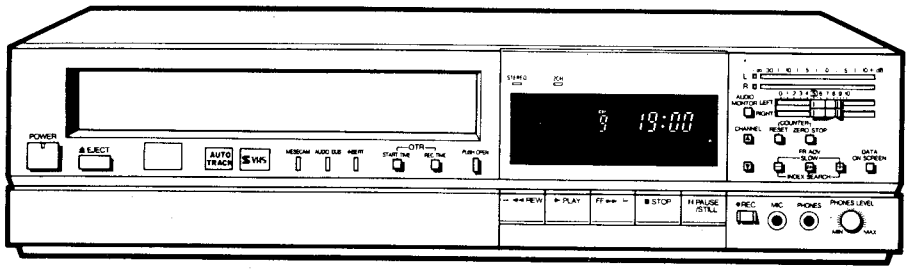
MITSUBISHI HSE70

MODEL

SERVICE MANUAL

VS-S99
EO/EOG/EK

AKAI SERVICE MANUAL



S-VHS VHS PAL 625

VIDEO CASSETTE RECORDER

MODEL VS-S99EO/EOG/EK

SPECIFICATIONS

Format	EO/EOG . . .	S-VHS/VHS standard (PAL, MESECAM)
	EK	S-VHS/VHS standard
Video recording system	. .	Rotary, slant azimuth two-head helical scan system
Rotary heads	. . . . .	Four video heads, two audio heads & one erase head
RF input	EO	System B, G (PAL, MESECAM) with monaural or multiplexed 2 channel audio VHF ch 2–12, A–H_2 UHF ch 21–69 CATV S_1'–S_3', S_1–S_{20} (M_1–M_{10}, U_1–U_{10})
	EOG	System B, G (PAL, MESECAM) with monaural or multiplexed 2 channel audio VHF ch 2–12, UHF ch 21–69 CATV S_1'–S_3', M_1–M_{10}, U_1–U_{31}
	EK	System I with monaural or multiplexed 2 channel audio (NICAM) UHF ch 21–69
RF output	EO/EOG . . .	System G type modulation UHF ch 32–40 adjustable (preset ch 36)
	EK	System I type modulation UHF ch 32–40 adjustable (preset ch 38)
Recording (line input)		
	EO/EOG . . .	PAL, SECAM (MESECAM TAPE)
	EK	PAL
Playback (line output)		
	EO/EOG . . .	PAL, SECAM (MESECAM TAPE)
	EK	PAL
Video		
Line input	. . . . .	0.75–1.5 Vp-p/75 ohms, unbalanced RCA type jack 21 pin scart socket and S-socket (Y-signal) 0.15–0.6 Vp-p/75 ohms, unbalanced S-socket (C-signal)
Line output	. . . . .	1.0 Vp-p/75 ohms, unbalanced RCA type jack 21 pin scart socket and S-socket (Y-signal) Burst 0.3 Vp-p/75 ohms, unbalanced S-socket (C-signal)

Audio	(VHS Hi-Fi: 2 ch, Linear: 1 ch)
Line input level	−8 dBs/50 K ohms unbalanced RCA type jack −6 dBs/50 K ohms unbalanced 21 pin scart socket
Line output level	−8 dBs/1 K ohms unbalanced RCA type jack −6 dBs/1 K ohms unbalanced 21 pin scart socket
Mic input	−67 dBs/50 K ohms unbalanced mini jack
Dynamic range	More than 90 dB (VHS Hi-Fi)
Frequency response . . .	20–20,000 Hz (VHS Hi-Fi)
Wow & Flutter	Less than 0.005% WRMS (VHS Hi-Fi)
Recording/playback time .	240 min. with E-240 cassette in SP mode 480 min. with E-240 cassette in LP mode
Tape speed	
SP mode	23.39 mm/sec
LP mode	11.70 mm/sec
FF, REW time	Approx. 3 min. with E-180 cassette
Timer	
Program	8 programs/1 month and OTR (one touch timer recording)
Clock reference	Quartz crystal
Power requirement	
EO/EOG . . .	220 V AC, 50 Hz
EK	240 V AC, 50 Hz
Power consumption	48 W
Operating temperature . . .	5–40°C
Dimensions	424 (W) × 112 (H) × 410 (D)
Weight	9.2 Kg

Standard accessories

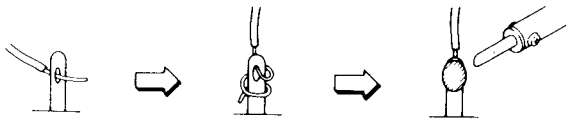
Remote control unit	1
Batteries for remote control	4
Coaxial cable (75 ohm)	1
Audio cable	1
S-VIDEO cable	1
Operator's manual	1

* For improvement purposes, specifications and design are subject to change without notice.

★SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ (*) symbol parts are critical for safety. Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation.
   These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.
The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal-input/output connectors, etc.) and the earth ground through a resister of 1500 ohms paralleled with a 0.15 μF capacitor, under the unit's normal working conditions. The leakage-current should be less than 0.5 mA rms AC.
The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 Mohms.

★INFORMATION

SYMBOLS OF MODEL NAME FOR PRIMARY DESTINATION

Symbol indicates the destination of the units as listed below.

Symbol	Classification	Principal Destination	System	
			Color	Broadcast
EA	S	Australia	PAL	B, G
ED	E	China	PAL	D
EDG	E	East Europe	PAL	D, K
EDI	E	China, Hong Kong	PAL	D, K, I
EG	E	Spain, Northern Europe, Other	PAL	B, G
	Y7	Saudi Arabia		
EK	B	U.K.	PAL	I
	Y1	Hong Kong		
EM	E	Middle East	PAL	B, G
	Y7	Saudi Arabia		
EO	E	Holland, Switzerland, Northern Europe	PAL	B, G
	V	Italy		
EOH	E	Holland, Belgium	PAL	B, G
	V	Italy		
EOG	V	W. Germany	PAL	B, G
ES	E	South Africa, Ireland, Hong Kong	PAL	I
EV	E	South-East Asia	PAL	B, G
	U	Middle East, South-East Asia		
	Y1	New Zealand		
	Y7	Saudi Arabia		
EZ	S	New Zealand	PAL	B, G
EGN	E	Middle East	PAL, NTSC	B, G
	Y7	Saudi Arabia		
S	E	France	SECAM	L
SK	E	Latin America, Oceania, SECAM-OIRT	SECAM	K, K1
SEG	E	France, Switzerland	SECAM, PAL	L, B, G
U	A	U.S.A.	NTSC	M
	C	Canada		
UM	U	Latin America	NTSC	M
J	J	Japan	NTSC	M

S-VHS SYSTEM

1. An S-VHS (Super-VHS) Overview

1-1 To meet the demand for higher picture quality imaging capabilities, the S-VHS offers a new high resolution VTR system (400 lines min. in horizontal resolution) by performing in an S-VHS mode that is divorced from any of the conventional standard VHS modes.

1-2 The S-VHS performance has been made possible by the S-VHS sub-emphasis circuit operated with new signal processing techniques and a new high performance S-VHS cassette tape.

1-3 The S-VHS VTR shall be made capable of both the following operations:

1) S-VHS mode record/playback (REC/PB) with an S-VHS cassette
2) Any standard VHS mode REC/PB with a standard VHS cassette

The VTR will therefore have to be equipped with a record (REC) mode selector switch.
Incidentally, no cassette recorded in an S-VHS mode may be played back on any conventional VHS VTR (i.e. no compatibility).

1-4 The S-VHS cassette can also serve as a standard VHS cassette.
The reverse, however, does not hold true, that is to say, no standard VHS cassette may serve as an S-VHS cassette.

2. S-VHS Engineering Specifications

2-1 S-VHS VIDEO CASSETTE

VIDEO CASSETTE
Conforms to the VHS specifications, similarly to any standard VHS or VHS-C cassette.
Only, an ID hole will have to be provided on the cassette for identification of its S-VHS format.

ID hole
Provided on all S-VHS cassettes, serves to have a VTR identify their S-VHS format. The S-VHS video tape recorder equipped with an auto-ID unit for telling regular VHS cassettes apart automatically prevents any S-VHS REC mode from being phased in when loaded with a regular VHS cassette.

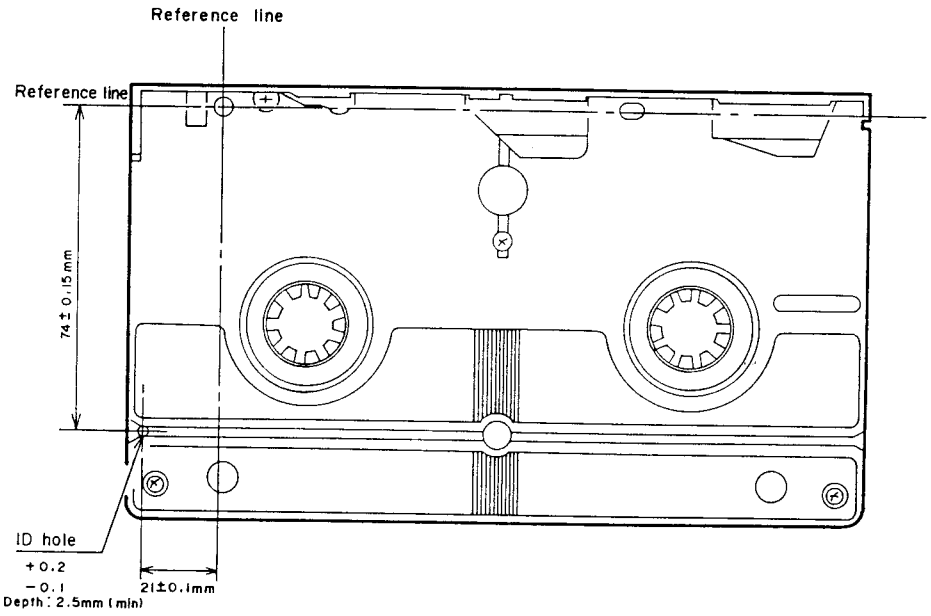


Fig. 1 S-VHS standard cassette ID hole

MAGNETIC TAPE
A high performance tape that meets the freshly set S-VHS standard. Its higher performance has substantially contributed to the high picture quality of S-VHS imagings. To maintain compatibility with the regular VHS, however, the use of any special tape has been avoided, and the usual hematite tape been employed instead, successfully achieving the high performance capabilities.

2-2 S-VHS Specifications

Both the NTSC and PAL versions conform to the VHS specifications, except that the S-VHS REC modes of the NTSC version cover only the SP (standard) and EP (6 hours) formats, and no LP (4 hours) format.

2-3 S-VHS video signal REC format (PAL/NTSC)

The S-VHS recorded frequency band surpasses that of the regular VHS REC frequency band mainly through the following improvements.

1) In/Output Video Signals

Either PAL (NTSC) signals or the separate Y/C signals that conform with the PAL (NTSC) signal format.

① Y/C separator for which comb filters have been employed, to fully utilize In/Output Signals:

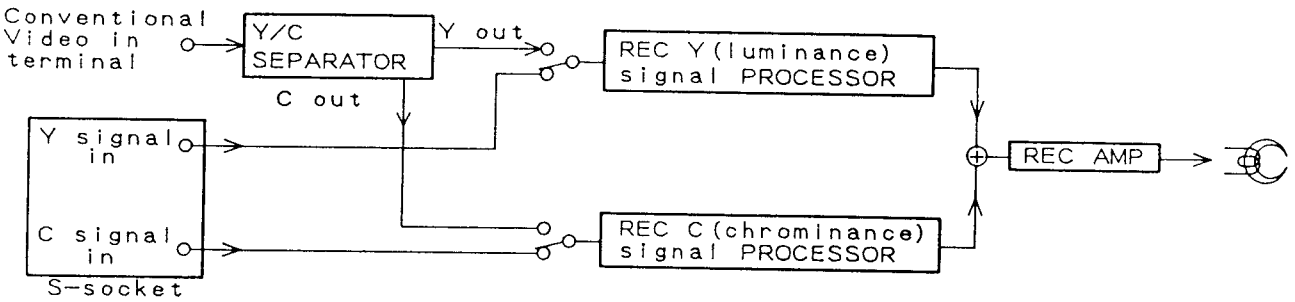
The S-VHS picture quality is enhanced by utilizing the 3 MHz and higher band luminance signal left unused by the conventional VHS in which a chrominance signal has been interleaved. For this reason, high precision comb filters have been employed for the Y/C separation of this band. (This arrangement is mandatory for the NTSC version.)

② Separate Y/C signal input/output terminals (S-Socket)

The S-VHS type VCR is equipped with video input/output terminals for conventional composite video signals as well as an S-socket for separate luminance (Y) and chrominance (C) signals (Figs. 2 and 3).

Accordingly, by operating the S-VHS combined with an S socket-equipped TV set, all Y/C interferences may be eliminated and crosstalk and dot interferences suppressed as well, contributing to an overall enhancement of the picture quality.

Recording



Playback

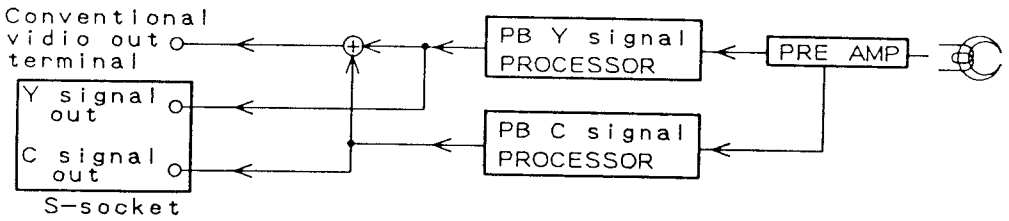


Fig. 2 Separated Y/C signal input-output socket system

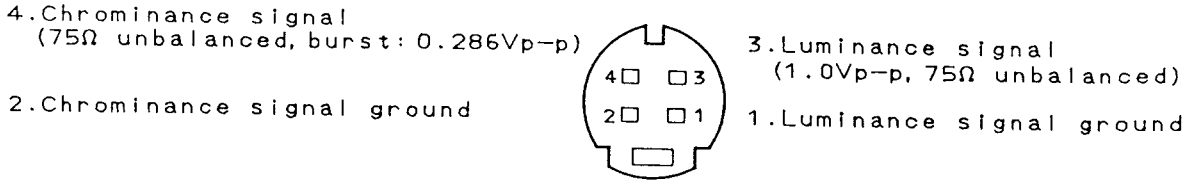


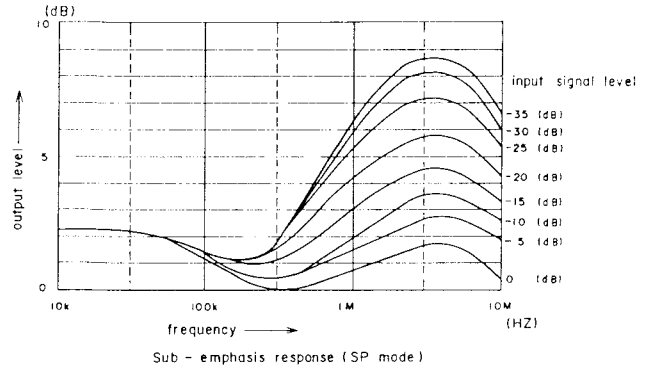
Fig. 3 S-socket

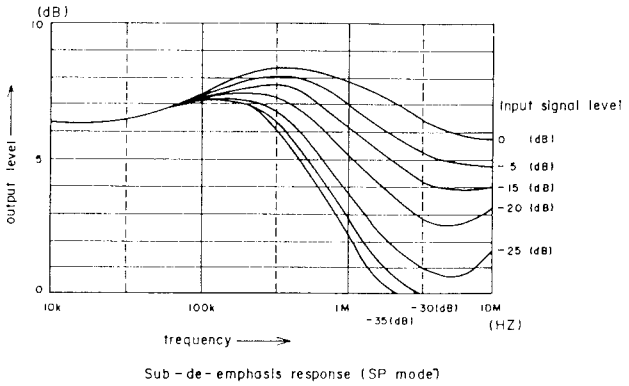
2) Add-on Sub-Emphasis

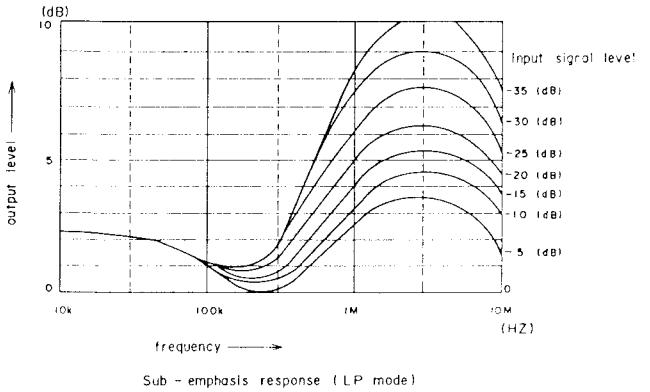
The S-VHS sub-emphasis is a non-linear emphasis circuit that corresponds to the non-linear emphasis, detail enhancer, or equivalent of the conventional VHS or HQ, but has been configured focusing on the further extended high frequency range of S-VHS.

Figs. 4 and 5 show the SP as well as LP mode output response curves of the sub-emphasis and sub-de-emphasis circuits respectively, when a sweep signal has been added to the emphasis circuit.

Unlike the conventional non-linear emphasis circuit (Fig. 6) or the detail enhancer (Fig. 7), these sub-emphasis/sub-de-emphasis circuits exhibit a unique contour of their response curves at mid-range frequencies between the low and high regions, first dipping downward and then climbing up again along with a rise in frequencies. Their response to a pulse input is shown in Fig. 8 in contrast with that of the conventional VHS.







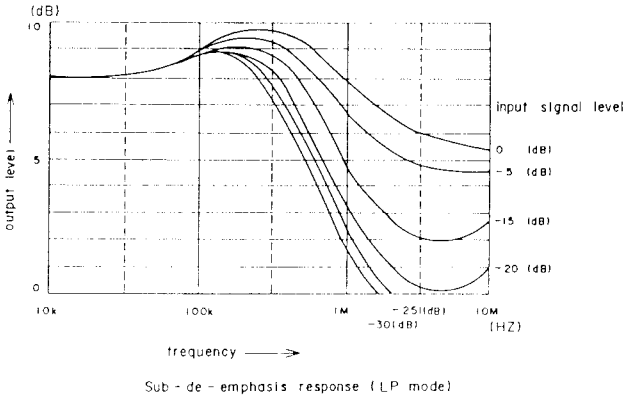


Fig. 4 Sub-emphasis response

Fig. 5 Sub-de-emphasis response

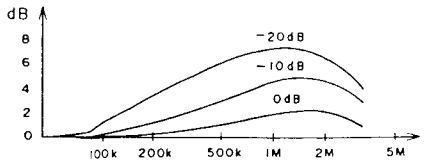


Fig. 6 VHS conventional non-linear emphasis response

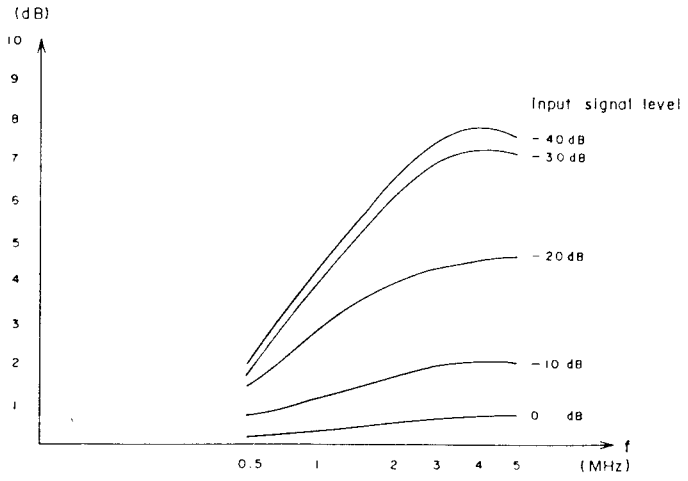


Fig. 7 Detail enhancer response

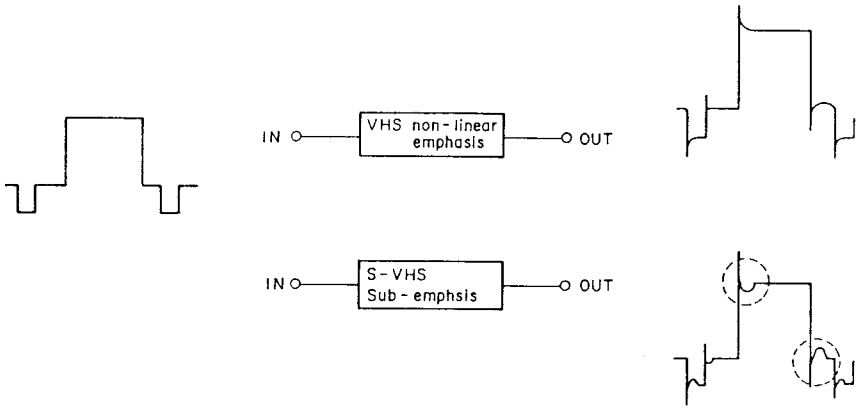


Fig. 8 Comparison of emphasis response

3) Luminance signal REC carrier frequency shift

To improve the video signal's high range frequency response during recording/playback, Y signal REC carrier frequency is increased (PAL: 3.8–4.8 MHz, NTSC: 3.4–4.4 MHz to 5.4 MHz–7 MHz). The deviation band is also expanded from 1 MHz to 1.6 MHz. The new S-VHS tape makes this frequency increase possible.

Luminance signal REC format: frequency modulated recording

White peak : 7.0 MHz ± 100 kHz
Sync tip : 5.4 MHz ± 100 kHz
Deviation : 1.6 MHz ± 100 kHz

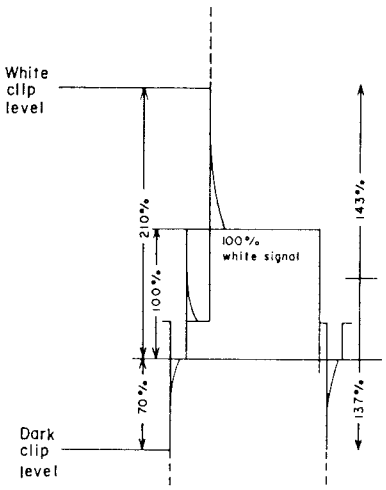


Fig. 9 White & dark clip

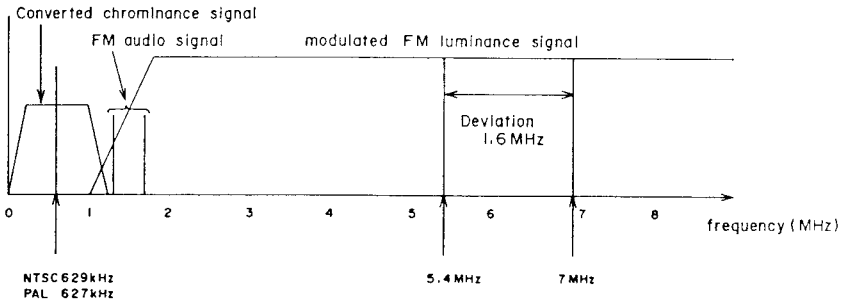


Fig. 10 Modulated luminance and chrominance signal spectrums

4) Others

① FM luminance signal recording current

The current setting shall be made to provide an optimum recording current level for the S-VHS tape.

② Pilot burst signal (with PAL System only)

By adding the pilot burst signal onto the recording chrominance signal, the luminance signal playback circuit shall be made switchable by detecting the pilot burst signal phase in a PB mode.

The purpose of this arrangement is to switch the Y PB circuit in accordance with whether any or no high frequency components of the luminance signal have been included in the chrominance signal at recording, by detecting an index signal added on for the switching purpose to the chrominance signal in advance, to preclude any interference between the C and Y circuits brought about by the invasion of the chrominance frequency band at playback by such high frequency components of the luminance signal. Unlike the NTSC, the PAL system leaves the use of comb filters optional for the Y/C separation of a composite input, which is the reason for the add-on pilot burst signal. The pilot burst injecting location on the circuit is the stage preceding the main converter.

I. CONTROLS

1-1. FRONT PANEL & FL DISPLAY (VS-S99EO, EOG)

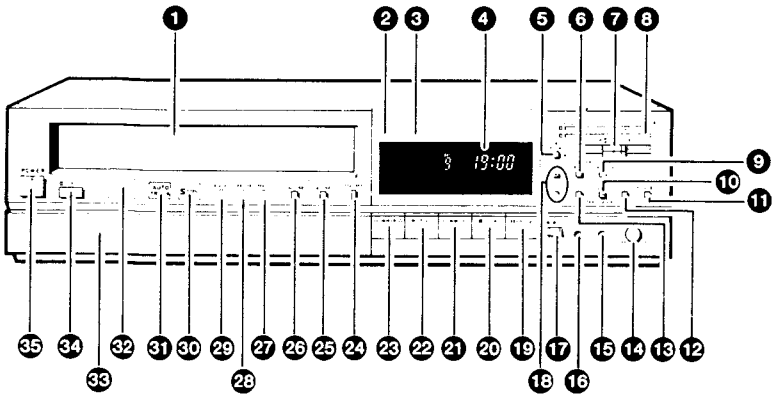


Fig. 1-1 Front panel (VS-S99EO, EOG)

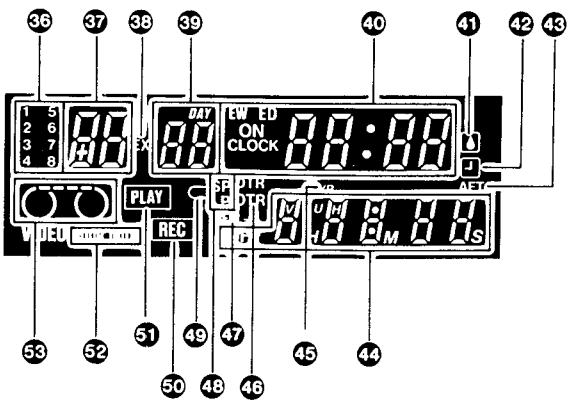


Fig. 1-2 FL display (VS-S99EO, EOG)

1. Cassette loading slot
2. STEREO indicator
3. 2 CH indicator
4. Fluorescent display
5. AUDIO MONITOR button
6. COUNTER RESET button
7. REC LEVEL control
8. PEAK LEVEL meter
9. COUNTER ZERO STOP button
10. SLOW/FR ADV button
11. DATA button
12. + button
13. – button
14. PHONES LEVEL control
15. PHONES jack
16. MIC jack
17. REC button
18. CHANNEL SELECTOR buttons
19. PAUSE/STILL button
20. STOP button
21. FF/FWD SEARCH button
22. PLAY button
23. REW/REV SEARCH button
24. PUSH OPEN button
25. OTR REC TIME button
26. OTR START TIME button
27. INSERT indicator
28. AUDIO DUB indicator
29. MESECAM indicator
30. S-VHS indicator
31. AUTO TRACKING indicator
32. Remote control sensor
33. Sub panel door
34. EJECT button
35. POWER button (with indicator)
36. Programme number indicators
37. Channel display
38. EX (External) display
39. Day display
40. Present time display
41. DEW indicator
42. PROG REC indicator
43. AFT indicator
44. Elapsed time counter display
45. VP (VPS) indicator
46. OTR indicator
47. REMAIN indicator
48. TAPE SPEED indicator
49. REPEAT indicator
50. REC indicator
51. PLAY indicator
52. ADDR/INDX indicator
53. CASSETTE STATUS indicator

1-2. FRONT PANEL & FL DISPLAY (VS-S99EK)

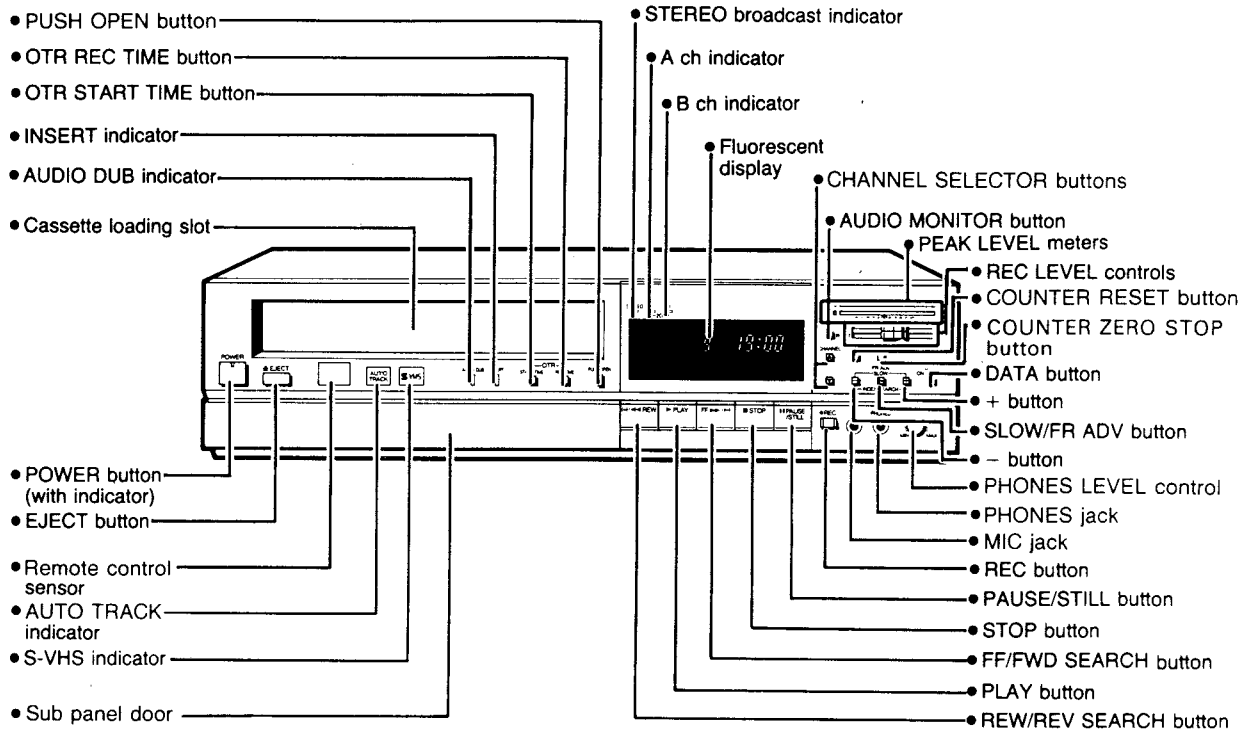


Fig. 1-3 Front panel (VS-S99EK)

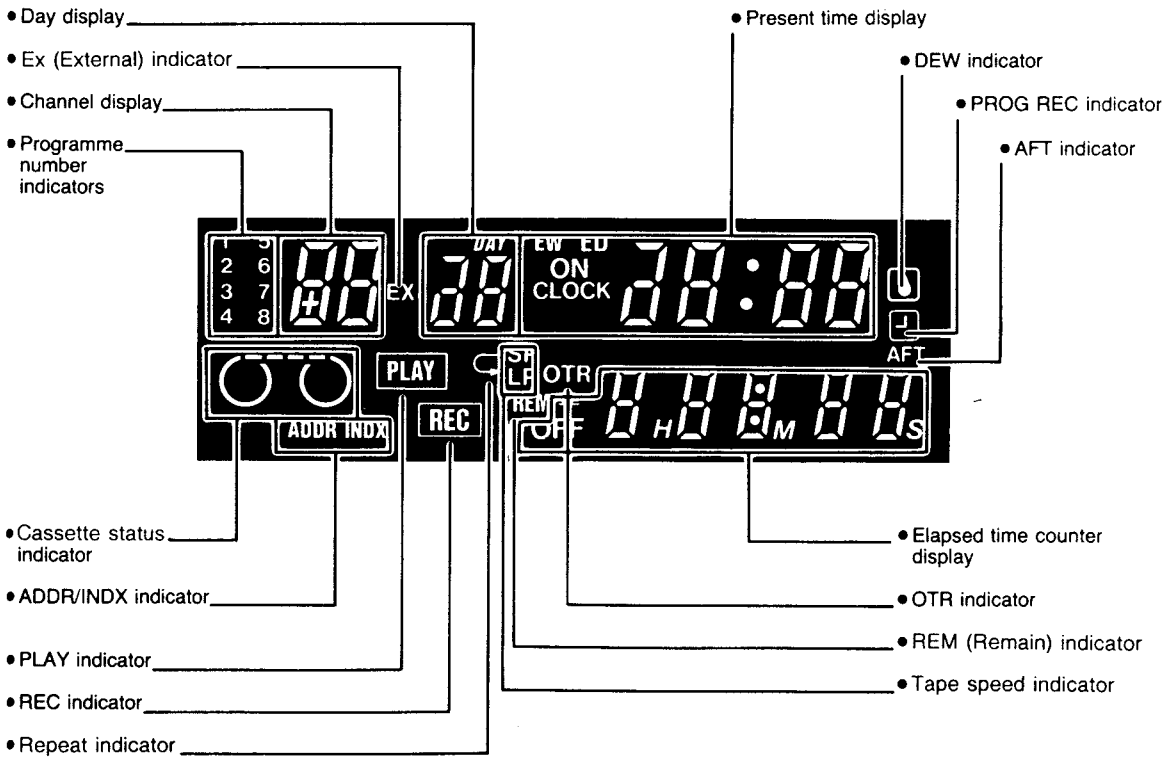


Fig. 1-4 FL display (VS-S99EK)

1-3. SUB PANEL & REAR PANEL (VS-S99EO)

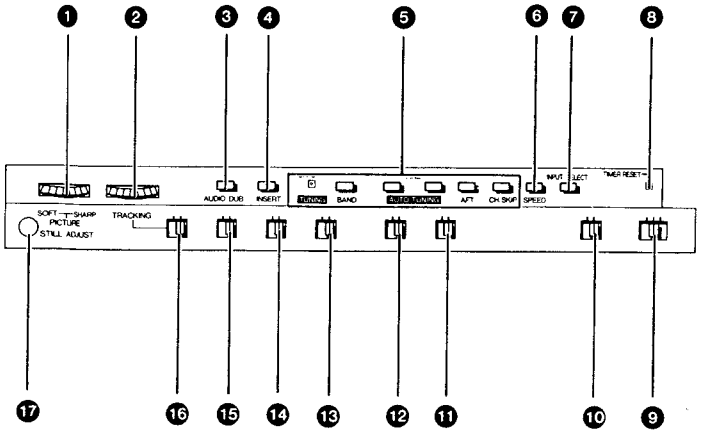


Fig. 1-5 Sub panel (VS-S99EO)

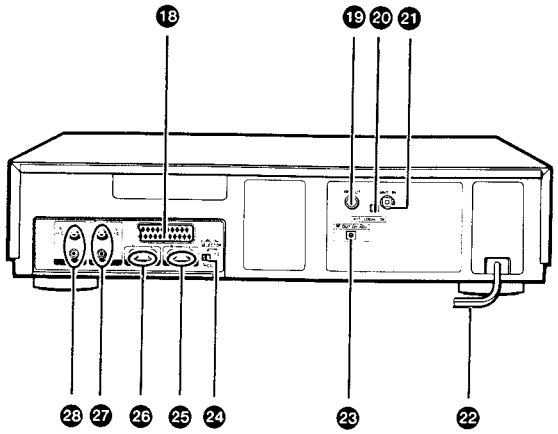


Fig. 1-6 Rear panel (VS-S99EO)

1. PICTURE control
2. TRACKING control
3. AUDIO DUB button
4. INSERT button
5. Channel preset section
6. TAPE SPEED button
7. INPUT SELECT button
8. TIMER RESET button
9. METER SELECT switch
10. TAPE REMAIN switch
11. VIDEO MUTE switch
12. EDIT switch
13. S-VHS switch
14. AV INPUT SELECT switch
15. VIDEO INPUT switch
16. DIGITAL TRACKING switch
17. STILL ADJUST control
18. EURO AV socket (SCART)
19. RF OUT terminal
20. ATT switch
21. ANT. IN terminal
22. Power cord
23. VIDEO CHANNEL setting screw
24. EURO AV SELECTOR switch
25. AUX AUDIO sockets
26. AUDIO OUT sockets
27. AUX VIDEO and AUX S-VIDEO sockets
28. VIDEO OUT and S-VIDEO OUT sockets

1-4. SUB PANEL & REAR PANEL (VS-S99EOG)

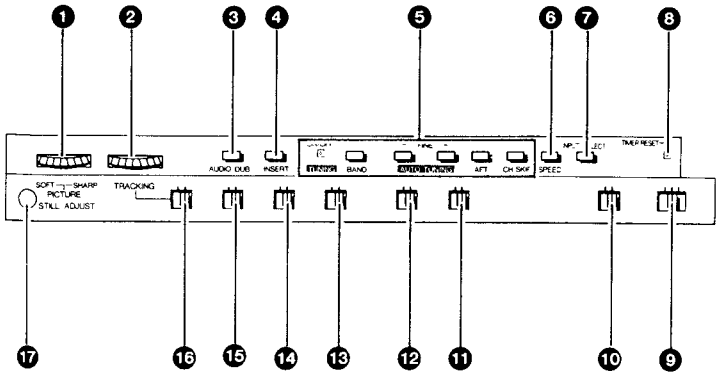


Fig. 1-7 Sub panel (VS-S99EOG)

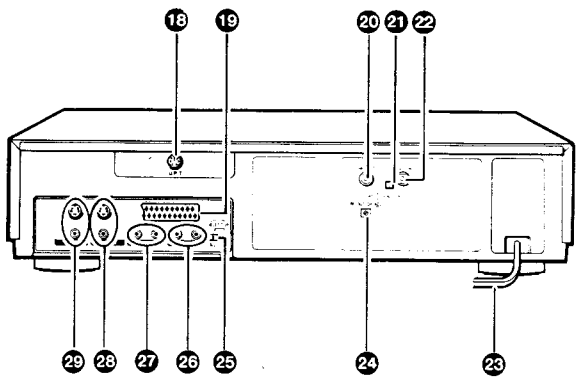


Fig. 1-8 Rear panel (VS-S99EOG)

1. PICTURE control
2. TRACKING control
3. AUDIO DUB button
4. INSERT button
5. Channel preset section
6. TAPE SPEED button
7. INPUT SELECT button
8. TIMER RESET button
9. METER SELECT switch
10. TAPE REMAIN switch
11. VIDEO MUTE switch
12. EDIT switch
13. S-VHS switch
14. AV INPUT SELECT switch
15. VIDEO INPUT switch
16. DIGITAL TRACKING switch
17. STILL ADJUST control
18. VPT adaptor socket
19. EURO AV socket (SCART)
20. RF OUT terminal
21. ATT switch
22. ANT. IN terminal
23. Power cord
24. VIDEO CHANNEL setting screw
25. EURO AV SELECTOR switch
26. AUX AUDIO sockets
27. AUDIO OUT sockets
28. AUX VIDEO and AUX S-VIDEO sockets
29. VIDEO OUT and S-VIDEO OUT sockets

1-5. SUB PANEL & FL DISPLAY (VS-S99EK)

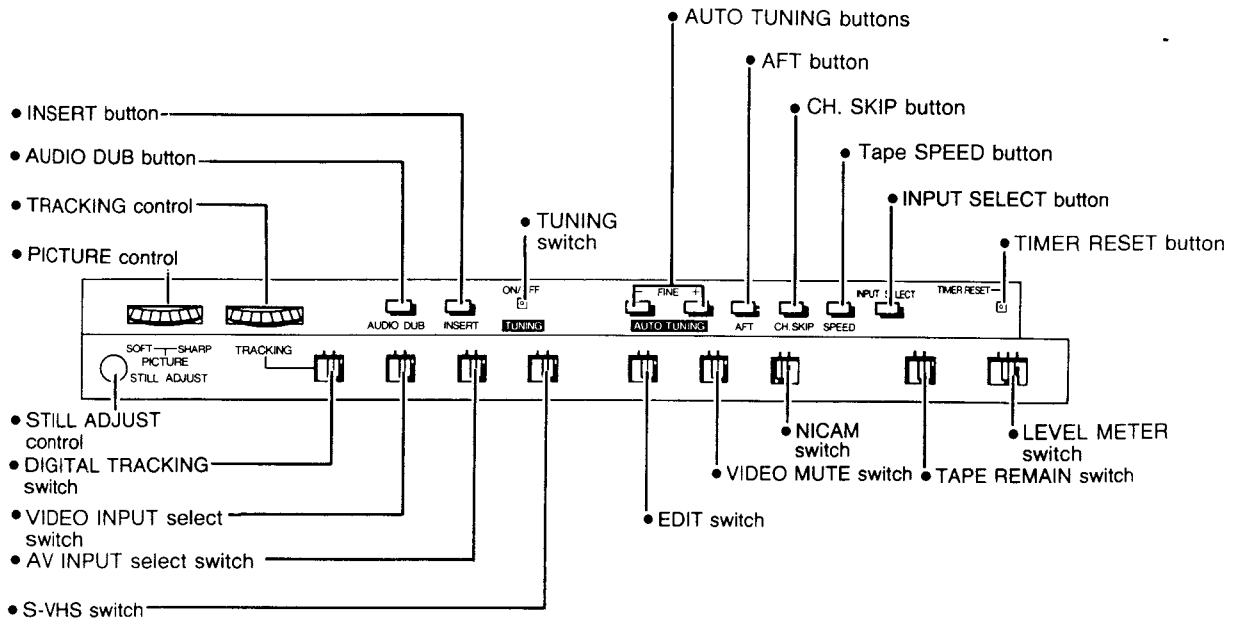


Fig. 1-9 Sub panel (VS-S99EK)

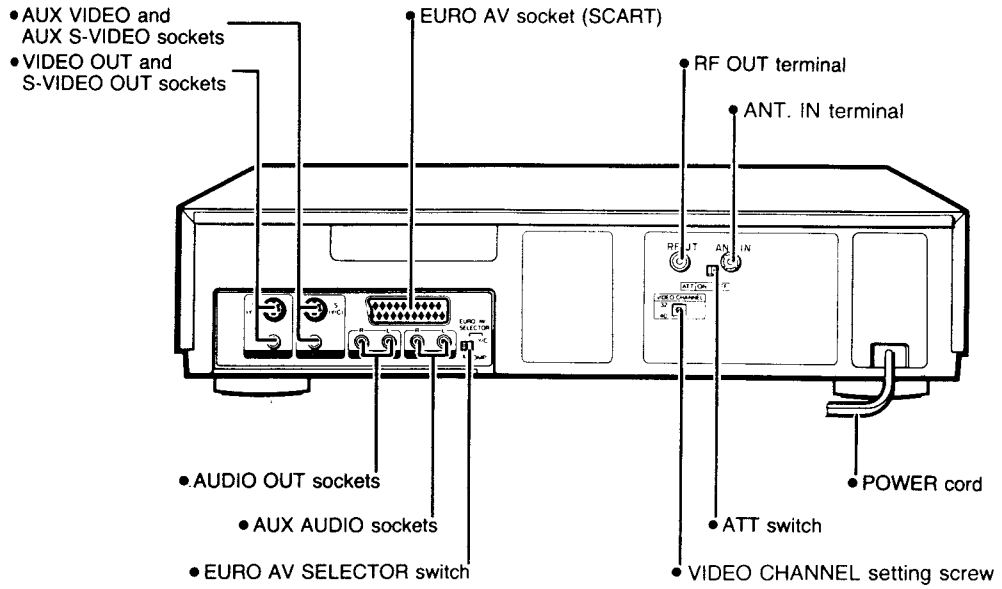


Fig. 1-10 Rear panel (VS-S99EK)

1-6. REMOTE CONTROL UNIT

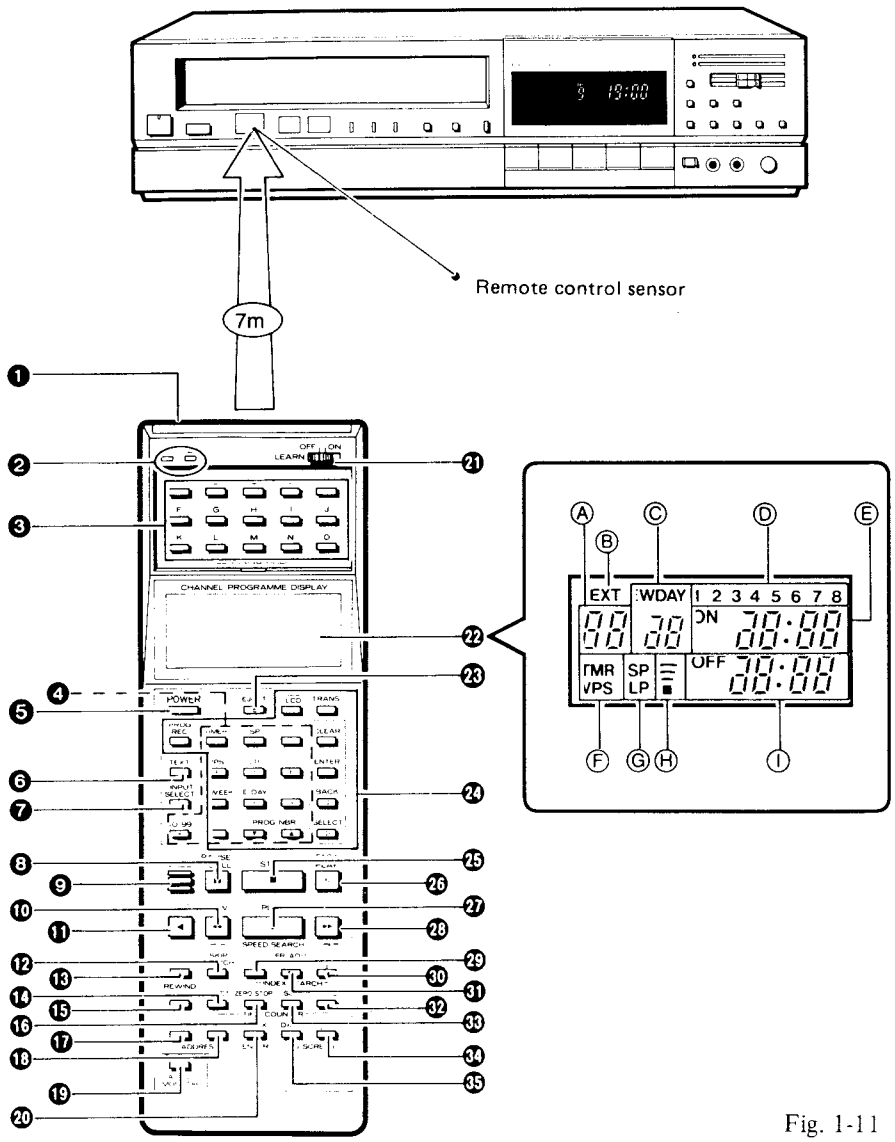


Fig. 1-11

1. Transmission window
2. LEARNING indicators (1, 2)
3. LEARNING buttons
4. CHANNEL NUMBER buttons
5. POWER button
6. TEXT button (EOG only)
7. INPUT SELECT button
8. PAUSE/STILL button
9. REC button
10. REW/REV SEARCH button
11. R-PLAY (REVERSE PLAY) button
12. SKIP SEARCH button
13. REPEAT button
14. COUNTER RESET button
15. REWIND/PLAY button
16. COUNTER ZERO STOP button
17. ADDRESS SEARCH button
18. ADDRESS MARK button
19. AUDIO MONITOR button
20. INDEX ENTER button
21. LEARN switch
22. Liquid crystal display
    - Ⓐ Channel display
    - Ⓑ EXT (EXTERNAL) indicator
    - Ⓒ Day display
    - Ⓓ Programme number indicators
    - Ⓔ Recording start time display
    - Ⓕ Rec mode indicator (EOG only)
    - Ⓖ Tape speed indicator
    - Ⓗ Transfer indicator
    - Ⓘ Recording end time display
23. EJECT button
24. Programme recording control section
25. STOP button
26. FAST PLAY button
27. PLAY button
28. FF/FWD SEARCH button
29. – button
30. + button
31. SLOWER ADV button
32. ELAPSED TIME SEARCH button
33. ELAPSED TIME SET button
34. PROG LIST button
35. DATA button

II. DISASSEMBLY

2-1. REMOVAL OF TOP COVER

1) As shown in Fig. 2-1, remove the four screws (ⓐ, ⓑ, ⓒ and ⓓ, two on each side retaining the top cover.
2) Gently expand the bottom edges of the top cover, pivot cover forward, then slide toward rear, in the direction of the arrows.

