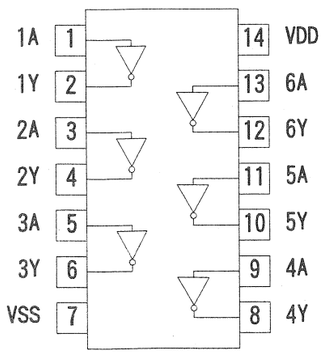

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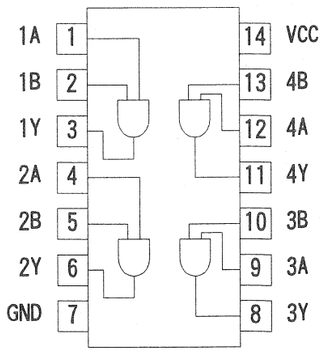

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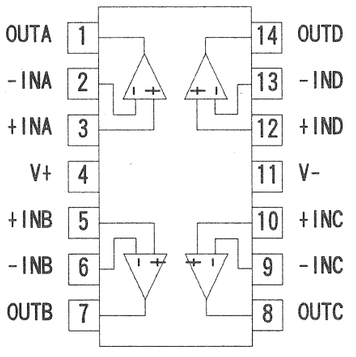
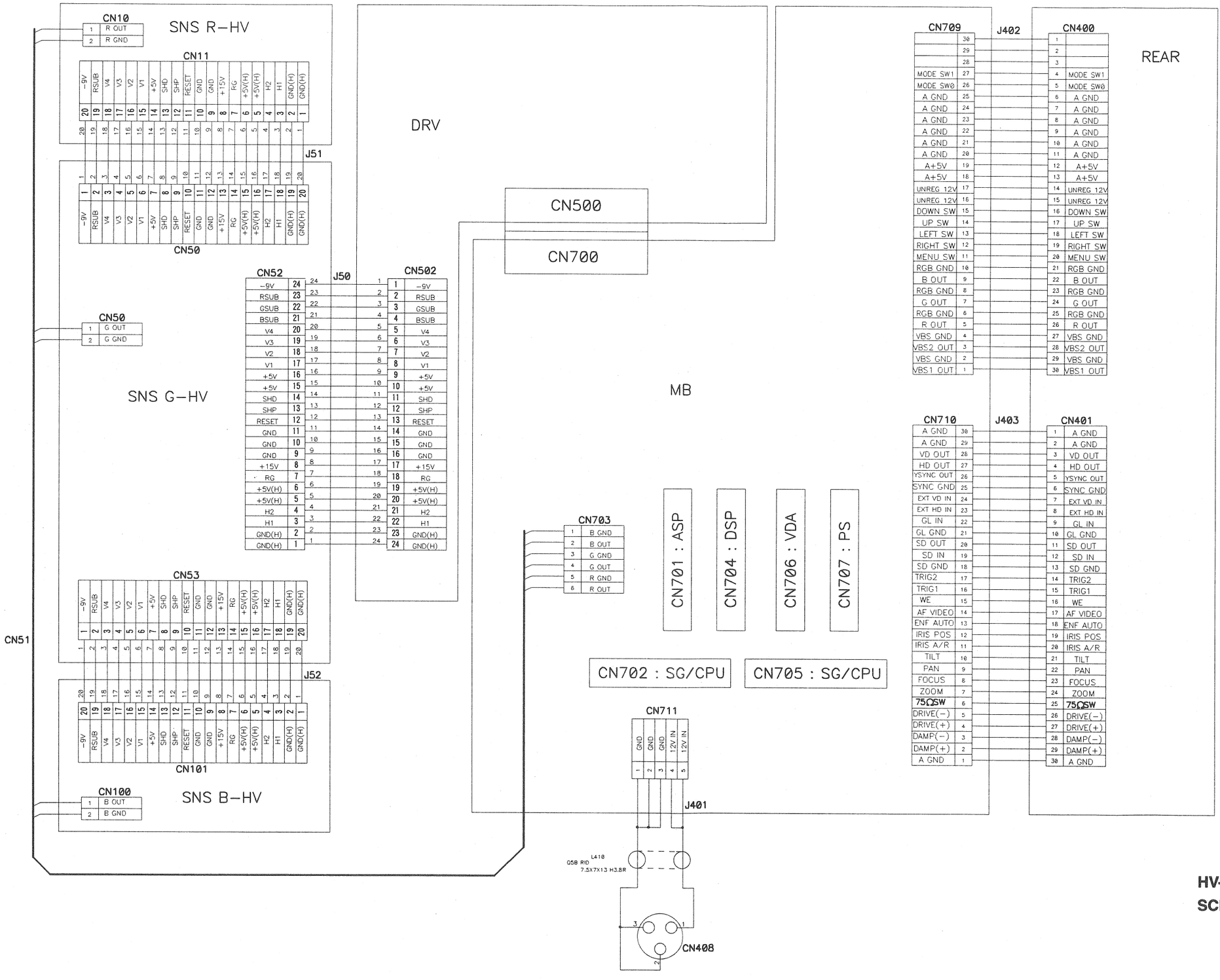