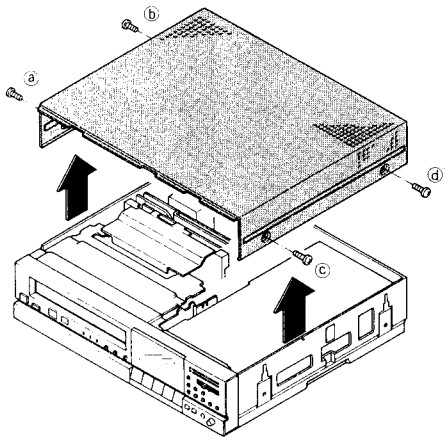


Fig. 2-1

2-2. REMOVAL OF BOTTOM COVER

1) Remove the ten screws (ⓐ, ⓑ, ⓒ, ⓓ, ⓔ, ⓕ, ⓖ, ⓗ, ⓘ and ⓙ) retaining the bottom cover as shown in Fig. 2-2.
2) Remove the bottom cover by sliding toward the rear and pulling outward in the direction of the arrow.

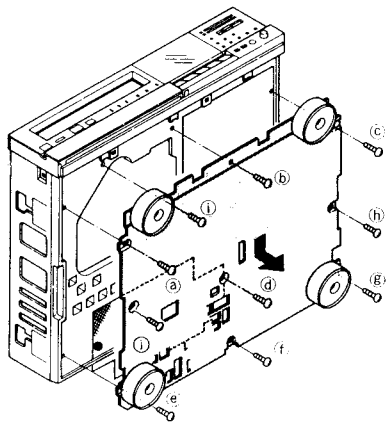


Fig. 2-2

2-3. REMOVAL OF FRONT PANEL

1) Remove the top cover.
2) Pull out the PHONES LEVEL knob on the front panel.
3) Remove the screw ⓘ on the top side of the front panel.
4) Release the hooks ⓐ, ⓑ, ⓒ, ⓓ, ⓔ, ⓕ, ⓖ and remove the front panel in the direction of the arrows as shown in Fig. 2-3.

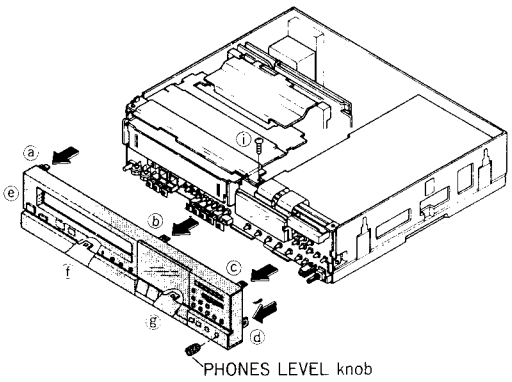


Fig. 2-3

2-4. HOW TO EXECUTE CIRCUIT BOARD SERVICE

CAUTION: Before attempting to remove or repair any PCB unplug the power cord from the A.C. source.

Location of printed circuit boards (Refer to Fig. 2-4)

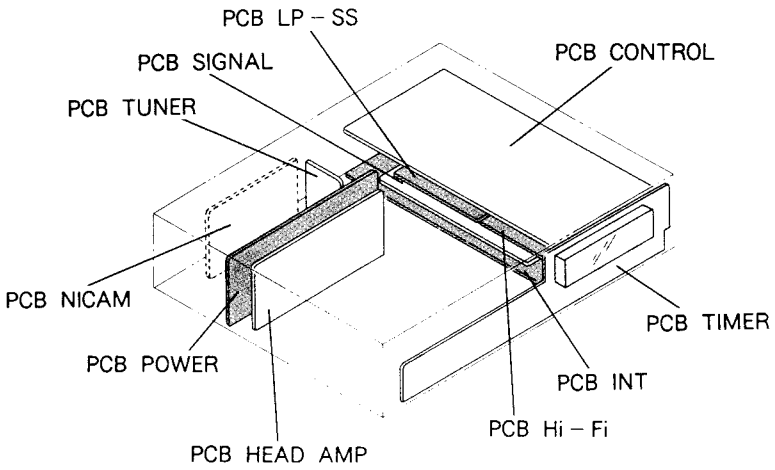


Fig. 2-4

2-4-1. PCB CONTROL

1) Remove the top cover.
2) Remove the four screws ⓐ, ⓑ, ⓒ and ⓓ retaining the PCB CONTROL as shown in Fig. 2-5.
3) Release the hook ⓔ and pivot the PCB CONTROL in the direction of the arrow.

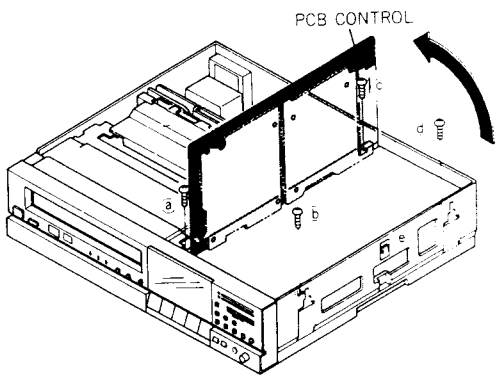


Fig. 2-5

2-4-2. PCB Hi-Fi

1) Pivot the PCB CONTROL.
2) Unlock the four PCB supports (ⓐ, ⓑ, ⓒ and ⓓ) retaining the PCB Hi-Fi as shown in Fig. 2-6.

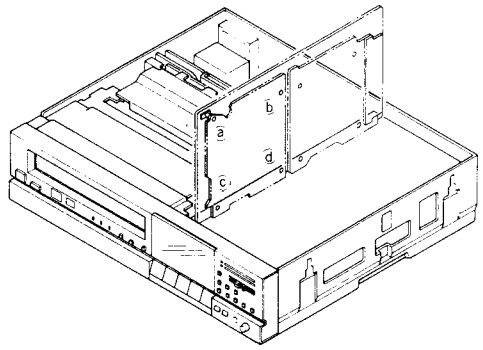


Fig. 2-6

2-4-3. PCB LP-SS

1) Pivot the PCB CONTROL.
2. Unlock the four PCB supports (ⓐ, ⓑ, ⓒ and ⓓ) retaining the PCB LP-SS as shown in Fig. 2-7.

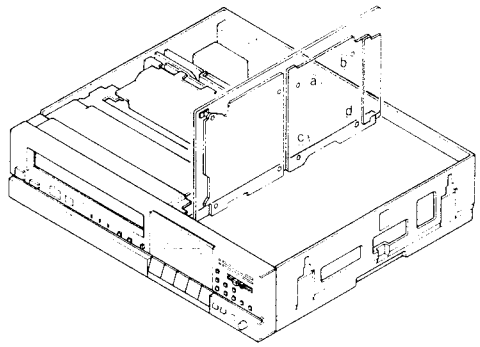


Fig. 2-7

2-4-4. PCB Y-SIGNAL

1) Pivot the PCB CONTROL.
2) Disconnect connector YR on the PCB Y-SIGNAL.
3) Unlock the two PCB supports (ⓐ and ⓑ) retaining the PCB Y-SIGNAL and pivot the PCB Y-SIGNAL in the direction of the arrow as shown in Fig. 2-8.

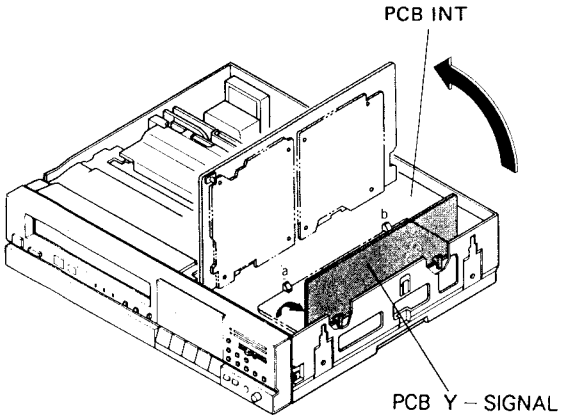


Fig. 2-8

2-4-5. PCB INT

1) Remove the bottom cover.
2) Pivot the PCB Y-SIGNAL.

2-4-6. PCB TIMER

1) Remove the front panel.
2) Remove the four screws (ⓐ, ⓑ, ⓒ and ⓓ) retaining the PCB TIMER and then remove the PCB TIMER as shown in Fig. 2-9.

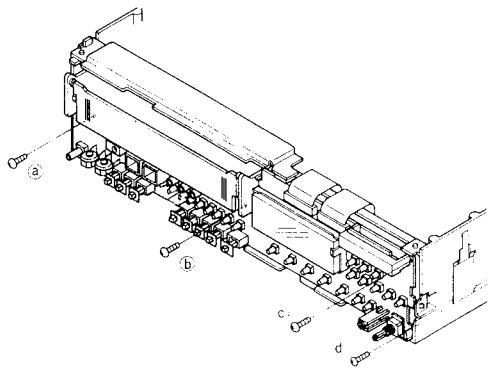


Fig. 2-9

2-4-7. PCB HEAD AMP

[Removal]

1) Remove the two screws (ⓐ and ⓑ) retaining the drum shield plate and then remove the drum shield plate.
2. Remove the two screws (ⓒ and ⓓ) retaining the PCB HEAD AMP and remove the PCB HEAD AMP by lifting in an upward direction as shown in Fig. 2-10.

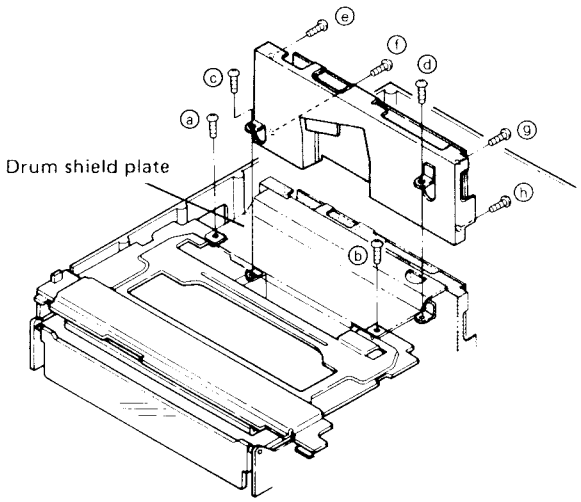


Fig. 2-10

[Installation]

1) Install the PCB HEAD AMP onto the drum assembly by connecting the connector [GB] on the PCB HEAD AMP.
2) With PCB HEAD AMP installed as in the above step 1), make sure the holes of the set screws (ⓒ and ⓓ) are aligned.
   If not, change the mounting position of the shield case and PCB so that the holes of the set screws (ⓒ and ⓓ) are properly aligned.
   If PCB is fastened without aligning the holes of the screws, the FM waveform may be disturbed.

2-4-8. PCB TUNER

1) Remove the three screws (ⓐ, ⓑ and ⓒ) retaining the PCB TUNER as shown in Fig. 2-11.
2) Remove the two screws (ⓓ and ⓔ) retaining the Radiator holder.
3) Remove the PCB TUNER by lifting in an upward direction.

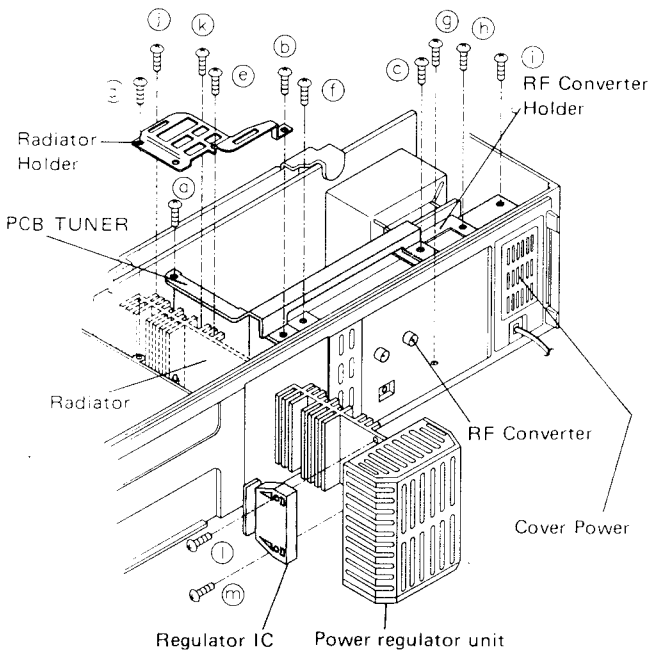


Fig. 2-11

2-4-9. PCB POWER TRANS

1) Remove the PCB TUNER.
2) Remove the three screws (ⓕ, ⓖ and ⓗ) retaining the RF converter as shown in Fig. 2-11.
3) Remove the RF converter and the RF converter holder by lifting in an upward direction.
4) Remove the screw (ⓘ) retaining the cover power and remove the cover power.
5) Remove the screw (ⓐ) retaining the PCB HEAD AMP and the ground lead wire as shown in Fig. 2-12.
6) Remove the four screws (ⓑ, ⓒ, ⓓ and ⓔ) retaining the PCB POWER TRANS.
7) Unlock the hook and remove the PCB POWER TRANS by pulling upward as shown in Fig. 2-12.
8) Remove the four screws (ⓕ, ⓖ, ⓗ and ⓘ) retaining the bracket and remove the bracket from the PCB POWER TRANS.

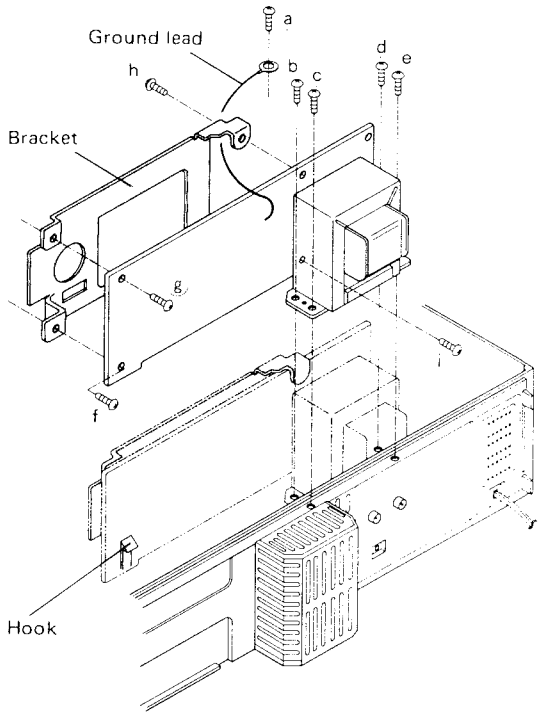


Fig. 2-12

2-4-10. POWER REGULATOR UNIT (IC970)

1) Remove the two screws (ⓓ and ⓔ) retaining the Radiator holder as shown in Fig. 2-11.
2) Remove the two screws (ⓙ and ⓚ) retaining the power regulator unit and sliding toward the rear side as shown in Fig. 2-11.
3) Remove the two screws (ⓛ and ⓜ) retaining the regulator IC and remove the regulator IC from the Radiator as shown in Fig. 2-11.

III. MAJOR COMPONENT REMOVAL AND INSTALLATION

3-1. REPLACEMENT OF CASSETTE HOUSING

[Removal]

1) Remove the top cover and front panel.
2) Remove the two screws (ⓐ and ⓑ) retaining the video head shield cover and remove the two screws (ⓒ and ⓓ) retaining the stay front as shown in Fig. 3-1.
3) Remove the video head shield cover and stay front.
4) Remove the cassette housing loading belt as shown in Fig. 3-2.
5) Disconnect connector DF , as shown in Fig. 3-3.
6) Unclamp lead wire on the cassette housing as shown in Fig. 3-1.
7) Remove the two screws (ⓐ and ⓑ) retaining the cassette housing as shown in Fig. 3-3.
8) Remove the cassette housing by sliding back in the direction of the arrow.

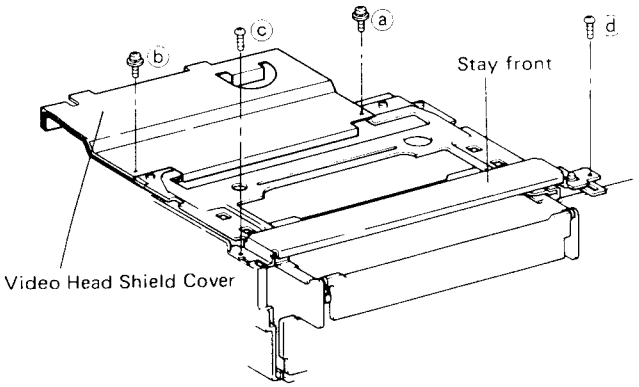


Fig. 3-1

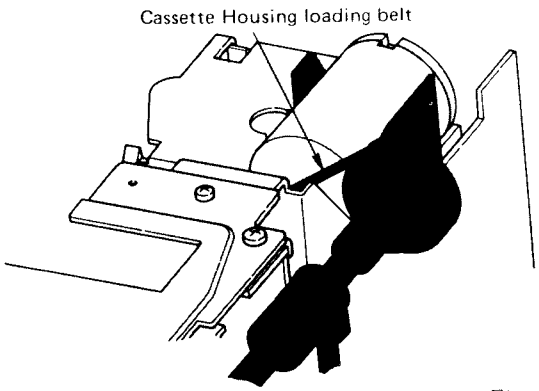


Fig. 3-2

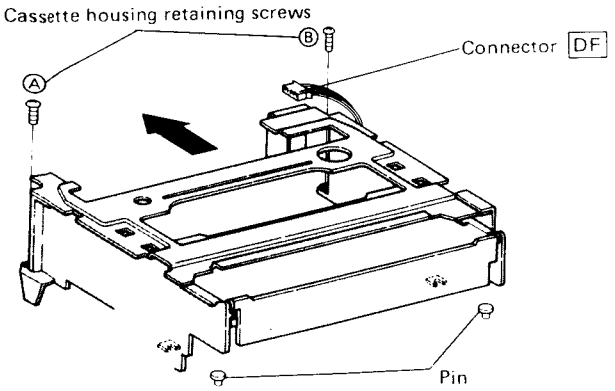


Fig. 3-3

[Replacement]

To reassemble the cassette housing into the VCR adhere to the following steps. If these steps are not carried out properly, abnormal noise may be produced in the FF and REW modes or the tape may be damaged in play-back.

1) Set the positioning U-holes at the right and left front of the cassette housing side onto the pins at the front side of the main transport plate, refer to Fig. 3-3, then slide the cassette housing inside to the point where the holes for the housing screws are matched to the screw holes on the main plate.
2) Install the two cassette housing screws.
3) Clamp the lead wire on the cassette housing.
4) Reconnect connectors DF .
5) Attach the cassette housing loading belt shown in Fig. 3-2.
6) Attach the stay front and the video head shield cover as shown in Fig. 3-1.
7) Check that the cassette is loaded and unloaded smoothly without abnormal noise.
8) Check that, in the unloaded position, the loading prevention latch attached to the bottom of the cassette housing is fastened to the housing side strip. (See Fig. 3-4)
9) If an irregularity is detected in steps 7) and 8) the cassette housing may be incorrectly assembled. Loosen the fastening screws, unfasten the cassette housing and readjust, as required.

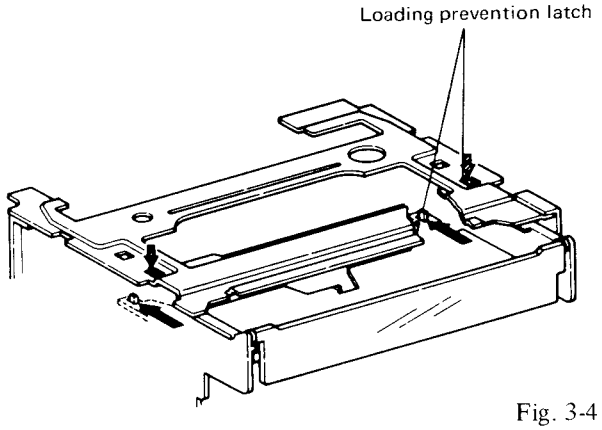


Fig. 3-4

3-2. REPLACEMENT OF DRUM MOTOR/ VIDEO HEAD ASSEMBLY

[Removal of Drum Motor/Video Head Assembly]

1) Remove the video head shield cover.
2) Remove the PCB HEAD AMP.
3) Remove the Regulator Transistor fastening screw as shown in Fig. 3-5 and remove the Regulator Transistor.
4) Disconnect connector DY from Drum assembly.
5) Remove the three drum retaining screws as shown in Fig. 3-6.

6) Holding the upper drum assembly, remove the complete Drum Motor/Video head assembly by gently pulling in an upward direction.
7) Disconnect connector DA from Drum assembly.
8) Remove the brush retaining screw and brush as shown in Fig. 3-6.

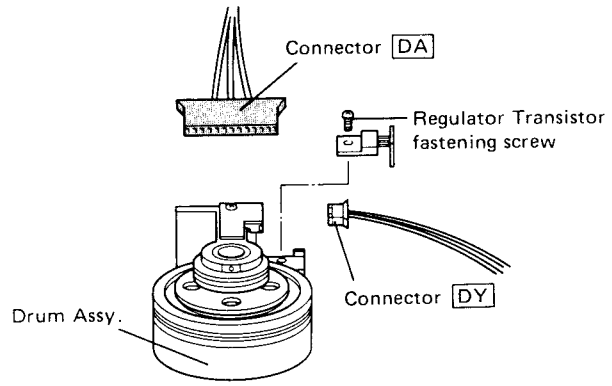


Fig. 3-5

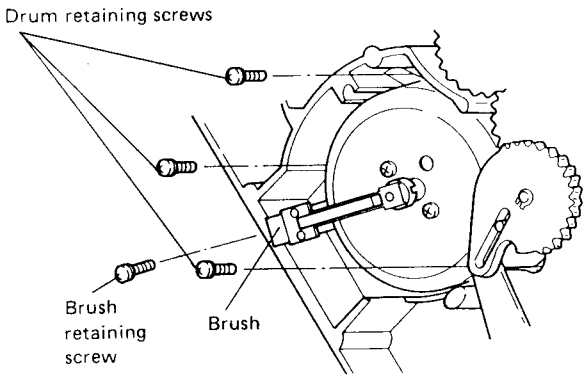


Fig. 3-6

[Installation of Drum Motor/Video Head Assembly]

During installation, avoid holding the Upper drum with bare hands. If this cannot be avoided, a cleaning procedure must be performed.

1) Fasten the brush with the brush retaining screw to the new Drum assembly as shown in Fig. 3-6.
2) Reconnect connector DA.
3) Carefully holding the complete drum assembly (with a piece of cotton cloth), slowly insert the drum assembly into its original drum mounting position.
   NOTE: Do not apply excessive force to the video heads as damage will result.
4) Secure with the three drum retaining screws previously removed, as shown in Fig. 3-6.
5) Fasten the Regulator Transistor assembly with mounting screw.
6) Reconnect connector DY as shown in Fig. 3-5.
7) Reinstall the video head shield cover.
8) When the complete drum assembly has been changed, precise alignment is required.
   Check and adjust playback switching point, tracking preset, colour recording level, FM recording level and interchangeability.

3-3. REPLACEMENT OF CAPSTAN MOTOR

[Removal of Capstan Motor]

1) On the underside of the transport deck, remove the two stopper–RD retaining screws (ⓐ and ⓑ) as shown in Fig. 3-7.
2) Remove the belt–R from the pulley-belt.
3) Remove the three Grip rings (ⓒ, ⓓ and ⓔ) retaining the link–B and remove the link–B as shown in Fig. 3-7.
4) Disconnect connector DC as shown in Fig. 3-7.
5) Remove the three screws retaining the Capstan motor as shown in Fig. 3-8.

[Installation of Capstan Motor]

1) Fasten the Capstan motor with the three Capstan motor retaining screws as shown in Fig. 3-8.
2) Reconnect connector DC as shown in Fig. 3-7.
3) Install link–B so the pin fits in the outside slot of CAM-GEAR-M, and install the grip rings at three locations.
4) Install belt–R and stopper–RD.
5) Clean the capstan shaft after its installation by wiping with alcohol.

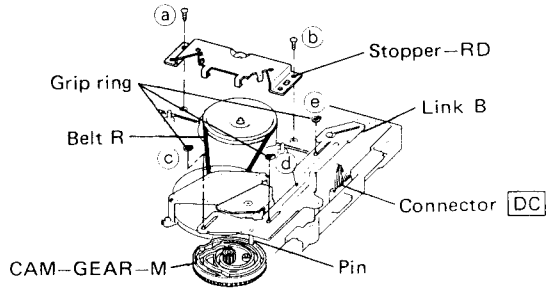


Fig. 3-7

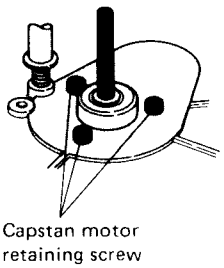


Fig. 3-8

3-4. REPLACEMENT OF BELT–R

[Removal of Belt–R]

1) Remove the two screws (ⓐ and ⓑ) retaining the stopper–RD as shown in Fig. 3-9.
2) Remove the two rotor thrust bearing retaining screws (ⓒ and ⓓ) as shown in Fig. 3-9.
3) Lift the rotor thrust bearing a little and remove the belt–R as shown in Fig. 3-9.

[Installation of Belt–R]

1) Reverse steps 1) ~ 3) in section 3-4. [Removal of Belt–R] to install a new belt–R.

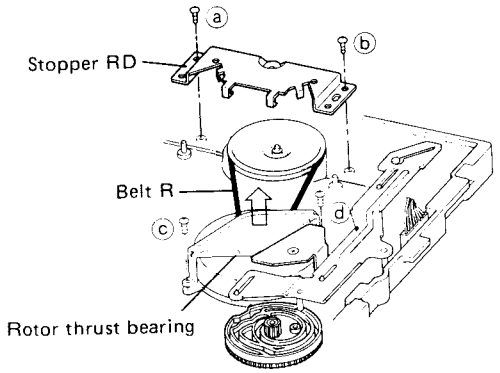


Fig. 3-9

3-5. REPLACEMENT OF LOADING MOTOR

[Removal of Loading Motor]

1) Remove the PCB HEAD AMP.
2) Remove the holder AMP with retaining screw as shown in Fig. 3-10.
3) Disconnect connector DL.
4) Remove the cassette housing loading belt as shown in Fig. 3-10.
5) Remove the loading belt as shown in Fig. 3-10.
6) Unlock the three supports (ⓐ , ⓑ and ⓒ) shown in Fig. 3-10 and remove the holder-worm.
7) Unlock the two Motor supports (ⓓ and ⓔ) as shown in Fig. 3-10 and remove the loading motor.

[Installation of Loading Motor]

1) Reverse steps 1) ~ 7) in section 3-5. [Removal of Loading Motor] to install a new loading motor.

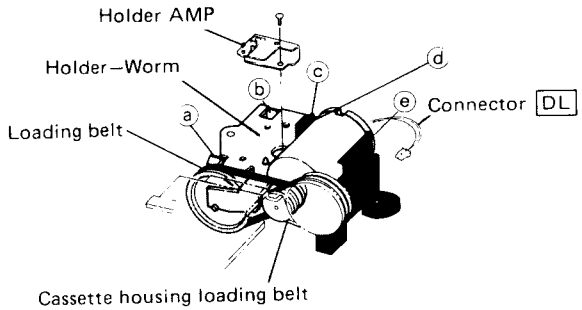


Fig. 3-10

3-6. REPLACEMENT OF PINCH ROLLER

1) Pull Pinch roller cap upward to remove. (Refer to Fig. 3-11).
2) Insert new Pinch roller. (Refer to Fig. 3-11).
3) Replace the pinch roller cap. Make sure that the direction of the cap is within the range shown in Fig. 3-11.

NOTE: It is advisable, when replacing the pinch roller cap, to support the arm-pinch from underneath to prevent it from being bent during this operation.

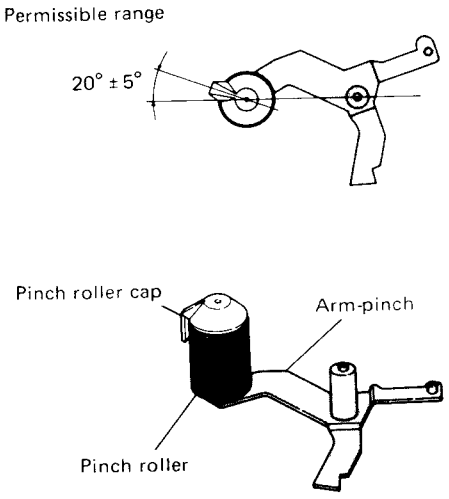


Fig. 3-11

IV. MECHANICAL ADJUSTMENT

NOTE: Some adjustments will require the use of a dummy video cassette tape.
A dummy video cassette tape can be prepared in the following way.
1. Remove both tape reels and the tape protection cover from a video cassette you no longer need.
2. Cover the video cassette's left and right side detection holes with black adhesive tape.

4-1. TENSION POLE POSITION ADJUSTMENT

1) Insert a dummy cassette in the cassette housing and set the recorder to the playback mode.
2) After loading has been completed remove the power cord from AC source.
3) Remove the cassette housing assembly.
4) Make sure that the tension pole is within the range shown in Fig. 4-1.
5) If the tension pole is outside the range, move the holder shown in Fig. 4-2 and adjust the position of the tension pole.

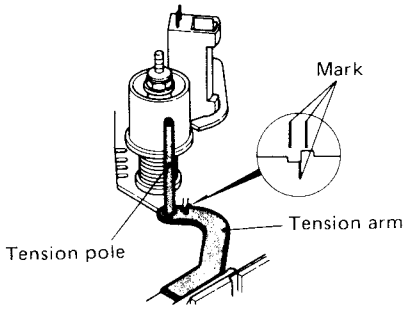


Fig. 4-1

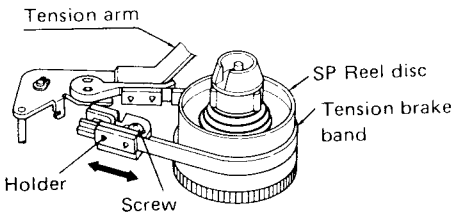


Fig. 4-2

4-2. BACK TENSION CHECK AND ADJUSTMENT

1) Insert the back tension meter and set the recorder to the playback mode.
2) Check that the mean value is 54 ± 4 g-cm on the supply side.
3) If the mean value exceeds 58 g-cm adjust the value to 54 g-cm by adjusting the location of the spring Ⓐ in the direction of arrow ⓐ as shown in Fig. 4-3.
4) If the pointer mean value is much less than 50 g-cm, adjust it to 54 g-cm by adjusting the location of the spring Ⓐ in the direction of arrow ⓑ.
   NOTE: The deviation of back tension value is not specified. However, if it fluctuates by more than 5 g-cm after a stabilizing period, then a problem exists in one of the associated parts.
   Check and repair as required.
5) Check that no skew distortion is observed during playback mode.

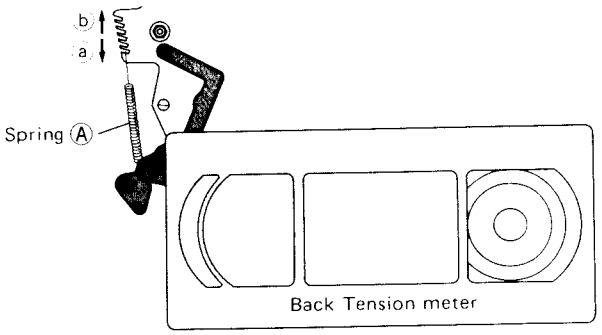


Fig. 4-3

4-3. POSITIONING OF GEARS AND THEIR INSTALLATION SEQUENCE

1) Set the gears so the positioning bore holes both for CAM-GEAR-M and main plate line up with each other (Refer to Fig. 4-7), confirm that the UNIT-ARM-MAIN pin on the front side of deck fits in the 2 mm slot of CAM-GEAR-M, and the LEVER-AP pin shall be fits in the 3 mm slot (Refer to Fig. 4-4).
2) Set ARM-LOAD pin so it fits in the slot of CAM-GEAR-M as shown in Fig. 4-5.
3) Fix CP-BRAKE pin so as to be held outside of CAM-GEAR-M.

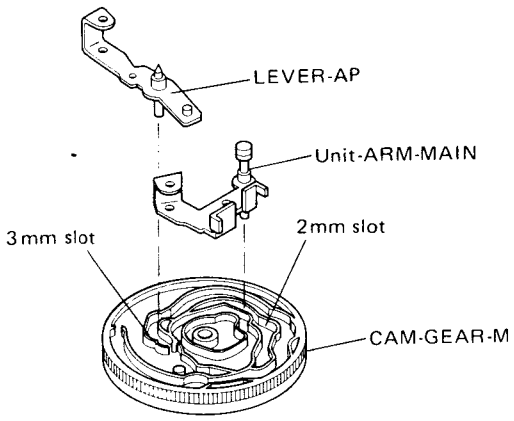


Fig. 4-4

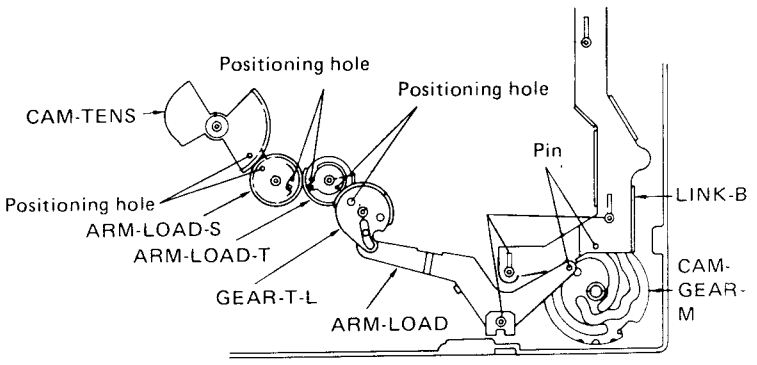


Fig. 4-5

4) Install ARM-LOAD-T, refer to Fig. 4-5.
5) Install GEAR-T-L so it aligns with the positioning hole of ARM-LOAD-T.
6) Install ARM-LOAD-S so the hole lines up with the positioning hole of ARM-LOAD-T.
7) Install CAM-TENS so the positioning hole lines up with the positioning hole of ARM-LOAD, etc.
8) Install LINK-B so the pin fits inside the slot of CAM-GEAR-M as shown in Fig. 4-5.
9) Install GRIP-RINGS, at 8 locations.

4-4. MODE SWITCH ATTACHMENT AND ADJUSTMENT

NOTE: When adjusting or repairing the mode switch ensure that the VCR is turned off in the "STOP" mode. (This time the half loading pole moves nearly to the audio/control head.)

Disconnect the power source plug.

1) Align both matching marks on the mode switch, as shown in Fig. 4-6.
2) The continuity of each of the pins should be checked to ground with an ohmmeter by connecting its red lead to GND, and black lead to each specific pin in sequence. Rotate the gear so the continuity conforms with the that given in Fig. 4-6.

   NOTE: The ohmmeter should be used at a high range (x 1000 or higher)
   Checking with x 1 range allows current of over 40 mA to flow and damage could result.
3) Set the CAM-GEAR-M so the positioning hole in the gear lines up with the positioning hole in the main plate, as shown in Fig. 4-7.

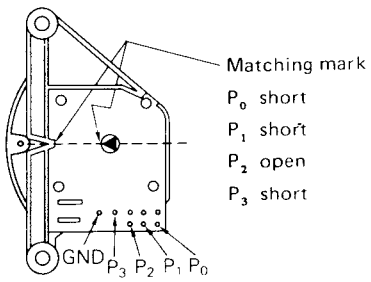


Fig. 4-6

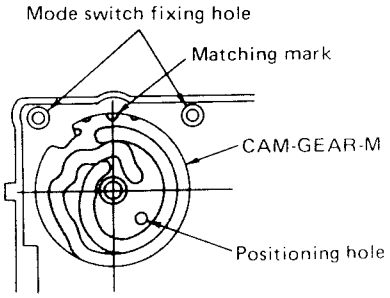


Fig. 4-7

4) Secure the mode switch to deck, taking care that the gears DO NOT ROTATE.
5) Repeat the continuity test given in Item 2), if any deviation is found after the mode switch is mounted, remove the mode switch and repeat the procedures given in Items 2) ~ 5), until correct continuity is achieved.

4-5. HALF LOADING UNIT ADJUSTMENT

4-5-1. Replacement of half loading unit

Remove each parts in the following order.

① Top cover
② Audio/Control head
③ Taper nut
④ Front loading unit
⑤ Half loading unit (Set Screws ⓒ, ⓓ and ⓔ are shown in Fig. 4-8.

For installation of the parts, install in reverse order and after the installation of front loading unit ④ execute the adjustment of the half loading gear position. (See 4-5-2)

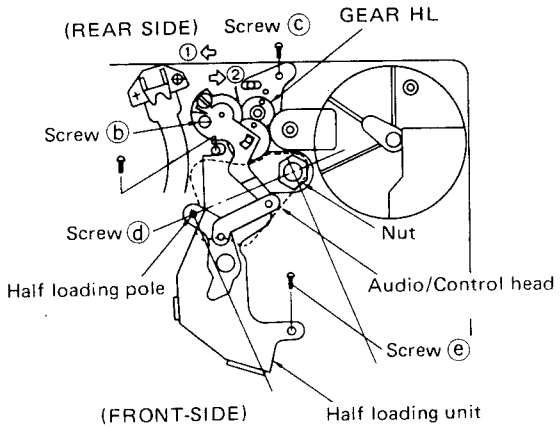


Fig. 4-8

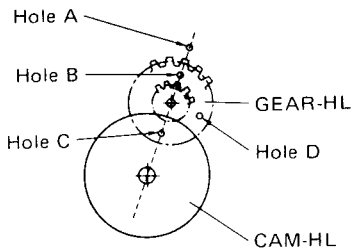


Fig. 4-9

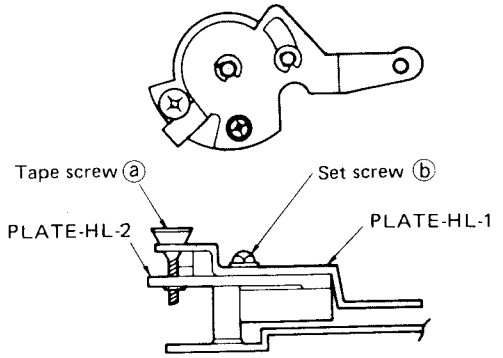
4-5-2. Adjustment of half loading gear position

1) Insert a dummy cassette in the cassette housing (at this time the recorder will go into the PLAY mode), then turn off the VCR. (At this time the half loading pole moves nearly to the audio/control head.)
2) Disconnect the power source plug.
3) Remove the set screw ⓒ in the half loading unit and loosen the set screws ⓓ and ⓔ (see Fig. 4-8). Slide the half loading unit in the direction of the arrow ①⇦ to align the three holes B, C and D in the half loading gear to the position shown in Fig. 4-9.
4) Slide the half loading unit in the direction of the arrow ②⇨ and secure in this position with screws ⓒ, ⓓ and ⓔ. Adjust the half loading pole position according to 4-5-3 before performing interchangeability and A/C HEAD adjustments and secure it with screw ⓑ for the time being.
5) Connect the power source plug and eject the dummy cassette.
6) After performing interchangeability and audio/control head adjustments, readjust the half loading pole position.

4-5-3. Adjustment of half loading pole position

Adjust the position of the half loading pole after interchangeability and A/C HEAD adjustments are performed.

1) Disconnect the power supply plug with the transport in the FAST FORWARD mode or the REWIND mode.
2) Loosen the set screw ⓑ so that PLATE-HL-1 can be moved.
3) Adjust the taper screw ⓐ so that the gap between the half loading pole and AE-HEAD shall be 0.45 ± 0.15 mm at the top of the pole. (Fig. 4-10).
4) Tighten the set screw ⓑ. After tightening, check again if the gap is 0.45 ± 0.15 mm. If not, loosen the set screw ⓑ and adjust the gap again.
5) On completion of adjustment, lock the taper screw ⓐ and the set screw ⓑ with a locking compound.



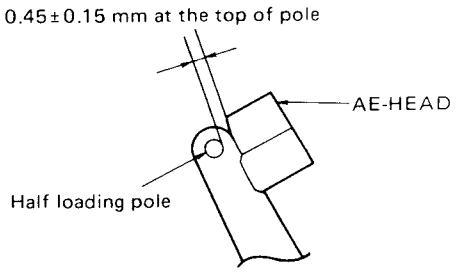


Fig. 4-10

4-6. TAPE PATH CHECK AND ADJUSTMENT

4-6-1. Tape run check

1) Load a recorded tape. Repeat playback and stop several times and check the following.

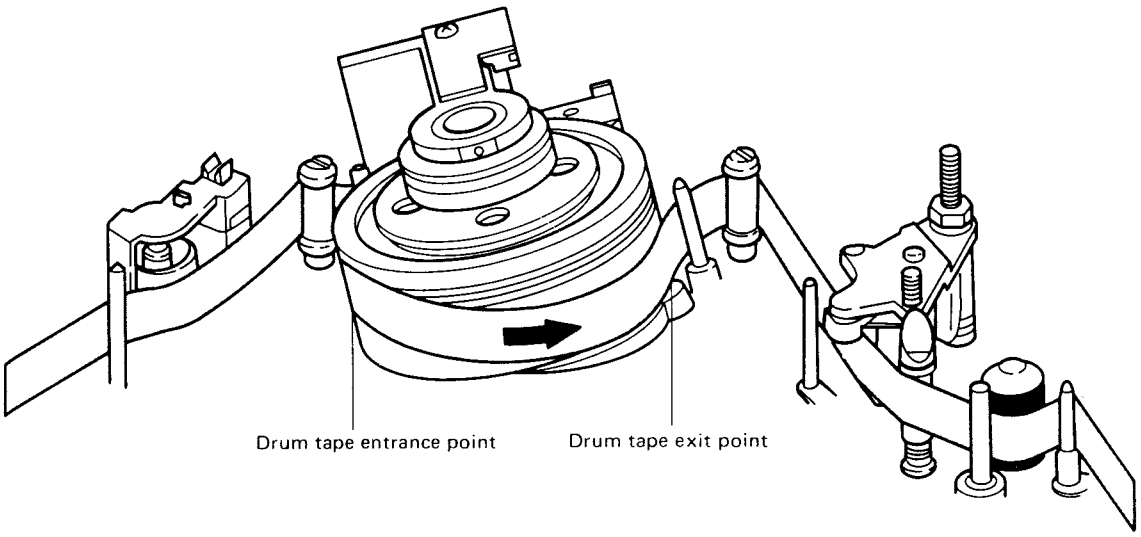


Fig. 4-11

2) Be sure that the tape does not run outside the drum lead path at the drum entrance and exit points in the playback mode.
   NOTE:
   * If the tape runs above the drum lead path, a "pit-a-pat" sound is generated because the video head catches the tape edge.
   * If the tape runs below the drum lead path, it will become curled or creased, and may also cause noise or instability in the picture.
3) Be sure that the tape is not curled or creased at either the guide roller or the guide poles on the supply and take up side, in loading, playback and unloading.

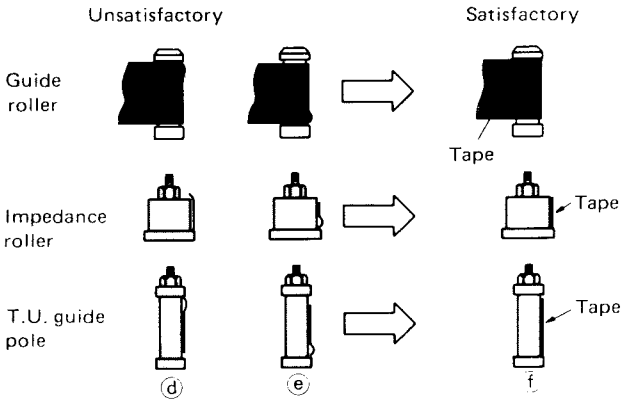


Fig. 4-13

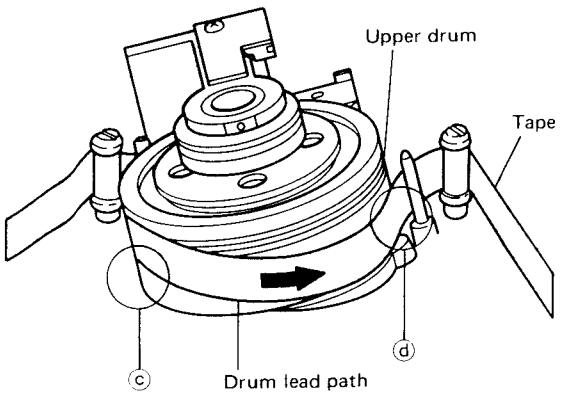


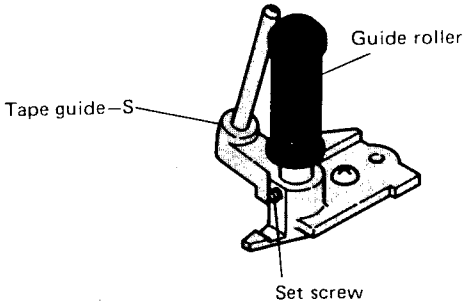
Fig. 4-12

4) Ensure that the tape is not damaged at areas "ⓒ" and "ⓓ" of the drum lead path where the tape is picked up on the drum at loading and separates from the drum at unloading (check at the end of E-180). Also ensure that no noise is generated.

4-6-2. Guide roller height adjustment

The following adjustment is required only when an irregularity is detected in the "Tape run check" stated in section 4-6-1.

1) Slightly loosen the set screws of the supply and the take up guide rollers.



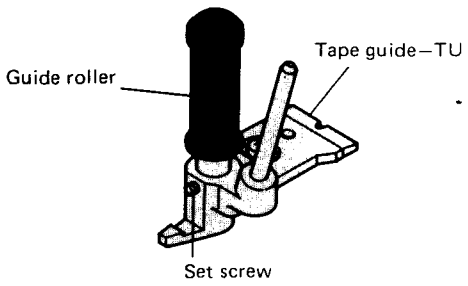


Fig. 4-14

NOTE: Loosen the set screw just enough to be able to move the guide roller with the hex key. If loosened excessively, the guide roller may be moved by the run of the tape. In this case, tighten the set screw slightly.

2) Load the recorded tape and set the recorder to the playback mode.
3) Slowly rotate the supply guide roller with – (minus) driver (Do not rotate more than 180° at a time) and adjust so that the tape will run smoothly over the drum, maintaining contact with the drum lead path.
4) Similarly turn the take up guide roller and adjust the point at which the tape separates from the drum.
   NOTE: Rotate the guide roller a little at a time. Careless rotation may damage the tape.

4-6-3. Take up guide pole and supply impedance roller

NOTE: The height of the take up guide pole and supply impedance roller is not adjusted at this stage since these adjustments are performed precisely at the factory.
If, for some reason, adjustments are necessary, proceed as follows.

* Adjust the height of the take up guide pole's lower flange to 10.8 mm from the chassis using a slide caliper.
* Adjust the height of the supply impedance roller's lower flange to 21.5 mm from the hollow part of the chassis.

1) Load a recorded tape and set the recorder to the playback mode.
2) Rotate the audio/control head inclination adjusting screw ⓒ and adjust so that the tape will run smoothly at the take up guide pole as illustrated in Fig. 4-13 ⓕ.
3) Be sure that the tape is not creased or twisted at the take up guide pole in playback.
4) Should the tape be creased or twisted at the arm take up guide pole, rotate the height adjusting nut until the crease or twist on the tape disappears. (Refer to Fig. 4-11 and Fig. 4-16.
   NOTE: Do not rotate the adjusting nut more than ± one turn.

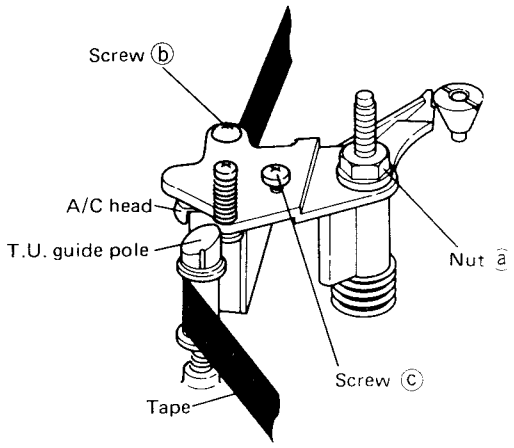


Fig. 4-15

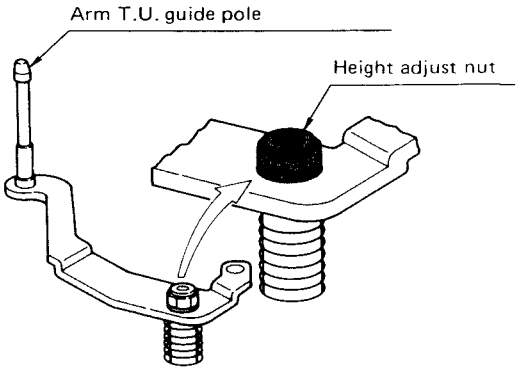


Fig. 4-16

4-6-4. Angle alignment of take-up slant pole

NOTE: Normally the slant pole angle does not require adjustment since it is precisely set at the factory.

1) Loosen the retaining screw shown in Fig. 4-17 slightly, it should be noted that excessively loosening often causes the guide roller to stick, preventing guide roller rotation during tape run.
2) When any tape folding or tape shrinkage is incurred on the top side of guide roller, rotate the slant pole assembly to widen the slant pole angle (Direction Ⓐ).
3) When the tape folding or tape shrinkage is found on the lower side of guide roller or when there is no spacing found between the lower side flange and the lower edge of the tape, rotate the slant pole assembly to decrease the slant pole angle (Direction Ⓑ).
4) After the angle alignment adjustment is made, perform the guide roller height adjustment.

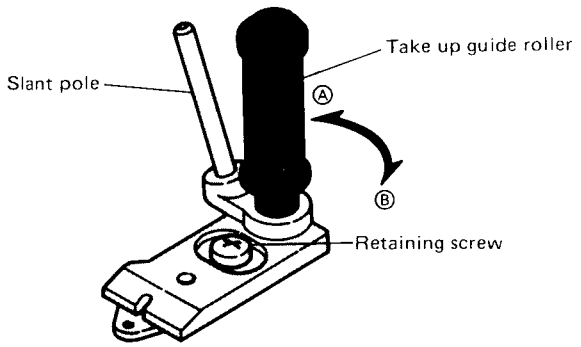


Fig. 4-17

4-7. INTERCHANGEABILITY ADJUSTMENT

Before running the alignment tape TF-530RFS, check and adjust the tape path by using a recorded tape in accordance with section 4-6.

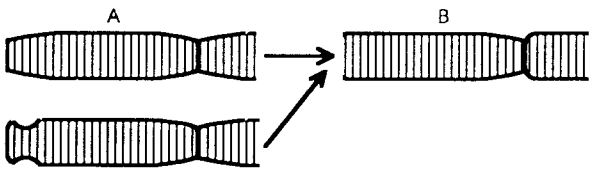
4-7-1. Check and adjustment of FM waveform

1) Connect the oscilloscope to test point TP-2A on the PCB Y-SIGNAL and set to the external synchronization mode.
   Synchronize by connecting EXT trigger to TP-2H on the PCB Y-SIGNAL.
2) Play back the alignment tape and observe the shape of the RF envelope.
3) Set DIGITAL TRACKING SW to MANUAL mode and then rotate the tracking control knob so that the FM waveform output will be maximum.

4-7-2. Drum meeting point adjustment

1) Set DIGITAL TRACKING SW to MANUAL mode and then rotate the tracking control knob so that the FM waveform output will be maximum.
2) Loosen slightly the set screw on supply guide roller.
3) Rotate the supply guide roller so the leading edge (Drum meeting point) of FM waveform is flat as A → B, as shown in Fig. 4-18.

   NOTE: If the guide roller turns too freely, slightly tighten the set screw.
   When adjusting the guide roller, the adjustment should be performed little by little so as not to any damage on the alignment tape. The above operation should be performed with care, checking the FM waveform, and at the same time, checking drum surface and guide pole surface for any tape curling or tape creasing.



Drum meeting point

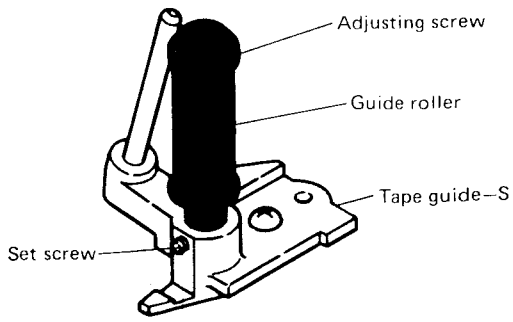


Fig. 4-18

4-7-3. Drum exit point adjustment

1) Set DIGITAL TRACKING SW to MANUAL mode and then rotate the tracking control knob so that the FM waveform output will be maximum.
2) The waveform at the exit point shall be adjusted in the same procedure as given for the drum meeting point. Loosen slightly the set screw on take up guide roller.
3) Rotate and adjust the take up guide roller so the lagging edge of FM waveform (Drum exit point) is flat as C → D, as shown in Fig. 4-19.
4) When the tape is found derailed from the guide, or involved with shrinkage at the take up guide pole part, turn the A/C head adjusting screw ⓒ which is shown in Fig. 4-19 so as for the tape travels flush to the lower edge of the guide pole.
   NOTE: The take up guide pole should not be adjusted.
5) In this case, rotate Audio/control head height adjusting NUT ⓐ until the letting top of the head meets the tape.
   Whether A/C head height shall be raised up or lowered shall be decided on the basis as shown in Fig. 4-19.

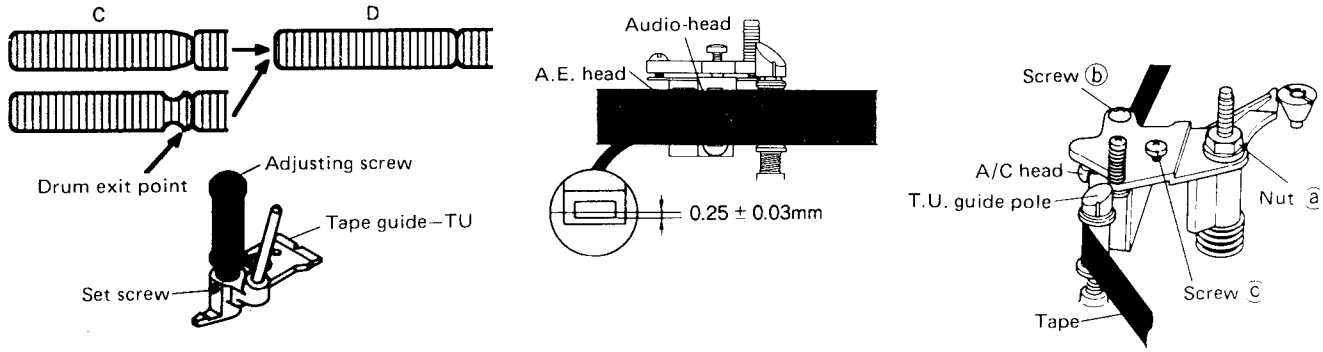


Fig. 4-19

4-7-4. Interchangeability adjustment

1) Connect the oscilloscope to test point TP-2A (PB FM OUT) on the PCB Y-SIGNAL. Set to external synchronization and synchronize by connecting EXT trigger to TP-2H on the PCB Y-SIGNAL. Set the EXT trigger to minus (–).
2) Play back the stairstep waveform of the alignment tape.
3) Turn the tracking control knob and adjust the FM waveform output to minimum.
4) If the FM waveform is similar to (A) or (B) in Fig. 4-20, adjust the height of the supply guide roller until it becomes like (E), (F) or (G) in Fig. 4-21. If the FM waveform fluctuates, adjust to the minimum point of fluctuation.
5) If the FM waveform is similar to (C) or (D) in Fig. 4-20 adjust the height of the take up guide roller until it becomes like (E), (F) or (G) in Fig. 4-21. If the waveform fluctuates, adjust to the minimum point of fluctuation.
6) Set the DIGITAL TRACKING SW to MANUAL mode and then rotate the tracking control knob from maximum to minimum FM waveform output. If the amplitude decrease is non linear finely adjust the height of the supply and take up guide rollers.
7) After ensuring that normal maximum FM waveform output coincides with maximum 6 kHz audio output, and that the tape is not creased along the tape path, secure the guide rollers by tightening the set screws.
   NOTE: Secure in stop mode, and do not apply excessive force to the tape guide.

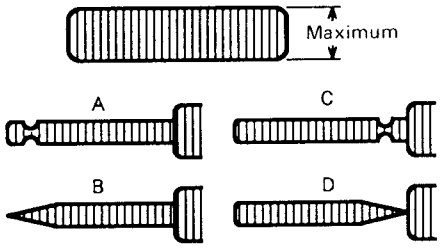


Fig. 4-20

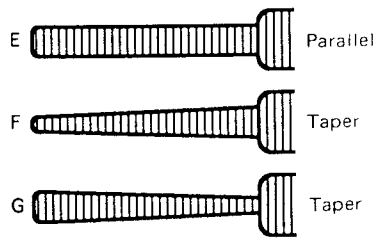


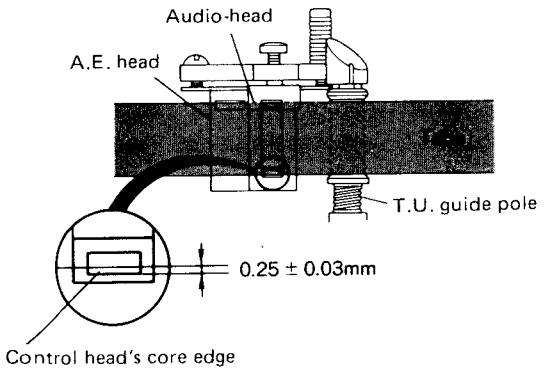
Fig. 4-21

8) After tightening the set screws, check the interchangeability again.

4-7-5. Audio/Control head adjustment

When the audio/control head is adjusted, the phase and azimuth of the control head must also be adjusted.

1) Monitor the audio out signal with the oscilloscope and play back 6 kHz audio signal.
2) Rotate the nut ⓐ and adjust to obtain maximum audio output level and the dimensions shown in Fig. 4-22.



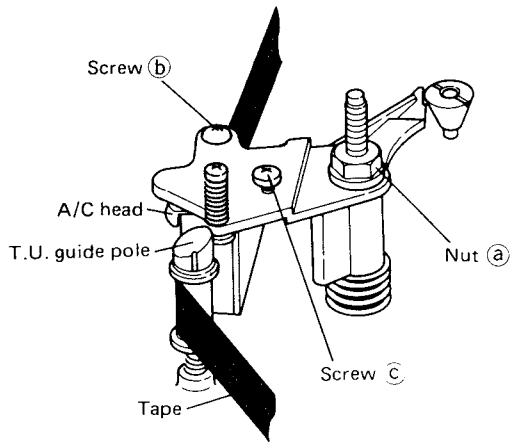


Fig. 4-22

3. Adjust the inclination adjusting screw ⓒ so that the tape will run along the lower edge of the take-up guide pole without creasing as illustrated in Fig. 4-22.

   NOTE: Adjust so that there are absolutely no creases in the tape at the take up guide pole because the tensile force of the tape at this part is very large and creasing will significantly shorten the tape service life.

4) Screw ⓑ is for adjustment of the azimuth. Adjust to 6 kHz maximum audio output.
5) Be sure that audio level fluctuation is below 2 dB peak to peak.
6) If the audio level fluctuation is greater than 2 dB p-p. Recheck the alignment given in item 2). If no improvement is noticed, lower the TU guide pole height slightly within a limit of 0.1 mm. If audio fluctuation is still too great, execute the slant pole angle alignment calibration as given in Item 4-6-4.

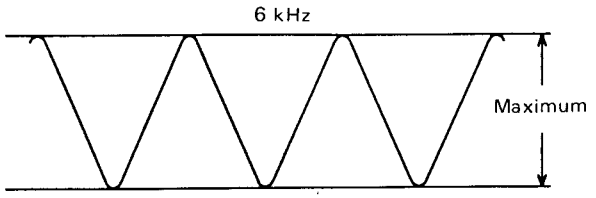


Fig. 4-23

4-7-6. Control head phase control adjustment

1) Set the DIGITAL TRACKING SW to MANUAL mode, and tracking knob to the centre click position.
2) Connect the oscilloscope to test point TP-2A (PB FM OUT) on the PCB Y-SIGNAL. Set up in the external trigger mode by connecting TP-2H on the same PC Board to the external trigger input.
3) Play back the alignment tape (TF-530RFS) and rotate the phase adjusting nut (CAM SCREW) shown in Fig. 4-24 to obtain maximum FM output.
4) Confirm that the FM output level is maximum when the DIGITAL TRACKING SW is set to the AUTO position.
5) Set the DIGITAL TRACKING SW to MANUAL position again, then turn the tracking knob. Confirm that the FM output level becomes maximum at the centre click position.

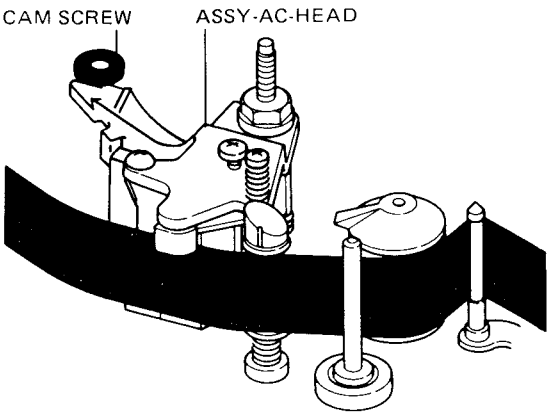


Fig. 4-24

4-7-7. Servo circuit adjustment

Following the completion of compatibility adjustments, check the following points.

1) Playback switching point adjustment. (See 5-2)
2) Tracking preset adjustment. (See 5-3)

4-7-8. Final check

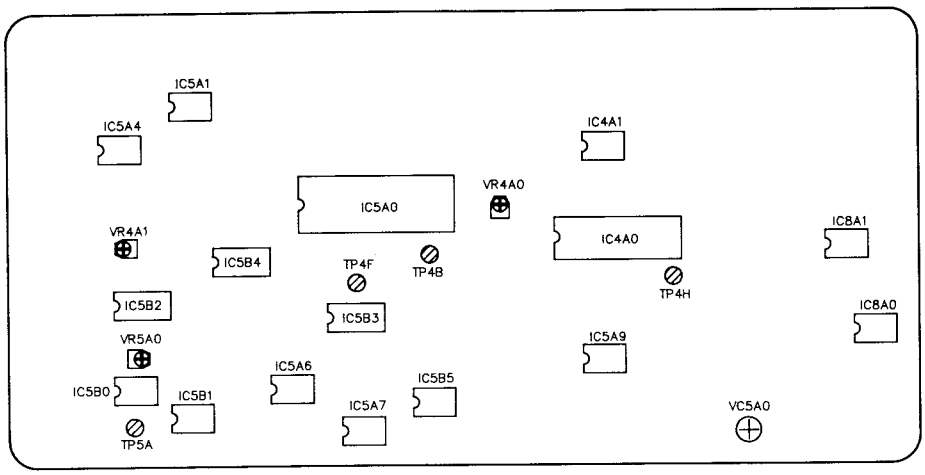
1) By using a self-recording and playback tape, record and play back the staircase and make sure that FM waveform from the self recorded tape is approximately the same as that of the alignment tape reproduction.
2) Adjust the audio playback output level if necessary. (See 5-25)
3) Check the video signal circuit adjustments if necessary. (See 5-4 ~ 5-24)

V. ELECTRICAL ADJUSTMENT

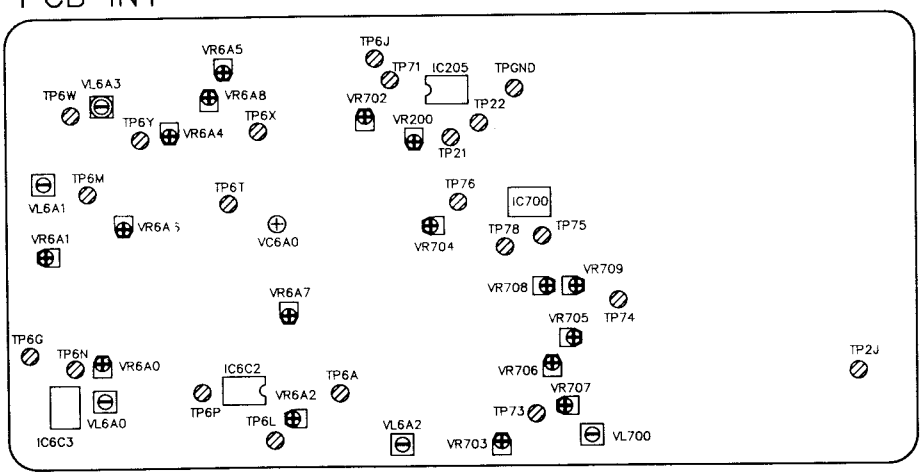
Circuit adjustments become necessary, in most cases, due to the wear of mechanical parts or following the replacement of critical components such as the video head. Certain circuit defects can often cause circuit adjustments to vary considerably. Should this occur, be sure to determine the natûre of the defect and repair prior to proceeding with adjustments.

Always use the test equipment recommended for a given adjustment procedure. If the appropriate test equipment is not available, it is recommended that adjustments NOT be attempted. Refrain from indiscreet adjustment of circuits unless properly equipped to do so.

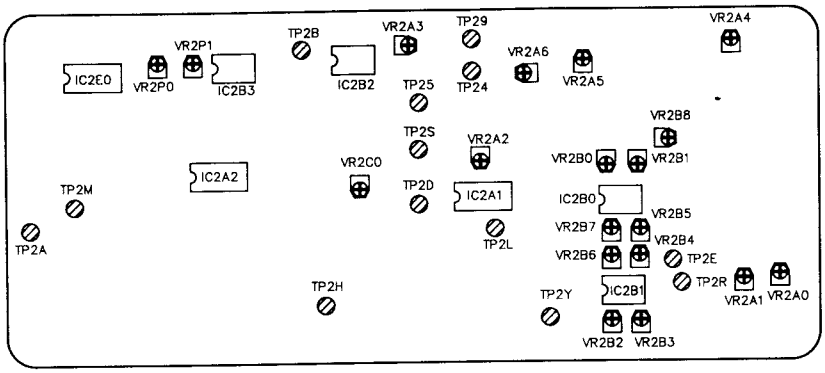
PCB CONTROL



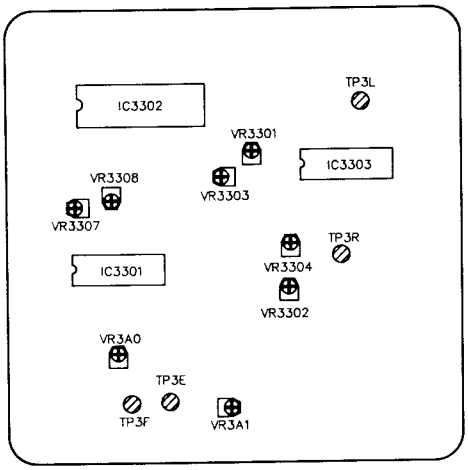
PCB INT



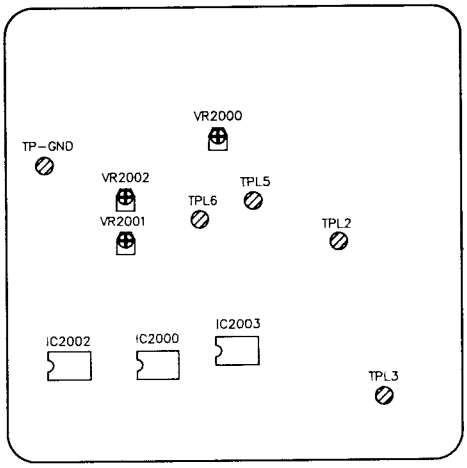
PCB Y-SIGNAL



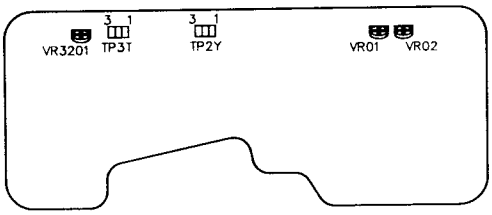
PCB HIFI



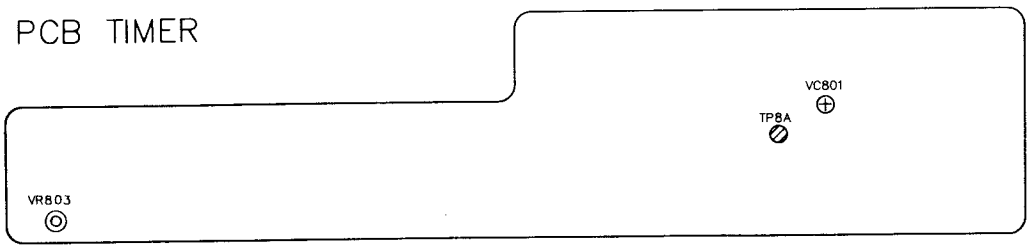
PCB LP-SS

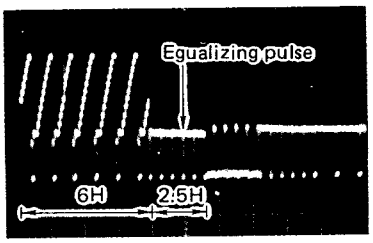
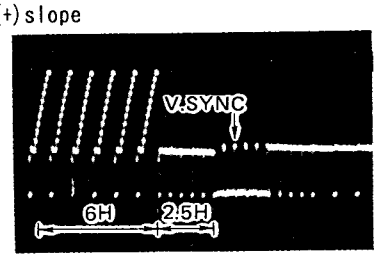


PCB HEAD AMP

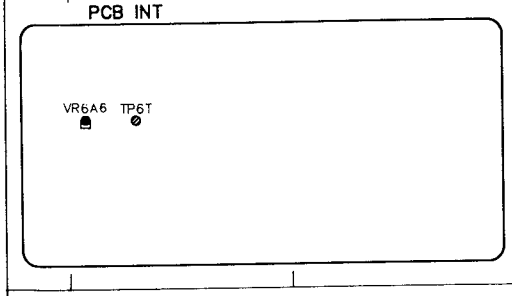


PCB TIMER

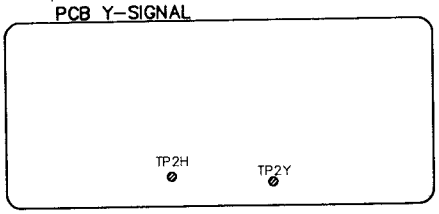


No.	Item	Mode	Adj. Method	Adjustment Procedure
Power Circuit				
1	CHROMA-5V	REC mode	• DC voltmeter to TP6T (INT) • VR6A6 (INT)	1. Adjust VR6A6 so that the level at TP6T is 5.1 ± 0.1 V.
Servo Circuit				
2	PB switching point	Play back SP alignment tape (TF-530RFS)	• Oscilloscope to TP2Y (Y-SIG) • Oscilloscope's EXT trigger to TP2H (Y-SIG) • EXT trigger (–) • VR4A0 (CONTROL)	1. Set the tracking control (VR801 at the centre click stop position and digital tracking SW (S806) to manual mode. 2. Adjust VR4A0 so that the trigger point is located at 8.5 ± 1 H before the vertical synchronizing signal. (-) slope  DIV 50mV (×10) TIM 0.1msec
			• EXT trigger (+)	3. Check that the trigger point is located 8.5 ± 1H before the vertical sync signal. (+) slope  DIV 50mV (×10) TIM 0.1msec

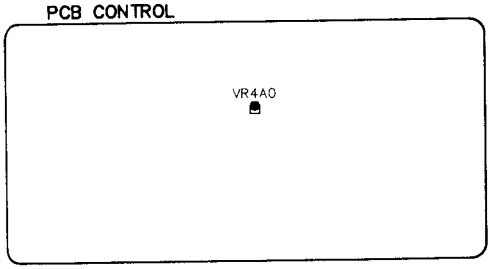
PCB INT

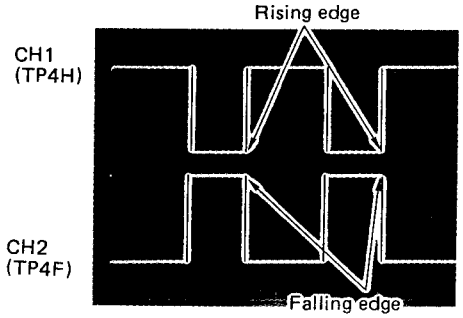
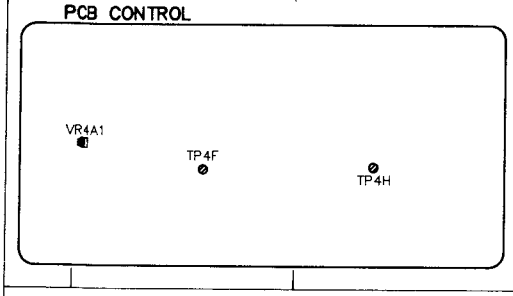
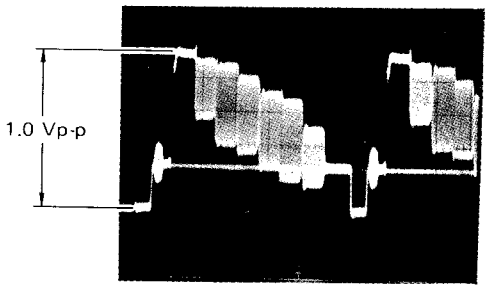
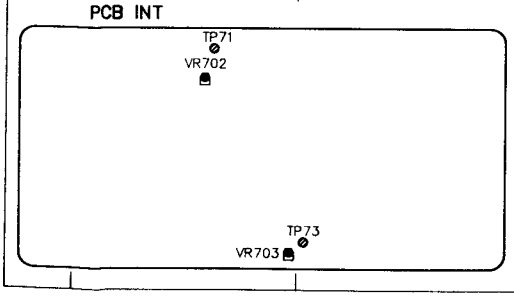


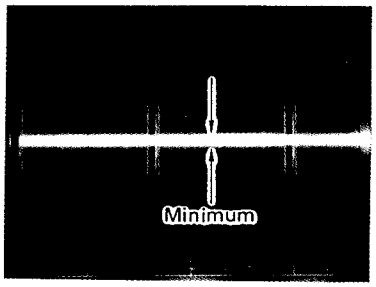
PCB Y-SIGNAL



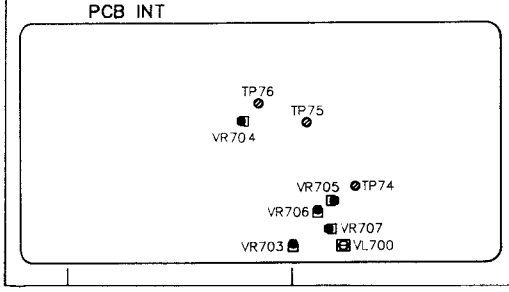
PCB CONTROL

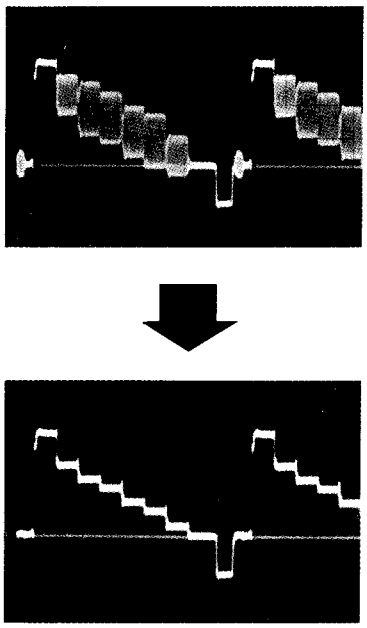
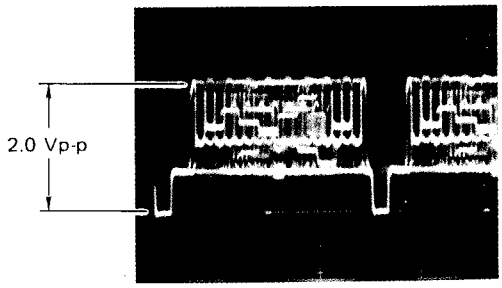


No.	Item	Mode	Adj. Method	Adjustment Procedure
3	Tracking preset	Play back SP alignment tape (TF-530RFS)	• Oscilloscope's CH-1 to TP4H (CONTROL) CH-2 to TP4F (CONTROL) • Oscilloscope's EXT trigger to CH1 • VR4A1 (CONTROL)	1. Set the tracking control (VR801) at the centre click stop position and digital tracking SW (S806) to manual mode. 2. Adjust VR4A1 so that the rising edge of TP4H coincides with the falling edge of TP4F.  DIV 0.2V (×10) TIM 10msec
	PCB CONTROL 			
Y/C Signal Circuit				
4	CCD gain	Supply RF signal (colour bar) STOP mode	• Oscilloscope to TP71 (INT) • VR702 (INT) • Oscilloscope to TP73 (INT) • VR703 (INT)	1. Adjust VR702 so that the video signal at TP71 is 1.0 Vp-p. 2. Adjust VR703 so that the video signal at TP73 is 1.0 Vp-p.  DIV 20mV (×10) TIM 10μsec
	PCB INT 			

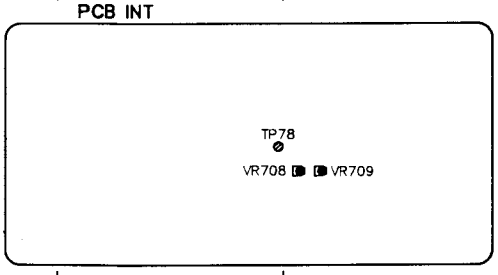
No.	Item	Mode	Adj. Method	Adjustment Procedure
5	Vertical correlation	Supply video signal (colour bar) STOP mode	• Oscilloscope's CH-1 to TP76 (INT) • Oscilloscope's CH-2 to TP75 (INT) • Oscilloscope's CH-2 to INVERT mode • Oscilloscope to ADD mode • VR705, VR703 (INT)	1. Turn VR704 fully clockwise. 2. Alternate adjustments in the following sequence: VR705, VR703, VR705 so that the chroma level is minimum.  DIV 20mV (×10) TIM 5msec
			• Oscilloscope's CH-2 to TP74 (INT) • VR706, VR707, VL700 (INT)	3. Alternate adjustments in the following sequence: VR706, VR707, VR706 so that the chroma level is minimum. 4. Alternate adjustments in the following sequence: VL700, VR707, VL700 so that the chroma level is minimum.

PCB INT

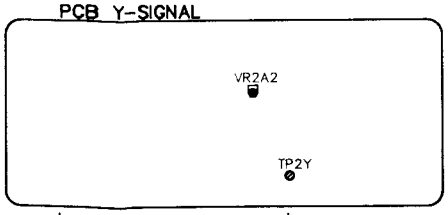


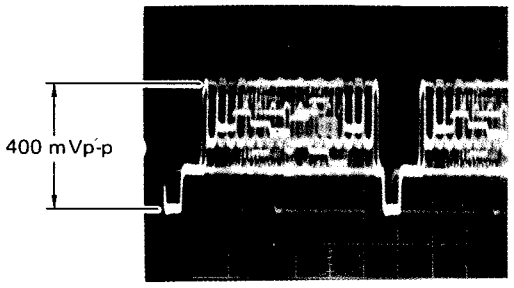
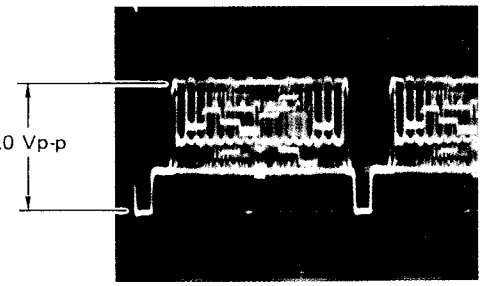
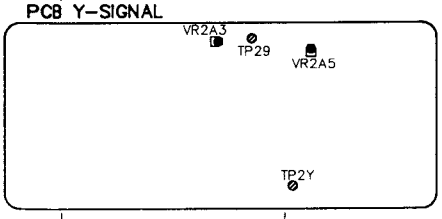
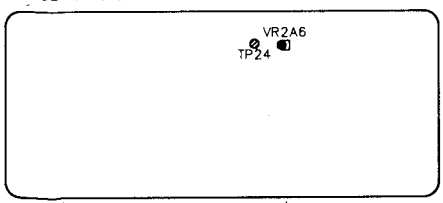
No.	Item	Mode	Adj. Method	Adjustment Procedure
6	Y/C separation	Supply RF signal (colour bar) STOP mode	• Oscilloscope to TP78 (INT) • VR708 (INT) • VR709 (INT)	1. Alternate adjustments in the following sequence: VR708, VR709, VR708 so that the chroma level is minimum.  DIV 20mV (×10) TIM 10 μ sec
7	EE-AGC level	Supply video signal (colour bar) STOP mode normal VHS mode	• Oscilloscope to TP2Y (Y-SIG) • VR2A2 (Y-SIG)	1. Adjust VR2A2 so that the level at TP2Y is 2.0 Vp-p.  2.0 Vp-p DIV 50mV (×10) TIM 10 μ sec

PCB INT



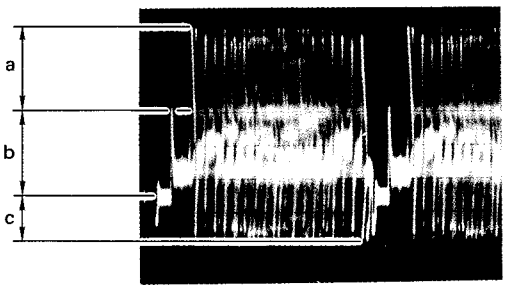
PCB Y-SIGNAL



No.	Item	Mode	Adj. Method	Adjustment Procedure
8	Sub-emphasis input level/ E-E output level (S-VHS)	Supply video signal (colour bar) STOP mode S-VHS mode	• Oscilloscope to TP29 (Y-SIG) • VR2A5 (Y-SIG)	1. Perform the EE-AGC level adjustment (ITEM 7) before this adjustment. 2. Adjust VR2A5 so that the level at TP29 is 400 mVp-p.  DIV 10mV(×10) TIM 10 µsec
			• Oscilloscope to TP2Y (Y-SIG) • VR2A3 (Y-SIG)	3. Adjust VR2A3 so that the level at TP2Y is 2.0 Vp-p.  DIV 50mV(×10) TIM 10 µsec
	PCB Y-SIGNAL 			
9	Sub-emphasis limiter	Non signal STOP mode	• DC voltmeter to TP24 (Y-SIG) • VR2A6 (Y-SIG)	1. Adjust VR2A6 so that the level at TP24 is 3.48 V.
	PCB Y-SIGNAL 			

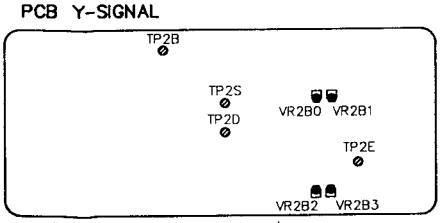
No.	Item	Mode	Adj. Method	Adjustment Procedure
10	White clip and dark clip	Supply video signal (colour bar) LP REC mode S-VHS mode	• Oscilloscope to TP2E (Y-SIG) • TP2S (Y-SIG) • TP2D (Y-SIG) • TP2B (Y-SIG) • VR2B2 (Y-SIG) • VR2B0 (Y-SIG)	1. EXT trigger to TP2S. 2. Short circuit TP2D and TP2B. 3. Adjust VR2B2 (W-CLIP) and VR2B0 (D-CLIP) so that the overshoot appearing at the white peak side and the undershoot below sync tip are 110% and 70% respectively.
		Normal VHS mode	• VR2B3 (Y-SIG) • VR2B1 (Y-SIG)	4. Adjust VR2B3 (W-CLIP) and VR2B1 (D-CLIP) so that the overshoot and the undershoot are 100% and 55% respectively.

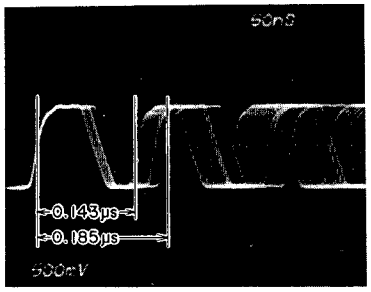
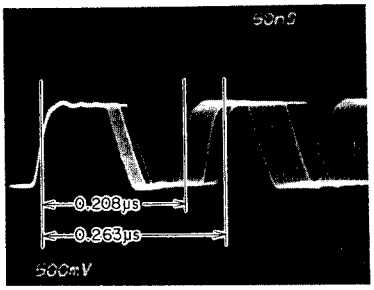
	S-VHS Mode	Normal mode
White Clip (a:b)	1.1:1	1:1
Dark Clip (b:c)	1:0.7	1:0.5



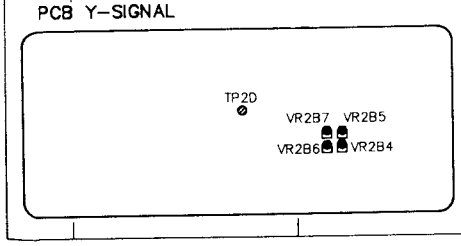
DIV 10mV(×10)
(VARIABLE mode)
TIM 10μsec

PCB Y-SIGNAL



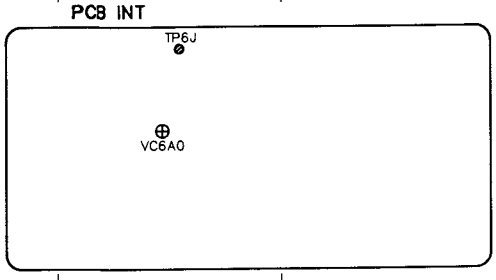
No.	Item	Mode	Adj. Method	Adjustment Procedure
11	FM Carrier	Supply Colour bar signal STOP mode S-VHS mode	• Oscilloscope to TP2D (Y-SIG) • VR2B6 (Y-SIG) • VR2B4 (Y-SIG)	1. Adjust VR2B6 (FM CAR SET) and VR2B4 (FM DEV SET) so that the waveform becomes as shown. SYNC TIP → 0.185 μS DEVIATION → 0.143 μS S-VHS 
		Normal VHS mode	• VR2B7 (Y-SIG) • VR2B5 (Y-SIG)	2. Adjust VR2B7 (FM CAR SET) and VR2B5 (FM DEV SET) so that the waveform becomes as shown. SYNC TIP → 0.263 μS DEVIATION → 0.208 μS Normal VHS 

PCB Y-SIGNAL

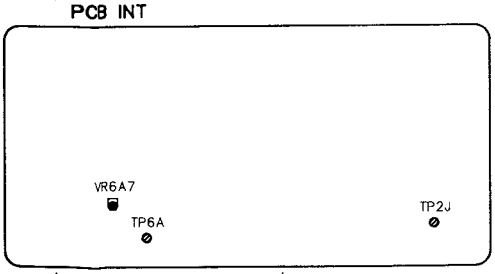


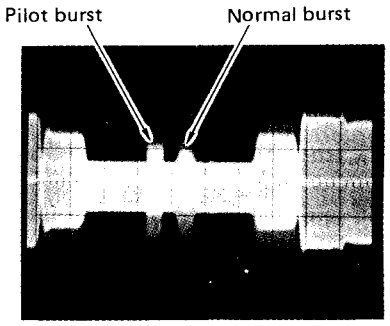
No.	Item	Mode	Adj. Method	Adjustment Procedure
12	Chroma Xtal OSC	Play back alignment tape TF-510CB	• Frequency counter to TP6J (INT) • VC6A0 (INT)	1. Adjust VC6A0 so that the frequency at TP6J is 4.433619MHz ± 30 Hz.
13	Pilot burst level	Supply RF signal (colour bar) STOP mode S-VHS mode normal VHS mode	• Oscilloscope to TP6A (INT) • Oscilloscope's GND to TP6G (INT) • Oscilloscope's EXT trigger to TP2J (INT) • VR6A7 (INT)	1. Adjust VR6A7 so that the pilot burst level is 1.1 times as normal burst signal. 2. Make sure that the pilot burst signal disappears in normal VHS mode.

PCB INT

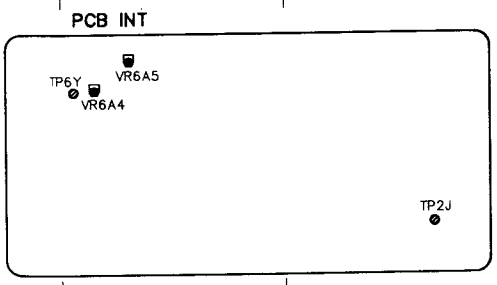
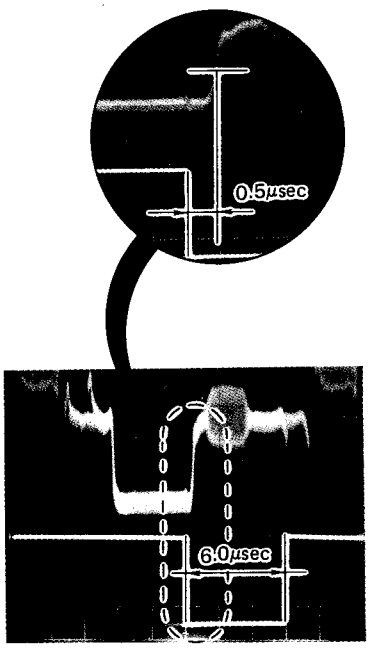
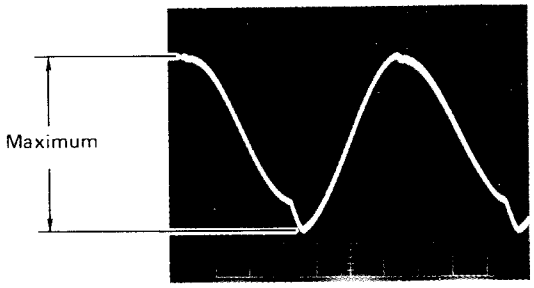
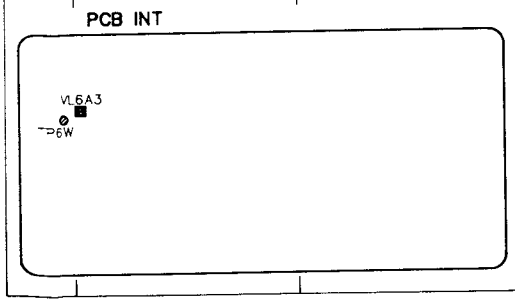


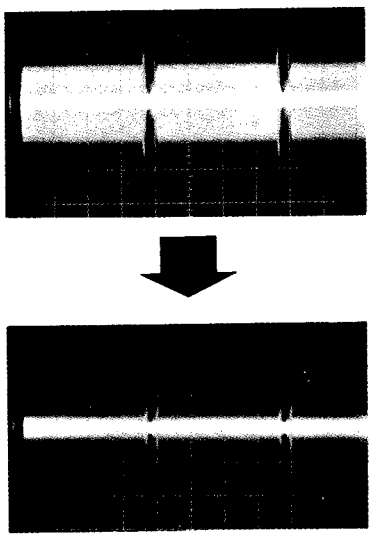
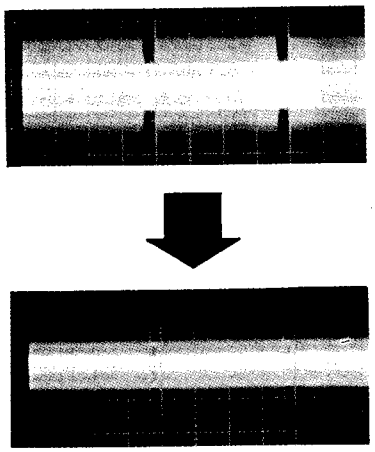
PCB INT

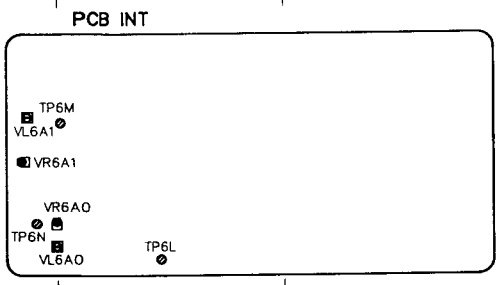


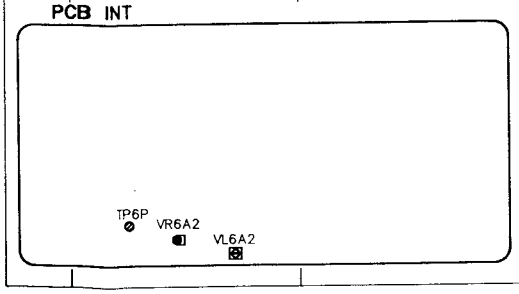


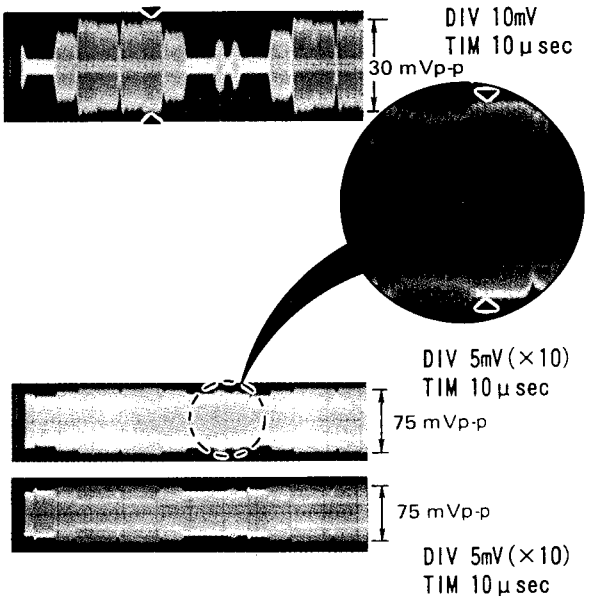
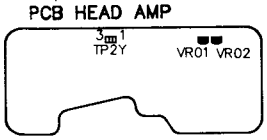
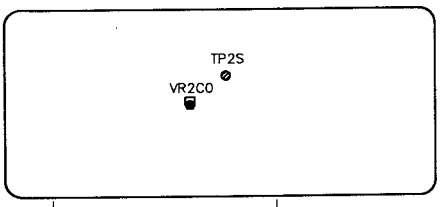
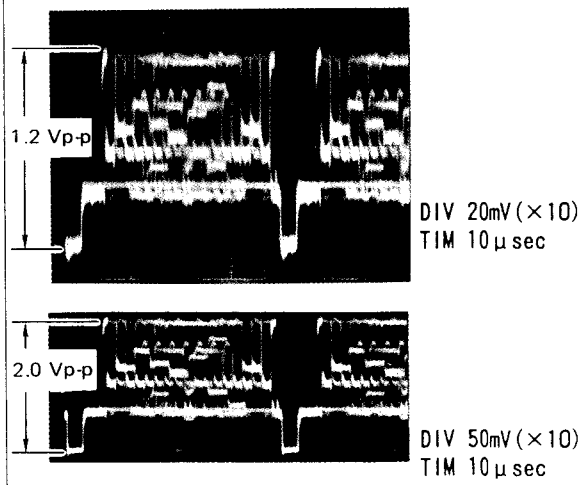
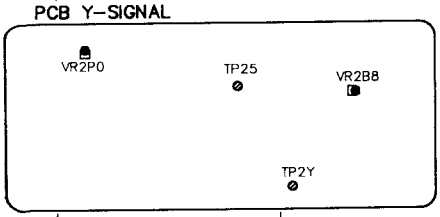
DIV 5mV (×10)
TIM 5 μ sec

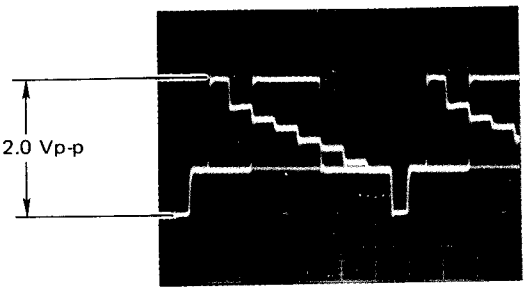
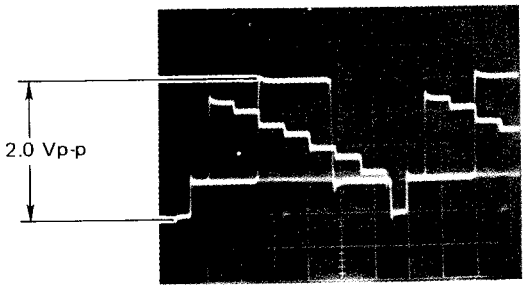
No.	Item	Mode	Adj. Method	Adjustment Procedure
14	SECAM gate pulse	Supply RF signal (SECAM colour bar) STOP mode	• Oscilloscope's CH-1 to TP2J (INT) • Oscilloscope's CH-2 to TP6Y (INT) • VR6A5 (INT)	1. Adjust VR6A4 so that the time difference between the middle of falling waveform at TP6Y and the middle of rising waveform at TP2J is 0.5 μsec as shown below. 2. Adjust VR6A5 so that the time difference between the middle of falling waveform at TP6Y and the middle of rising waveform at TP6Y is 6.0 μsec as shown below.  
15	SECAM detect	Supply RF signal (SECAM colour bar) STOP mode	• Oscilloscope to TP6W (INT) • VL6A3 (INT)	1. Adjust VL6A3 so that the amplitude waveform (fH/2) at TP6W is maximum.  