7. SCHEMATIC DIAGRAMS



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J51 : SML2CD-20*30
J52 : SML2CD-20*30
J401 : ZHR-5 L=85
J402 : SML2CD-30*45
J403 : SML2CD-30*30
CN51 : ZHR-6/2P-SZN

HV-D15 CHASSIS
SCHEMATIC DIAGRAM

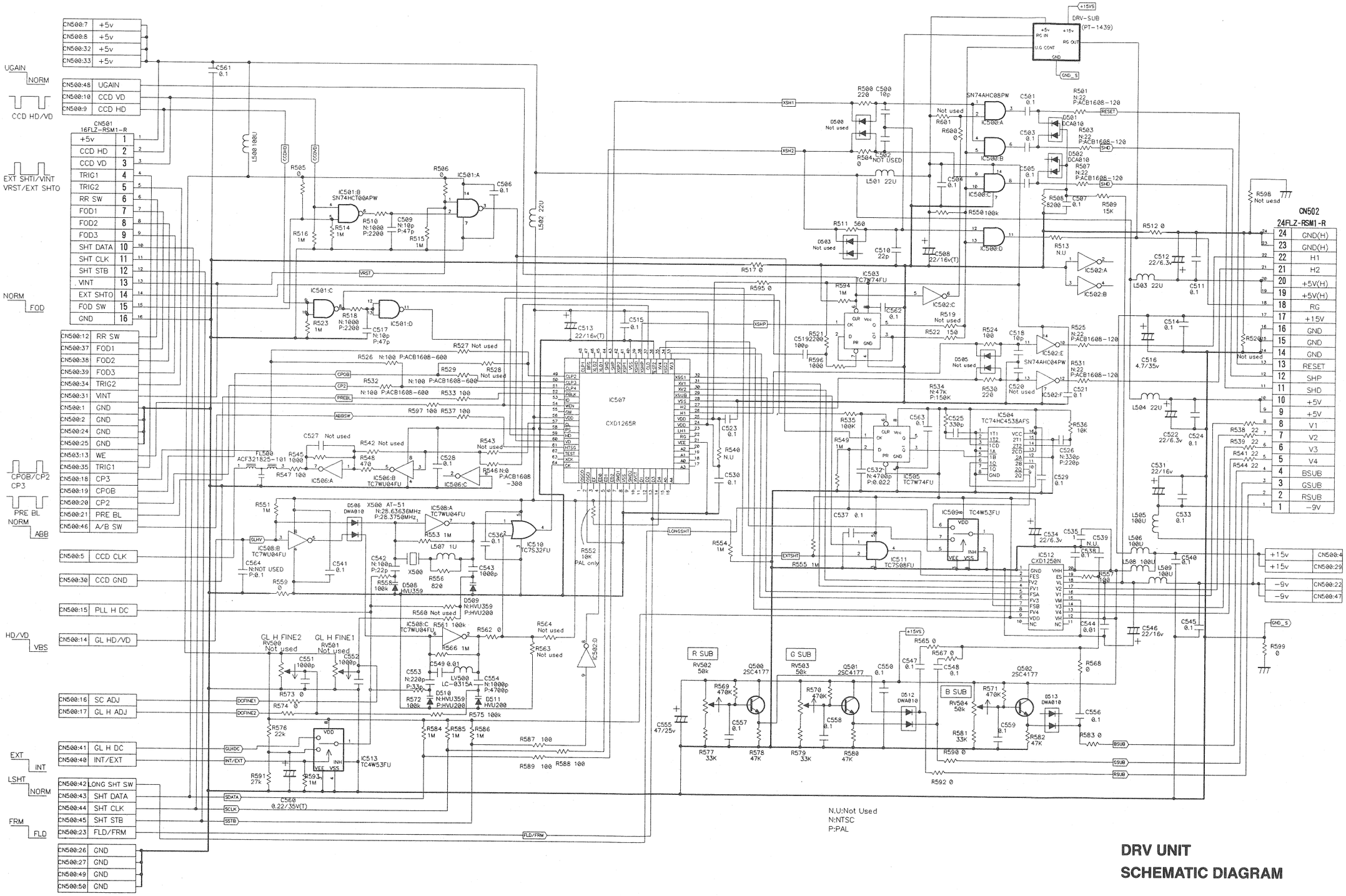
SNS UNIT
SCHEMATIC DIAGRAM

N.U:Not Used

SNS B-HV

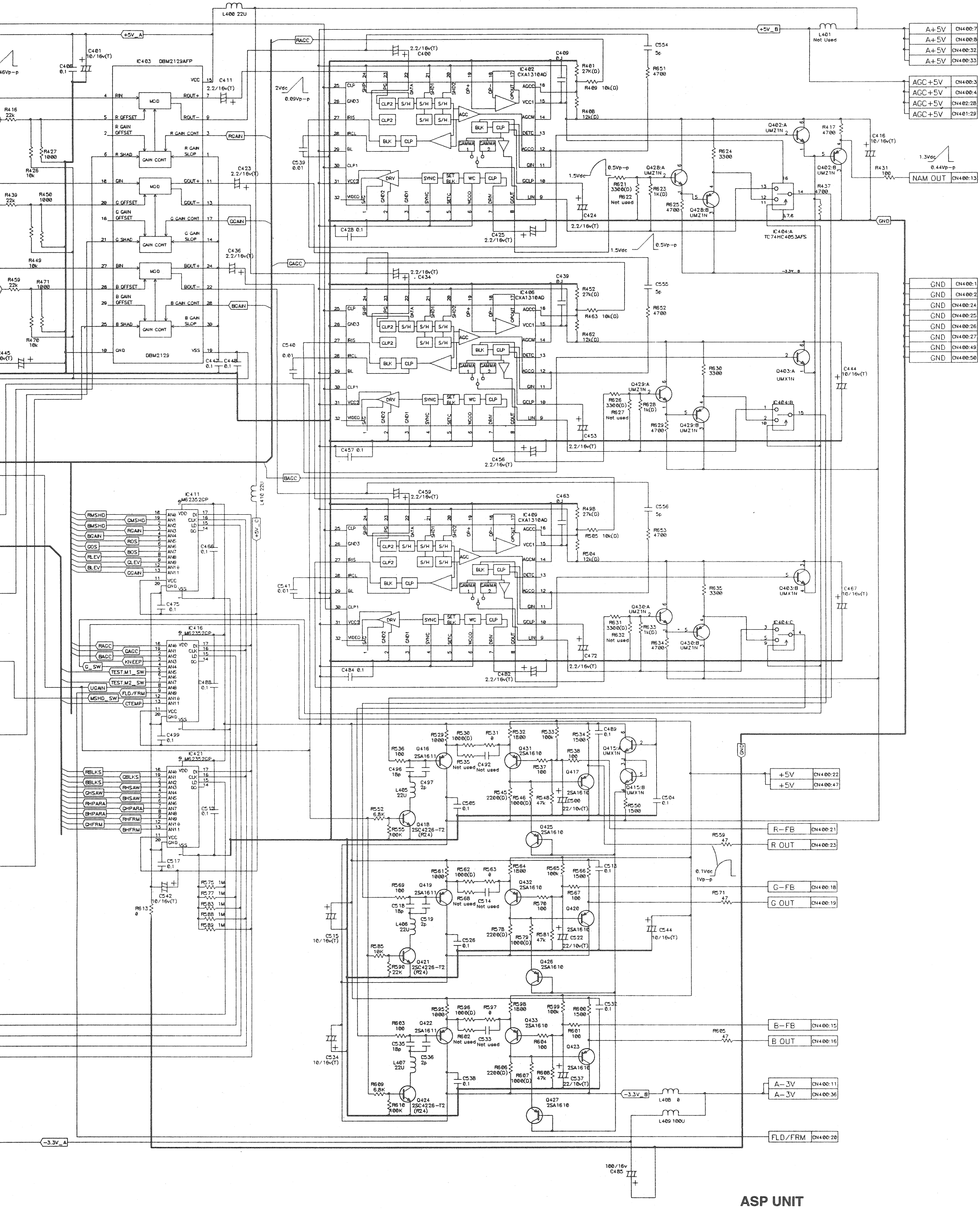
SNS G-HV

SNS R-HV

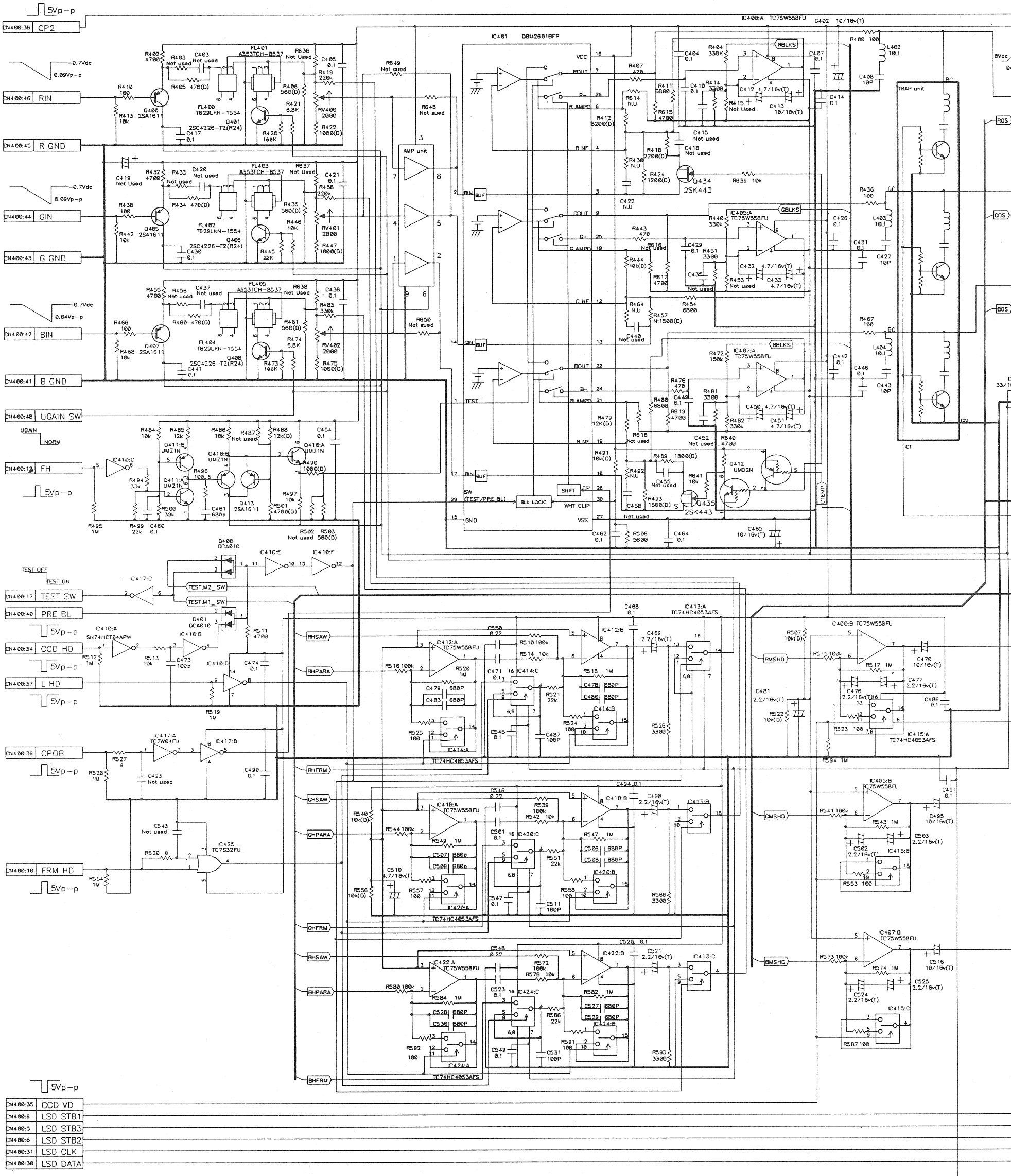


N.U:Not Used
N:NTSC
P:PAL

DRV UNIT
SCHEMATIC DIAGRAM



ASP UNIT