No.	Item	Mode	Adj. Method	Adjustment Procedure
16	Chroma-COMB	Supply video signal (colour bar) STOP mode	• Oscilloscope's CH-1 to TP6L (INT) • Oscilloscope's CH-2 to TP6M (INT) • Oscilloscope's CH-2 to INVERT mode • Oscilloscope to ADD mode • Oscilloscope's CH-2 to TP6N (INT) • VL6A0, VR6A0, VL6A1, VR6A1 (INT)	1. Alternate adjustments in the following sequence: VL6A0, VR6A0, VL6A0 so that the chroma level is minimum. 2. Make sure that the minimum chroma level is less than 100 mVp-p. 3. Alternate adjustments in the following sequence: VL6A1, VR6A1, VL6A1 so that the chroma level is minimum. 4. Make sure that the minimum chroma level is less than 100 mVp-p.  DIV 50mV (×10) TIM 5msec
17	Chroma noise reduction	Supply video signal (colour bar) STOP mode	• Oscilloscope to TP6P (INT) • VL6A2 (INT) • VR6A2 (INT)	1. Alternate adjustments in the following sequence: VL6A2, VR6A2, VL6A2 so that the chroma level is minimum.  DIV 5mV (×10) TIM 5msec

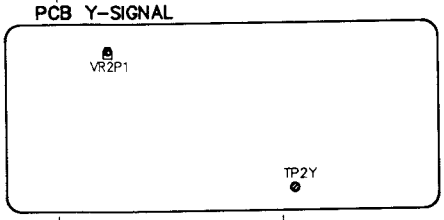




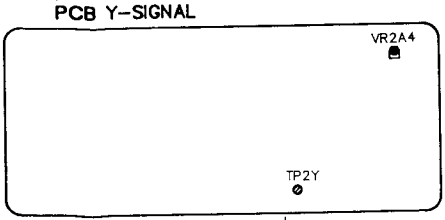
No.	Item	Mode	Adj. Method	Adjustment Procedure
18	Y/C REC Level	Supply RF signal (colour bar) LP REC mode S-VHS mode Normal VHS mode	• Oscilloscope to TP2Y (HEAD AMP) Signal: Pin ① GND: Pin ③ • Oscilloscope's EXT trigger to TP2S (Y-SIG) * Do not connect the probe GND • VR02, VR01 (HEAD AMP) • VR200 (Y-SIG)	1. Turn VR02 fully clockwise. 2. Adjust VR01 so that the chroma level is 30 mVp-p. 3. Adjust VR02 so that the luminance FM level is 75 mVp-p. 4. Adjust VR2C0 so that the luminance FM level is 75 mVp-p.  PCB HEAD AMP  PCB Y-SIGNAL 
19	Demodulation sensitivity/play-back level (S-VHS)	Playback mode self-recorded tape in S-VHS format)	• Oscilloscope to TP25 (Y-SIG) • VR2P0 (Y-SIG) • Oscilloscope to TP2Y (Y-SIG) • VR2B8 (Y-SIG)	1. Adjust VR2P0 so that the level at TP25 is 1.2 Vp-p. 2. Adjust VR2B8 so that the level at TP2Y is 2.0 Vp-p.  PCB Y-SIGNAL 

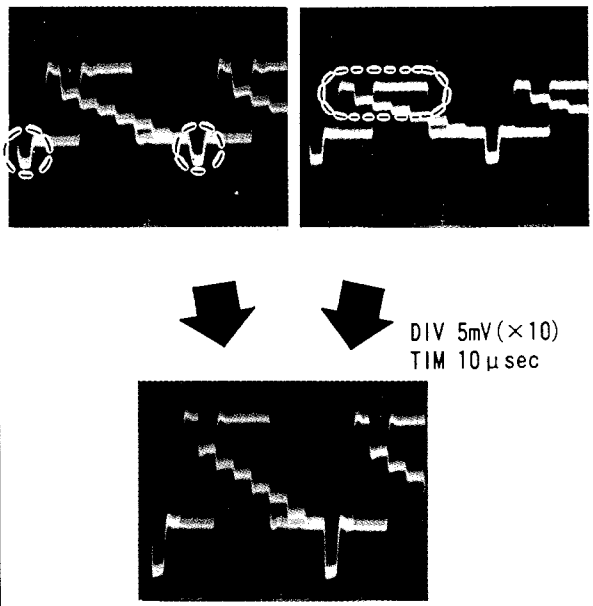
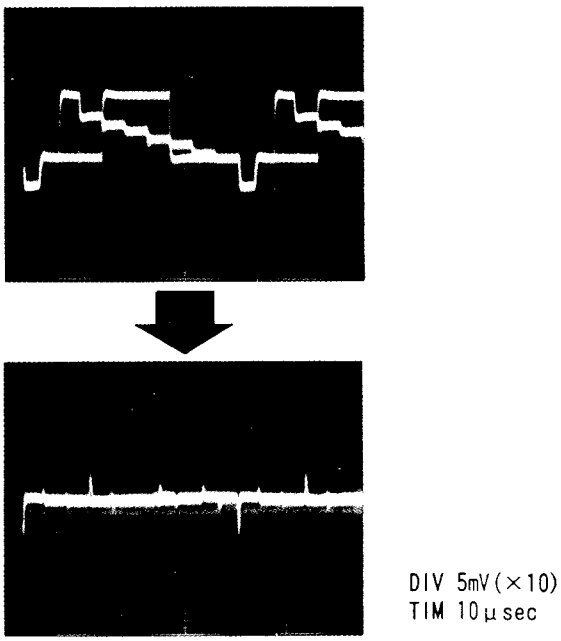
No.	Item	Mode	Adj. Method	Adjustment Procedure
20	Demodulation sensitivity (normal VHS)	Playback alignment tape (TF-510CB)	• Oscilloscope to TP2Y (Y-SIG) • VR2P1 (Y-SIG)	1. Adjust VR2P1 so that the level at TP2Y is 2.0 Vp-p.  DIV 50mV (×10) TIM 10 μ sec
21	SECAM Playback level	Playback mode (SECAM colour bar self-recorded in normal VHS format with S-VHS tape)	• Oscilloscope to TP2Y (Y-SIG) • VR2A4 (Y-SIG)	1. Check that the S-VHS indicator is not illuminated. 2. Adjust VR2A4 so that the level at TP2Y is 2.0 Vp-p.  DIV 50mV (×10) TIM 10 μ sec

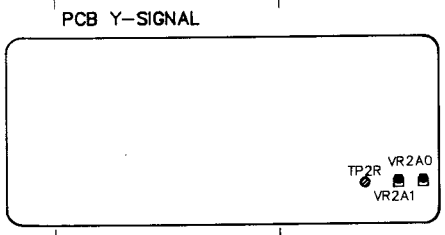
PCB Y-SIGNAL

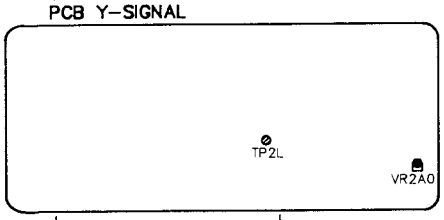


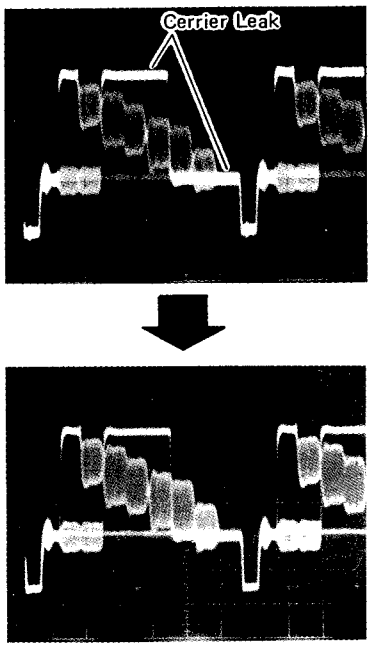
PCB Y-SIGNAL



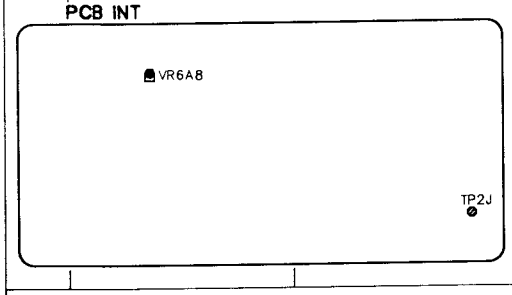
No.	Item	Mode	Adj. Method	Adjustment Procedure
22	CCD bias	Playback alignment tape (TF-510CB)	• Oscilloscope to TP2R (Y-SIG) • VR2A1 (Y-SIG)	1. Perform that VR2A0 is middle position. 2. Adjust VR2A1 so that the SYNC signal and upper side of waveform is not strained. 
23	Noise cancel	Playback alignment tape (TF-510CB)	• Oscilloscope to TP2L (Y-SIG) • VR2A0 (Y-SIG)	1. Adjust VR2A0 so that the video signal disappears. 2. Check that the video signal level is less than 30 mVp-p. 





No.	Item	Mode	Adj. Method	Adjustment Procedure
24	Chroma carrier leak	Playback alignment tape (TF-510CB)	• Oscilloscope to TP2J (INT) • VR6A8 (INT)	1. Adjust VR6A8 so that the carrier leak for minimum amplitude at the point. 

PCB INT

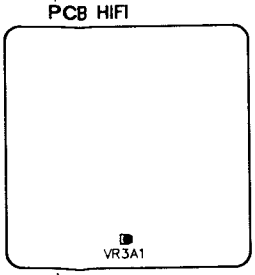


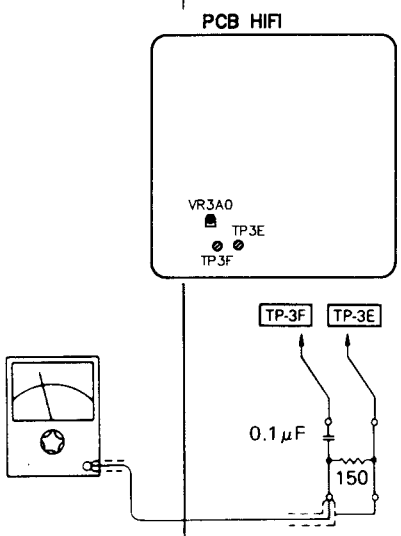
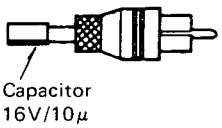
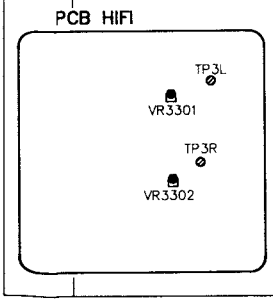
Normal Audio Circuit

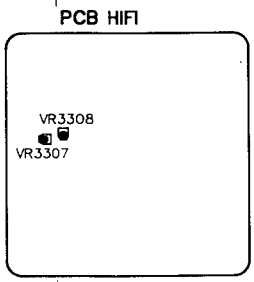
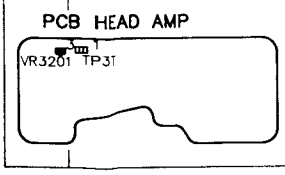
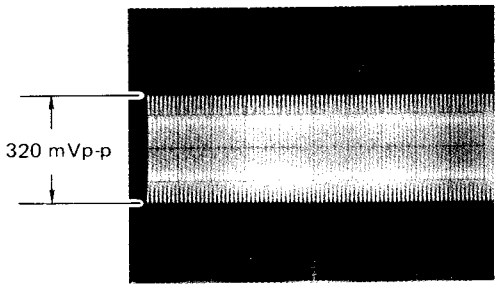
‡1. Set the audio monitor SW to normal mode.
‡2. Set the input select SW to EXT mode.
‡3. Supply video signal to the video input jack.

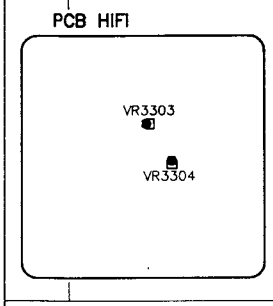
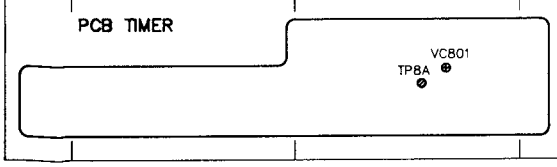
25	Playback audio level	Playback alignment tape TF-532CBS	• AC voltmeter to audio output terminal (L-CH or R-CH) • VR3A1 (Hi-Fi)	1. Set the video mute SW to OFF. 2. Adjust VR3A1 for an audio output level of −8 dBs. ‡ (310 mV. r.m.s): 1 mW 600Ω 0.775 V. r.m.s input impedance = 47 kΩ 3. Confirm that the level fluctuation is less than ±1 dB. If level fluctuation is over ±1 dB then check that the mechanical adjustment.

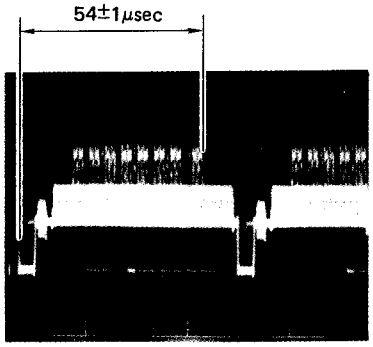
PCB HIFI



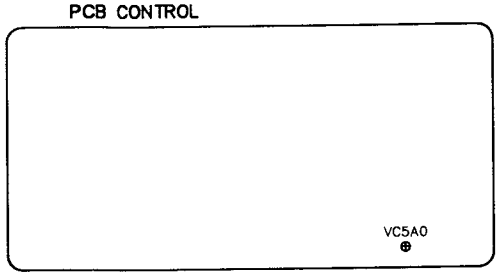
No.	Item	Mode	Adj. Method	Adjustment Procedure
26	Audio bias level	SP REC mode 	• AC voltmeter to TP3E (Hi-Fi) and TP3F (Hi-Fi) throug a high pass filter. Note: Be careful that the AC voltmeter housing does not touch the VCR chassis. • VR3A0 (Hi-Fi)	1. Insert a shorted RCA type phonoplug into the AUDIO IN terminal. 2. Confirm that the monitor TV etc. does not affect the indication of the AC voltmeter and then adjust VR3A0 for a level of 2.8 mV. r.m.s. Note: Do not set the VCR to PLAY mode with the AC voltmeter connected. (The audio amplifier will be over-loaded.) 
Hi-Fi Audio Circuit				
‡1. Set the audio monitor SW to Hi-Fi mode. ‡2. Set the input select SW to EXT mode.				
27	OSC frequency 	REC mode	• Frequency counter to TP3L • VR3301 (Hi-Fi) • Frequency counter to TP3R (Hi-Fi) • VR3302 (Hi-Fi)	1. Short circuit audio input jack (L-CH and R-CH). 2. Adjust VR3301 so that frequency at TP3L is 1.40 MHz ± 3 kHz. 3. Audio VR3302 so that frequency at TP3R is 1.80 MHz ± 3 kHz.

No.	Item	Mode	Adj. Method	Adjustment Procedure
28	E-E level  	Supply audio signal (1 kHz, – 8 dBs) to audio input jack (R-CH and L-CH)	• AC voltmeter to audio output jack • L-CH audio out • VR3307 (Hi-Fi) • R-CH audio out • VR3308 (Hi-Fi)	1. Set the REC LEVEL ADJ to centre click stop position. 2. Adjust VR3307 so that the audio output level at L-CH is –8 dBs. 3. Adjust VR3308 so that the audio output level at R-CH is –8 dBs.
29	FM REC level  	REC mode	• Oscilloscope to TP3T (HEAD AMP) Signal: Pin ① GND: Pin ③ • VR3201 (HEAD AMP)	1. Shoft circuit audio input jack (L-CH and R-CH). 2. Adjust VR3201 so that the level at TP3T is 320 mVp-p.  DIV 5mV (×10) TIM 10 μ sec

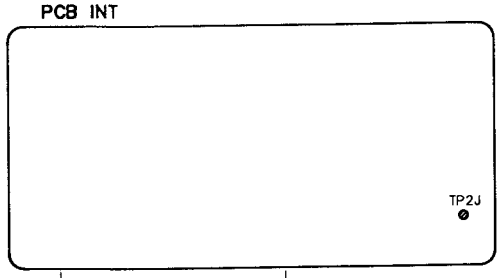
No.	Item	Mode	Adj. Method	Adjustment Procedure
30	Playback level  	Playback mode (1 kHz, −8 dBs audio signal self-recorded tape)	• AC milli-voltmeter to audio output jack • L-CH audio out • VR3303 (Hi-Fi) • R-CH audio out • VR3304 (Hi-Fi)	1. Set the REC LEVEL ADJ to centre click stop position. Record a short segment of 1 kHz signal at −8 dBs and play it back. 2. Adjust VR3303 so that the L-CH audio output level is −8 dBs. 3. Adjust VR3304 so that the R-CH audio output level is −8 dBs.
Timer Circuit				
31	Timer frequency  	Power OFF	• Frequency counter to TP8A • VC801 (TIMER)	1. Adjust VC801 so that the frequency at TP8A is 6.835938 ± 0.000030 mSec.

No.	Item	Mode	Adj. Method	Adjustment Procedure
32	Display position	Supply RF signal (colour bar) program REC setting mode	• Oscilloscope to TP2J (INT) • VC5A0 (CONTROL)	1. Check that the picture is in the centre of the screen. 2. Adjust VC5A0 so that the time difference between the falling edge of H-SYNC and end of character signal is 54 ± 1 μ sec.  DIV 20mV(×10) TIM 10μsec
33	List 2 H-SYNC frequency	Non signal STOP mode input select SW to EXT	• Frequency counter to TP21 (INT) • TP22 (INT) • VR200 (INT)	1. Video must SW (S801) to OFF. 2. Ground TP22 (INT). 3. Adjust VR200 so that the frequency at TP21 is 15.725 kHz ± 0.01 kHz. Note: This adjustment value varies with temperature. If VCR has been ON for 30 minutes or longer to 15.625 kHz ± 0.01 kHz.

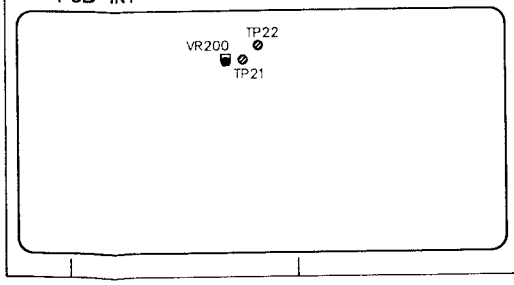
PCB CONTROL



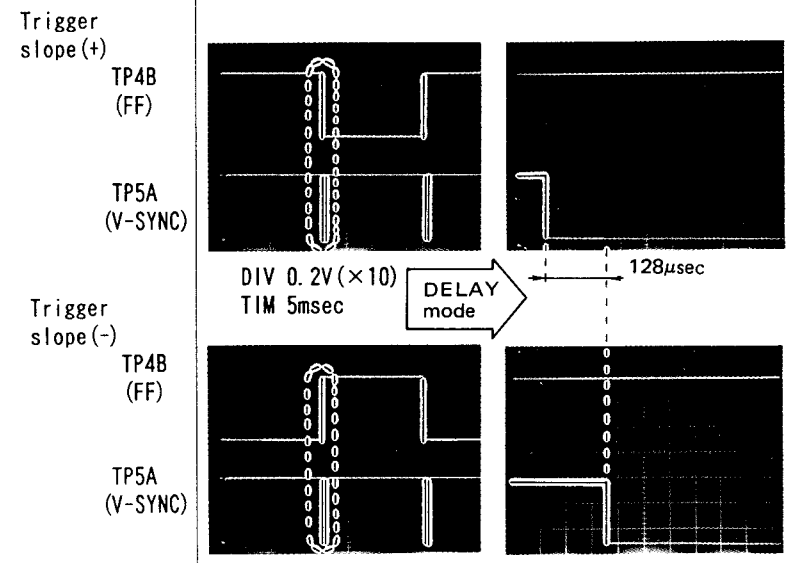
PCB INT

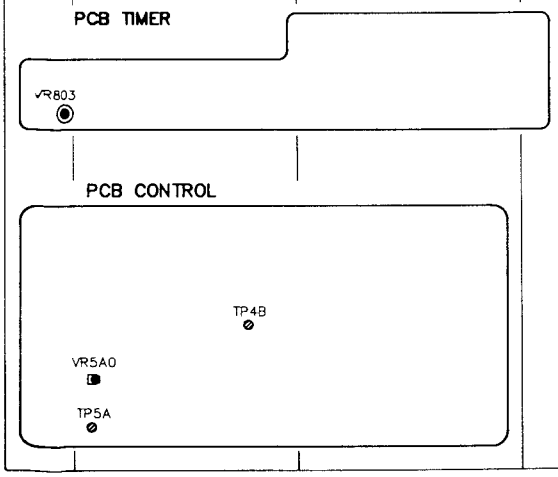


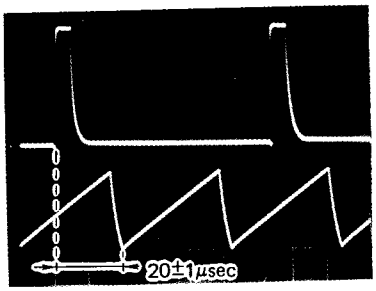
PCB INT

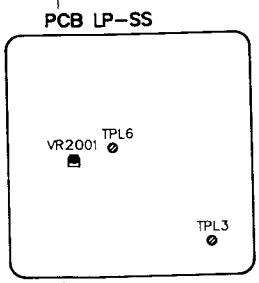


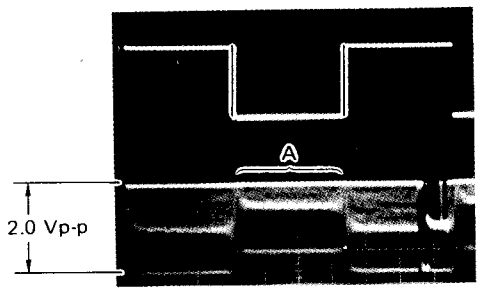
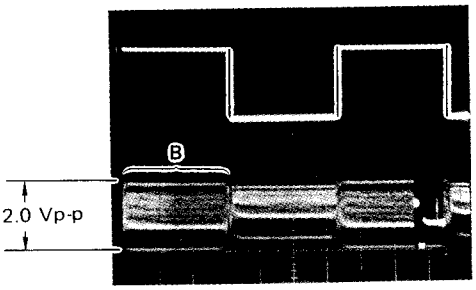
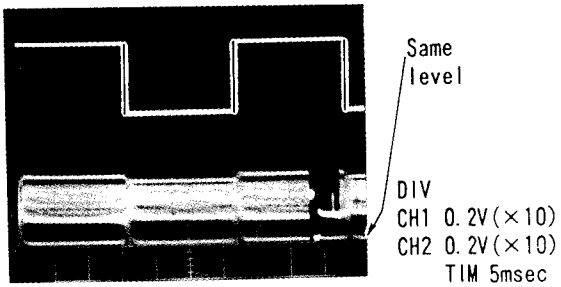
No.	Item	Mode	Adj. Method	Adjustment Procedure
34	List 2 still jitter	Playback SP self-recorded tape STILL mode	• Oscilloscope's CH1 to TP4B (CONTROL) • Oscilloscope's CH2 to TP5A (CONTROL) • Set TRIG. SOURCE SW to CH1 • Trigger slope (+) • Trigger slope (−) • VR5A0 (CONTROL)	1. Active the still function and adjust VR803 (STILL ADJUST) to eliminate picture jitter. 2. Set the horizontal display SW of oscilloscope to DELAY mode and monitor the waveform in the area of the falling edge at CH1. (TIM 50 μ sec) 3. Set DELAY TIME of the oscilloscope until falling edge of V-SYNC waveform at CH2 coincide with second vertical scale on the left of the oscilloscope. 4. Set the oscilloscope to minus (−) slope. 5. Adjust VR5A0 so that the time difference between the falling edge of V-SYNC waveform at CH2 in the area of the falling edge of FF waveform at minus (−) trigger by CH1 and the falling edge of V-SYNC waveform at CH2 in the area of the rising edge of FF waveform at plus (+) trigger by CH1 is 128 μ sec as shown below.

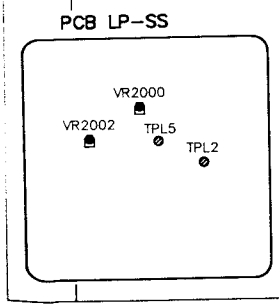


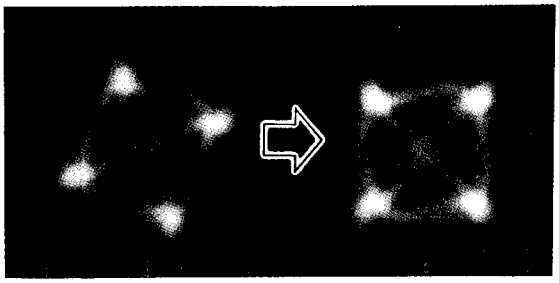
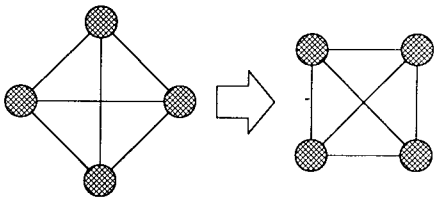


No.	Item	Mode	Adj. Method	Adjustment Procedure
LP-SS Circuit				
35	VCO	STOP mode	• Oscilloscope's CH-1 to TPL3 (LP-SS) • Oscilloscope's CH-2 to TPL6 (LP-SS) • Set TRIG. SOURCE SW to to CH1 • VR2001 (LP-SS)	1. Check that the frequency of waveform at CH-2 is approximately 2 times as frequency of waveform at CH-1. 2. Adjust VR2001 so that the time difference between the rising edge of CH-1 and bottom edge of CH-2 is 20 ± 1 μsec.  DIV 0.2V(×10) TIM 5msec



No.	Item	Mode	Adj. Method	Adjustment Procedure
36	Demodulation Gain	Fast playback mode (LP colour bar)	• Oscilloscope's CH-1 to TPL5 (LP-SS) • Oscilloscope's CH-2 to TPL2 (LP-SS) • Set TRIG. SOURCE SW to CH1 • VR2002 (LP-SS) • VR2000 (LP-SS)	1. Turn VR2002 fully clockwise as seen from the component side. 2. Adjust VR2000 so that the level of waveform at A is 2.0 Vp-p. Note: When adjusted waveform is saturated, it is no problem.  3. Adjust VR2002 so that the waveform is not saturated and level of waveform at B is 2.0 Vp-p.  4. Adjust VR2000 so that the sync tip level of each waveform is same level. At this time, if level of waveform at B is changed then readjust VR2002 so that the level is 2.0 Vp-p. 



No.	Item	Mode	Adj. Method	Adjustment Procedure
NICAM Circuit (EK model only)				
37	Carrier VCX0	Supply RF signal (STEREO or DUAL SOUND) STOP mode	• Oscilloscope's CH-1 to TP3 (NICAM) • Oscilloscope's CH-2 to TP4 (NICAM) • Oscilloscope to X-Y mode • VC7A0 (NICAM)	1. Adjust VC7A0 to obtain the waveform illustrated.  DIV 20mV (×10) 
38	Clock VCX0	Supply RF signal (STEREO or DUAL SOUND) STOP mode	• Digital voltmeter to TP5 and TP6 (NICAM) • VC7A1 (NICAM)	1. Adjust VC7A0 to obtain the waveform as illustrated.

VI. PARTS LIST

ATTENTION

1. **When placing an order for parts, be sure to list Part No., Model No. and the description of eachpart. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.**
2. **Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.**
3. **Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.**

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

2. HEAD BASE BLOCK

REF. NO.	PART NO.	DESCRIPTION
1	BH-T2023A320A	HEAD BASE BLOCK
2	HP-H2206A010A	HEAD R/P PR4-8FU C
3	ZS-477876	PAN20×03STL CMT
4	ZS-536488	BID20×08STL CMT
5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification

This number corresponds with the individual parts index number in that figure.

b) PC Board

6. MAIN PC BOARD

REF. NO.	PART NO.	DESCRIPTION
IC1	EI-324536	IC HD14049BP
IC2	EI-336801	IC MB8841-564M
C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
C1B	EC-350949	C MMY V 223M 250DC [J]
C1C	EC-338397	C MMY V 223M 125AC [C,A]
X1	EI-318384	OSC X'TAL NC-18C

Symbols for primary destination

[A] : AAL (U.S.A) [S] : SAA (Australia)
[B] : BEAB (England) [U] : U/T (Universa Area)
[C] : CSA (Canada)
[E] : CEE (Europe) [V] : VDE (W. Germany)
[J] : JPN (Janan) [Y] : Custom Version

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No.listed at right of Part No.

WARNING

⚠ (*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVERTISSEMENT

⚠ (*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉDE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LÉ FABRICANT.

1. RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

Ref. No.	Part No.	Description
1	BB-728167J	REEL DRIVE [illegible]
2	BM-727566J	MOTOR CAPSTAN [illegible]
3	BM-727565J	MOTOR DRUM[illegible] YORK MAGNET
4	BM-727564J	MOTOR LOADING[illegible] PULLEY
5	*BT-728136J	TRANS POW [illegible]350P406C2 [EK-B]
6	*BT-727680J	TRANS POW [illegible]350P406C[illegible] [EO-E,EOG]
7	BV-727646J	DRUM ASSY
8	BZ-728342J	REMOCON RECEIVER UNIT
9	EC-727475J	C LAYER [illegible]
10	ED-727500J	D LED [illegible] [CASSETTE [illegible]]
11	ED-727502J	D LED SUR [illegible]
12	ED-727501J	D LED SUR [illegible]
13	ED-713429	D LED SUR [illegible]
14	ED-727516J	D LED SUS [illegible]
15	ED-727507J	D SILICON [illegible]
16	ED-727506J	D SILICON [illegible]
17	ED-727498J	D SILICON [illegible]
18	ED-604541	D SILICON [illegible]
19	ED-311852	D SILICON [illegible]
20	ED-727515J	D SILICON [illegible]
21	ED-709644	D SILICON [illegible]
22	ED-727514J	D ZENER [illegible]
23	ED-727510J	D ZENER [illegible]36A
24	ED-727511J	D ZENER [illegible]
25	ED-727512J	D ZENER [illegible]9CD
26	ED-351655	D ZENER [illegible] B
27	ED-719781	D ZENER [illegible]DES B1 [EK-B] [NICAM]
28	ED-707412	D ZENER [illegible]DE B
29	ED-727503J	D ZENER [illegible]
30	ED-727505J	D ZENER [illegible]
31	ED-727508J	D ZENER [illegible]
32	ED-727509J	D ZENER [illegible] B3
33	ED-727570J	LEVEL [illegible]
34	EE-728341J	TUNER [illegible]S-S99EK
35	EE-727679J	TUNER [illegible]S-S99EO
36	EE-727708J	TUNER [illegible]S-S99EOG
37	*EF-355226	FUSE [illegible] 1.00A
38	*EF-355398	FUSE [illegible] 2.00A
39	*EF-601964	FUSE [illegible] 250V 1.60A
40	EH-727601J	DELAY [illegible]-CX(1/2H)
41	EH-727603J	DELAY [illegible]-CE2344M)
42	EH-727602J	DELAY [illegible]-CP145M)
43	EH-728144J	EQ DELAY [illegible]
44	EH-727608J	EQ DELAY [illegible]
45	EH-727614J	EQ DELAY [illegible]
46	EH-727695J	EQ DELAY [illegible]NKS-2558WBJ
47	EH-727689J	EQ DELAY [illegible]
48	EH-728143J	FILTER [illegible]
49	EH-728128J	FILTER [illegible] [EK-B] [NICAM]
50	EH-727700J	FILTER [illegible]
51	EH-727697J	FILTER [illegible]
52	EH-727609J	FILTER [illegible]371A10)
53	EH-727696J	FILTER [illegible]02)
54	EH-727618J	FILTER [illegible]480A10 TDK)
55	EH-727567J	FILTER [illegible] 5.74MB [EO-E,EOG]
56	EH-706784	FILTER [illegible] MHZ [EO-E,EOG]
57	EH-727568J	FILTER [illegible]S)
58	EH-727612J	FILTER [illegible]SS306-55FZ103N100
59	EH-727616J	FILTER [illegible] 45)
60	EH-727605J	FILTER [illegible]
61	EH-727607J	FILTER [illegible]
62	EH-727620J	FILTER [illegible] 65)
63	EH-727611J	FILTER [illegible]4A10 TDK)
64	EH-727610J	FILTER LP(409P372A10)
65	EH-727615J	FILTER LP(409P444A10 TDK)
66	EH-727706J	FILTER LP(9P 454A10) [EOG]
67	EH-727619J	FILTER LP(9P461A10 TDK)
68	EH-727621J	FILTER LP(9P478)
69	EI-727524J	IC ADI(B060-2)
70	EI-728122J	IC AFL87F-14000A10 [EK-B] [NICAM]
71	EI-727528J	IC AMP2(B078-1)
72	EI-727537J	IC AN3224K
73	EI-364399	IC AN3311K
74	EI-307616	IC AN608P
75	EI-727521J	IC BA6411
76	EI-727552J	IC BA7021
77	EI-727518J	IC BA7022A
78	EI-366892	IC BA7025L
79	EI-727538J	IC BA7252S
80	EI-727539J	IC BA7710S
81	EI-727544J	IC BA7720S
82	EI-727545J	IC BA7730S
83	EI-727526J	IC BPF(B074-2)
84	EI-727531J	IC BPF2(B080-2)
85	EI-727529J	IC BX6387
86	EI-727554J	IC CXL1009P
87	EI-727551J	IC CX22013
88	EI-727530J	IC EMP2(B079-1)
89	EI-727523J	IC H/L(B059-2)
90	EI-727548J	IC HA118054
91	EI-727698J	IC HA118116NT
92	EI-727699J	IC HA118117NT
93	EI-727517J	IC HA13403
94	EI-727486J	IC HD14077BP
95	EI-728170J	IC HM6264ALSP10/12 [EK-B] [NICAM]
96	EI-353852	IC LA7016
97	EI-727553J	IC LA7212
98	EI-727549J	IC LA7295
99	EI-712636	IC LA7910
100	EI-727687J	IC L78M05
101	EI-727487J	IC MC14094BCP
102	EI-727488J	IC MC14538BCP
103	EI-727536J	IC MN3802
104	EI-727495J	IC MN6747MME
105	EI-727489J	IC M50455-090SP
106	EI-727493J	IC M50747-762SP
107	EI-727490J	IC M50925-690SP
108	EI-727491J	IC M50925-700SP
109	EI-727492J	IC M50925-933SP
110	EI-727543J	IC M51435SP
111	EI-355134	IC M5201L
112	EI-346071	IC M5218L-21
113	EI-727540J	IC M58630P
114	EI-727542J	IC NJM2217L
115	EI-709620	IC NJM78L09K
116	EI-360772	IC NJM79L05A [EK-B] [NICAM]
117	EI-376675	IC PST520C
118	EI-727519J	IC PST520H
119	EI-381643J	IC SDA5642 [EOG]
120	EI-727533J	IC STK5477
121	EI-727527J	IC SUB(B075-2)
122	EI-727532J	IC SYNC-P(B090-1)
123	EI-727550J	IC TA72915
124	EI-727541J	IC TA7357P
125	EI-382827J	IC TA8662N [EK-B] [NICAM]
126	EI-313797	IC TC4001BP
127	EI-304657	IC TC4011BP [EK-B] [NICAM]
128	EI-306727	IC TC4013BP
129	EI-306704	IC TC4030BP
130	EI-200573	IC TC4053BP
131	EI-310036	IC TC4066BP
132	EI-713424	IC TC4077BP
133	EI-324695	IC TC4081BP

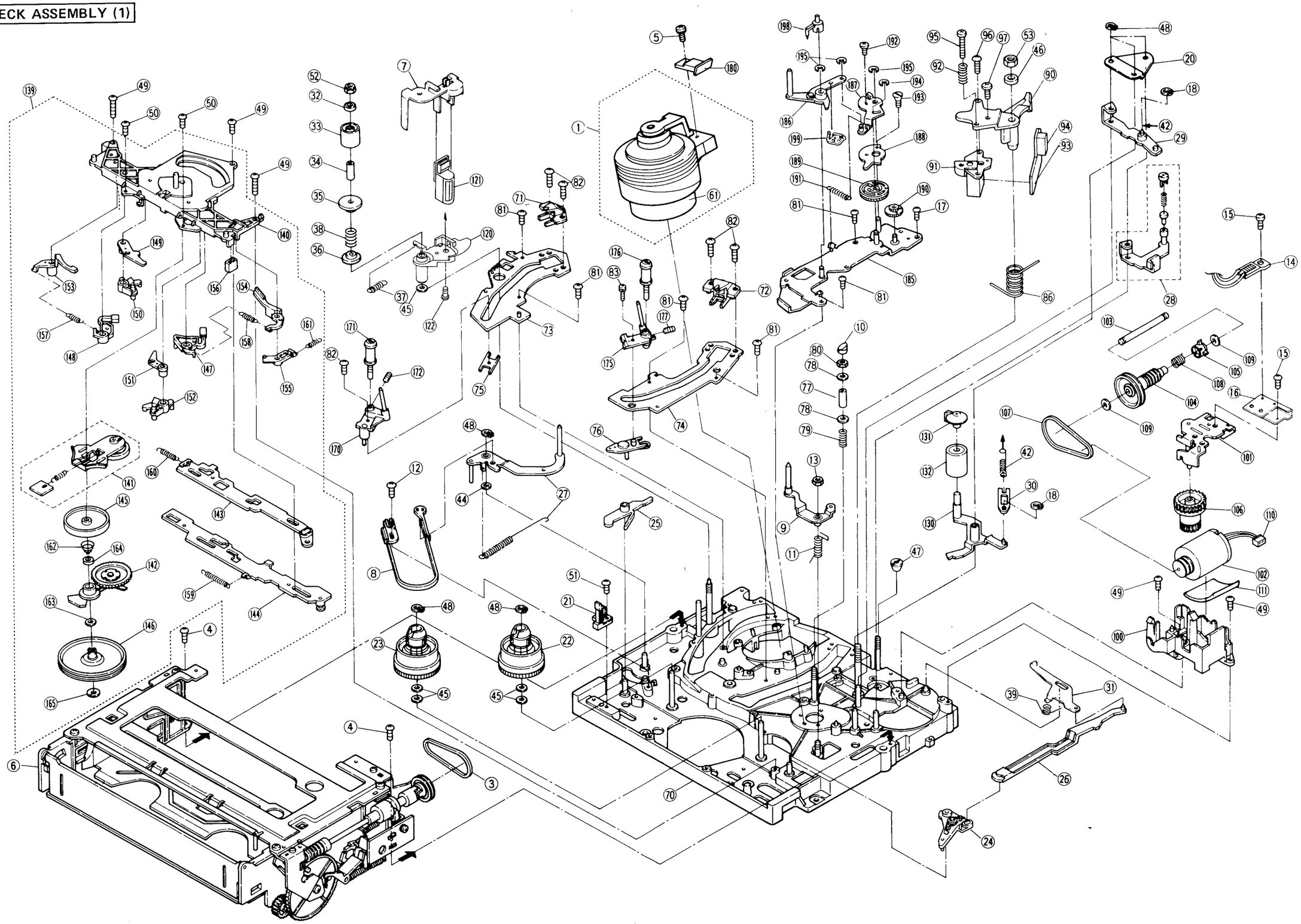
Ref. No.	Part No.	Description
134	EI-382828J	IC TC6011N [EK-B] [NICAM]
135	EI-727547J	IC TDA2555 [EO-E,EOG]
136	EI-727546J	IC TDA3803A [EO-E,EOG]
137	EI-382826J	IC TD6710AN [EK-B] [NICAM]
138	EI-727520J	IC TK15022Z
139	EI-727686J	IC UPC574J
140	EI-727494J	IC UPD75216AGF-522-3BE [EO-E,EK-B]
141	EI-727704J	IC UPD75216AGF-523-3BE [EOG]
142	EI-727701J	IC UPD7554CS-091 [EOG]
143	EI-727555J	IC 272P317
144	EI-728141J	OSC CE
145	EI-727572J	OSC CE CST2.00MG
146	EI-728126J	OSC CE CST8.08MT001
147	EI-727571J	OSC CE KBR-4.0MES
148	EI-728124J	OSC X'TAL QUARTZ* [EK-B] [NICAM]
149	EI-728123J	OSC X'TAL QUARTZ* [EK-B] [NICAM]
150	EI-728125J	OSC X'TAL QUARTZ* [EK-B] [NICAM]
151	EI-727558J	OSC X'TAL QUARTZ 32.768KHZ
152	EI-727561J	OSC X'TAL QUARTZ*(NDK21.325)
153	EI-727559J	OSC X'TAL QUARTZ*(P059A)
154	EI-727560J	OSC X'TAL QUARTZ*(P063011)
155	EI-727562J	OSC X'TAL QUARTZ*(P08402B)
156	EI-727557J	OSC X'TAL 13.305NHZ
157	EI-706774	OSC X'TAL 4.43MHZ
158	EM-727481J	IND FL 13-MT-15G
159	EO-727613J	COIL BIAS OSC 705720044D
160	EO-727599J	COIL SIF*5.5/5.74MHZ
161	EQ-727563J	RELAY G5A-237P DC12V
162	*ER-728129J	R FUSE 1/4W 330J
163	*ER-728168J	R FUSE 1/4W 4R7J [EK-B]
164	*ER-727458J	R FUSE 1/4W 6.8J
165	ES-727623J	SW FL*
166	ES-727622J	SW KEY BOARD* [STOP]
167	ES-727624J	SW LEAF [REC SAFTY SW]
168	ES-727625J	SW MODE SELECTOR-A
169	ES-727626J	SW PUSH [S-VHS SW]
170	ES-727691J	SW SLIDE 2-2 L=15.1 [VIDEO MUTE]
171	ES-727690J	SW SLIDE 2-2 L=9 NON SHORT [EURO AV SESLECTOR]
172	ES-727692J	SW SLIDE 2-3 L=15.1 [LEVEL METER]
173	ET-727485J	TR CHIP DT124K
174	ET-727484J	TR CHIP 2SC3053 C,D
175	ET-354370	TR DTA124ES
176	ET-354371	TR DTC124ES
177	ET-348302	TR FET 2SK381 C,D F05
178	ET-727535J	TR PHOTO GP2L04B
179	ET-727534J	TR PHOTO PN1362-1
180	ET-308472	TR 2SA1115 E,F,G F05
181	ET-357532	TR 2SA933S R
182	ET-742510	TR 2SA950 O,Y
183	ET-302539	TR 2SA952 K
184	ET-728140J	TR 2SB892 T,U
185	ET-722347J	TR 2SC1740S Q,R
186	ET-308977	TR 2SC2274K F F05
187	ET-308141	TR 2SC2603 G F05
188	ET-706734	TR 2SC2724 C,D
189	ET-338410	TR 2SC2878 A,B
190	ET-346113	TR 2SC3068 [EK-B] [NICAM]
191	ET-727483J	TR 2SC3331 S,T,U
192	ET-348948	TR 2SD1273 P,Q
193	ET-369572	TR 2SD1682 T,U
194	ET-727482J	TR 2SD1776 O,P,Q
195	EV-727684J	VR PWB*0.15W B100K-7.5FCS [TRACKING]
196	EV-727683J	VR PWB*0.15W B20K-7.5 CS [PICTURE]
197	EV-727681J	VR PWB*1/10W A5K-20F [PHONES LEVEL]
198	EV-727685J	VR PWB*1/20W B100K-25TM [STILL ADJUST]
199	EV-727682J	VR SLIDE D*1/20W A10KX2CS [AUDIO LEVEL]
200	*EW-728132J	AC CORD (B)
201	*EW-728130J	AC CORD (E)
202	*EW-728131J	AC CORD (V)
203	HC-727627J	HEAD CTL VS-S99EO
204	HE-727628J	HEAD FE VS-S99EO
205	MB-727629J	BELT LOADING*
206	MB-727630J	BELT R*
207	MI-727631J	IDLER GUM UNIT
208	ML-728160J	ARM LID OPENER
209	ML-728159J	ARM LOADING(S)
210	ML-728157J	ARM LOADING(T)
211	MP-727633J	PINCH ROLLER *
212	MR-728148J	ROLLER GUIDE
213	MT-727635J	REEL DISK(S)
214	MT-727634J	REEL DISK(TU)
215	MZ-727643J	CAM GEAR-M3 *
216	MZ-727645J	GEAR DRIVE-FL2
217	MZ-727640J	GEAR FL-S *
218	MZ-727639J	GEAR FL-T *
219	MZ-727632J	IDLER GEAR UNIT
220	VT-728153J	LOADING LEADER(R)PART VS-S99EO
221	VT-728154J	LOADING LEADER*S-2*(L)PART

2. DECK ASSEMBLY (1)

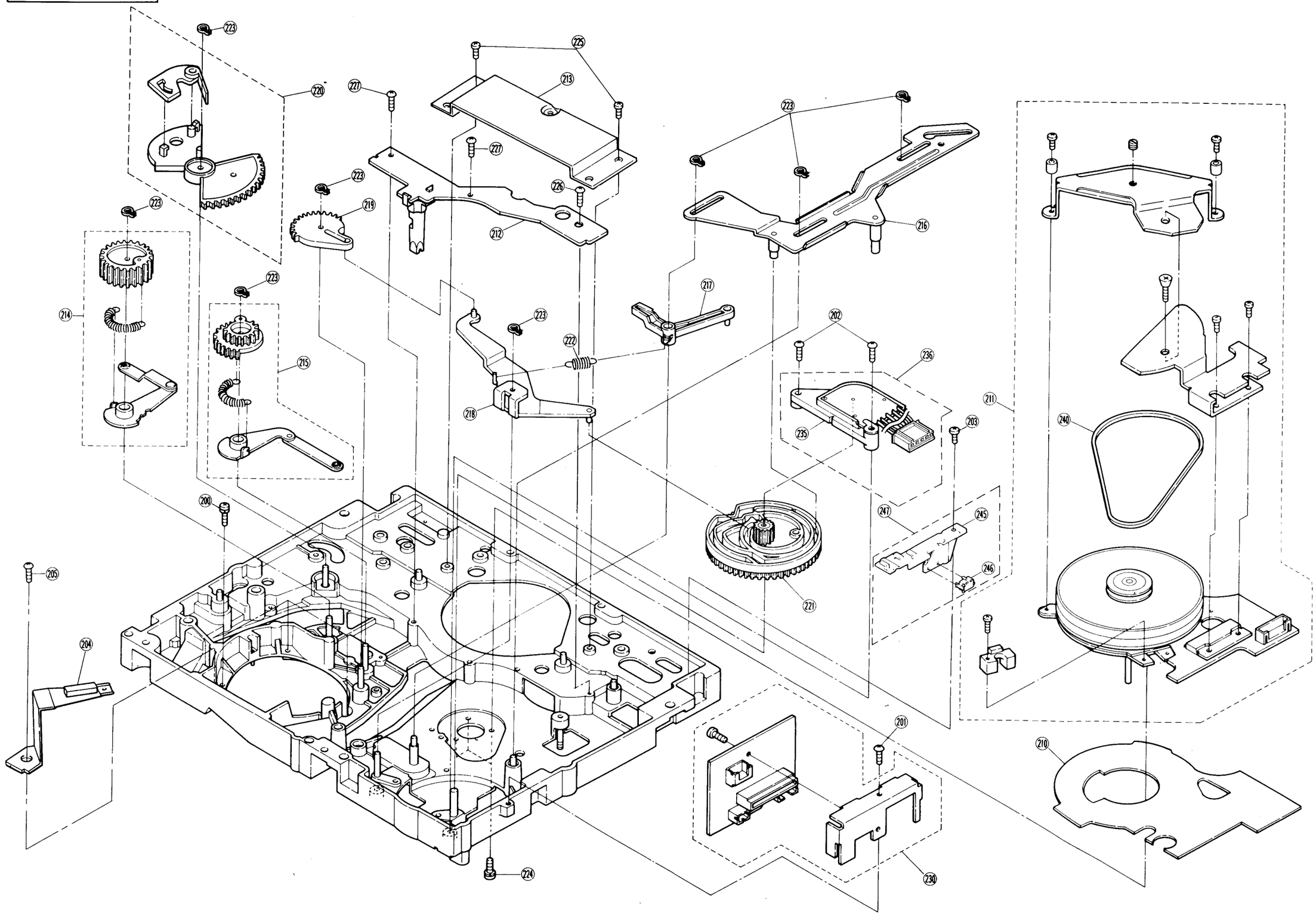
Ref. No.	Part No.	Description
1	BV-727646J	DRUM ASSY
3	MB-727629J	BELT LOADING*
6	SP-728151J	UNIT F/L-E2 [EJECTOR BLK]
8	MB-727637J	BELT TENS BRAKE*
9	ML-727636J	ARM TU-G *
14	ML-727569J	SENSOR H *
21	ES-727624J	SW LEAF [REC SAFTY SW]
22	MT-727635J	REEL DISK(S)
23	MT-727634J	REEL DISK(TU)
27	ML-727638J	ARM TENSION *
33	MR-728149J	ROLLER IMPEDANCE-C
45	ZW-709527	W SP
48	ZW-728346J	RING GRIP
61	BM-727565J	MOTOR DRUM(W/YORK MAGNET)
91	HC-727627J	HEAD CTL VS-S99EO
98	BB-728166J	LOADING MOTOR BLK
102	BM-727564J	MOTOR LOADING(W/PULLEY)
107	MB-727629J	BELT LOADING*
121	HE-727628J	HEAD FE VS-S99EO
132	MP-727633J	PINCH ROLLER *
139	BB-728167J	REEL DRIVE BLK
141	MI-727631J	IDLER GUM UNIT
142	MZ-727632J	IDLER GEAR UNIT
165	ZW-728150J	WASHER CUT
170	VT-728154J	LOADING LEADER*S-2*(L)PART
171	MR-728148J	ROLLER GUIDE
175	VT-728153J	LOADING LEADER(R)PART VS-S99EO
176	MR-728148J	ROLLER GUIDE
180	ET-348948	TR 2SD1273 P,Q
181	BV-728156J	HALF LOADING BLK

NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

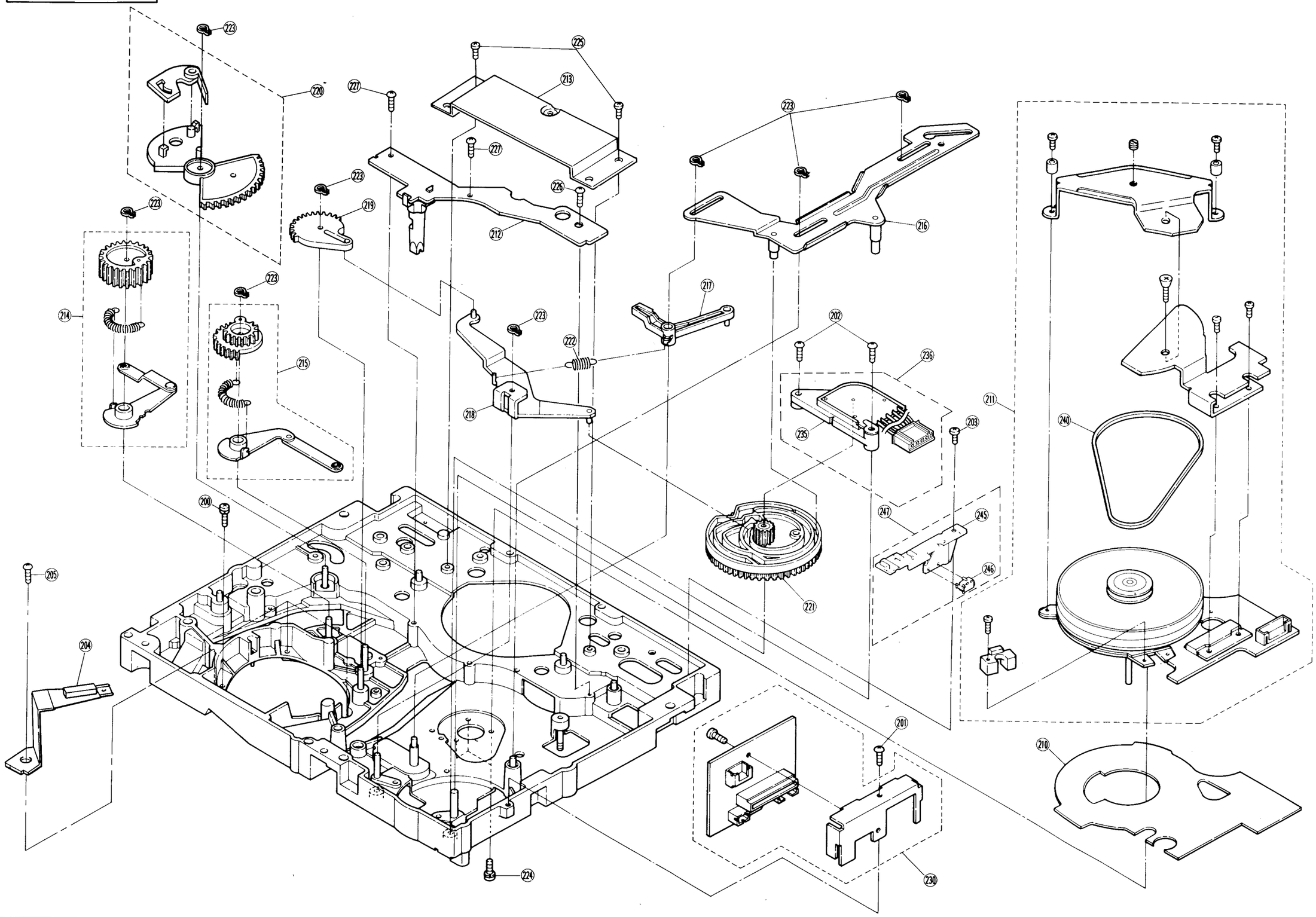
DECK ASSEMBLY (1)



DECK ASSEMBLY (2)



DECK ASSEMBLY (2)



3. DECK ASSEMBLY (2)

Ref. No.	Part No.	Description
211	BM-727566J	MOTOR CAPSTAN *
217	ML-728155J	BRAKE-CP
219	MZ-727644J	GEAR T-L
220	MZ-727642J	TENSION CAM UNIT
221	MZ-727643J	CAM GEAR-M3 *
235	ES-727625J	SW MODE SELECTOR-A
240	MB-727630J	BELT R*
223	ZW-728346J	RING GRIP
246	ES-727626J	SW PUSH [S-VHS SW]

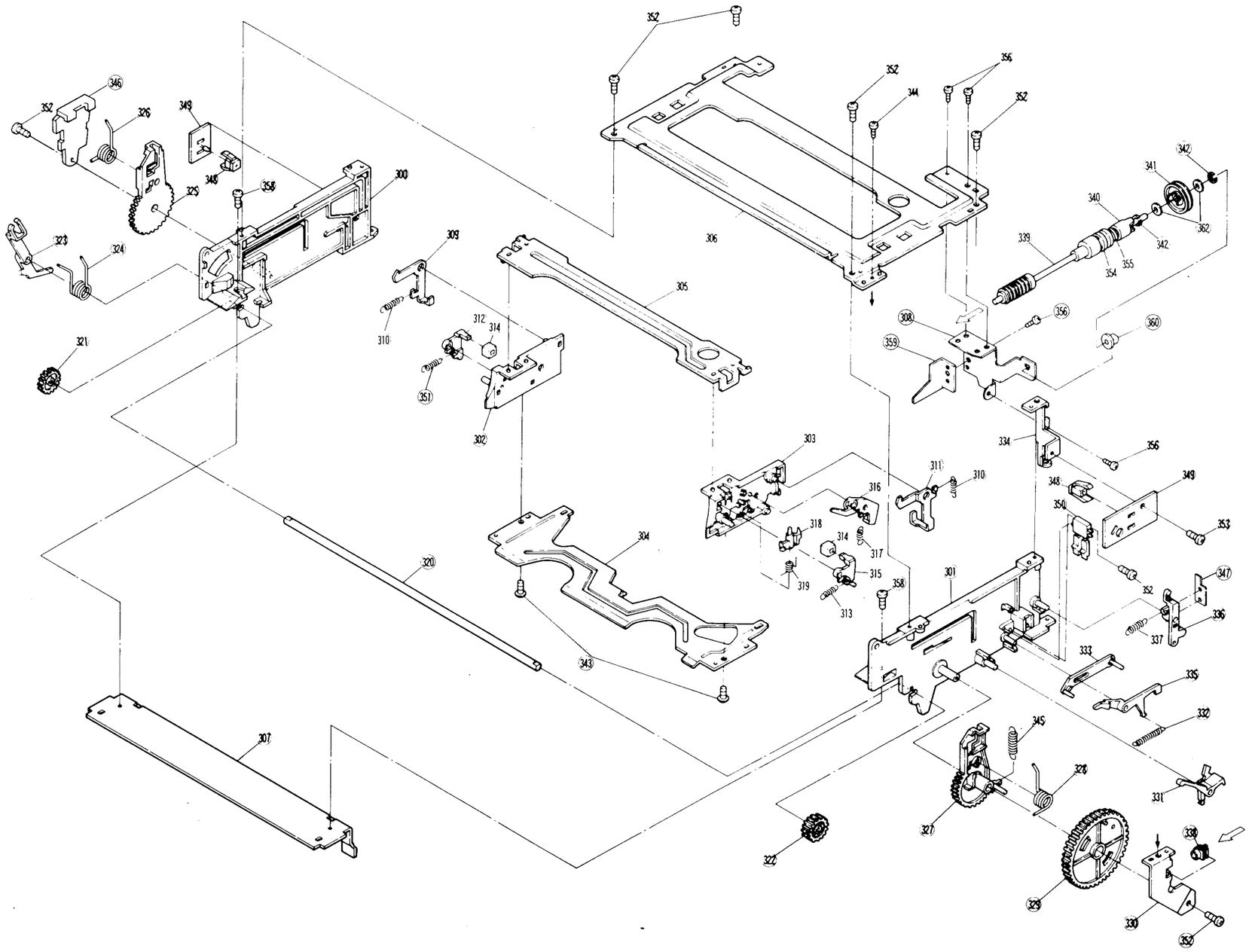
NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

4. DECK ASSEMBLY (3)(EJECTOR BLOCK)

Ref. No.	Part No.	Description
321	MZ-727640J	GEAR FL-S *
322	MZ-727639J	GEAR FL-T *
323	ML-728160J	ARM LID OPENER
325	ML-728159J	ARM LOADING(S)
327	ML-728157J	ARM LOADING(T)
329	MZ-727645J	GEAR DRIVE-FL2
339	MS-728158J	SHAFT WORM
340	MZ-727641J	CLUTCH A*
341	MI-728152J	PULLEY FL
348	ET-727534J	TR PHOTO PN1362-1
350	ES-727623J	SW FL*

NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

DECK ASSEMBLY (3)



5. P.C BOARD BLOCK

Ref. No.	Part No.	Description
1-A	BA-727661J	PC Y BLK VS-S99EO
1-B	BA-727662J	PC Y BLK VS-S99EOG
1-C	BA-727663J	PC Y BLK VS-S99EK
2-A	BA-727657J	PC INT BLK VS-S99EO
2-B	BA-727658J	PC INT BLK VS-S99EOG
2-C	BA-727659J	PC INT BLK VS-S99EK
3-A	BA-727665J	PC CONTROL BLK VS-S99EO
3-B	BA-727666J	PC CONTROL BLK VS-S99EOG
3-C	BA-727667J	PC CONTROL BLK VS-S99EK
4-A	BA-728133J	PC POWER BLK VS-S99EO
4-B	BA-728134J	PC POWER BLK VS-S99EOG
4-C	BA-728135J	PC POWER BLK VS-S99EK
5-A	BA-727709J	PC TIMER BLK VS-S99EO
5-B	BA-727710J	PC TIMER BLK VS-S99EOG
5-C	BA-727711J	PC TIMER BLK VS-S99EK
6-A	BA-727669J	PC TUNER BLK VS-S99EO
6-B	BA-727670J	PC TUNER BLK VS-S99EOG
6-C	BA-727671J	PC TUNER BLK VS-S99EK
7	BA-728163J	PC HI-FI BLK
8	BA-728164J	PC HEAD AMP BLK
9	BA-728165J	PC LP-SS BLK
10	BA-727674J	PC DECODER BLK VS-S99EO/EOG
11	BA-727673J	PC NICAM BLK VS-S99EK

6. INTEGRATED CIRCUITS

Ref. No.	Part No.	Description
IC1	EI-727517J	IC HA13403
IC01	EI-364399	IC AN3311K
IC02	EI-727537J	IC AN3224K
IC101	EI-712636	IC LA7910
IC161	EI-727553J	IC LA7212
IC200	EI-727552J	IC BA7021
IC201	EI-353852	IC LA7016
IC202	EI-727552J	IC BA7021
IC203	EI-727552J	IC BA7021
IC205	EI-727542J	IC NJM2217L
IC206	EI-353852	IC LA7016
IC207	EI-727552J	IC BA7021
IC208	EI-727532J	IC SYNC-P(B090-1)
IC209	EI-353852	IC LA7016
IC210	EI-353852	IC LA7016
IC217	EI-727528J	IC AMP2(B078-1)
CI218	EI-727528J	IC AMP2(B078-1)
IC219	EI-727528J	IC AMP2(B078-1)
IC222	EI-727529J	IC BX6387
IC224	EI-727528J	IC AMP2(B078-1)
IC2A1	EI-727552J	IC BA7021
IC2A2	EI-727543J	IC M51435SP
IC2A3	EI-727530J	IC EMP2(B079-1)
IC2A4	EI-727536J	IC MN3802
IC2B0	EI-200573	IC TC4053BP
IC2B1	EI-200573	IC TC4053BP
IC2B2	EI-310036	IC TC4066BP
IC2B3	EI-310036	IC TC4066BP
IC2C0	EI-353852	IC LA7016
IC2C2	EI-727552J	IC BA7021
IC2C3	EI-727552J	IC BA7021
IC2C5	EI-353852	IC LA7016
CI2C6	EI-353852	IC LA7016
IC2D0	EI-307616	IC AN608P
IC2D1	EI-727529J	IC BX6387
IC2E0	EI-727555J	IC 272P317
IC2E1	EI-727528J	IC AMP2(B078-1)
IC2000	EI-310036	IC TC4066BP
IC2001	EI-727518J	IC BA7022A
IC2002	EI-306704	IC TC4030BP
IC2003	EI-306727	IC TC4013BP
IC300	EI-346071	IC M5218L-21
IC301	EI-727520J	IC TK15022Z
IC3A0	EI-727549J	IC LA7295
IC3A1	EI-355134	IC M5201L
IC3201	EI-727538J	IC BA7252S
IC3301	EI-727545J	IC BA7730S
IC3302	EI-727544J	IC BA7720S
IC3303	EI-727539J	IC BA7710S
IC3305	EI-727524J	IC ADI(B060-2)
IC3306	EI-727523J	IC H/L(B059-2)
IC3307	EI-727524J	IC ADI(B060-2)
IC4A0	EI-727495J	IC MN6747MME
IC4A1	EI-200573	IC TC4053BP
IC4A2	EI-727521J	IC BA6411
IC5A0	EI-727493J	IC M50747-762SP
IC5A1	EI-727486J	IC HD14077BP
IC5A2	EI-376675	IC PST520C
IC5A3	EI-727519J	IC PST520H
IC5A4	EI-313797	IC TC4001BP
IC5A5	EI-727489J	IC M50455-090SP
IC5A6	EI-313797	IC TC4001BP
IC5A7	EI-324695	IC TC4081BP
IC5A8	EI-727550J	IC TA72915
IC5A9	EI-310036	IC TC4066BP
IC5B0	EI-713424	IC TC4077BP
IC5B1	EI-200573	IC TC4053BP
IC5B2	EI-727492J	IC M50925-933SP
IC5B3	EI-727491J	IC M50925-700SP
IC5B4	EI-727490J	IC M50925-690SP
IC5B5	EI-727487J	IC MC14094BCP
IC6A0	EI-727698J	IC HA118116NT
IC6A1	EI-727699J	IC HA118117NT
IC6A2	EI-727541J	IC TA7357P
IC6B0	EI-366892	IC BA7025L
IC6B1	EI-727488J	IC MC14538BCP
IC6C0	EI-353852	IC LA7016
IC6C1	EI-727552J	IC BA7021
IC6C2	EI-727548J	IC HA118054
IC6C3	EI-727551J	IC CX22013
IC6C4	EI-307616	IC AN608P
IC6C5	EI-307616	IC AN608P
IC6C6	EI-727528J	IC AMP2(B078-1)
IC6C7	EI-307616	IC AN608P
IC6C8	EI-727687J	IC L78M05
IC6C9	EI-727529J	IC BX6387
IC6D0	EI-353852	IC LA7016
IC700	EI-727551J	IC CX22013
IC701	EI-727531J	IC BPF2(B080-2)
IC702	EI-727526J	IC BPF(B074-2)
IC703	EI-727531J	IC BPF2(B080-2)
IC704	EI-727527J	IC SUB(B075-2)
IC705	EI-307616	IC AN608P
IC706	EI-727529J	IC BX6387
IC707	EI-727529J	IC BX6387
IC708	EI-709620	IC NJM78L09K
IC709	EI-727528J	IC AMP2(B078-1)
IC710	EI-727554J	IC CXL1009P
IC711	EI-727554J	IC CXL1009P
IC7A0	EI-727547J	IC TDA2555 [EO-E,EOG]
IC7A0	EI-307616	IC AN608P [EK-B] [NICAM]
IC7A1	EI-727546J	IC TDA3803A [EO-E,EOG]
IC7A1	EI-307616	IC AN608P [EK-B] [NICAM]
IC7A2	EI-382827J	IC TA8662N [EK-B] [NICAM]
IC7A3	EI-382828J	IC TC6011N [EK-B] [NICAM]
IC7A4	EI-728170J	IC HM6264ALSP10/12 [EK-B] [NICAM]
IC7A6	EI-382826J	IC TD6710AN [EK-B] [NICAM]
IC7A7	EI-304657	IC TC4011BP [EK-B] [NICAM]
IC7A9	EI-360772	IC NJM79L05A [EK-B] [NICAM]
IC7B0	EI-728122J	IC AFL87F-14000A10 [EK-B] [NICAM]
IC7B1	EI-728122J	IC AFL87F-14000A10 [EK-B] [NICAM]
IC7B2	EI-355134	IC M5201L [EK-B] [NICAM]
IC801-A	EI-727704J	IC UPD75216AGF-523-3BE [EOG]
IC801-B	EI-727494J	IC UPD75216AGF-522-3BE [EO-E,EK-B]
IC802	EI-727540J	IC M58630P
IC8A0	EI-381643J	IC SDA5642 [EOG]
IC8A1	EI-727701J	IC UPD7554CS-091 [EOG]
IC902	EI-727686J	IC UPC574J
IC970	EI-727533J	IC STK5477

7. TRANSISTORS

Ref. No.	Part No.	Description
Q01	ET-727484J	TR CHIP 2SC3053 C,D
Q02	ET-727485J	TR CHIP DT124K
Q03	ET-727485J	TR CHIP DT124K
Q04	ET-727484J	TR CHIP 2SC3053 C,D
Q06	ET-727484J	TR CHIP 2SC3053 C,D
Q21	ET-727485J	TR CHIP DT124K
Q22	ET-727485J	TR CHIP DT124K
Q50	ET-727485J	TR CHIP DT124K
Q51	ET-727484J	TR CHIP 2SC3053 C,D
Q104	ET-354371	TR DTC124ES
Q1A0	ET-354370	TR DTA124ES
Q1A1	ET-338410	TR 2SC2878 A,B
Q1A2	ET-706734	TR 2SC2724 C,D
Q200	ET-302539	TR 2SA952 K
Q201	ET-302539	TR 2SA952 K
Q202	ET-302539	TR 2SA952 K
Q203	ET-706734	TR 2SC2724 C,D
Q204	ET-354371	TR DTC124ES
Q205	ET-706734	TR 2SC2724 C,D
Q206	ET-706734	TR 2SC2724 C,D
Q207	ET-706734	TR 2SC2724 C,D
Q212	ET-354371	TR DTC124ES
Q213	ET-357532	TR 2SA933S R
Q214	ET-357532	TR 2SA933S R
Q218	ET-348302	TR FET 2SK381 C,D F05
Q219	ET-706734	TR 2SC2724 C,D
Q220	ET-354370	TR DTA124ES [EO-E]
Q221	ET-354371	TR DTC124ES
Q2A0	ET-357532	TR 2SA933S R
Q2A1	ET-706734	TR 2SC2724 C,D
Q2A2	ET-706734	TR 2SC2724 C,D
Q2A3	ET-706734	TR 2SC2724 C,D
Q2A4	ET-357532	TR 2SA933S R
Q2A5	ET-357532	TR 2SA933S R
Q2A6	ET-722347J	TR 2SC1740S Q,R
Q2A8	ET-722347J	TR 2SC1740S Q,R
Q2A9	ET-722347J	TR 2SC1740S Q,R
Q2B0	ET-722347J	TR 2SC1740S Q,R
Q2B1	ET-728140J	TR 2SB892 T,U
Q2B4	ET-706734	TR 2SC2724 C,D
Q2B5	ET-706734	TR 2SC2724 C,D
Q2C0	ET-357532	TR 2SA933S R
Q2C4	ET-706734	TR 2SC2724 C,D
Q2C5	ET-706734	TR 2SC2724 C,D
Q2C6	ET-706734	TR 2SC2724 C,D
Q2C8	ET-706734	TR 2SC2724 C,D
Q2C9	ET-706734	TR 2SC2724 C,D
Q2P0	ET-354370	TR DTA124ES
Q2P1	ET-354371	TR DTC124ES
Q2P2	ET-354371	TR DTC124ES
Q2P3	ET-354371	TR DTC124ES
Q2P4	ET-354371	TR DTC124ES
Q2P5	ET-354371	TR DTC124ES
Q2P6	ET-354371	TR DTC124ES
Q2P7	ET-354371	TR DTC124ES
Q2P8	ET-354371	TR DTC124ES
Q2R0	ET-354370	TR DTA124ES
Q2R1	ET-354371	TR DTC124ES
Q2R2	ET-354371	TR DTC124ES
Q2R3	ET-354371	TR DTC124ES
Q2R4	ET-354371	TR DTC124ES
Q2R5	ET-354371	TR DTC124ES
Q2R6	ET-354371	TR DTC124ES
Q2R8	ET-354371	TR DTC124ES
Q2R9	ET-354371	TR DTC124ES
Q2S0	ET-354370	TR DTA124ES
Q2S1	ET-354371	TR DTC124ES
Q2S3	ET-354371	TR DTC124ES
Q2S4	ET-354371	TR DTC124ES
Q2S5	ET-354371	TR DTC124ES
Q2S6	ET-354371	TR DTC124ES
Q2S7	ET-354371	TR DTC124ES
Q2S8	ET-354371	TR DTC124ES
Q2T1	ET-706734	TR 2SC2724 C,D
Q2T2	ET-706734	TR 2SC2724 C,D
Q2T3	ET-706734	TR 2SC2724 C,D
Q2T4	ET-706734	TR 2SC2724 C,D
Q2T5	ET-706734	TR 2SC2724 C,D
Q2T6	ET-706734	TR 2SC2724 C,D
Q2T7	ET-706734	TR 2SC2724 C,D
Q2T8	ET-706734	TR 2SC2724 C,D
Q2T9	ET-354371	TR DTC124ES
Q2U0	ET-706734	TR 2SC2724 C,D
Q2U1	ET-357532	TR 2SA933S R
Q2U2	ET-354371	TR DTC124ES
Q2U3	ET-706734	TR 2SC2724 C,D
Q2000	ET-706734	TR 2SC2724 C,D
Q2001	ET-706734	TR 2SC2724 C,D
Q2003	ET-706734	TR 2SC2724 C,D
Q2004	ET-706734	TR 2SC2724 C,D
Q2005	ET-706734	TR 2SC2724 C,D
Q2006	ET-357532	TR 2SA933S R
Q2007	ET-354371	TR DTC124ES
Q2900	ET-354371	TR DTC124ES
Q2901	ET-302539	TR 2SA952 K
Q2902	ET-706734	TR 2SC2724 C,D
Q2903	ET-706734	TR 2SC2724 C,D
Q2904	ET-706734	TR 2SC2724 C,D
Q2905	ET-706734	TR 2SC2724 C,D
Q2906	ET-742510	TR 2SA950 O,Y
Q2907	ET-308977	TR 2SC2274K F F05
Q300	ET-354370	TR DTA124ES
Q301	ET-722347J	TR 2SC1740S Q,R
Q302	ET-338410	TR 2SC2878 A,B
Q303	ET-338410	TR 2SC2878 A,B
Q304	ET-354370	TR DTA124ES
Q305	ET-722347J	TR 2SC1740S Q,R
Q306	ET-722347J	TR 2SC1740S Q,R
Q3A0	ET-727483J	TR 2SC3331 S,T,U
Q3A1	ET-706734	TR 2SC2724 C,D
Q3A2	ET-308141	TR 2SC2603 G F05
Q3A3	ET-354371	TR DTC124ES
Q3201	ET-727484J	TR CHIP 2SC3053 C,D
Q3202	ET-727484J	TR CHIP 2SC3053 C,D
Q3203	ET-308977	TR 2SC2274K F F05
Q3204	ET-308977	TR 2SC2274K F F05
Q3205	ET-742510	TR 2SA950 O,Y
Q3206	ET-727484J	TR CHIP 2SC3053 C,D
Q3207	ET-727485J	TR CHIP DT124K
Q3208	ET-727485J	TR CHIP DT124K
Q3306	ET-722347J	TR 2SC1740S Q,R
Q3307	ET-722347J	TR 2SC1740S Q,R
Q3308	ET-722347J	TR 2SC1740S Q,R
Q3309	ET-354371	TR DTC124ES
Q3310	ET-354371	TR DTC124ES
Q3311	ET-354371	TR DTC124ES
Q3326	ET-354371	TR DTC124ES
Q3327	ET-354370	TR DTA124ES
Q3330	ET-354371	TR DTC124ES
Q3331	ET-357532	TR 2SA933S R
Q3332	ET-354371	TR DTC124ES
Q3333	ET-354371	TR DTC124ES
Q4A0	ET-722347J	TR 2SC1740S Q,R
Q4A1	ET-308141	TR 2SC2603 G F05
Q4A2	ET-357532	TR 2SA933S R
Q4A3	ET-354371	TR DTC124ES
Q4A4	ET-357532	TR 2SA933S R
Q4A5	ET-308472	TR 2SA1115 E,F,G F05
Q4A6	ET-308141	TR 2SC2603 G F05
Q4A7	ET-308141	TR 2SC2603 G F05
Q4A8	ET-354371	TR DTC124ES
Q571	ET-727535J	TR PHOTO GP2L04B
Q572	ET-727534J	TR PHOTO PN1362-1
Q573	ET-727534J	TR PHOTO PN1362-1
Q574	ET-727535J	TR PHOTO GP2L04B
Q5A0	ET-357532	TR 2SA933S R
Q5A1	ET-302539	TR 2SA952 K
Q5A2	ET-354371	TR DTC124ES
Q5A4	ET-722347J	TR 2SC1740S Q,R
Q5A5	ET-722347J	TR 2SC1740S Q,R
Q5A6	ET-722347J	TR 2SC1740S Q,R
Q5A8	ET-354371	TR DTC124ES

8. DIODES

Ref. No.	Part No.	Description
D101	ED-311852	D SILICON H 1S2471
D102	ED-311852	D SILICON H 1S2471
D103	ED-311852	D SILICON H 1S2471
D106	ED-604541	D SILICON H 1S2076
D107	ED-604541	D SILICON H 1S2076
D1A0	ED-727515J	D SILICON MA165
D1A1	ED-727515J	D SILICON MA165
D200	ED-727515J	D SILICON MA165
D202	ED-727515J	D SILICON MA165
D203	ED-727515J	D SILICON MA165
D204	ED-727515J	D SILICON MA165
D206	ED-727515J	D SILICON MA165
D2A0	ED-727515J	D SILICON MA165
D2A1	ED-727515J	D SILICON MA165
D2A2	ED-727515J	D SILICON MA165
D2A3	ED-727515J	D SILICON MA165
D2A4	ED-727515J	D SILICON MA165
D2A5	ED-727515J	D SILICON MA165
D2A7	ED-727515J	D SILICON MA165
D2A8	ED-727515J	D SILICON MA165
D2A9	ED-727515J	D SILICON MA165
D2B0	ED-727515J	D SILICON MA165
D2B1	ED-727515J	D SILICON MA165
D2B2	ED-727515J	D SILICON MA165
D2E0	ED-727515J	D SILICON MA165
D2E2	ED-727515J	D SILICON MA165
D2E3	ED-727515J	D SILICON MA165
D2E4	ED-727515J	D SILICON MA165
D2E5	ED-727515J	D SILICON MA165
D2E6	ED-727515J	D SILICON MA165
D2E7	ED-727515J	D SILICON MA165
D2E8	ED-727515J	D SILICON MA165
D2000	ED-727515J	D SILICON MA165
D300	ED-727515J	D SILICON MA165
D3A0	ED-727515J	D SILICON MA165
D3A1	ED-727515J	D SILICON MA165
D3A2	ED-727515J	D SILICON MA165
D3201	ED-727503J	D ZENER HZ11A1
D3301	ED-727508J	D ZENER HZ6C3
D3302	ED-727515J	D SILICON MA165
D3303	ED-727515J	D SILICON MA165
D3306	ED-727515J	D SILICON MA165
D3401	ED-727515J	D SILICON MA165
D3403	ED-727515J	D SILICON MA165
D3404	ED-727515J	D SILICON MA165
D4A0	ED-727515J	D SILICON MA165
D4A1	ED-727515J	D SILICON MA165
D4A2	ED-727509J	D ZENER RD5.1E B3
D4A3	ED-727509J	D ZENER RD5.1E B3
D4A4	ED-727515J	D SILICON MA165
D4A5	ED-727515J	D SILICON MA165
D4A6	ED-727515J	D SILICON MA165
D4A7	ED-727515J	D SILICON MA165
D4A8	ED-727515J	D SILICON MA165
D4A9	ED-727515J	D SILICON MA165
D4B0	ED-727515J	D SILICON MA165
D4B1	ED-727515J	D SILICON MA165
D4B2	ED-311852	D SILICON H 1S2471
D4B3	ED-311852	D SILICON H 1S2471
D4B4	ED-727515J	D SILICON MA165
D570	ED-727500J	D LED GL-451 [CASSETTE LAMP]
D5A0	ED-727515J	D SILICON MA165
D5A1	ED-727515J	D SILICON MA165
D5A2	ED-727515J	D SILICON MA165
D5A3	ED-727515J	D SILICON MA165
D5A4-A	ED-727515J	D SILICON MA165
D5A4-B	XX-333333	ABC
D5A5	ED-709644	D SILICON 1SS82
D5A6	ED-727514J	D ZENER EM01ZV1
D5A8	ED-727515J	D SILICON MA165
D5A9	ED-727515J	D SILICON MA165
D5B0	ED-727515J	D SILICON MA165
D5B1	ED-727515J	D SILICON MA165
D5B2	ED-727515J	D SILICON MA165
D5B3	ED-727515J	D SILICON MA165
D5B4	ED-727515J	D SILICON MA165
D5B5	ED-727515J	D SILICON MA165
D5B7	ED-727515J	D SILICON MA165
D5B8	ED-727515J	D SILICON MA165
D5D9	ED-727515J	D SILICON MA165
D5C0	ED-727515J	D SILICON MA165
D5C1	ED-727515J	D SILICON MA165
D5C2	ED-727514J	D ZENER EM01ZV1
D5C3	ED-707412	D ZENER H RD20E B
D5C4	ED-727515J	D SILICON MA165
D5C6	ED-727515J	D SILICON MA165
D5C7	ED-727515J	D SILICON MA165
D5C8	ED-727515J	D SILICON MA165
D5C9	ED-727515J	D SILICON MA165
D5D0	ED-727515J	D SILICON MA165
D5D2	ED-727515J	D SILICON MA165
D5D3	ED-727515J	D SILICON MA165
D5D4	ED-727515J	D SILICON MA165
D5D4	ED-727515J	D SILICON MA165
D5D6	ED-727515J	D SILICON MA165
D5D7	ED-727515J	D SILICON MA165
D6A0	ED-727512J	D ZENER EQA02-09CD
D6A1	ED-727515J	D SILICON MA165
D6A2	ED-727515J	D SILICON MA165
D6A3	ED-727515J	D SILICON MA165
D6A4	ED-727515J	D SILICON MA165
D6A5	ED-727515J	D SILICON MA165
D6A7	ED-727515J	D SILICON MA165
D6A8	ED-727515J	D SILICON MA165
D6A9	ED-727515J	D SILICON MA165
D6B0	ED-727515J	D SILICON MA165
D6B1	ED-727515J	D SILICON MA165
D6B2	ED-727515J	D SILICON MA165
D7A0	ED-604541	D SILICON H 1S2076
D7A0	ED-719781	D ZENER H RD10ES B1 [EK-B] [NICAM]
D7A1	ED-727515J	D SILICON MA165
D7A1	ED-727515J	D SILICON MA165 [EK-B] [NICAM]
D7A2	ED-727515J	D SILICON MA165 [EK-B] [NICAM]
D7A3	ED-727515J	D SILICON MA165 [EK-B] [NICAM]
D7A5	ED-727515J	D SILICON MA165 [EK-B] [NICAM]
D7A6	ED-727515J	D SILICON MA165 [EK-B] [NICAM]
D7A7	ED-727515J	D SILICON MA165 [EK-B] [NICAM]
D7A8	ED-727515J	D SILICON MA165 [EK-B] [NICAM]
D801	ED-727504J	D ZENER HZ6C2
D802	ED-351655	D ZENER H MZ309 B
D803	ED-311852	D SILICON H 1S2471
D804	ED-727501J	D LED SLR-34MC3
D805	ED-727516J	D LED SLS-5601-2
D806	ED-727502J	D LED SLR-34DC3
D807	ED-727501J	D LED SLR-34MC3
D808	ED-727501J	D LED SLR-34MC3
D810	ED-311852	D SILICON H 1S2471
D812	ED-311852	D SILICON H 1S2471
D814	ED-311852	D SILICON H 1S2471
D815	ED-311852	D SILICON H 1S2471
D816	ED-311852	D SILICON H 1S2471
D817	ED-311852	D SILICON H 1S2471
D818	ED-311852	D SILICON H 1S2471
D819	ED-311852	D SILICON H 1S2471
D820	ED-311852	D SILICON H 1S2471
D821	ED-311852	D SILICON H 1S2471
D822	ED-311852	D SILICON H 1S2471
D823	ED-311852	D SILICON H 1S2471
D824	ED-311852	D SILICON H 1S2471
D825	ED-311852	D SILICON H 1S2471
D826	ED-311852	D SILICON H 1S2471
D828	ED-311852	D SILICON H 1S2471
D831	ED-311852	D SILICON H 1S2471
D832	ED-311852	D SILICON H 1S2471

Ref. No.	Part No.	Description
Q5A9	ET-354371	TR DTC124ES
Q5B0	ET-354370	TR DTA124ES
Q5B1	ET-354370	TR DTA124ES
Q5B2	ET-722347J	TR 2SC1740S Q,R
Q5B3	ET-722347J	TR 2SC1740S Q,R
Q5B4	ET-722347J	TR 2SC1740S Q,R
Q5B5	ET-722347J	TR 2SC1740S Q,R
Q5B6-A	ET-357532	TR 2SA933S R [EO-E,EK-B]
Q5B6-B	ET-357532	TR 2SA933S R [EOG]
Q5B8	ET-722347J	TR 2SC1740S Q,R
Q5B9	ET-354371	TR DTC124ES
Q5C0	ET-722347J	TR 2SC1740S Q,R
Q5C1	ET-706734	TR 2SC2724 C,D
Q5C2	ET-727482J	TR 2SD1776 O,P,Q
Q5C3	ET-357532	TR 2SA933S R
Q5C4	ET-354371	TR DTC124ES
Q5C5	ET-354370	TR DTA124ES
Q5C6	ET-357532	TR 2SA933S R
Q5C7	ET-354370	TR DTA124ES
Q5C8	ET-308141	TR 2SC2603 G F05
Q5C9	ET-354371	TR DTC124ES
Q5D1	ET-354370	TR DTA124ES
Q5D3	ET-354370	TR DTA124ES
Q5D4	ET-722347J	TR 2SC1740S Q,R
Q5D5	ET-354371	TR DTC124ES
Q5D8	ET-722347J	TR 2SC1740S Q,R
Q5E0	ET-354371	TR DTC124ES
Q5E1	ET-308472	TR 2SA1115 E,F,G F05
Q5E2	ET-354371	TR DTC124ES
Q5E4	ET-357532	TR 2SA933S R
Q5E5	ET-354371	TR DTC124ES
Q5E6	ET-354370	TR DTA124ES
Q5E7	ET-357532	TR 2SA933S R
Q5F0	ET-354371	TR DTC124ES
Q5F1	ET-354370	TR DTA124ES [EO-E,EK-B]
Q5G0	ET-354371	TR DTC124ES
Q5G1	ET-354370	TR DTA124ES
Q6A0	ET-706734	TR 2SC2724 C,D
Q6A3	ET-354371	TR DTC124ES
Q6A4	ET-354371	TR DTC124ES
Q6A5	ET-706734	TR 2SC2724 C,D
Q6A6	ET-354371	TR DTC124ES
Q6A7	ET-354371	TR DTC124ES
Q6A8	ET-357532	TR 2SA933S R
Q6A9	ET-354371	TR DTC124ES
Q6B0	ET-706734	TR 2SC2724 C,D
Q6B1	ET-722347J	TR 2SC1740S Q,R
Q6B2	ET-357532	TR 2SA933S R
Q6B3	ET-722347J	TR 2SC1740S Q,R
Q6B4	ET-354370	TR DTA124ES
Q6B5	ET-706734	TR 2SC2724 C,D
Q6B6	ET-706734	TR 2SC2724 C,D
Q6B7	ET-706734	TR 2SC2724 C,D
Q6B8	ET-354371	TR DTC124ES
Q6B9	ET-706734	TR 2SC2724 C,D
Q6C0	ET-706734	TR 2SC2724 C,D
Q6C1	ET-706734	TR 2SC2724 C,D
Q6C2	ET-354371	TR DTC124ES
Q6C3	ET-706734	TR 2SC2724 C,D
Q6C4	ET-354371	TR DTC124ES
Q6C5	ET-354371	TR DTC124ES
Q6C6	ET-354371	TR DTC124ES
Q6D2	ET-706734	TR 2SC2724 C,D
Q6D3	ET-706734	TR 2SC2724 C,D
Q6D4	ET-706734	TR 2SC2724 C,D
Q6D5	ET-354371	TR DTC124ES
Q6D6	ET-354371	TR DTC124ES
Q6D7	ET-706734	TR 2SC2724 C,D
Q700	ET-706734	TR 2SC2724 C,D
Q701	ET-357532	TR 2SA933S R
Q702	ET-357532	TR 2SA933S R
Q704	ET-706734	TR 2SC2724 C,D
Q705	ET-308472	TR 2SA1115 E,F,G F05
Q7A0	ET-706734	TR 2SC2724 C,D [EO-E,EOG]
Q7A0	ET-722347J	TR 2SC1740S Q,R [EK-B] [NICAM]
Q7A1	ET-706734	TR 2SC2724 C,D [EO-E,EOG]
Q7A1	ET-706734	TR 2SC2724 C,D [EK-B] [NICAM]
Q7A2	ET-706734	TR 2SC2724 C,D [EO-E,EOG]
Q7A3	ET-706734	TR 2SC2724 C,D [EO-E,EOG]
Q7A3	ET-346113	TR 2SC3068 [EK-B] [NICAM]
Q7A4	ET-346113	TR 2SC3068 [EK-B] [NICAM]
Q7A5	ET-354371	TR DTC124ES [EO-E,EOG]
Q7A6	ET-706734	TR 2SC2724 C,D [EO-E,EOG]
Q7A7	ET-706734	TR 2SC2724 C,D [EO-E,EOG]
Q7A7	ET-354370	TR DTA124ES [EK-B] [NICAM]
Q7A8	ET-338410	TR 2SC2878 A,B [EO-E,EOG]
Q7A9	ET-354370	TR DTA124ES [EO-E,EOG]
Q801	ET-308472	TR 2SA1115 E,F,G F05
Q802	ET-354370	TR DTA124ES
Q803	ET-308141	TR 2SC2603 G F05
Q804	ET-308472	TR 2SA1115 E,F,G F05 [EO-E,EOG]
Q8A0-A	ET-722347J	TR 2SC1740S Q,R [EOG]
Q8A0-B	ET-354371	TR DTC124ES [EO-E,EK-B]
Q8A3	ET-706734	TR 2SC2724 C,D [EOG]
Q901	ET-728140J	TR 2SB892 T,U
Q902	ET-728140J	TR 2SB892 T,U
Q903	ET-302539	TR 2SA952 K
Q904	ET-354371	TR DTC124ES
Q905	ET-369572	TR 2SD1682 T,U
Q906	ET-369572	TR 2SD1682 T,U
Q971	ET-348948	TR 2SD1273 P,Q

11. COILS

Ref. No.	Part No.	Description
L01	EO-713868	COIL PEAKING 100UH K
L02	EO-727576J	COIL PEAKING 100MH-K
L04	EO-713868	COIL PEAKING 100UH K
L08	EO-727589J	COIL PEAKING 47MH-J
L09	EO-727576J	COIL PEAKING 100MH-K
L14	EO-727590J	COIL PEAKING 56MH-J
L15	EO-727586J	COIL PEAKING 18MH-J
L16	EO-727581J	COIL PEAKING 6.8MH-J
L17	EO-727584J	COIL PEAKING 12MH-J
L18	EO-727583J	COIL PEAKING 10MH-J
L200	EO-727576J	COIL PEAKING 100MH-K
L201	EO-727576J	COIL PEAKING 100MH-K
L202	EO-727576J	COIL PEAKING 100MH-K
L203	EO-727576J	COIL PEAKING 100MH-K
L204	EO-727576J	COIL PEAKING 100MH-K
L206	EO-727576J	COIL PEAKING 100MH-K
L207	EO-727576J	COIL PEAKING 100MH-K
L208	EO-727576J	COIL PEAKING 100MH-K
L209	EO-727576J	COIL PEAKING 100MH-K
L2A0	EO-727576J	COIL PEAKING 100MH-K
L2A1	EO-727576J	COIL PEAKING 100MH-K
L2A2	EO-727576J	COIL PEAKING 100MH-K
L2A3	EO-727576J	COIL PEAKING 100MH-K
L2A4	EO-727576J	COIL PEAKING 100MH-K
L2A5	EO-727576J	COIL PEAKING 100MH-K
L2A6	EO-727576J	COIL PEAKING 100MH-K
L2A7	EO-727576J	COIL PEAKING 100MH-K
L2B0	EO-727576J	COIL PEAKING 100MH-K
L2B1	EO-727576J	COIL PEAKING 100MH-K
L2B2	EO-727576J	COIL PEAKING 100MH-K
L2B3	EO-727576J	COIL PEAKING 100MH-K
L2B4	EO-727576J	COIL PEAKING 100MH-K
L2B5	EO-727576J	COIL PEAKING 100MH-K
L2B7	EO-727576J	COIL PEAKING 100MH-K
L2B8	EO-711534	COIL PEAKING 15MH K
L2C4	EO-727595J	COIL PEAKING 150MH-J
L2C9	EO-727585J	COIL PEAKING 15MH-J
L2D0	EO-727583J	COIL PEAKING 10MH-J
L2D3	EO-727588J	COIL PEAKING 39MH-J
L2D4	EO-727595J	COIL PEAKING 150MH-J
L2D7	EO-727590J	COIL PEAKING 56MH-J
L2D8	EO-727590J	COIL PEAKING 56MH-J
L2D9	EO-727595J	COIL PEAKING 150MH-J
L2E0	EO-727587J	COIL PEAKING 33MH-J
L2E1	EO-727598J	COIL PEAKING 330MH-J
L2E2	EO-727592J	COIL PEAKING 82MH-J
L2E3	EO-727596J	COIL PEAKING 180MH-J
L2H5	EO-727582J	COIL PEAKING 8.2MH-J
L2J0	EO-727584J	COIL PEAKING 12MH-J
L2J1	EO-711534	COIL PEAKING 15MH K
L2J2	EO-727589J	COIL PEAKING 47MH-J
L2J3	EO-727583J	COIL PEAKING 10MH-J
L2J4	EO-727576J	COIL PEAKING 100MH-K
L2J5	EO-727589J	COIL PEAKING 47MH-J
L2J7	EO-727588J	COIL PEAKING 39MH-J
L2J8	EO-727580J	COIL PEAKING 5.6MH-J
L2J9	EO-727595J	COIL PEAKING 150MH-J
L2K0	EO-727585J	COIL PEAKING 15MH-J
L2K1	EO-711534	COIL PEAKING 15MH K
L2K2	EO-727585J	COIL PEAKING 15MH-J
L2000	EO-727582J	COIL PEAKING 8.2MH-J
L2001	EO-727583J	COIL PEAKING 10MH-J
L2002	EO-727576J	COIL PEAKING 100MH-K
L2003	EO-727576J	COIL PEAKING 100MH-K
L2004	EO-727578J	COIL PEAKING 1MH-J
L2005	EO-727578J	COIL PEAKING 1MH-J
L2900	EO-727597J	COIL PEAKING 220MH-J
L2901	EO-727597J	COIL PEAKING 220MH-J
L2902	EO-727575J	COIL PEAKING 3.9MH-K
L2903	EO-727580J	COIL PEAKING 5.6MH-J
L302	EO-728121J	COIL PEAKING 1000MH-K
L303	EO-728121J	COIL PEAKING 1000MH-K
L304	EO-727576J	COIL PEAKING 100MH-K
L305	EO-727576J	COIL PEAKING 100MH-K
L3A0	EO-706795	COIL RF-16C 100MHK J
L3A1	EO-708246	COIL 8200MH J
L3A2	EO-712656	COIL PEAKING 100MH J
L3A3	EO-727574J	COIL PEAKING 180MH-J
L3A4	EO-708246	COIL 8200MH J
L3202	EO-727576J	COIL PEAKING 100MH-K
L3203	EO-727576J	COIL PEAKING 100MH-K
L3204	EO-727595J	COIL PEAKING 150MH-J
L3307	EO-727594J	COIL PEAKING 120MH-J
L3308	EO-727593J	COIL PEAKING 100MH-J
L3309	EO-727593J	COIL PEAKING 100MH-J
L3310	EO-727593J	COIL PEAKING 100MH-J
L3311	EO-727593J	COIL PEAKING 100MH-J
L3312	EO-727593J	COIL PEAKING 100MH-J
L3314	EO-727591J	COIL PEAKING 68MH-J
L3315	EO-727590J	COIL PEAKING 56MH-J
L3316	EO-727593J	COIL PEAKING 100MH-J
L4A0	EO-727585J	COIL PEAKING 15MH-J
L5A0	EO-727593J	COIL PEAKING 100MH-J
L5A1	EO-727593J	COIL PEAKING 100MH-J
L5A2	EO-727585J	COIL PEAKING 15MH-J
L6A0	EO-727582J	COIL PEAKING 8.2MH-J
L6A1	EO-727581J	COIL PEAKING 6.8MH-J
L6A2	EO-727582J	COIL PEAKING 8.2MH-J
L6A3	EO-727581J	COIL PEAKING 6.8MH-J
L6A4	EO-727576J	COIL PEAKING 100MH-K
L6A6	EO-727576J	COIL PEAKING 100MH-K
L6A8	EO-727582J	COIL PEAKING 8.2MH-J
L6A9	EO-727576J	COIL PEAKING 100MH-K
L6B1	EO-727576J	COIL PEAKING 100MH-K
L6B2	EO-727576J	COIL PEAKING 100MH-K
L6B3	EO-727576J	COIL PEAKING 100MH-K
L6B4	EO-727576J	COIL PEAKING 100MH-K
L6B5	EO-727577J	COIL PEAKING 180MH-K
L6B6	EO-706795	COIL RF-16C 100MHK J
L6B7	EO-727576J	COIL PEAKING 100MH-K
L6B8	EO-727576J	COIL PEAKING 100MH-K
L6B9	EO-727576J	COIL PEAKING 100MH-K
L6C0	EO-708246	COIL 8200MH J
L6C1	EO-727576J	COIL PEAKING 100MH-K
L6C2	EO-727576J	COIL PEAKING 100MH-K
L6C3	EO-727576J	COIL PEAKING 100MH-K
L6C4	EO-727576J	COIL PEAKING 100MH-K
L6C5	EO-727576J	COIL PEAKING 100MH-K
L6C6	EO-728142J	COIL PEAKING*820MH-J
L700	EO-727576J	COIL PEAKING 100MH-K
L701	EO-727576J	COIL PEAKING 100MH-K
L702	EO-727582J	COIL PEAKING 8.2MH-J
L703	EO-727576J	COIL PEAKING 100MH-K
L704	EO-706824	COIL FIX 1 100MH K
L705	EH-727612J	FILTER EMI DSS306-55FZ103N100
L706	EH-727612J	FILTER EMI DSS306-55FZ103N100
L707	XX-333333	ABC
L708	EO-727581J	COIL PEAKING 6.8MH-J
L709	EO-727576J	COIL PEAKING 100MH-K
L7A0	EO-712659	COIL PEAKING 1.0MH K
L7A0	EO-728142J	COIL PEAKING*820MH-J [EK-B] [NICAM]
L7A1	EO-727599J	COIL SIF*5.5/5.74MHZ
L7A1	EO-728142J	COIL PEAKING*820MH-J [EK-B] [NICAM]
L7A2	EO-727599J	COIL SIF*5.5/5.74MHZ
L7A3	EO-727688J	COIL PILOT
L7A3	EO-727583J	COIL PEAKING 10MH-J [EK-B] [NICAM]
L7A4	EO-727585J	COIL PEAKING 15MH-J [EK-B] [NICAM]
L801	EO-728139J	COIL PEAKING 470MH-K
L802	EO-728139J	COIL PEAKING 470MH-K
L8A1	EO-727585J	COIL PEAKING 15MH-J
L901	EH-727705J	FILTER LINE ELF-18D290CN
VL6A0	EO-727604J	COIL DL MATCH*14MH
VL6A1	EO-727604J	COIL DL MATCH*14MH
VL6A2	EO-727604J	COIL DL MATCH*14MH
VL6A3	EO-727600J	COIL OSC HORIZ(007-01)
VL700	EO-727604J	COIL DL MATCH*14MH
T3A0	EO-727613J	COIL BIAS OSC 705720044D
T370	HC-727627J	HEAD CTL VS-S99EO