SCHEMATIC DIAGRAM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CN400:44 GIN
CN400:43 G GND
CN400:42 BIN
CN400:41 B GND
CN400:48 UGAIN SW
CN400:1 FH
CN400:17 TEST SW
CN400:40 PRE BL
CN400:34 CCD HD
CN400:37 L HD
CN400:39 CPOB
CN400:10 FRM HD
CN400:35 CCD VD
CN400:9 LSD STB1
CN400:5 LSD STB3
CN400:6 LSD STB2
CN400:31 LSD CLK
CN400:30 LSD DATA
IC401 DBM2601BFP
IC400:A TC75W558FU
IC405:A TC75W558FU
IC407:A TC75W558FU
IC400:B TC75W558FU
IC405:B TC75W558FU
IC407:B TC75W558FU
IC412:A TC75W558FU
IC418:A TC75W558FU
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IC412:B
IC418:B
IC422:B
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IC413:B
IC413:C
IC414:A TC74HC4053AFS
IC414:B
IC414:C
IC415:A TC74HC4053AFS
IC415:B
IC415:C
IC420:A TC74HC4053AFS
IC420:B
IC420:C
IC424:A TC74HC4053AFS
IC424:B
IC424:C
IC410:A SN74HCT04APW
IC410:B
IC410:C
IC410:D
IC410:E
IC410:F
IC417:A TC7W04FU
IC417:B
IC417:C
IC425 TC7S32FU
D400 DCA010
D401 DCA010
Q400 2SA1611
Q401 2SC4226-T2(R24)
Q405 2SA1611
Q406 2SC4226-T2(R24)
Q407 2SA1611
Q408 2SC4226-T2(R24)
Q411:B UMZ1N
Q410:B UMZ1N
Q410:A UMZ1N
Q411:A UMZ1N
Q413 2SA1611
Q434 2SK443
Q435 2SK443
Q412 UMD2N
FL400 TB29LKN-1554
FL401 A353TCH-B537
FL402 TB29LKN-1554
FL403 A353TCH-B537
FL404 TB29LKN-1554
FL405 A353TCH-B537
AMP unit
TRAP unit
RBLKS
GBLKS
BBLKS
BLK LOGIC
SHIFT
TEMP
UGAIN
NORM
TEST OFF
TEST ON
TEST_M2_SW
TEST_M1_SW
RHSAW
RHPARA
RHFRM
GHSAW
GHPARA
GHFRM
BHSAW
BHPARA
BHFRM
RMSHD
GMSHD
BMSHD
ROS
GOS
BOS
RC
GC
BC
GN
CT
5Vp-p
0.7Vdc
0.09Vp-p
0.04Vp-p

N.U : Not used