Ref. No.	Part No.	Description
D833	ED-311852	D SILICON H 1S2471
D834	ED-713429	D LED SLR-34URC3
D835	ED-713429	D LED SLR-34URC3
D836	ED-311852	D SILICON H 1S2471
D839	ED-311852	D SILICON H 1S2471
D840	ED-311852	D SILICON H 1S2471
D841	ED-311852	D SILICON H 1S2471
D844	ED-311852	D SILICON H 1S2471
D845	ED-311852	D SILICON H 1S2471
D846	ED-311852	D SILICON H 1S2471
D850	ED-727570J	LEVEL METER UNIT
D851	ED-311852	D SILICON H 1S2471
D852	ED-311852	D SILICON H 1S2471
D853	ED-311852	D SILICON H 1S2471
D854	ED-727502J	D LED SLR-34DC3
D862	ED-311852	D SILICON H 1S2471
D8A2	ED-727515J	D SILICON MA165
D901	ED-727506J	D SILICON DSA3A1
D902	ED-727506J	D SILICON DSA3A1
D903	ED-727506J	D SILICON DSA3A1
D904	ED-727506J	D SILICON DSA3A1
D905	ED-727506J	D SILICON DSA3A1
D906	ED-727506J	D SILICON DSA3A1
D907	ED-727506J	D SILICON DSA3A1
D908	ED-727506J	D SILICON DSA3A1
D909	ED-727507J	D SILICON DSA1C1
D910	ED-727507J	D SILICON DSA1C1
D911	ED-709644	D SILICON 1SS82
D912	ED-727498J	D SILICON EM-1Z
D913	ED-709644	D SILICON 1SS82
D914	ED-709644	D SILICON 1SS82
D915	ED-709644	D SILICON 1SS82
D916	ED-727505J	D ZENER HZ30-3
D917	ED-727511J	D ZENER EQA02-07A
D918	ED-604541	D SILICON H 1S2076
D919	ED-604541	D SILICON H 1S2076
D920	ED-604541	D SILICON H 1S2076
D921	ED-727510J	D ZENER EQA02-06A
D922	ED-727511J	D ZENER EQA02-07A

9. FILTERS

Ref. No.	Part No.	Description
BF3301	EH-727609J	FILTER BP(409P371A10)
BPF200	EH-728143J	FILTER BP
BPF201	EH-728143J	FILTER BP
BPF6A0	EH-727618J	FILTER BP(9P460A10 TDK)
BPF6A2	EH-727700J	FILTER BP *
BPF6A3	EH-727697J	FILTER BP *
BPF700	EH-727696J	FILTER BP(45602)
BPF7A0	EH-728128J	FILTER BP [EK-B] [NICAM]
CF161	EI-728141J	OSC CE
CF5A0	EI-728126J	OSC CE CST8.08MT001
CF5A1	EI-727571J	OSC CE KBR-4.0MES
CF5A2	EI-727571J	OSC CE KBR-4.0MES
CF5A3	EI-727572J	OSC CE CST2.00MG
CF6A0	EH-727568J	FILTER CE(4.17S)
CF7A0	EH-706784	FILTER CE 5.5 MHZ [EO-E,EOG]
CF7A1	EH-727567J	FILTER CE SFE 5.74MB [EO-E,EOG]
HPF200	EH-727616J	FILTER HP(P4 45)
LF3301	EH-727605J	FILTER LP *
LF3302	EH-727605J	FILTER LP *
LPF200	EH-727615J	FILTER LP(409P444A10 TDK)
LPF201	EH-727615J	FILTER LP(409P444A10 TDK)
LPF2A0	EH-727611J	FILTER LP(374A10 TDK)
LPF2A1	EH-727607J	FILTER LP *
LPF2A2	EH-727620J	FILTER LP(P4 65)
LPF2A3	EH-727610J	FILTER LP(409P372A10)
LPF2A4	EH-727620J	FILTER LP(P4 65)
LPF3Z0	EH-727706J	FILTER LP(9P 454A10) [EOG]
LPF3Z1	EH-727706J	FILTER LP(9P 454A10) [EOG]
LPF6A0	EH-727619J	FILTER LP(9P461A10 TDK)
LPF6A1	EH-727620J	FILTER LP(P4 65)
LPF700	EH-727621J	FILTER LP(9P478)
LPF701	EH-727621J	FILTER LP(9P478)

10. DELAY LINES

Ref. No.	Part No.	Description
DF2A0	EH-727608J	EQ DELAY *
DF2B0	EH-727695J	EQ DELAY G314NKS-2558WBJ
DF700	EH-727614J	EQ DELAY *
DF701	EH-728144J	EQ DELAY
DF703	EH-727689J	EQ DELAY(49801)
DL2000	EH-727602J	DELAY LINE(ADL-CP145M)
DL2001	EH-727601J	DELAY LINE ADL-CX(1/2H)
DL6A0	EH-727603J	DELAY LINE(ADL-CE2344M)
DL6A1	EH-727603J	DELAY LINE(ADL-CE2344M)
DL6A2	EH-727603J	DELAY LINE(ADL-CE2344M)
DL700	EH-727603J	DELAY LINE(ADL-CE2344M)

14. RESISTORS / CAPACITORS

Ref. No.	Part No.	Description
R5C2	EH-727457J	R COMP 1/8W 100K-JX4
R5C3	EH-727457J	R COMP 1/8W 100K-JX4
R902	*ER-727458J	R FUSE 1/4W 6.8J
R905	*ER-728129J	R FUSE 1/4W 330J
R	*ER-728168J	R FUSE 1/4W 4R7J [EK-B]
C5A5	EC-727475J	C LAYER FU5.5V 0.22F
VC5A0	EC-727477J	C S-FIX 5.5PF-30PF
VC6A0	EC-709956	C S-FIX 9.8P-60P
VC7A0	EC-727477J	C S-FIX 5.5PF-30PF [EK-B] [NICAM]
VC7A1	EC-727477J	C S-FIX 5.5PF-30PF [EK-B] [NICAM]
VC801	EC-727476J	C S-FIX 4.2P-20P

15. SWITCHES

Ref. No.	Part No.	Description
S2000	ES-727690J	SW SLIDE 2-2 L=9 NON SHORT [EURO AV SESLECTOR]
S801	ES-727691J	SW SLIDE 2-2 L=15.1 [VIDEO MUTE]
S802	ES-727691J	SW SLIDE 2-2 L=15.1 [EDIT]
S803	ES-727692J	SW SLIDE 2-3 L=15.1 [LEVEL METER]
S804	ES-727691J	SW SLIDE 2-2 L=15.1 [EK-B] [NICAM]
S806	ES-727691J	SW SLIDE 2-2 L=15.1 [TRACKING]
S807	ES-727691J	SW SLIDE 2-2 L=15.1 [TAPE REMAIN]
S808	ES-727691J	SW SLIDE 2-2 L=15.1 [AV INPUT]
S809	ES-727691J	SW SLIDE 2-2 L=15.1 [S.VHS]
S810	ES-727691J	SW SLIDE 2-2 L=15.1 [VIDEO INPUT]
S811	ES-727622J	SW KEY BOARD* [STOP]
S812	ES-727622J	SW KEY BOARD* [REW]
S813	ES-727622J	SW KEY BOARD* [FF]
S814	ES-727622J	SW KEY BOARD* [PLAY]
S815	ES-727622J	SW KEY BOARD* [PAUSE]
S816	ES-727622J	SW KEY BOARD* [REC]
S819	ES-727622J	SW KEY BOARD* [CH DOWN]
S820	ES-727622J	SW KEY BOARD* [CH UP]
S821	ES-727622J	SW KEY BOARD* [DATA ON SCREEN]
S822	ES-727622J	SW KEY BOARD* [EJECT]
S823	ES-727622J	SW KEY BOARD* [POWER]
S824	ES-727622J	SW KEY BOARD* [TIMER RESET]
S825	ES-727622J	SW KEY BOARD* [TUNING ON/OFF]
S826	ES-727622J	SW KEY BOARD* [SPEED]
S827	ES-727622J	SW KEY BOARD* [AFT]
S828	ES-727622J	SW KEY BOARD* [AUTO TUNING +]
S829	ES-727622J	SW KEY BOARD* [AUDIO DUB]
S830	ES-727622J	SW KEY BOARD* [AUDIO MONITOR]
S831	ES-727622J	SW KEY BOARD* [INPUT SELECTOR]
S832	ES-727622J	SW KEY BOARD* [CH SKIP]
S833	ES-727622J	SW KEY BOARD* [AUTO TUNING -]
S834	ES-727622J	SW KEY BOARD* [INSERT]
S835	ES-727622J	SW KEY BOARD* [COUNTER RESET]
S836	ES-727622J	SW KEY BOARD* [ORT REC TIME]
S837	ES-727622J	SW KEY BOARD* [OTR START TIME]
S838	ES-727622J	SW KEY BOARD* [FR ADV]
S839	ES-727622J	SW KEY BOARD* [FR ADV SLOW +]
S840	ES-727622J	SW KEY BOARD* [0 STOP]
S842	ES-727622J	SW KEY BOARD* [FR ADV SLOW -]
S843	ES-727622J	SW KEY BOARD* [BAND]

16. MISCELLANEOUS

Ref. No.	Part No.	Description
RF-A	*BV-727676J	RF CONVERTER VS-S99EO EOG
RF-B	*BV-727677J	RF CONVERTER VS-S99EK
F901	*EF-355226	FUSE BET T 250V 1.00A
F902	*EF-601964	FUSE SEMKO T 250V 1.60A
F903	*EF-355398	FUSE BET T 250V 2.00A
F904	*EF-355398	FUSE BET T 250V 2.00A
J2Z0	EJ-728145J	SOCKET DIN MINI (4P)
J2Z1	EJ-728145J	SOCKET DIN MINI (4P)
J3Z0	EJ-728146J	CONNECTOR (21P)
J8A0	EJ-727707J	SOCKET DIN (8P) [EOG]
J801	EJ-727694J	JACK HEADPHONE [HEAD PHONES JACK]
J802	EJ-727693J	JACK MIC [MIC JACK]
K3A0	EQ-727563J	RELAY G5A-237P DC12V
TU101-A	EE-727679J	TUNER VIF BLK VS-S99EO
TU101-B	EE-727708J	TUNER VIF BLK VS-S99EOG
TU101-C	EE-728341J	TUNER VIF BLK VS-S99EK
V801	EM-727481J	IND FL 13-MT-15G
X2A0	EI-727562J	OSC X'TAL QUARTZ*(P08402B)
X2000	EI-727557J	OSC X'TAL 13.305NHZ
X5A0	EI-727559J	OSC X'TAL QUARTZ*(P059A)
X6A0	EI-706774	OSC X'TAL 4.43MHZ
X700	EI-727561J	OSC X'TAL QUARTZ*(NDK21.325)
X7A0	EI-728124J	OSC X'TAL QUARTZ* [EK-B] [NICAM]
X7A1	EI-728123J	OSC X'TAL QUARTZ* [EK-B] [NICAM]
X7A2	EI-728125J	OSC X'TAL QUARTZ* [EK-B] [NICAM]
X801	EI-727560J	OSC X'TAL QUARTZ*(P063011)
X802	EI-727558J	OSC X'TAL QUARTZ 32.768KHZ
Z801	BZ-728342J	REMOCON RECEIVER UNIT

12. TRANSFORMERS

Ref. No.	Part No.	Description
T901-A	*BT-727680J	TRANS POW VS-S99EO(350P40601) [EO-E,EOG]
T901-B	*BT-728136J	TRANS POW VS-S99EK(350P406O2) [EK-B]

13. VARIABLE RESISTORS

Ref. No.	Part No.	Description
VR01	EV-727473J	R S-FIX 1/5W B5K-M [Y/C REC LEVEL]
VR02	EV-727472J	R S-FIX 1/5W B2K-M [S-VHS Y/C REC LEVEL]
VR1A0	EV-709968	R S-FIX 0.1W 104
VR200	EV-727470J	R S-FIX 1/5W B5K-M [H SYNC FREQ]
VR2A0	EV-727463J	R S-FIX 1/5W B5K-M [NOISE CANCEL]
VR2A1	EV-709973	R S-FIX 0.1W 203 [CCD BIAS]
VR2A2	EV-709976	R S-FIX 0.1W 103 [EE-AGC LEVEL]
VR2A3	EV-709965	R S-FIX 0.1W 102 [SUB-EMPH-IN/EE-OUT]
VR2A4	EV-709965	R S-FIX 0.1W 102 [SECAM PB LEVEL]
VR2A5	EV-727463J	R S-FIX 1/5W B5K-M [SUB-EMPH-IN/EE-OUT]
VR2A6	EV-709976	R S-FIX 0.1W 103 [SUB EMPH LIMITER]
VR2B0	EV-727464J	R S-FIX 1/5W B30K-M [S-VHS D-CLIP]
VR2B1	EV-727464J	R S-FIX 1/5W B30K-M [D-CLIP]
VR2B2	EV-727464J	R S-FIX 1/5W B30K-M [S-VHS W-CLIP]
VR2B3	EV-727464J	R S-FIX 1/5W B30K-M [W-CLIP]
VR2B4	EV-709976	R S-FIX 0.1W 103 [S-VHS DEVIATION]
VR2B5	EV-709976	R S-FIX 0.1W 103 [DAVIATION]
VR2B6	EV-709973	R S-FIX 0.1W 203 [S-VHS CARRIER]
VR2B7	EV-709973	R S-FIX 0.1W 203 [CARRIER]
VR2B8	EV-727463J	R S-FIX 1/5W B5K-M [DEM SENS/S-VHS PB LEVEL]
VR2C0	EV-709965	R S-FIX 0.1W 102 [Y/C REC LEVEL]
VR2P0	EV-727464J	R S-FIX 1/5W B30K-M [DEM SENS/PB LEVEL]
VR2P1	EV-727464J	R S-FIX 1/5W B30K-M [DEM SENS]
VR2000	EV-727459J	R S-FIX 1/5W B200-M [DEM GAIN LP-SS]
VR2001	EV-709968	R S-FIX 0.1W 104 [VCO LP-SS]
VR202	EV-727465J	R S-FIX 1/10W B200K-N [DEM GAIN LP-SS]
VR3A0	EV-709968	R S-FIX 0.1W 104 [AUDIO BIAS LEVEL]
VR3A1	EV-709976	R S-FIX 0.1W 103 [AUDIO PB LEVEL]
VR3201	EV-727463J	R S-FIX 1/5W B5K-M [HI-FI FM REC LEVEL]
VR3301	EV-727473J	R S-FIX 1/5W B5K-M [HI-FI OSC FREQ]
VR3302	EV-727469J	R S-FIX 1/5W B3K-M [HI-FI OSC FREQ]
VR3303	EV-709976	R S-FIX 0.1W 103 [HI-FI PB LEVEL]
VR3304	EV-709976	R S-FIX 0.1W 103 [HI-FI PB LEVEL]
VR3305	EV-709976	R S-FIX 0.1W 103
VR3306	EV-709976	R S-FIX 0.1W 103
VR3307	EV-709973	R S-FIX 0.1W 203 [HI-FI EE LEVEL]
VR3308	EV-709973	R S-FIX 0.1W 203 [HI-FI EE LEVEL]
VR4A0	EV-709968	R S-FIX 0.1W 104 [PB SW POINT]
VR4A1	EV-709968	R S-FIX 0.1W 104 [TRACKING PRESET]
VR5A0	EV-709968	R S-FIX 0.1W 104 [STILL JITTER]
VR6A0	EV-727461J	R S-FIX 1/5W B500-M [CHROMA COMB]
VR6A1	EV-727461J	R S-FIX 1/5W B500-M [CHROMA COMB]
VR6A2	EV-727461J	R S-FIX 1/5W B500-M [CHROMA NOISE REDUCTION]
VR6A3	EV-709965	R S-FIX 0.1W 102
VR6A4	EV-709973	R S-FIX 0.1W 203 [SECAM GATE PULSE]
VR6A5	EV-709973	R S-FIX 0.1W 203 [SECAM GATE PULSE]
VR6A6	EV-727461J	R S-FIX 1/5W B500-M [CHROMA -5V]
VR6A7	EV-727471J	R S-FIX 1/5W B50K [PILOT BURST LEVEL]
VR6A8	EV-709976	R S-FIX 0.1W 103 [CHROMA CARRIER LEAK]
VR702	EV-727467J	R S-FIX 1/5W B1K-M
VR703	EV-727467J	R S-FIX 1/5W B1K-M [CCD GAIN]
VR704	EV-727467J	R S-FIX 1/5W B1K-M
VR705	EV-727467J	R S-FIX 1/5W B1K-M [V-CORRECTION]
VR706	EV-727467J	R S-FIX 1/5W B1K-M [V-CORRECTION]
VR707	EV-727466J	R S-FIX 1/5W B500-M [V-CORRECTION]
VR708	EV-727467J	R S-FIX 1/5W B1K-M [Y/C SEPARATION]
VR709	EV-727468J	R S-FIX 1/5W B2K-M [Y/C SESPARATION]
VR7A0	EV-709973	R S-FIX 0.1W 203 [EO-E,EOG]
VR7A1	EV-727460J	R S-FIX 1/10W B300-M [EO-E,EOG]
VR7A2	EV-727459J	R S-FIX 1/5W B200-M [EO-E,EOG]
VR7A3	EV-727462J	R S-FIX 1/5W B3K-M [EO-E,EOG]
VR7A4	EV-727462J	R S-FIX 1/5W B3K-M [EO-E,EOG]
VR7A5	EV-709968	R S-FIX 0.1W 104
VR801	EV-727684J	VR PWB*0.15W B100K-7.5FCS [TRACKING]
VR802	EV-727683J	VR PWB*0.15W B20K-7.5 CS [PICTURE]
VR803	EV-727685J	VR PWB*1/20W B100K-25TM [STILL ADJUST]
VR804	EV-727681J	VR PWB*1/10W A5K-20F [PHONES LEVEL]
VR805	EV-727682J	VR SLIDE D*1/20W A10KX2CS [AUDIO LEVEL]

17. FINAL ASSEMBLY BLOCK

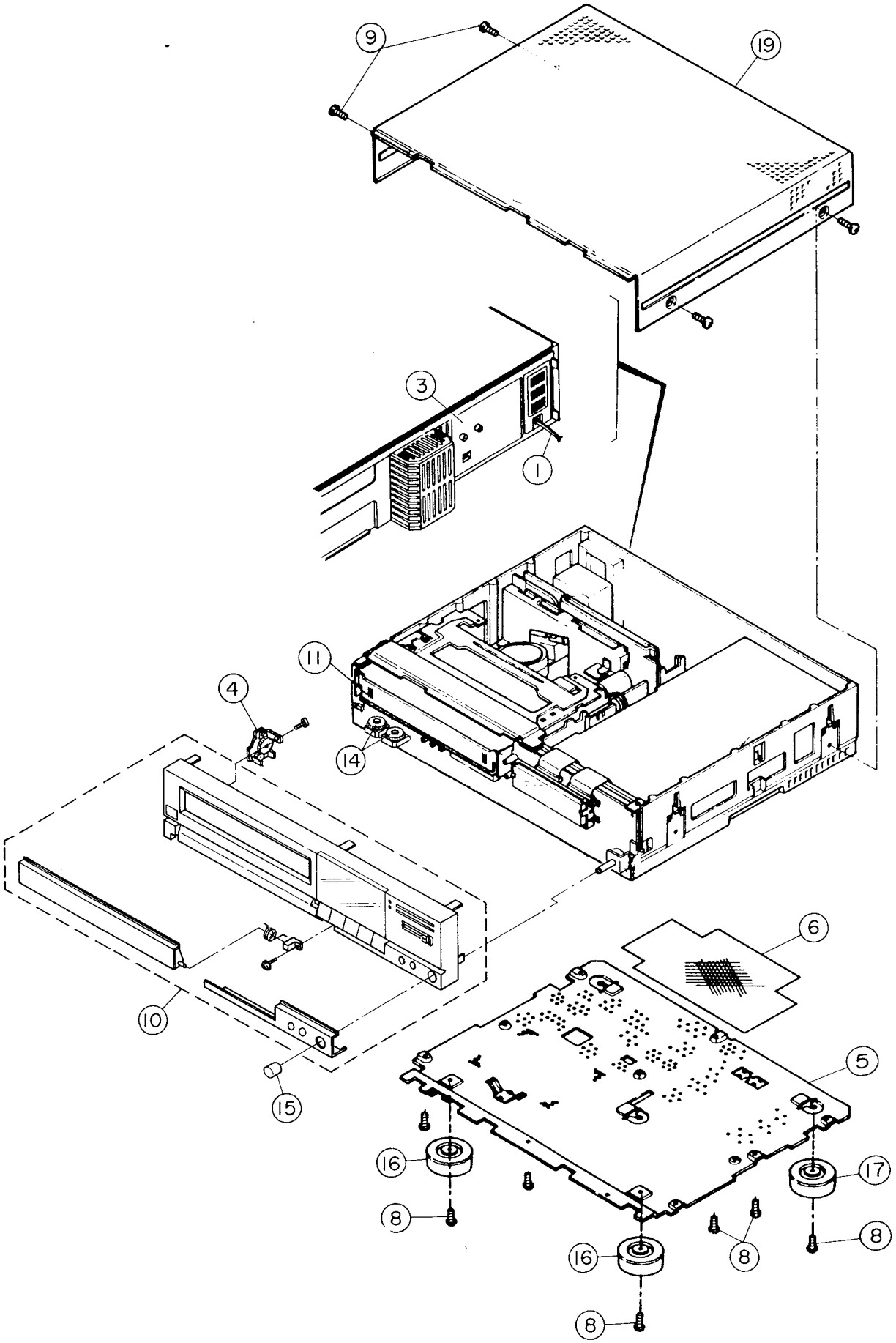
Ref. No.	Part No.	Description
1-A	*EW-728130J	AC CORD (E)
1-B	*EW-728131J	AC CORD (V)
1-C	*EW-728132J	AC CORD (B)
4	MZ-728147J	UNIT DUMPER
8	ZS-331875	PT BR30X12STL CMT
9	ZS-728345J	SCREW T-POINT
10-A	BD-727649J	COVER FRONT VS-S99EO
10-B	BD-727650J	COVER FRONT VS-S99EOG
10-C	BD-727651J	COVER FRONT VS-S99EK
11-A	SE-727653J	DOOR FL VS-S99EO
11-B	SE-727654J	DOOR FL VS-S99EOG
11-C	SE-727655J	DOOR FL VS-S99EK
14	SK-728344J	KNOB LEVEL TR
15	SK-728343J	KNOB LEVEL HP
16	SA-728161J	FOOT(F)
17	SA-728162J	FOOT(R)
19-A	SP-727647J	COVER TOP ASSY VS-S99EO/EK/EA [EO-E,EK-B]
19-B	SP-727648J	COVER TOP ASSY VS-S99EOG [EOG]

NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

18. ACCSESSORY

Ref. No.	Part No.	Description
11	AV-727478J	CABLE 2P* [RCA CORD]
12	AV-727479J	CABLE 1.5M(RF) [RF CORD]
13	AV-727480J	CABLE(S-CABLE) [S-VHS CORD]
17-A	AV-728137J	REMOTE CONTROL VS-S99EO/EK
17-B	AV-728138J	REMOTE CONTROL VS-S99EOG

FINAL ASSEMBLY BLOCK



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KEY TO ABBREVIATIONS

Abbreviation	Explanation	Abbreviation	Explanation
A/C	Audio/Control	HE-2	Hall Element-2
ACC	Automatic Colour Control	H-LED	Humidity-LED
A.E	Audio Erase	H-SENS	Hurmidity-Sensor
AFC	Automatic Frequency Control	HPF	High-Pass Filter
AFT-D	Automatic Fine Tuning Door Switch	LIM	Limiter
AGC	Automatic Gain Control	LPF	Low Pass Filter
AL	After Loading	LM	Loading Motor
AMP	Amplifier	MDA	Motor Drive Amplifier
ANT	Antenna	MC	Mechanical Control
A-PB	Audio-Playback	MIC	Microphone
A-REC	Audio-Recording	MOD	Modulator
ALC	Automatic Level Control	OPE	Operation
BPF	Band-Pass Filter	OSC	Oscillator
B/W	Black and White	PB	Play Back
BS	Band SW	PG	Pulse Generator
CASS	Cassette	P/R-SW	P.B/REC-SW
CP	Capstan	PCB	Printed Circuit Board
CP-FG	Capstan-Frequency Generator	PIC	Picture Control
CP-F/R	Capstan-Forward/Reverse	REC	Recording
CP M	Capstan-Motor	REF	Reference
CONV	Converter	RIS	Record Inhibit Switch
CTL	Control	REW	Rewind
C-LAMP	Cassette Lamp	REG	Regulator
C-ILAMP	Cassette Indicator Lamp	RS	Reverse Search
DAL	Delay-After Loading	SENS	Sensor
DEMOD	Demodulator	SM	Supply Motor
DET	Detector	S/P	Still/Pause
DL	Delay Line	SS	Speed Search
DL-REV	Delay Reverse	STBY	Stand By
DL-FWD	Delay Forward	S & H	Sample & Hold
DOC	Drop Out Compensator	SYNC SEP	Sync Separator
EF	Emitter Follower	TM	Take up Motor
EMPHA	Emphasis	T-REC	Timer-Recording
EQ	Equalizer	T.P	Test Point
EE	Electric Electric	TR	Transistor
ES	End Sensor	TU-P	Tuner-Power
FE-H	Full Erase Head	UL	Unloading
FF	Flip Flop or Fast Forward	V.S.	Voltage Synthesizer
FG	Frequency Generator	V.SYNC	Vertical Sync
FL-SW	Front Loading SW	VCO	Voltage Controlled Oscillator
FLM	Front Loading Motor	VXO	Variable Crystal Oscillator
F/R-SW	FF/Rewind Switch	W/D	White/Dark
G	Ground	X'OSC	Crystal Oscillator
HE-1	Hall Element-1	Y/C	Luminance/Chrominance

AKAI ELECTRIC CO., LTD.

12-14, 2-Chome, Higashi-Kojiya, Ohta-ku, Tokyo, Japan

SERVICE DEPARTMENT TEL: TOKYO (745)9884 TELEX: J26261

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AKAI

MODEL VS-S99EO/EOG/EK

SCHEMATIC DIAGRAMS AND PC BOARDS

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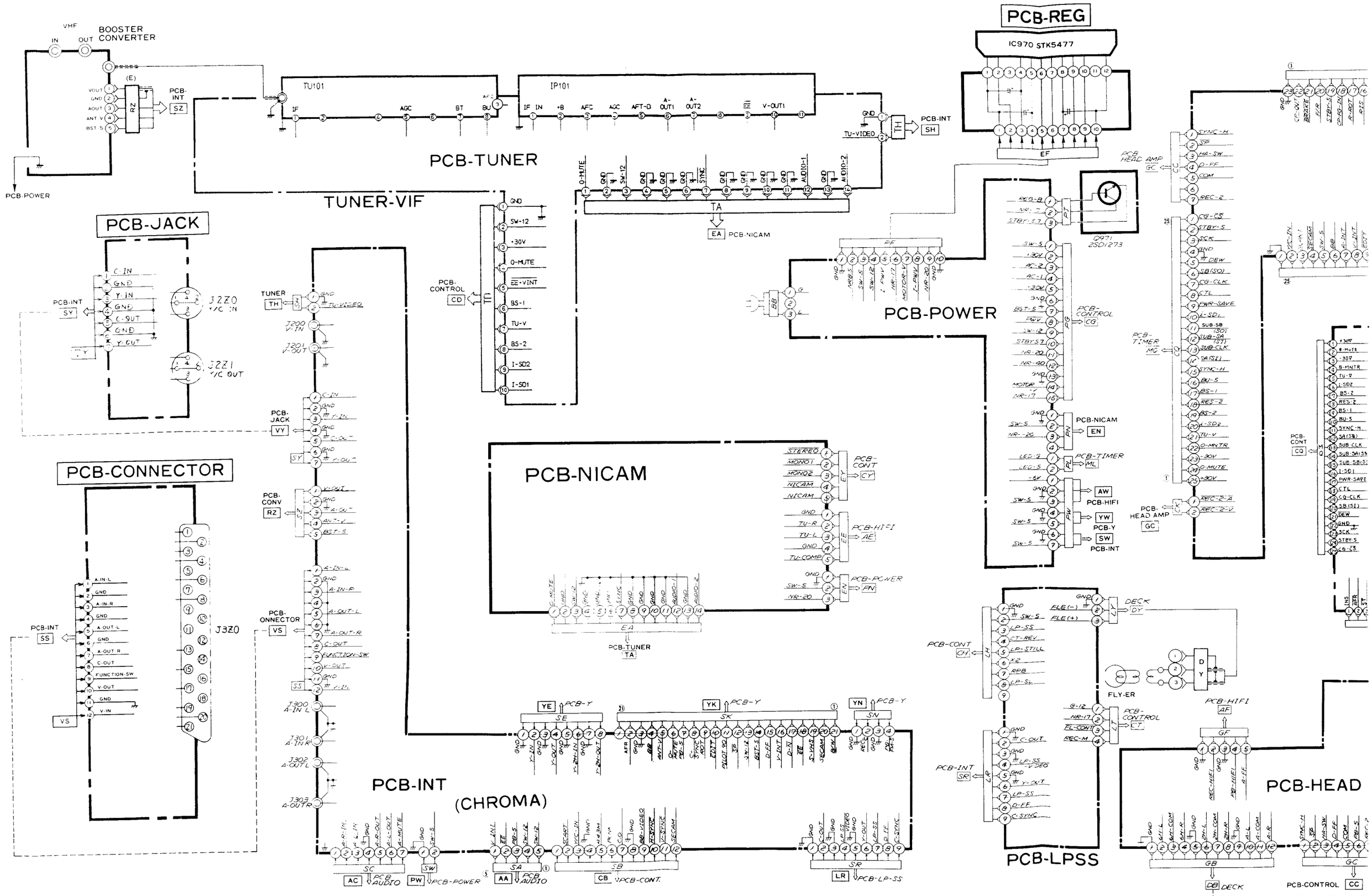
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A-OUT2
V-OUT1
TU-VIDEO
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PCB AUDIO
PW
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PCB-LP-SS
PCB-CONTROL
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PCB-TIMER
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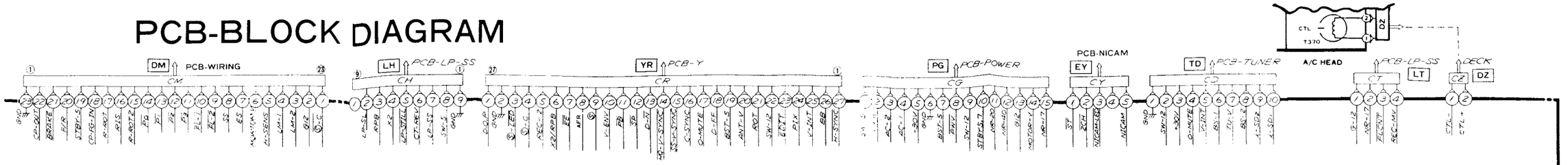
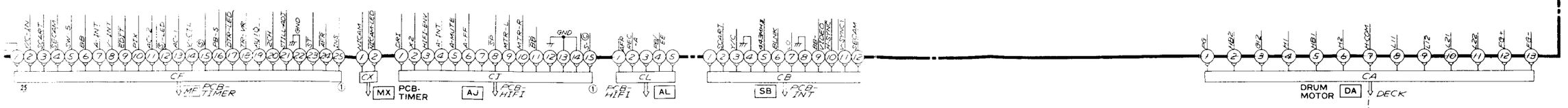
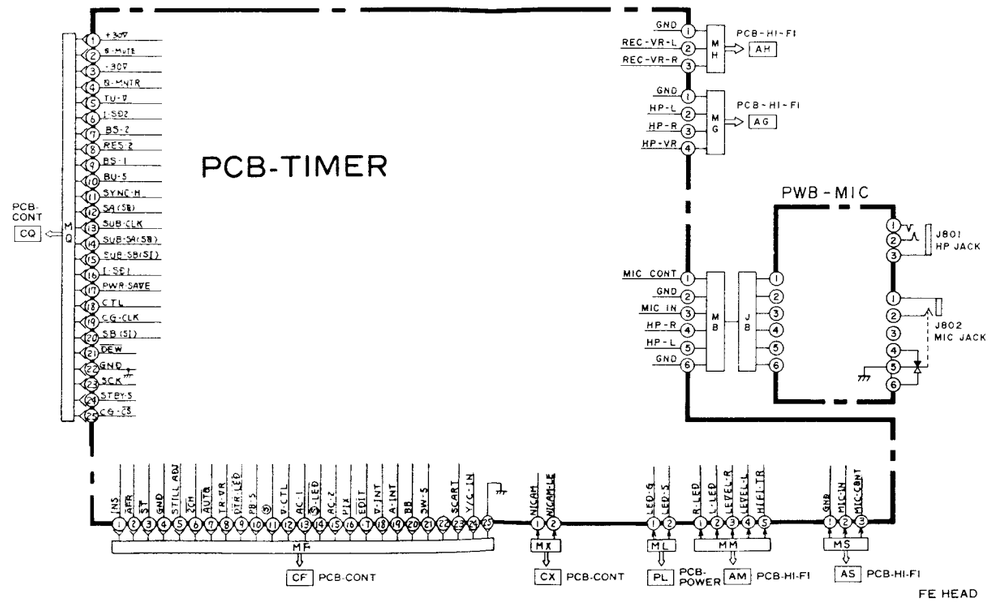
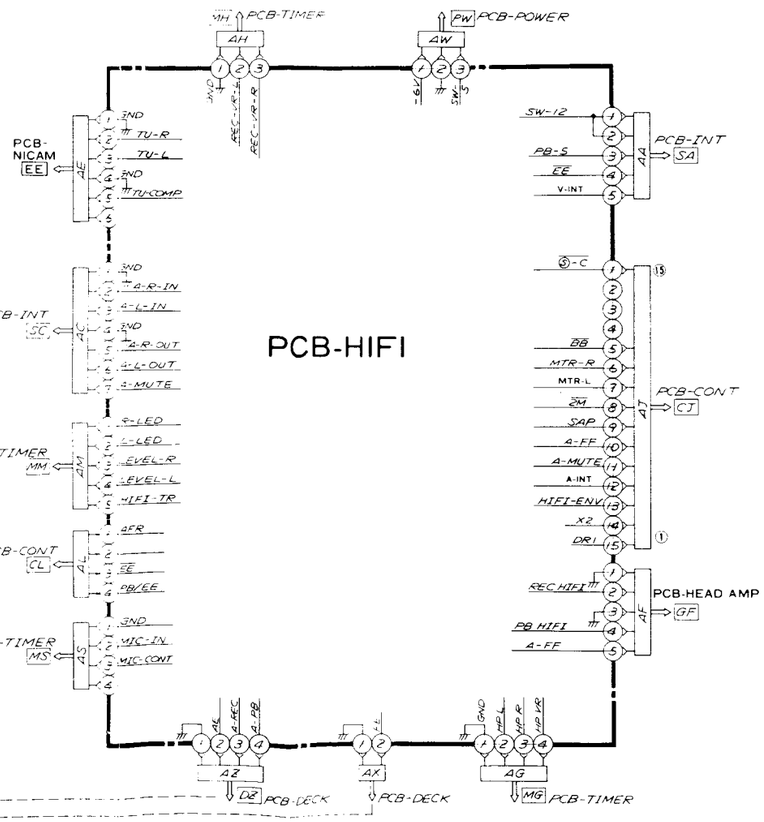
PCB-BLOCK DIAGRAM

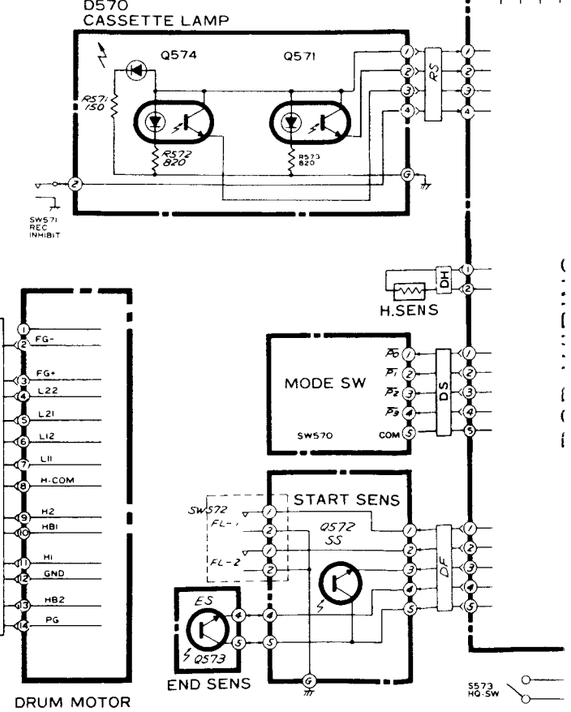


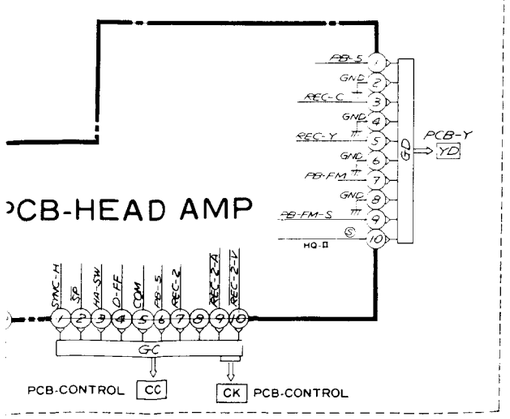
PCB-CONTROL(MECHANISM CONTROL) (SERVO)

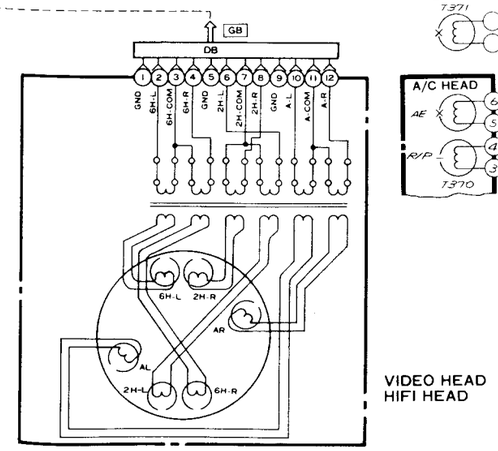


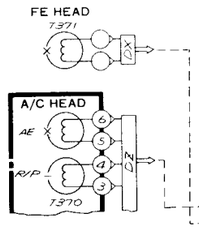


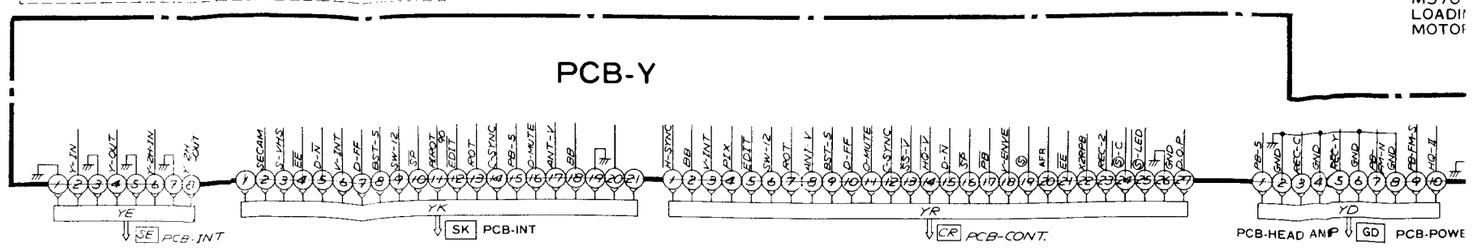


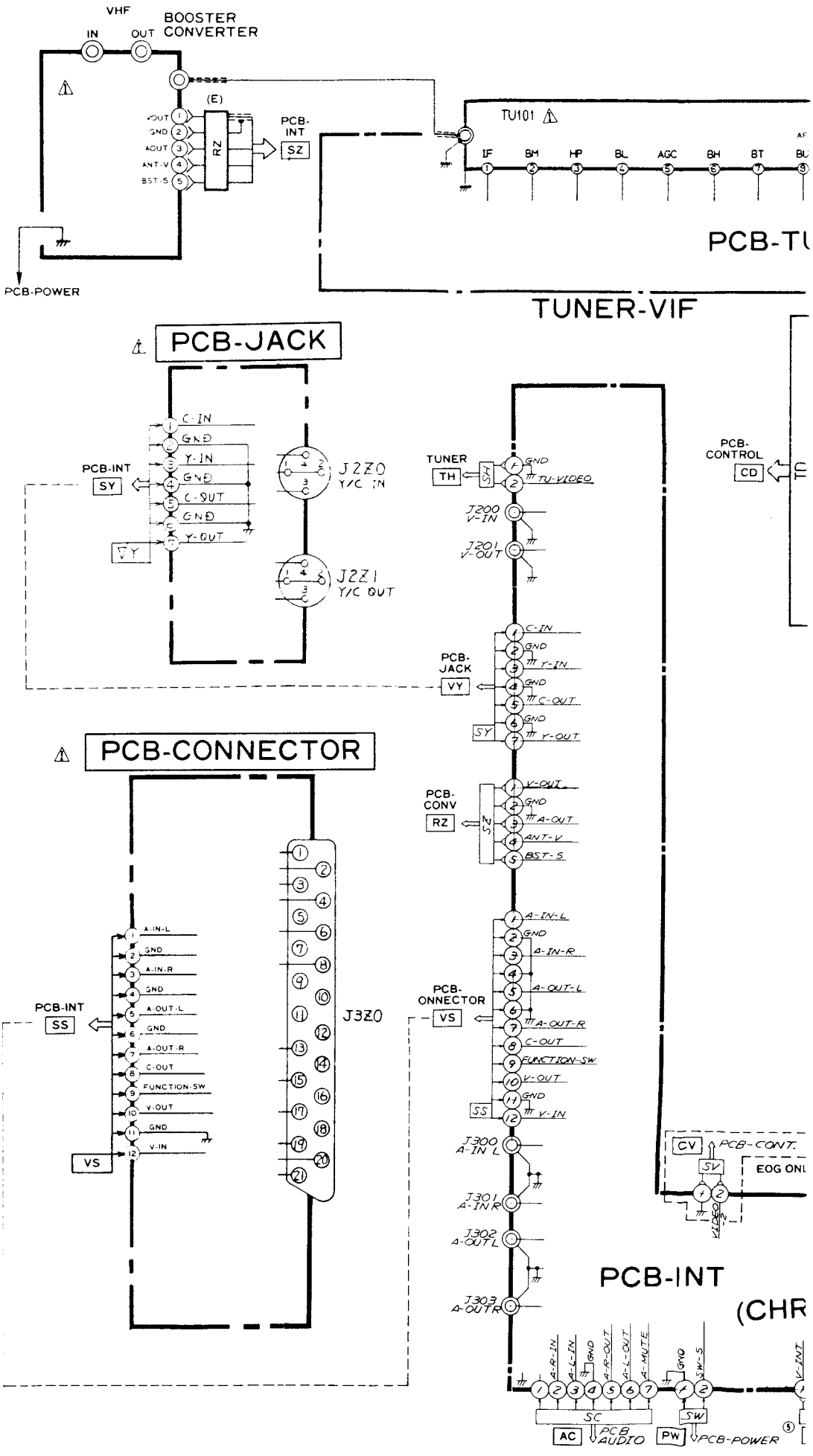








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AOUT
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BST-S
RZ
PCB-INT
SZ
PCB-POWER
TU101
IF
BM
HP
BL
AGC
BH
BT
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TUNER-VIF
PCB-JACK
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GND
Y-OUT
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SY
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J220
Y/C IN
J221
Y/C OUT
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TH
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J201
V-OUT
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GND
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SV
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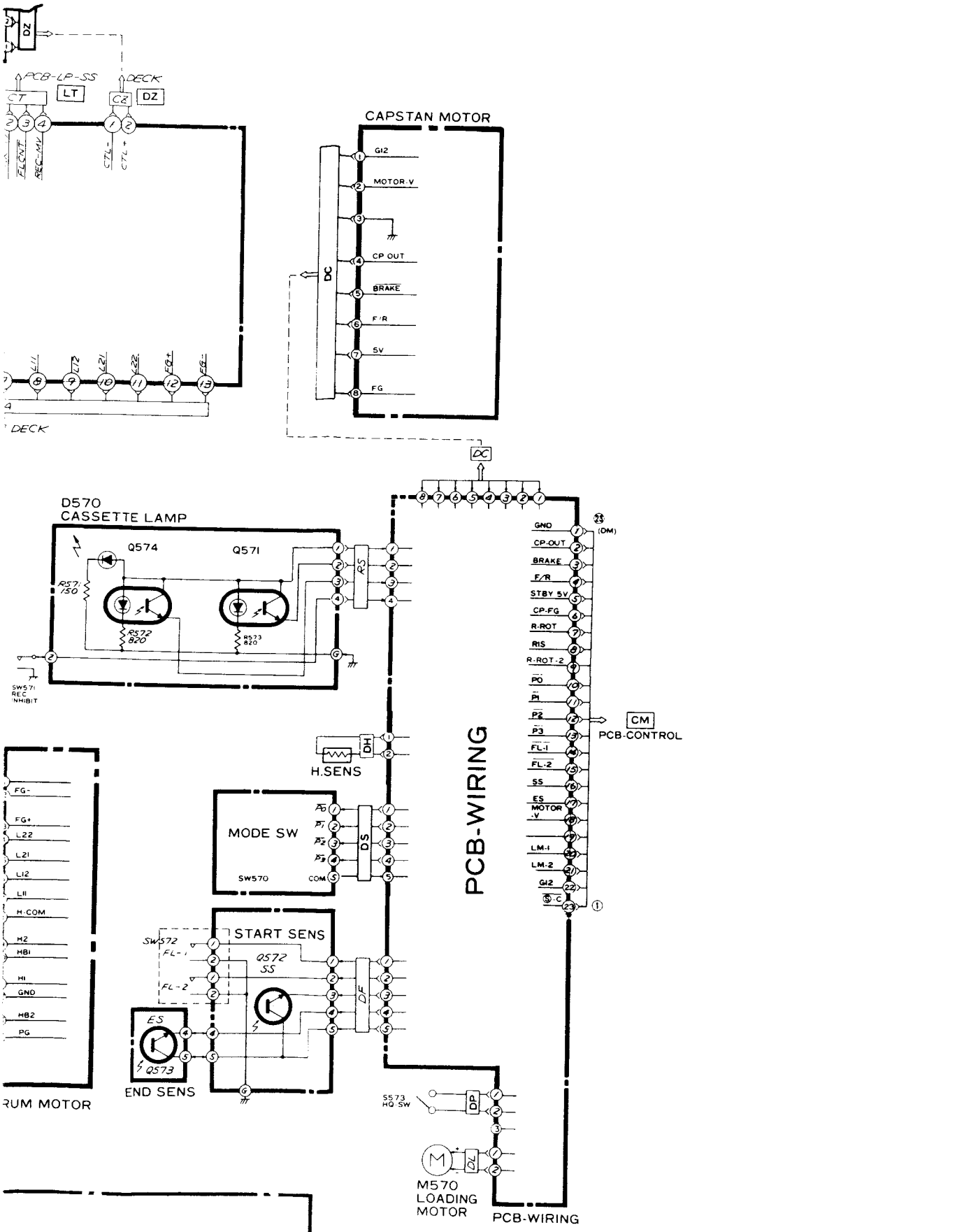
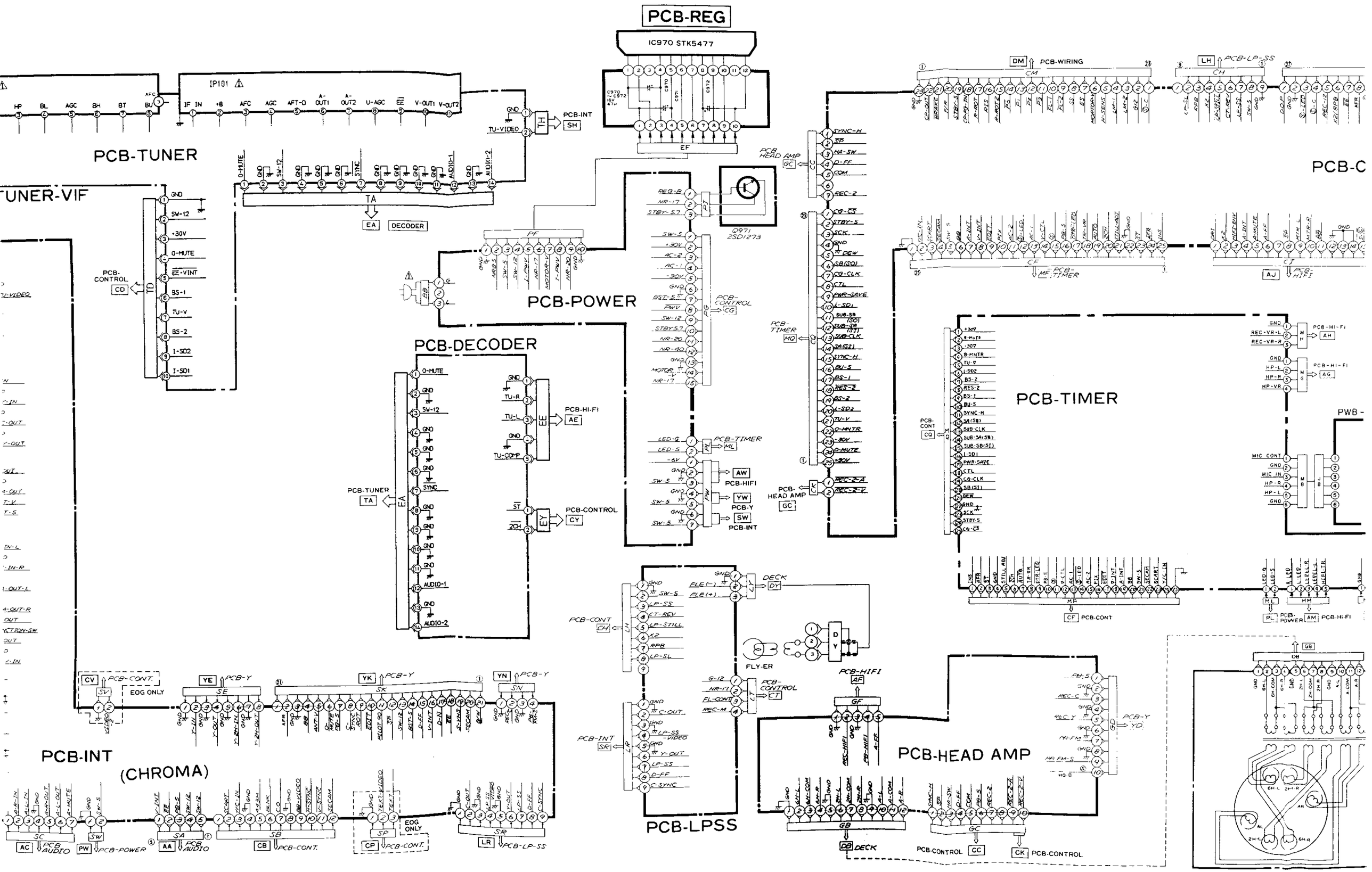


VS-S99EK
PCB-BLOCK DIAGRAM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TU-VIDEO
TH
PCB-INT
SH
TA
EA
DECODER
0-MUTE SW-12 +30V 0-MUTE EE·VINT BS-1 TU-V BS-2 I-SD2 I-SD1
PCB-CONTROL
CD
TD
PCB-POWER
PF
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PG
PCB-DECODER
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TU-R TU-L TU-COMP
PCB-HI-FI
AE
EE
ST 2CH
PCB-CONTROL
CY
EY
PCB-TUNER
TA
EA
PCB HEAD AMP
GC
CC
SYNC-H ST HA-SW 0-FF COM REC-2
PCB-TIMER
MQ
CQ
PCB-HEAD AMP
CK
PCB-WIRING
DM
CM
PCB-LP-SS
LH
CH
PCB-C
CF
MF PCB-TIMER
CJ
AJ PCB-HIFI
PCB-TIMER
PCB-CONT CQ
PCB-HI-FI AH
PCB-HI-FI AG
MIC CONT GND MIC IN HP-R HP-L GND
CF PCB-CONT
PL PCB-POWER
AM PCB-HI-FI
PCB-INT
(CHROMA)
CV PCB-CONT. EOG ONLY
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YK PCB-Y
YN PCB-Y
SC PCB AUDIO
PW PCB-POWER
AA PCB AUDIO
CB PCB-CONT.
CP PCB-CONT.
LR PCB-LP-SS
EOG ONLY
PCB-LPSS
PCB-CONT CH
PCB-INT SR
DECK DY
FLY-ER
PCB-CONTROL CT
PCB-HIFI AF
PCB-HEAD AMP
GB DB DECK
PCB-CONTROL CC
CK PCB-CONTROL
PCB-Y YD
GB
DB
6H-L 2H-R AR AL 2H-L 6H-R

PCB-CONTROL(MECHANISM CONTROL) (SERVO)

PCB DECODER

CAPSTAN MOTOR

PCB-HIFI

PCB-WIRING

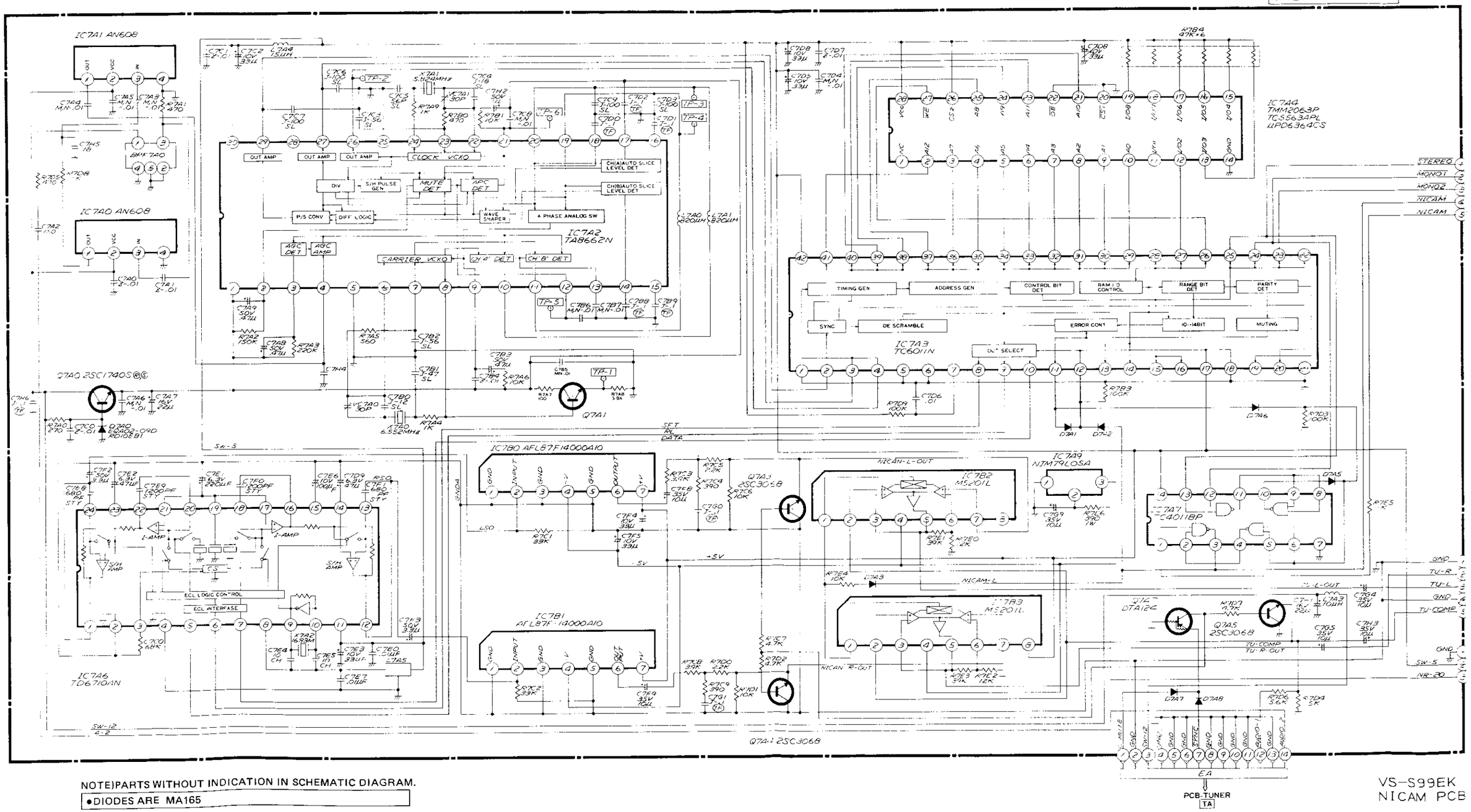
D570 CASSETTE LAMP

PCB-Y

VIDEO HEAD HIFI HEAD

VS-S99EO·EOG PCB-BLOCK DIAGRAM

⚠ PCB-NICAM

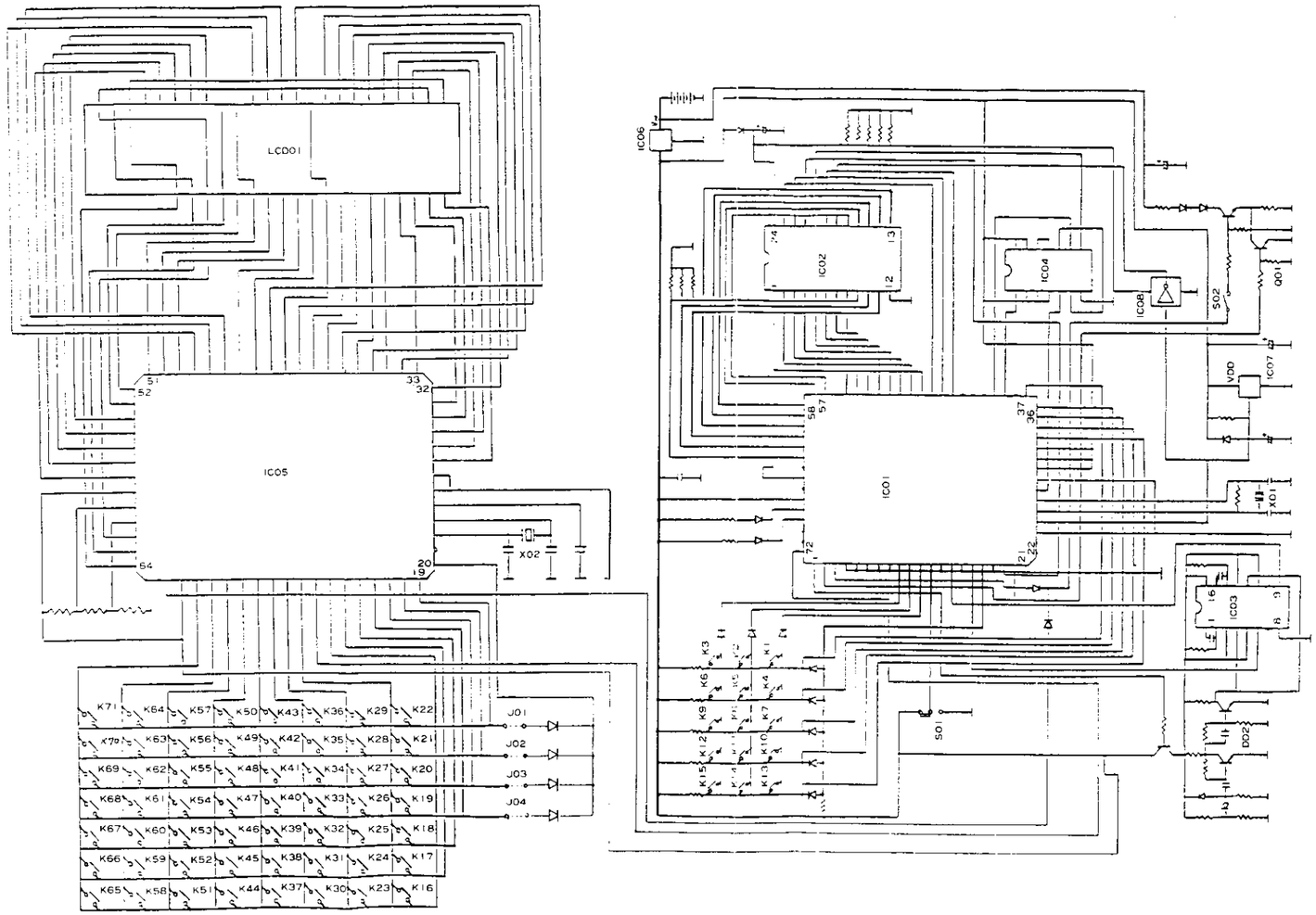


NOTE)PARTS WITHOUT INDICATION IN SCHEMATIC DIAGRAM.

•DIODES ARE MA165

VS-S99EK
NICAM PCB

TRANSMITTER REMOTE CONTROL



VS-S99EK · EO · EOG
REMOTE CONTROL UNIT

SCHEMATIC DIAGRAM

NOTE 1:

1. DC voltages were measured from points indicated to the circuit ground with a valve voltmeter.
2. The voltages parenthesised are on SP recording mode. While those without parenthesised on SP play back mode.

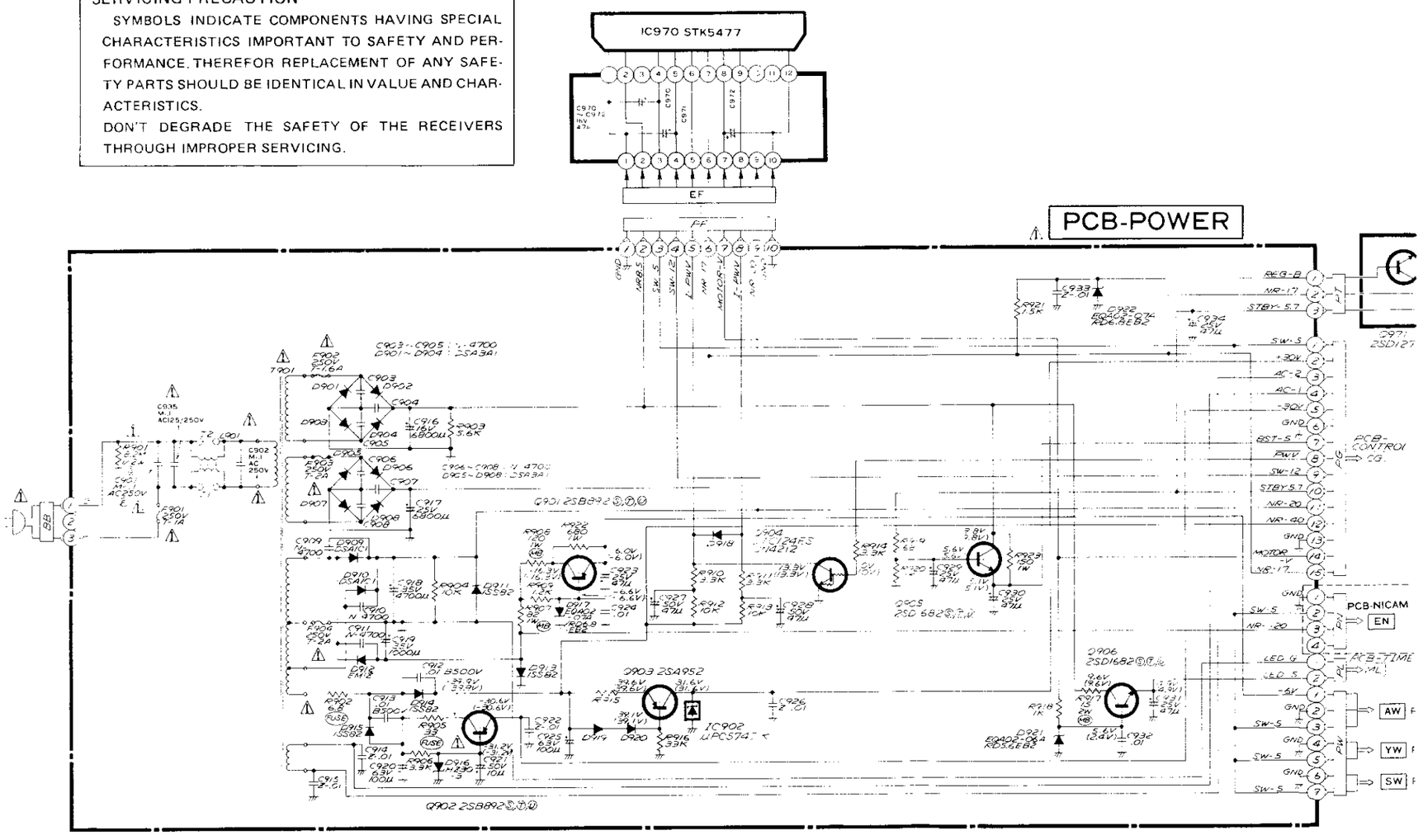
NOTE 2:

1. The unit of resistance "ohm" entirely omitted.
   Accordingly, K = 1000 ohms
   M = 1000K ohms.
2. The wattage of resistor, not specifically designated, is 1/4 watt.
3. Resistors, not specifically designated, are carbon resistors.
4. The marks of resistors are as follows.
   (CE) : Cemented resistor
   (MB) : Metal oxide film resistor (type 8)
   (S) : Fixed composition resistors
   (W) : Wire wound resistor
   (M) : Metal film resistor
5. The tolerance of resistor value, not specifically designated, is: ±5%, K = ±10% M = ±20%
6. The unit of capacitance, not specifically designated, is:
   a) μF, for numbers less than 1
   b) PF, for numbers more than 1
7. Capacitors, not specifically designated are Ceramic capacitors except electrolytic capacitors.
8. The marks of capacitors are as follows:
   (ALM) : Aluminus electrolytic capacitor
   (MF) : Polyester capacitor
   (PP) : Polypropylene film capacitor
   (TAN) : Tantalum capacitor
   (SC) : Semiconductor Ceramic Capacitors
   (TF) : Twin film capacitor
   (NP) : Non polarized electrolytic capacitor
   ✱ : Electrolytic capacitor
9. The DC working voltage of capacitor, not specifically designated is: 50V
10. The tolerance of capacitor value, not specifically designated is: ±10%
    and J = ±5% K = ±10% M = ±20% P = +100% −0%
    C = ±0.25PF D = ±0.5PF F = ±1PF Z = +80% −20% N=±30%
11. Ceramic capacitors with the marks RH, UJ, SL. etc. are temperature compensating types.

SPECIFIC SYMBOL	
Zener Diode	Crystal unit
Varicap	LE Diode
Posistor	Photo Diode
Thermistor	Ceramic filter
Fusible Resistor	

This is a basic schematic diagram. Some sets may be subject to modification according to engineering improvement.

⚠
SERVICING PRECAUTION
SYMBOLS INDICATE COMPONENTS HAVING SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY AND PERFORMANCE. THEREFOR REPLACEMENT OF ANY SAFETY PARTS SHOULD BE IDENTICAL IN VALUE AND CHARACTERISTICS.
DON'T DEGRADE THE SAFETY OF THE RECEIVERS THROUGH IMPROPER SERVICING.

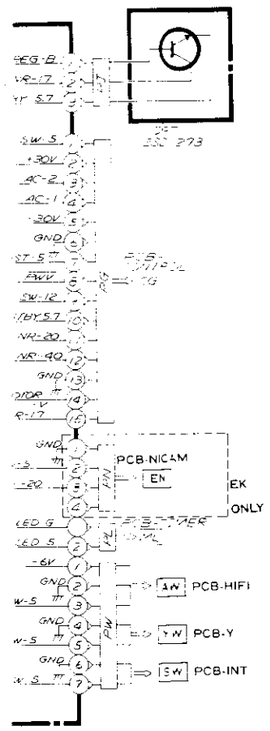


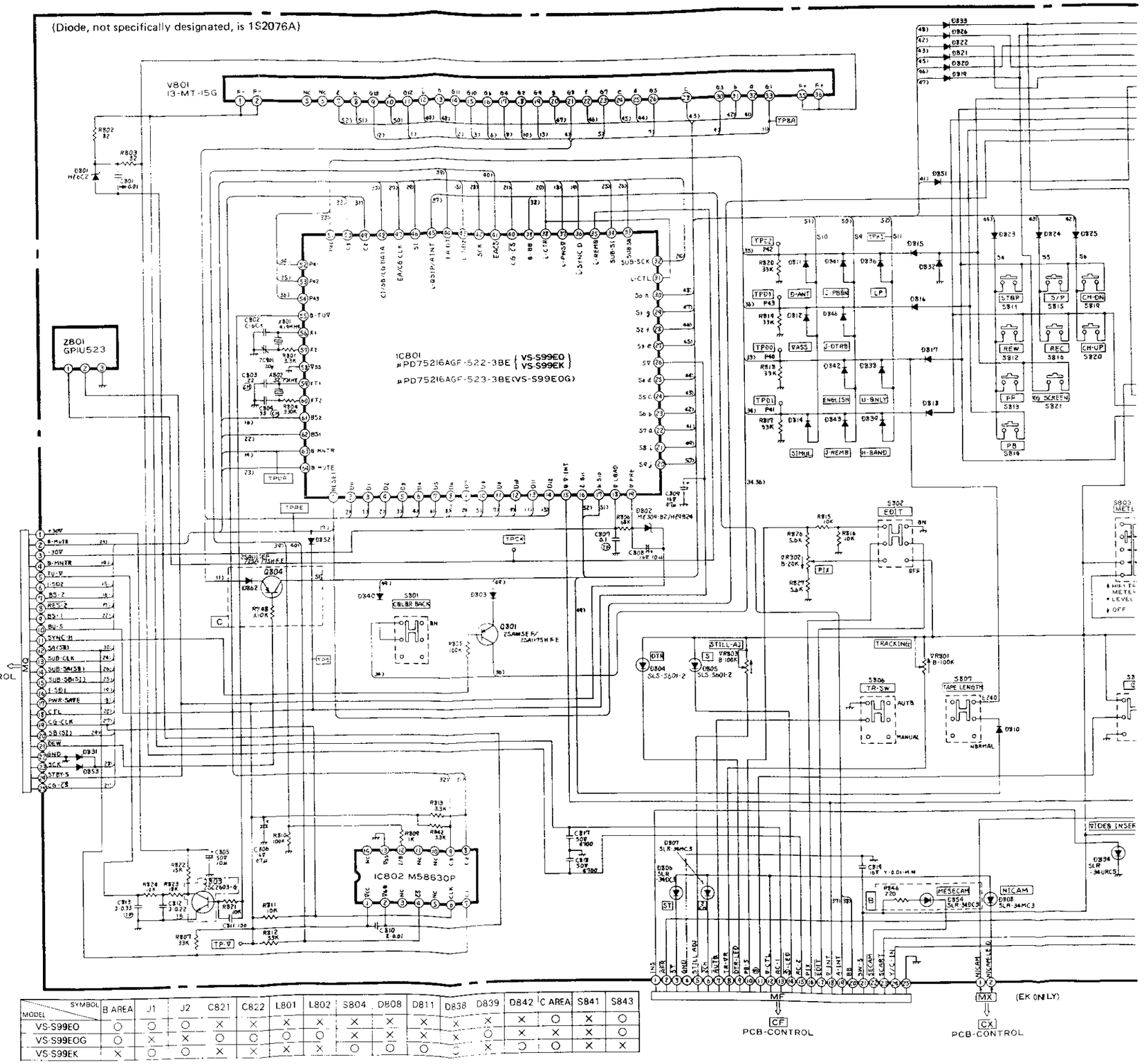
SYMBOL NO. / MODEL	J1	J2		L901	C901	C902	R915		C935
EK	○	○		×	×	×	100		○
EO	○	○		×	×	×	56		○
EOG	×	×		○	○	○	56		×

VS-S99EK · EO · EOG
POWER PCB

(Diode, not specifically designated, is 1S2076A)

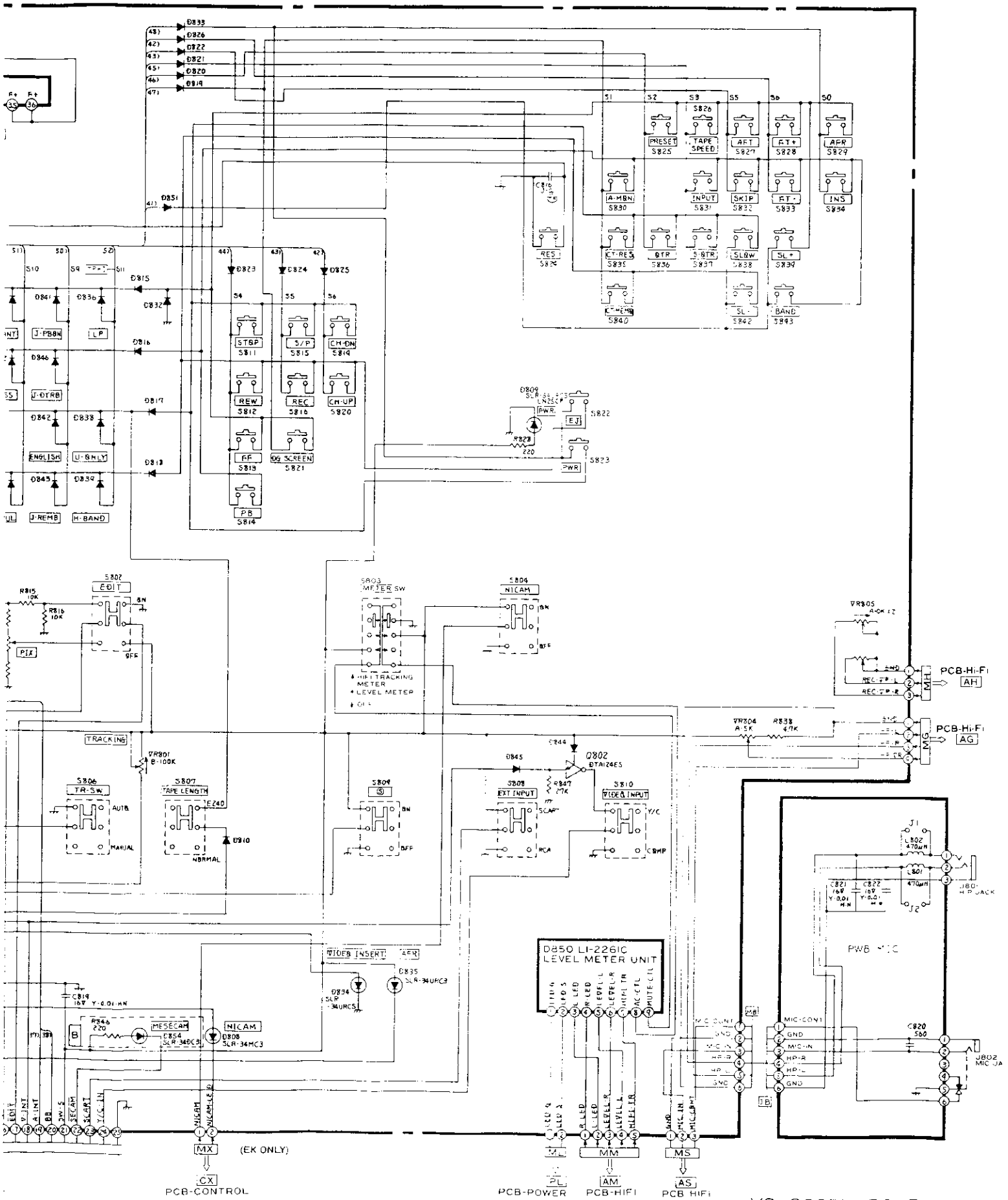
Z801
PREAMP-REMOTE CONTROL

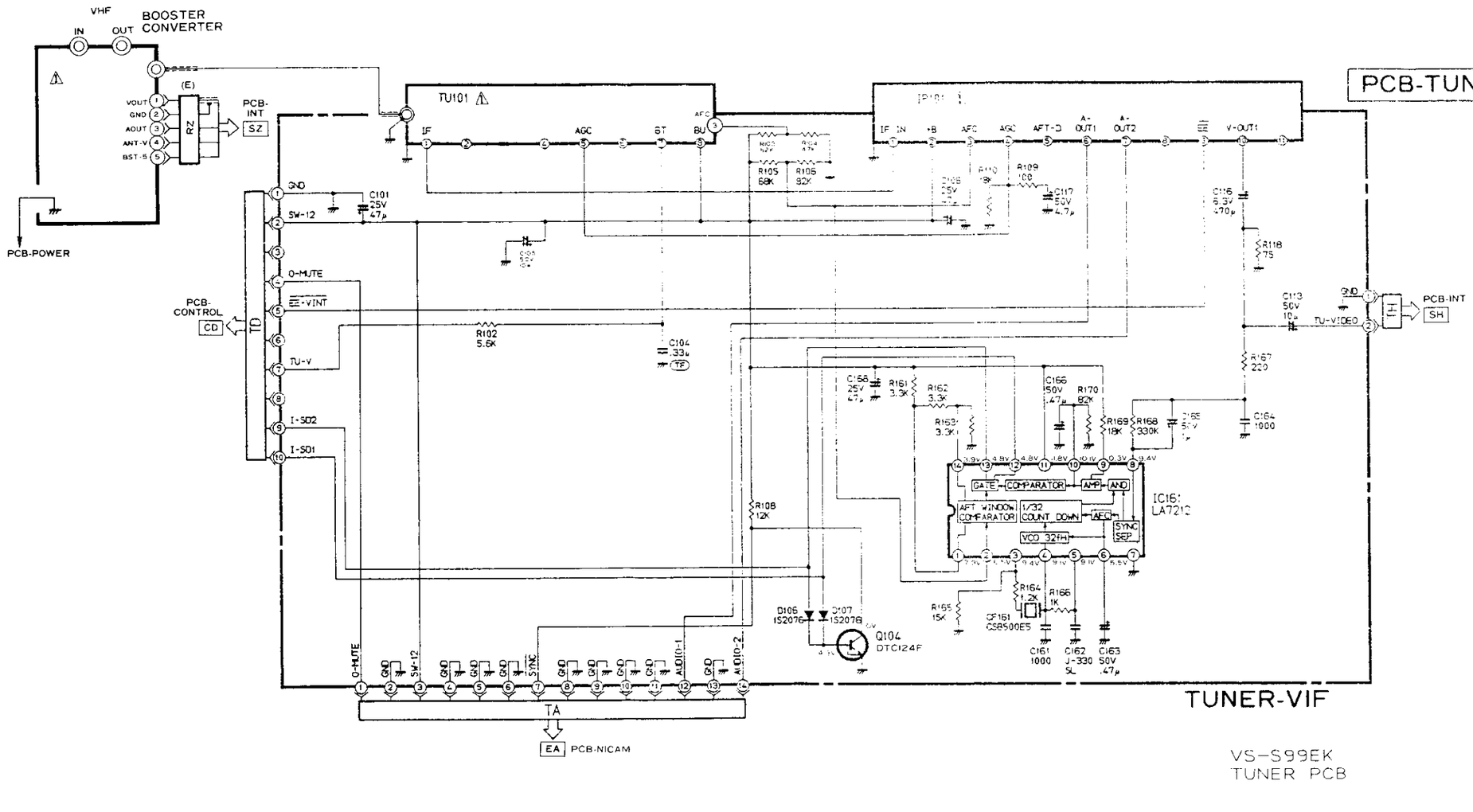


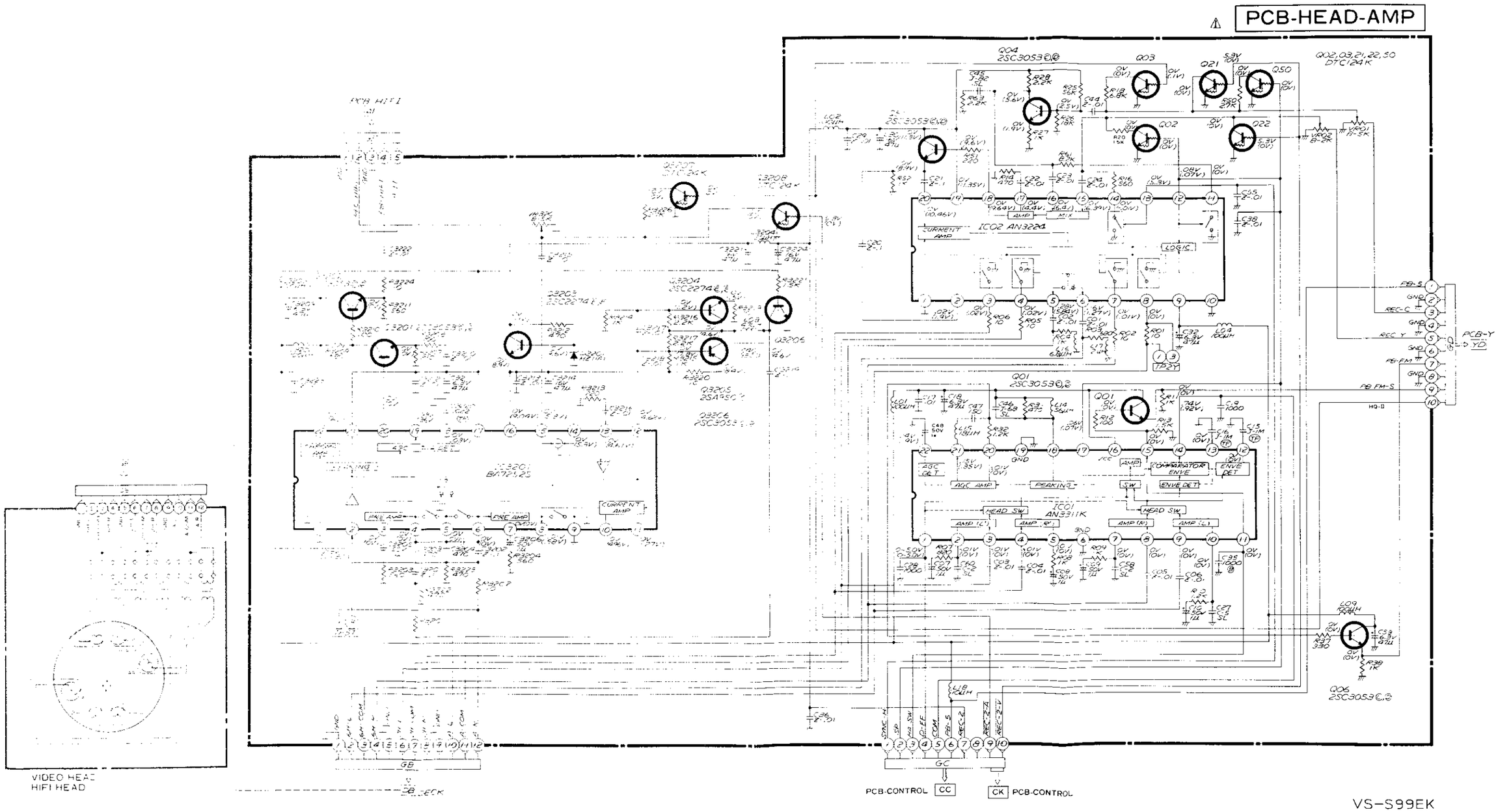


MODEL \ SYMBOL	B AREA	J1	J2	C821	C822	L801	L802	S804	D808	D811	D838	D839	D842	C AREA	S841	S843
VS-S99EO	○	○	○	×	×	×	×	×	×	×	×	○	×	○	×	○
VS-S99EOG	○	×	×	○	○	○	○	×	×	×	×	×	×	×	×	○
VS-S99EK	×	○	○	×	×	×	×	○	○	○	○	×	○	○	×	×

PCB-TIMER


S802 EDIT
S803 MFJTER SW
S804 NICAM
S805 TRACKING
S806 TR-SW
S807 TAPE LENGTH
S808 EXT INPUT
S809
S810 VIDEO INPUT
S811 STBP
S812 REW
S813 FF
S814 PB
S815 S/P
S816 REC
S819 CM-DN
S820 CM-UP
S821 OG SCREEN
S822 EJ
S823 PWR
S825 PRESET
S826 TAPE SPEED
S827 AFT
S828 AFT+
S829 AFR
S830 A-MRN
S831 INPUT
S832 SKIP
S833 AFT-
S834 INS
S835 CT-RES
S836 QTR
S837 1/3QTR
S838 SLOW
S839 SL+
S840 CT-MEMO
S842 SL-
S843 BAND
Q802 DTA124ES
D850 LI-226IC LEVEL METER UNIT
PCB-Hi-Fi
PCB-CONTROL
PCB-POWER
PCB-HIFI
PCB HIFI
VS-S99EK · EO · EOG
TIMER PCB


VHF
IN
OUT
BOOSTER CONVERTER
(E)
VOUT
GND
AOUT
ANT-V
BST-5
RZ
PCB-INT
SZ
PCB-POWER
TU101
IF
AGC
BT
BU
AFC
PCB-TUNER
IF IN
+B
AFC
AGC
AFT-D
A-OUT1
A-OUT2
EE
V-OUT1
R105 68K
R106 82K
R110 8K
R109 100
C117 50V 4.7μ
C116 6.3V 470μ
R118 75
GND
SW-12
C101 25V 47μ
0-MUTE
EE-VINT
TU-V
I-SO2
I-SO1
PCB-CONTROL
CD
TD
R102 5.6K
C104 .33μ
TF
C113 50V 10μ
TU-VIDEO
TH
PCB-INT
SH
R167 220
C164 1000
C158 25V 47μ
R161 3.3K
R162 3.3K
R163 3.3K
C166 50V .47μ
R170 82K
R169 18K
R168 330K
C165 50V 1μ
R108 12K
GATE
COMPARATOR
AMP
AND
AFT WINDOW COMPARATOR
1/32 COUNT DOWN
AFC
VCO 32fH
SYNC SEP
IC161 LA7210
D106 1S2076
D107 1S2076
Q104 DTC124F
R155 15K
R164 1.2K
R166 1K
CF161 CSB500E5
C161 1000
C162 J-330 SL
C163 50V .47μ
SYNC
AUDIO-1
AUDIO-2
TA
EA
PCB-NICAM
TUNER-VIF
VS-S99EK
TUNER PCB
VIDEO HEAD
HIFI HEAD

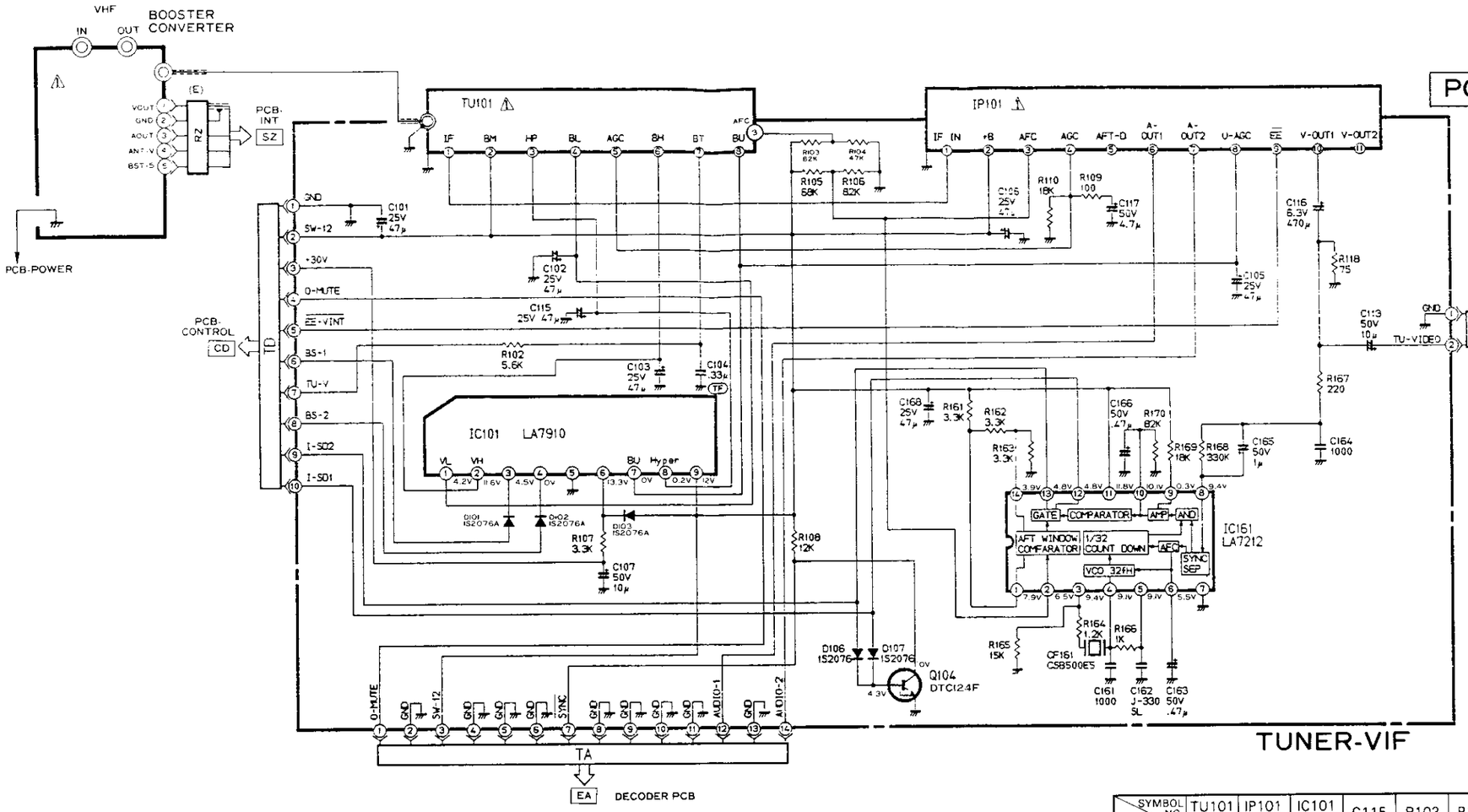


VS-S99EK
HEAD AMP PCB

NOTE) PARTS WITHOUT INDICAT

● NPN TRANSISTORS ARE 2SC

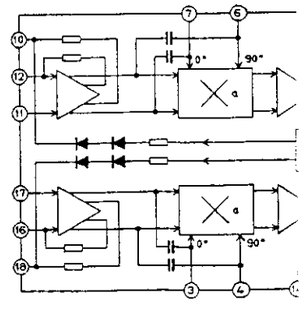
PCB-TUNER ⚠



TUNER-VIF

SYMBOL NO / MODEL	TU101 HP③	IP101 AFC③	IC101 PIN⑧	C115	R103	R104
EOG	○	OPEN	○	○	×	×
EO	OPEN	○	OPEN	×	○	○

VS-S99EO·EOG
TUNER PCB



IC7A0 TDA2555

VITHOUT INDICATION IN SCHEMATIC DIAGRAM.

STORS ARE 2SC2724©,Ⓔ

DTC124ES UN4212 | DTA124ES UN4112

⚠ PCB-DECODER

TDA2555

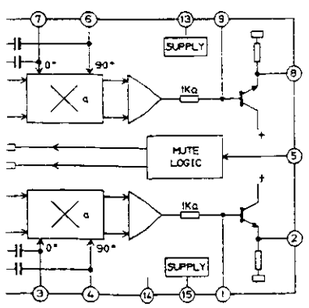
IC7A1 TDA3803A

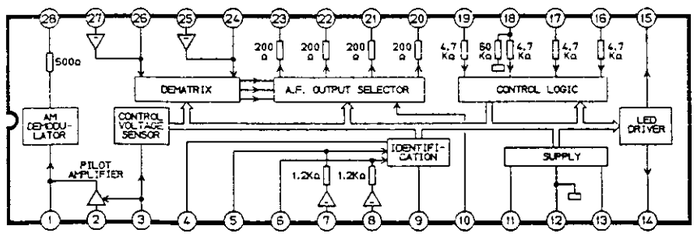
PCB-HI-FI AE

PCB-CONTROL CY

Q7A1 Q7A2 Q7A3 Q7A5 Q7A6 Q7A7 Q7A8 2SC2878-B /2SC3068

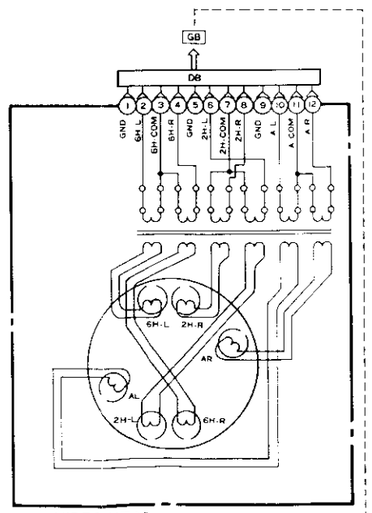
D7A0 1S2076



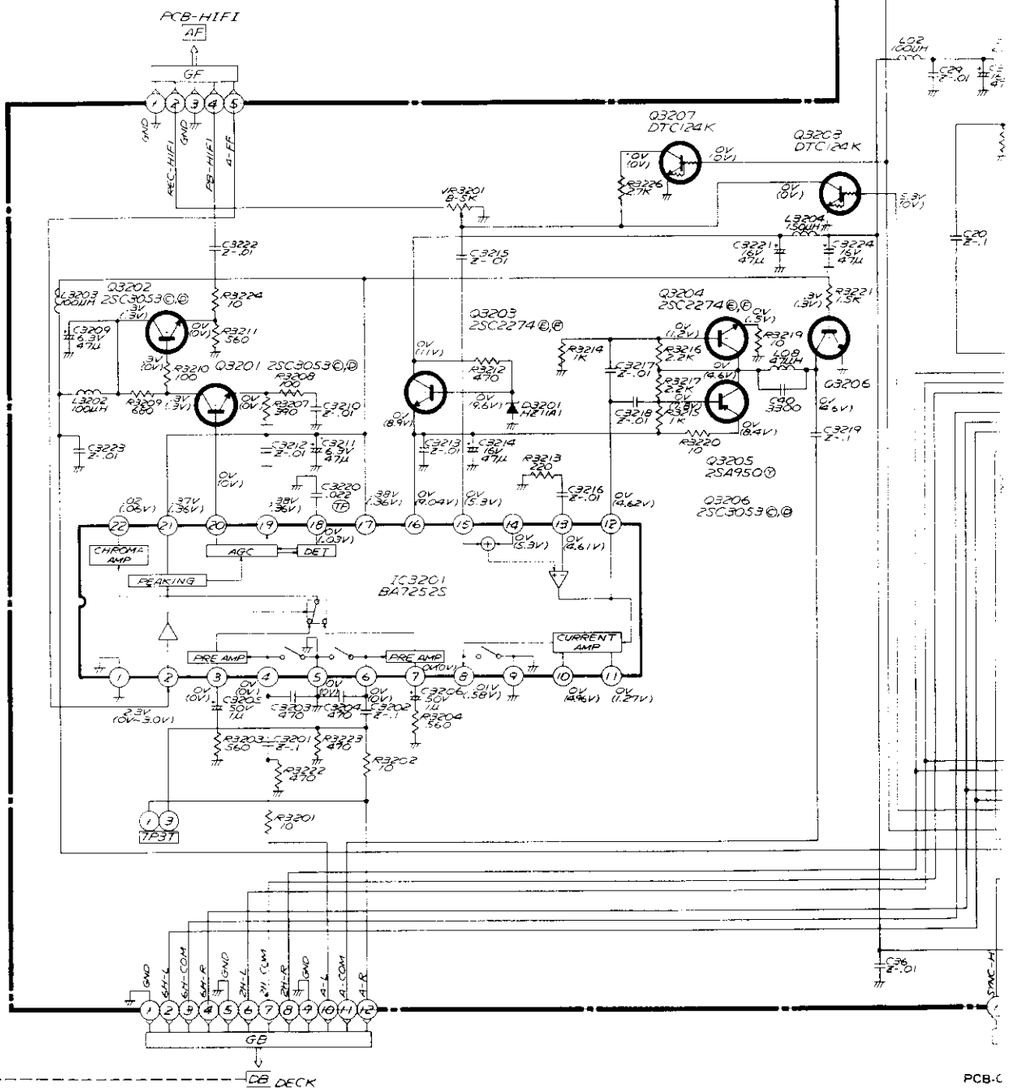


IC7A1 TDA3803A

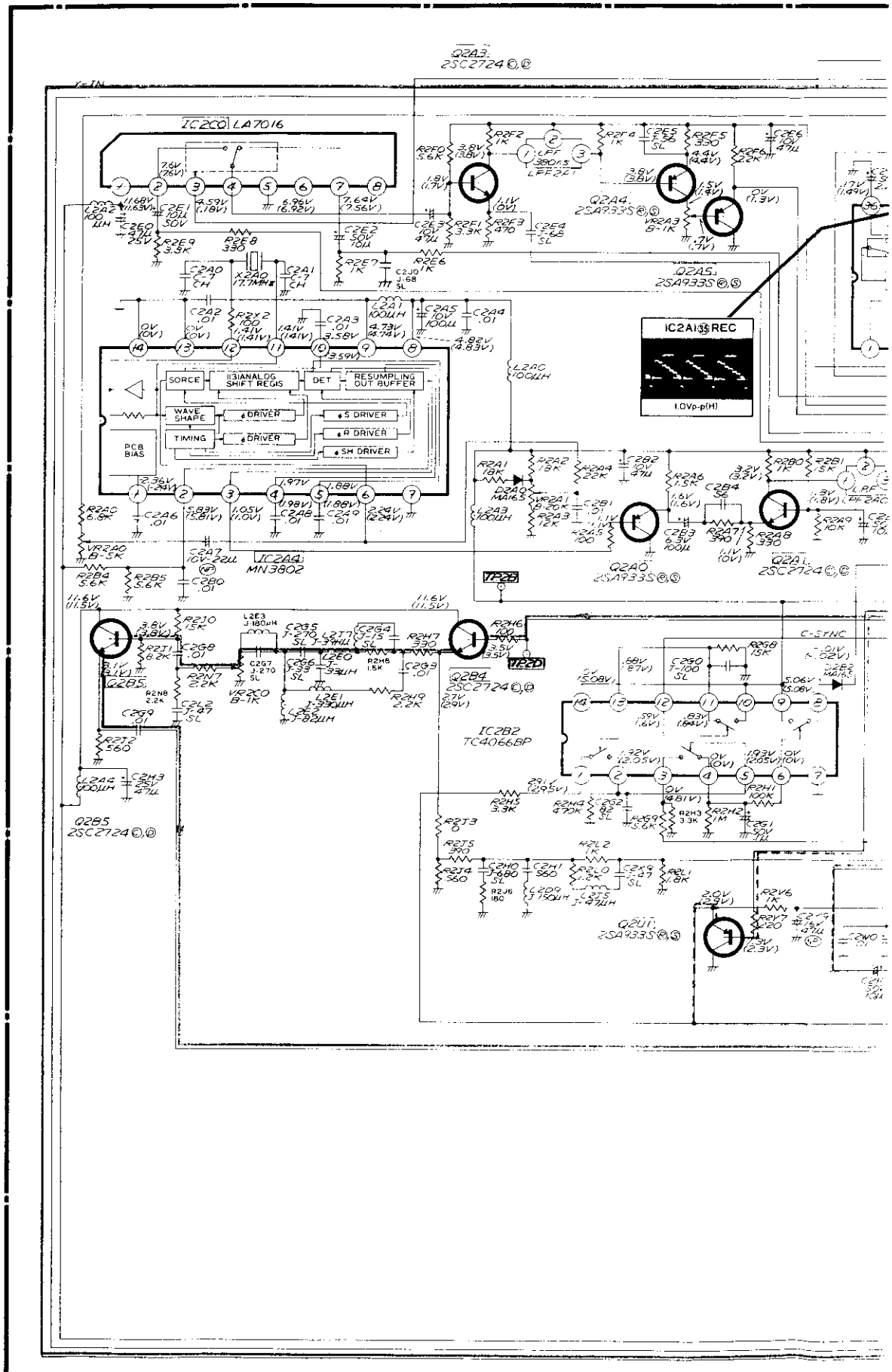
VS-S99EO·EOG
DECODER PCB



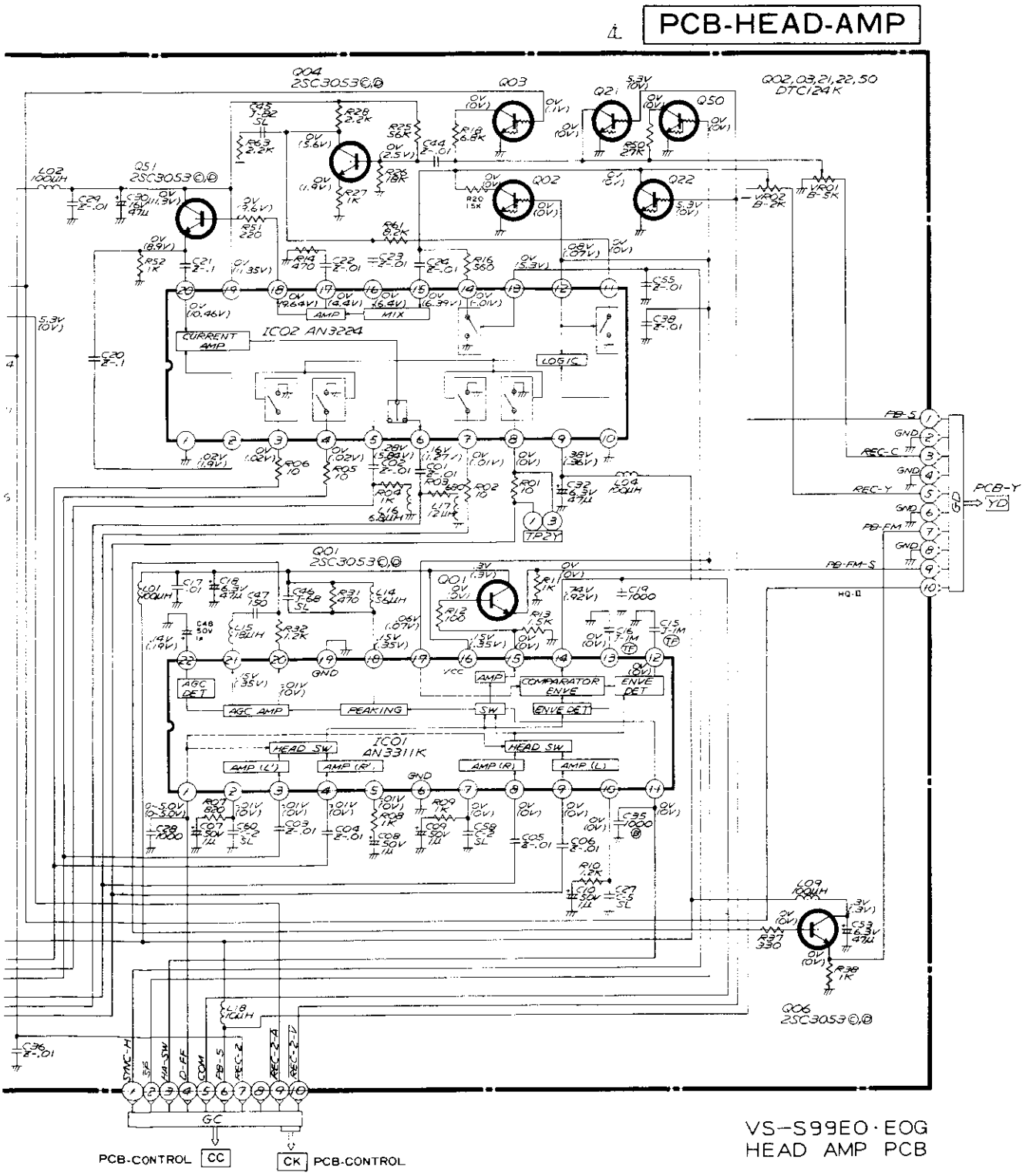
VIDEO HEAD
HIFI HEAD



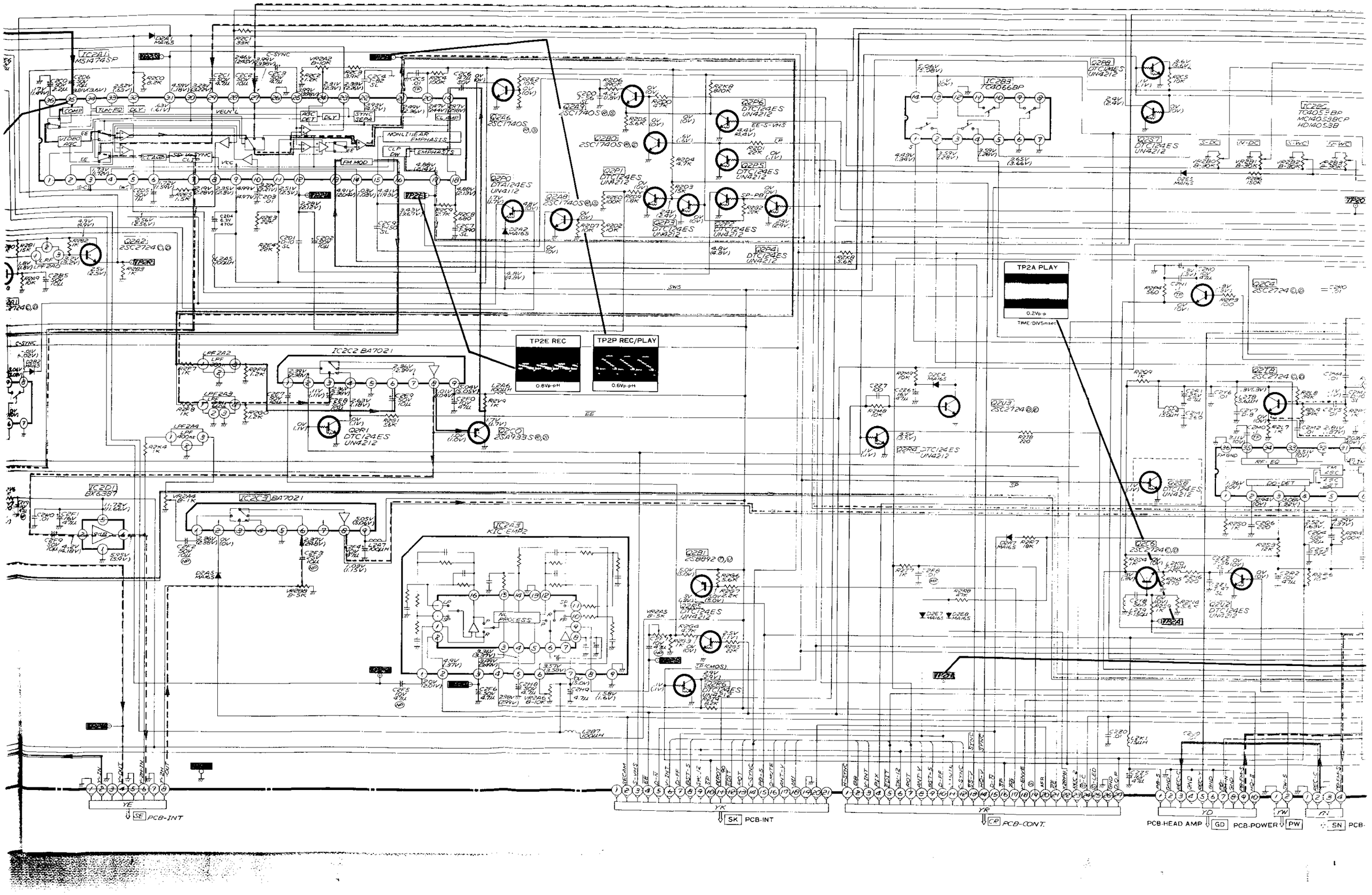
PCB-C

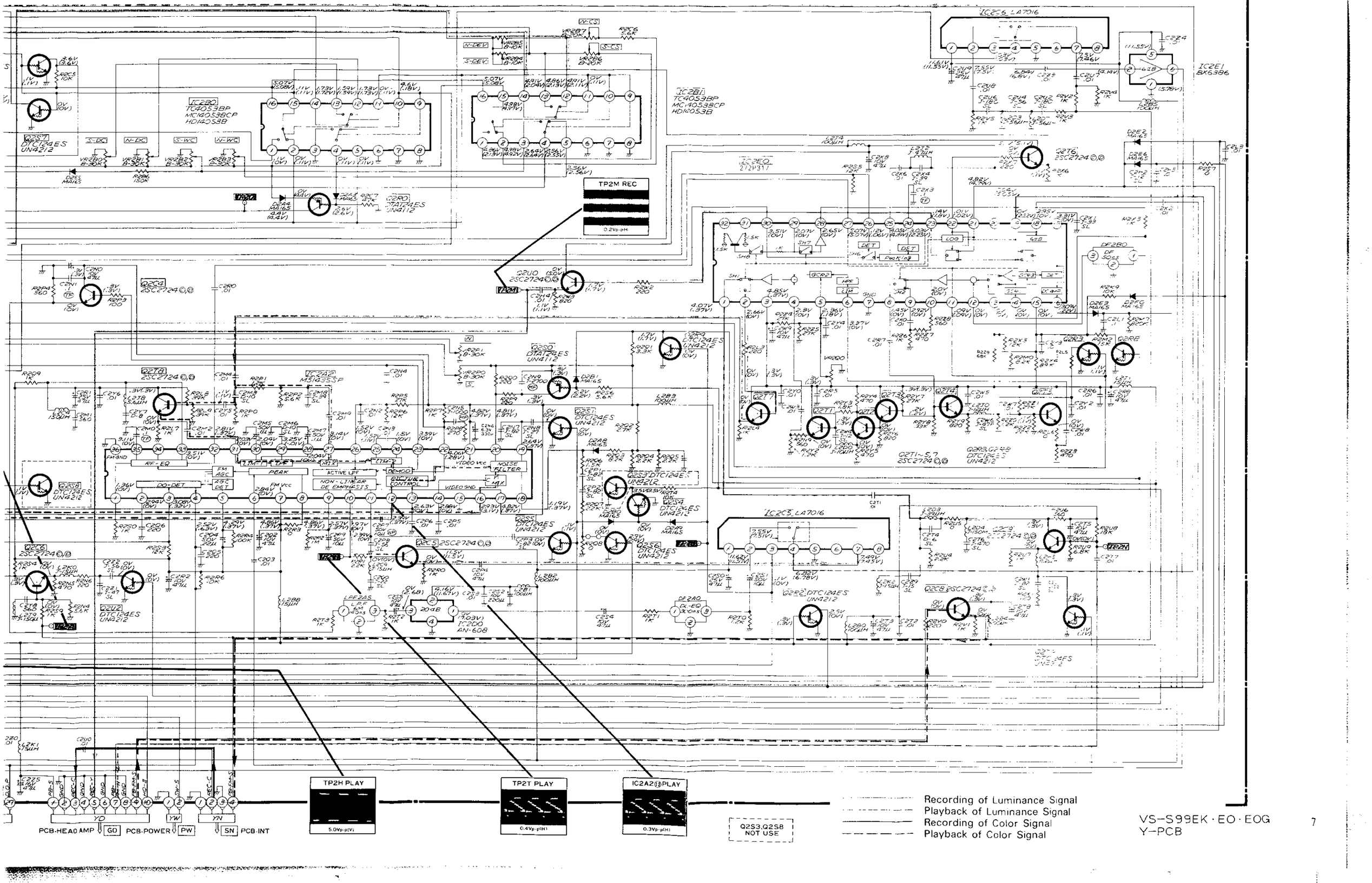

1
2
3
A
B
C
D
E
IC2C0 LA7016
Q2A3 2SC2724 ©,©
Q2A4 2SA933S ®,Ⓢ
Q2A5 2SA933S ®,Ⓢ
IC2A1 REC
1.0Vp-p(H)
IC2A4 MN3802
SORCE
113ANALOG SHIFT REGIS
DET
RESUMPLING OUT BUFFER
WAVE SHAPE
DRIVER
TIMING
S DRIVER
R DRIVER
SH DRIVER
PCB BIAS
Q2A0 2SA933S ®,Ⓢ
Q2A1 2SC2724 ©,©
Q2B4 2SC2724 ©,©
IC2B2 TC4066BP
Q2B5 2SC2724 ©,©
Q2U1 2SA933S ®,Ⓢ
C-SYNC

4. PCB-HEAD-AMP

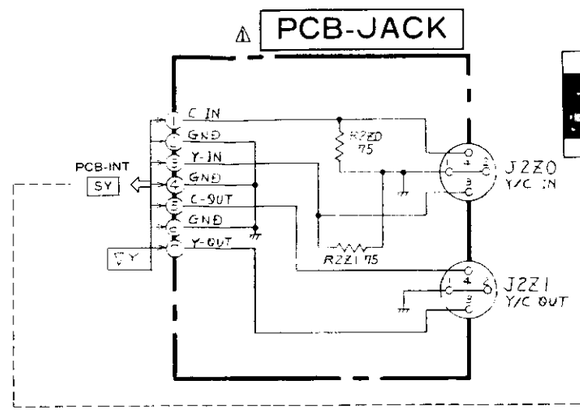


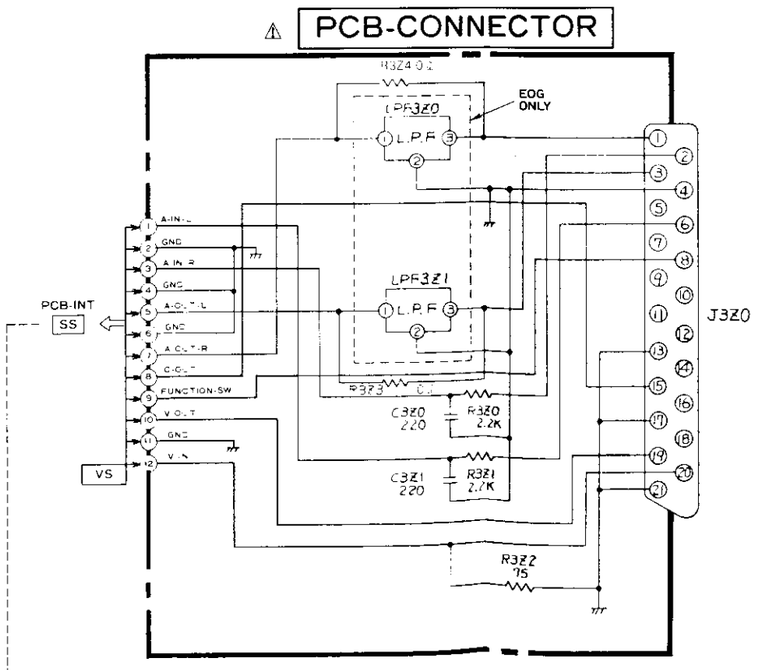
VS-S99EO·EOG
HEAD AMP PCB


IC2A1 MS1474SP
IC2C2 BA7021
IC2C3 BA7021
IC2A3 KIC EMP2
IC2D1 BX6387
IC2B3 TC4066BP
IC2B2 TC4053BP MC14053BCP HD14053B
TP2E REC
0.8Vp-p H
TP2P REC/PLAY
0.6Vp-p H
TP2A PLAY
0.2Vp-p
TIME: DIV 5msec
PCB-INT
PCB-CONT.
PCB-HEAD AMP
PCB-POWER
PCB-

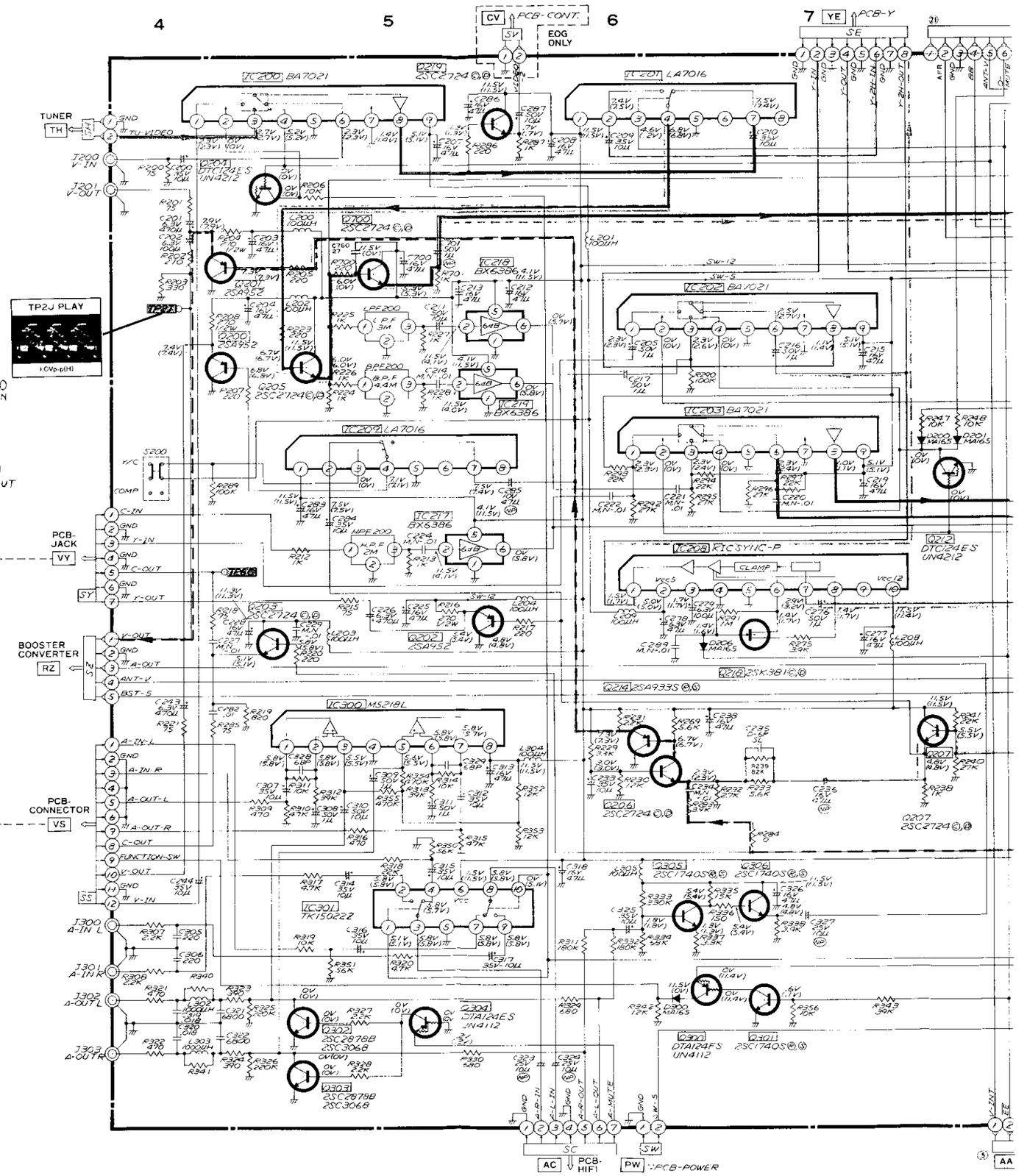

IC2C6 LA7016
IC2E1 BX6386
IC2B1 TC4053BP MC14053BCP HD14053B
IC2B0 TC4053BP MC14053BCP HD14053B
IC2C5 LA7016
IC2A2 M51435SP
TP2M REC
0.2Vp-p(H)
TP2H PLAY
5.0Vp-p(V)
TP2T PLAY
0.4Vp-p(H)
IC2A2(2) PLAY
0.3Vp-p(H)
Q2S3,Q2S8 NOT USE
Recording of Luminance Signal
Playback of Luminance Signal
Recording of Color Signal
Playback of Color Signal
PCB-HEAD AMP
PCB-POWER
PCB-INT
VS-S99EK·EO·EOG
Y-PCB

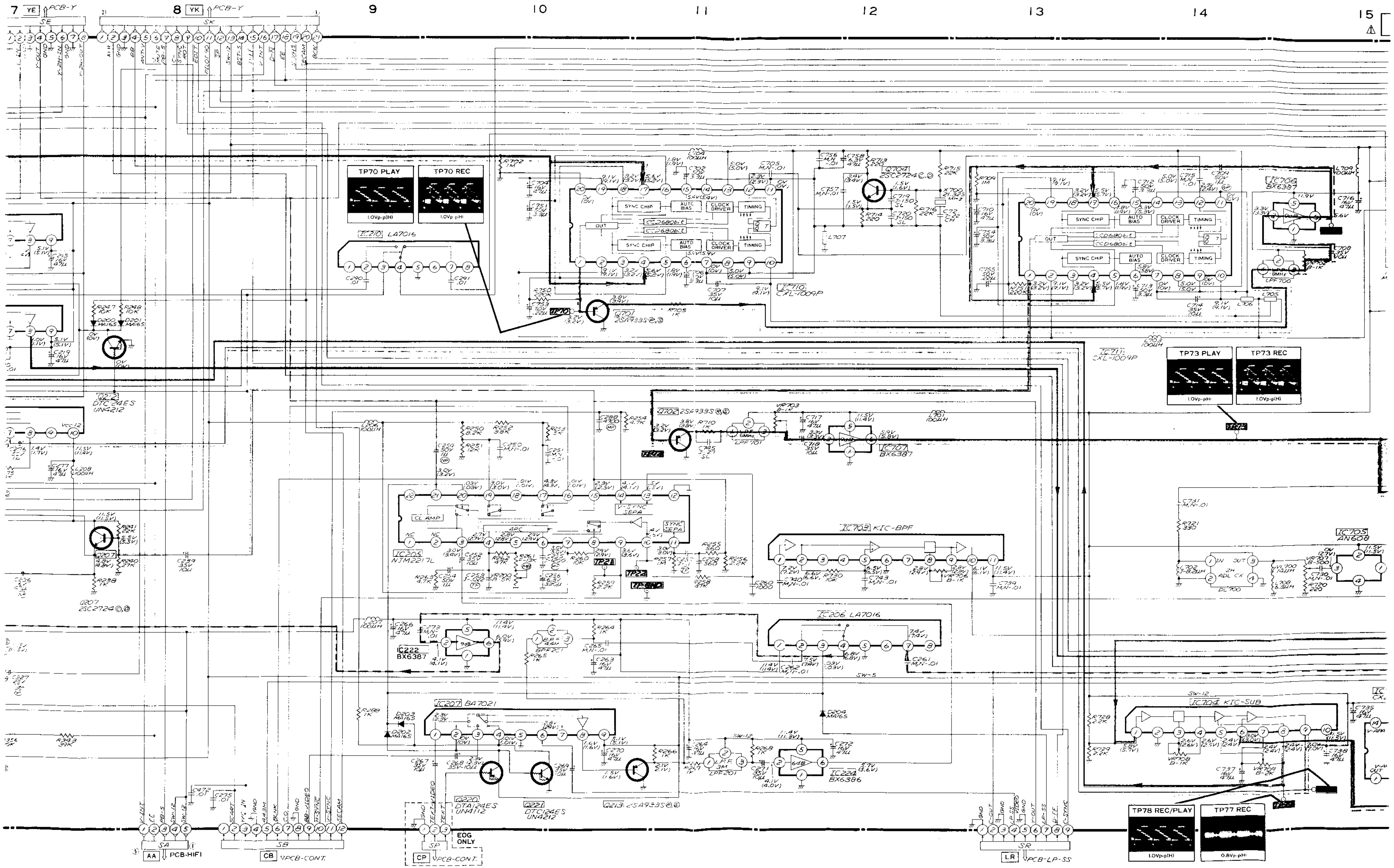
SYMBOL NO / MODEL	C319	C320	C321	C322	R288	R307	R308	R321	R322	R323	R324	R340	R341	L302	L303
EK	1000	1000	×	×	0Ω	0Ω	0Ω	0Ω	0Ω	390	390	0Ω	0Ω	×	×
EOG	.018	.018	6800	6800	1K	2.2K	2.2K	470	470	120	120	×	×	1000 μH	1000 μH
EO	1000	1000	×	×	0Ω	0Ω	0Ω	0Ω	0Ω	390	390	0Ω	0Ω	×	×





VS-S99EK·EO·EOG
JACK & CONNECTOR PCB

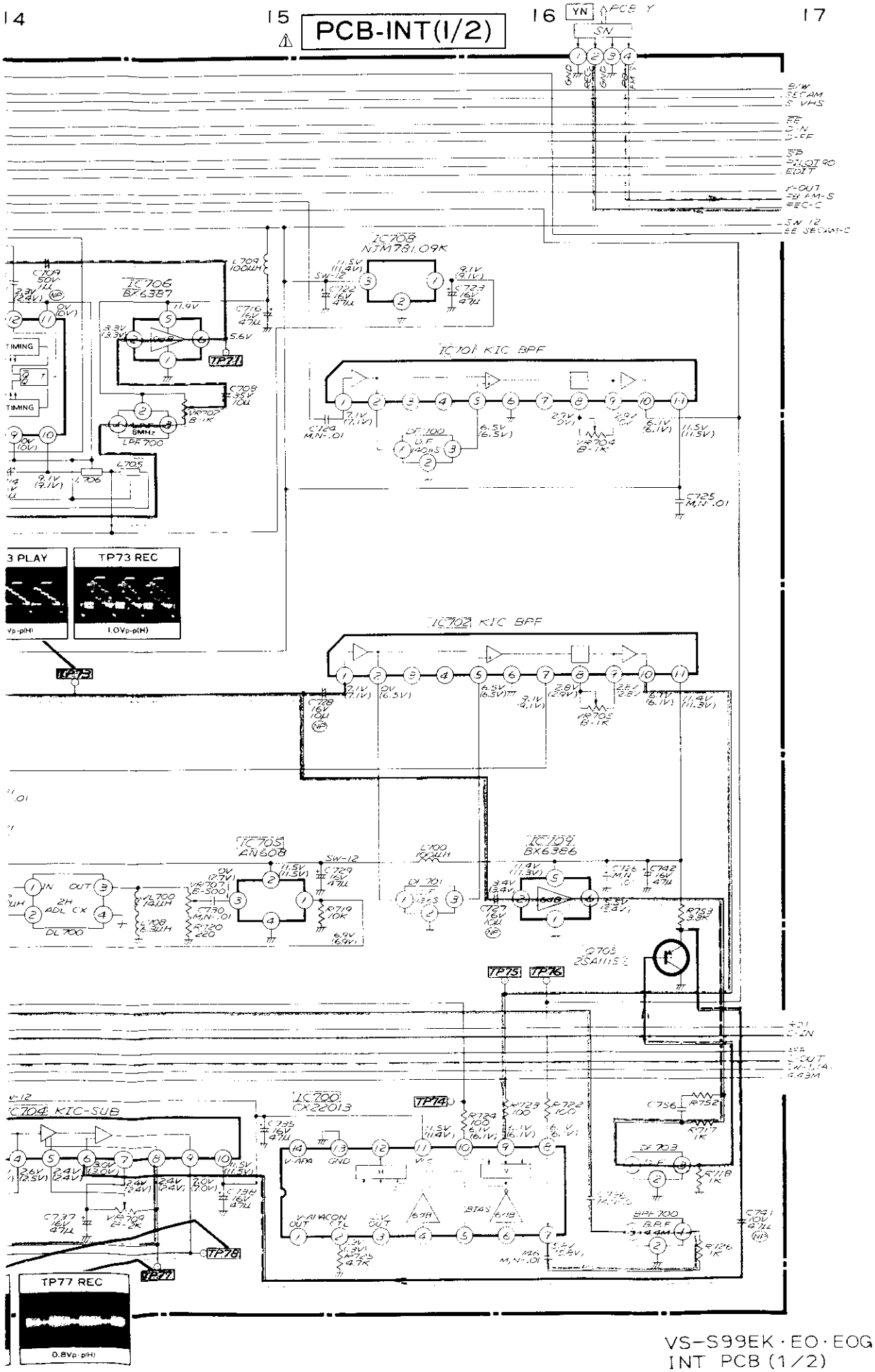




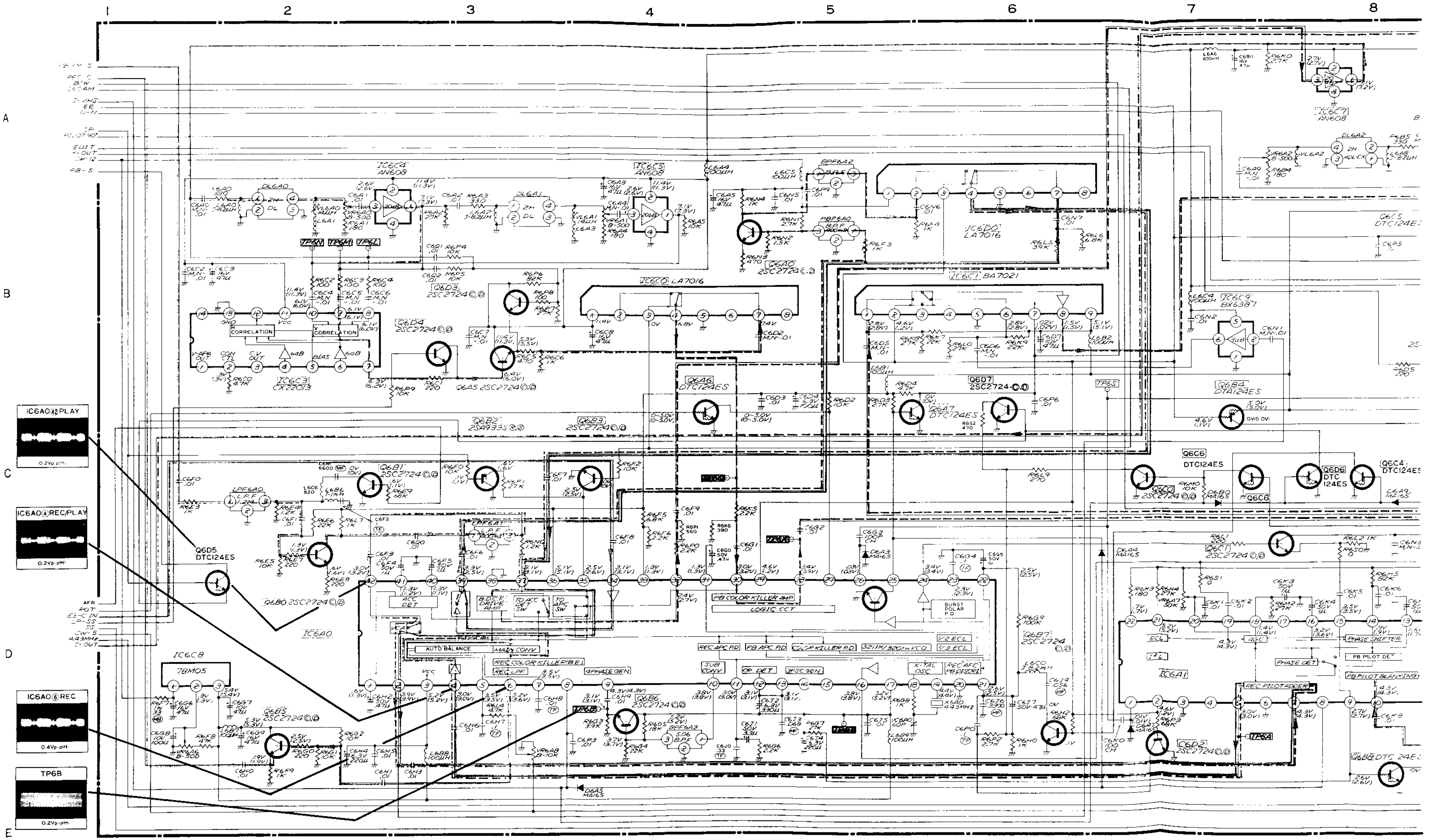
7
YE
PCB-Y
SE
8
YK
PCB-Y
SK
9
10
11
12
13
14
15
TP70 PLAY
TP70 REC
1.0Vp-p(H)
IC210 LA7016
Q701 2SA933S
IC710 CXL-1009P
Q704 2SC2724
IC711 CXL-1009P
IC706 BX6387
TP73 PLAY
TP73 REC
1.0Vp-p(H)
Q212 DTC124ES UN4212
Q702 2SA933S
IC707 BX6387
IC205 NJM2217L
IC703 KIC-BPF
IC705 AN608
Q207 2SC2724
IC222 BX6387
IC206 LA7016
IC207 BA7021
IC704 KIC-SUB
IC224 BX6386
Q220 DTA124ES UN4112
Q221 DTC124ES UN4212
Q213 2SA933S
SA
AA
PCB-HIFI
SB
CB
PCB-CONT.
SP
CP
PCB-CONT.
EOG ONLY
SR
LR
PCB-LP-SS
TP78 REC/PLAY
TP77 REC
1.0Vp-p(H)
0.8Vp-p(H)

14 15 16 17

PCB-INT(1/2)



VS-S99EK · EO · EOG
INT PCB (1/2)



IC6A0 ㊷ PLAY
0.2Vp-p/H
IC6A0 ④ REC/PLAY
0.2Vp-p/H
IC6A0 ⑥ REC
0.4Vp-p/H
TP6B
0.2Vp-p/H
IC6C4 AN608
IC6C5 AN608
IC6C7 AN608
IC6D0 LA7016
IC6C0 LA7016
IC6C1 BA7021
IC6C9 BX6387
IC6C3 CX22013
IC6C8 78M05
IC6A0
IC6A1
Q6D5 DTC124ES
Q6B0 2SC2724
Q6B1 2SC2724
Q6B2 2SA933S
Q6B3 2SC2724
Q6B5 2SC2724
Q6B6 2SC2724
Q6B7 2SC2724
Q6B8 DTC124ES
Q6D3 2SC2724
Q6D4 2SC2724
Q6A5 2SC2724
Q6A6 DTC124ES
Q6D7 2SC2724
Q6A7 DTC124ES
Q6B4 DTA124ES
Q6A0 2SC2720
Q6C5 DTC124ES
Q6C6 DTC124ES
Q6D6 DTC124ES
Q6C4 DTC124ES
Q6C0 2SC2724
Q6C1 2SC2724
Q6D2 2SC2724
CORRELATION
ACC DET
B.D.C.P. DRIVE AMP
TO ACC DET SW
TO APC SW
AUTO BALANCE
MAIN CONV
PB COLOR KILLER AMP
LOGIC CCT
REC APC PD
PB APC PD
COLOR KILLER PD
321fH/320fH VCO
1/2 ECL
1/3 ECL
REC COLOR KILLER (B.E.)
REC LPF
4 PHASE GEN
SUB CONV
CP DET
2fSC GEN
X'TAL OSC
REC AFC PB DISCRI
BURST POLAR PD
REC PILOT ADDER
PHASE SHIFTER
PB PILOT DET
PB PILOT BLANKING
PHASE DET
AGC
TP6M
TP6N
TP6L
TP6S
TP6A

8 9 ⚠ PCB-INT(2/2) (CHROMA) 11 12 13 14 15

IC6CZ⑧PLAY
0.4Vp-p(H)

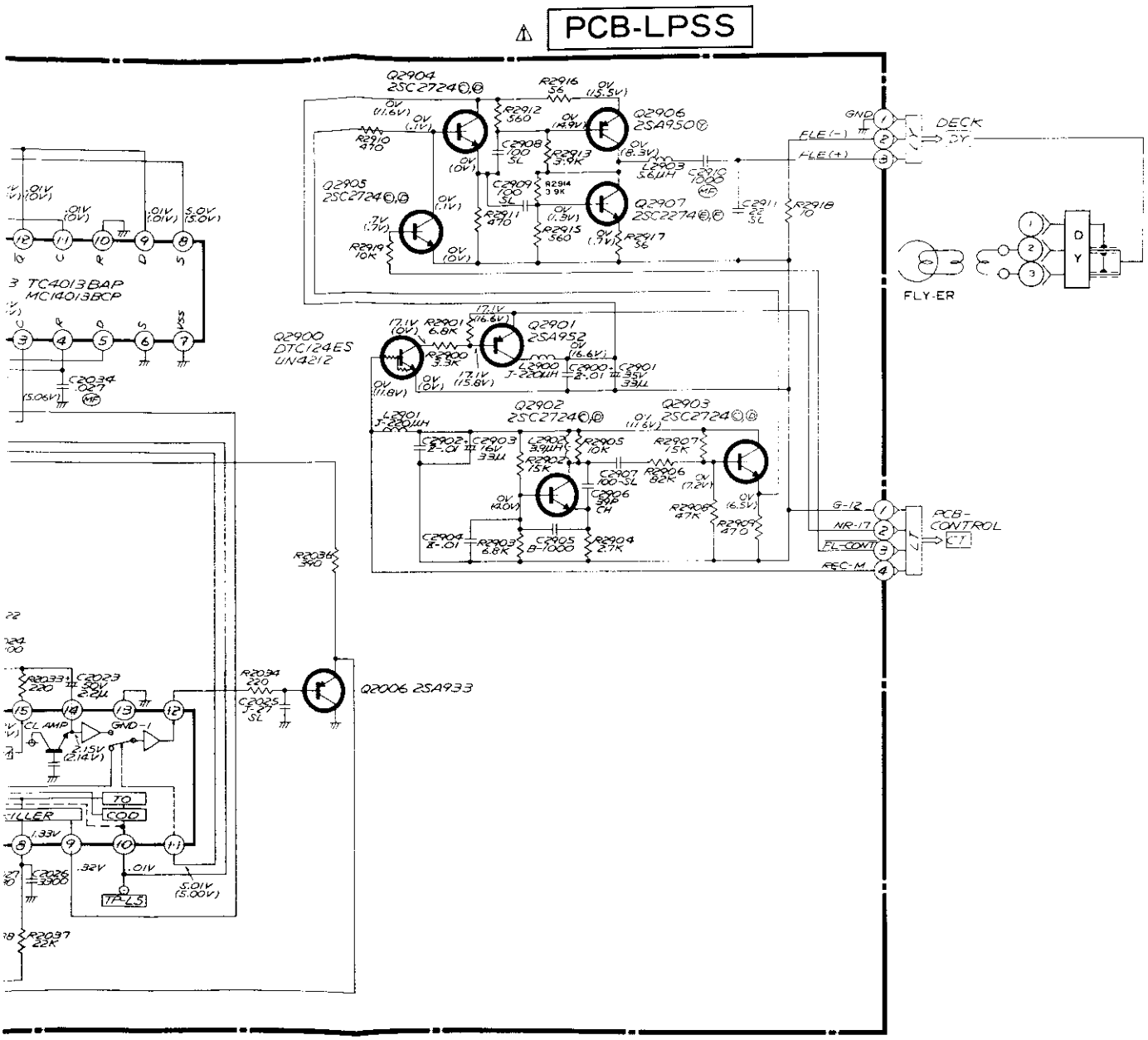
TP6J PLAY
0.2Vp-p(H)

PCB-CONT CH

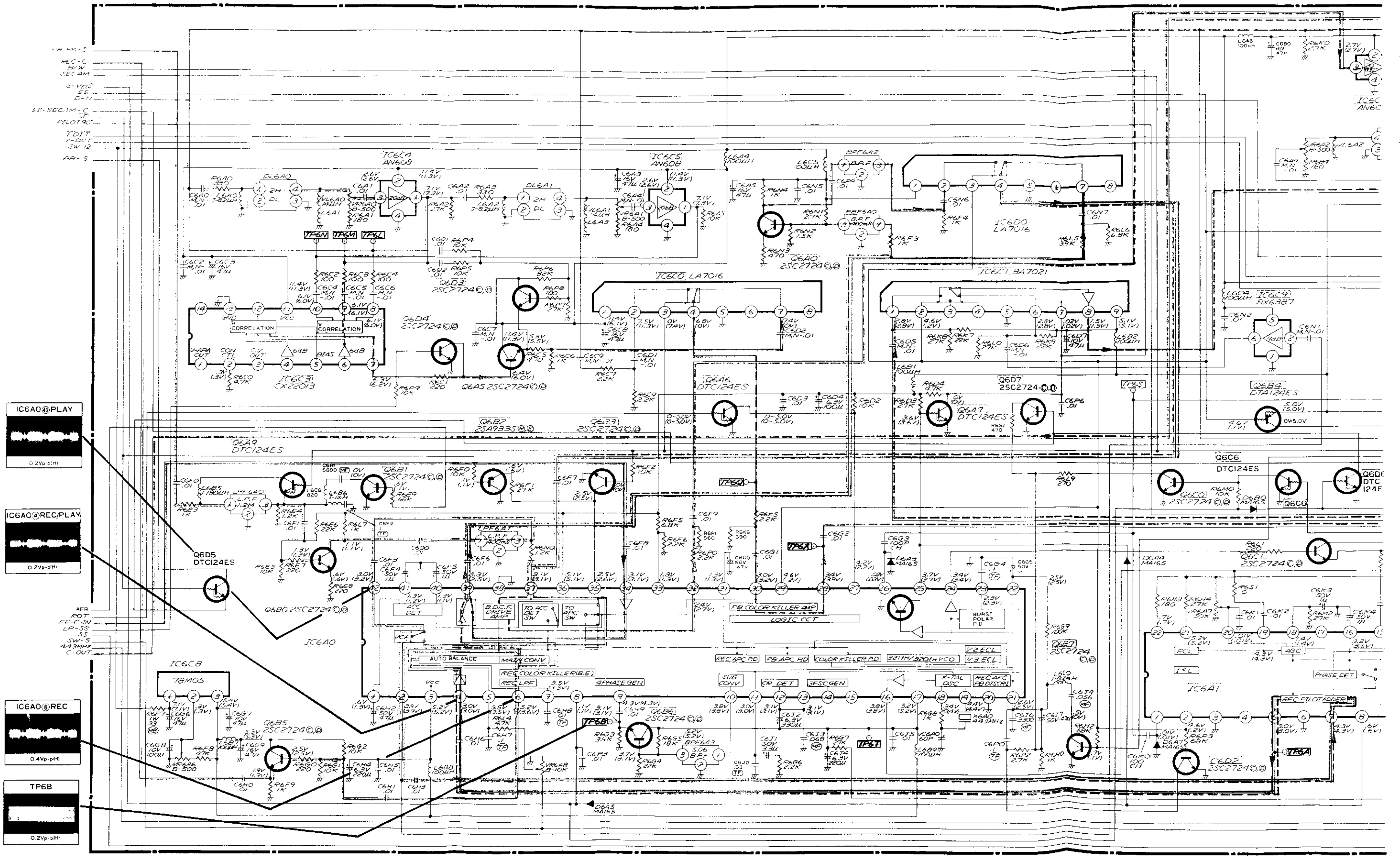
PCB-INT SR

VS-S99EK
INT PCB (2/2)

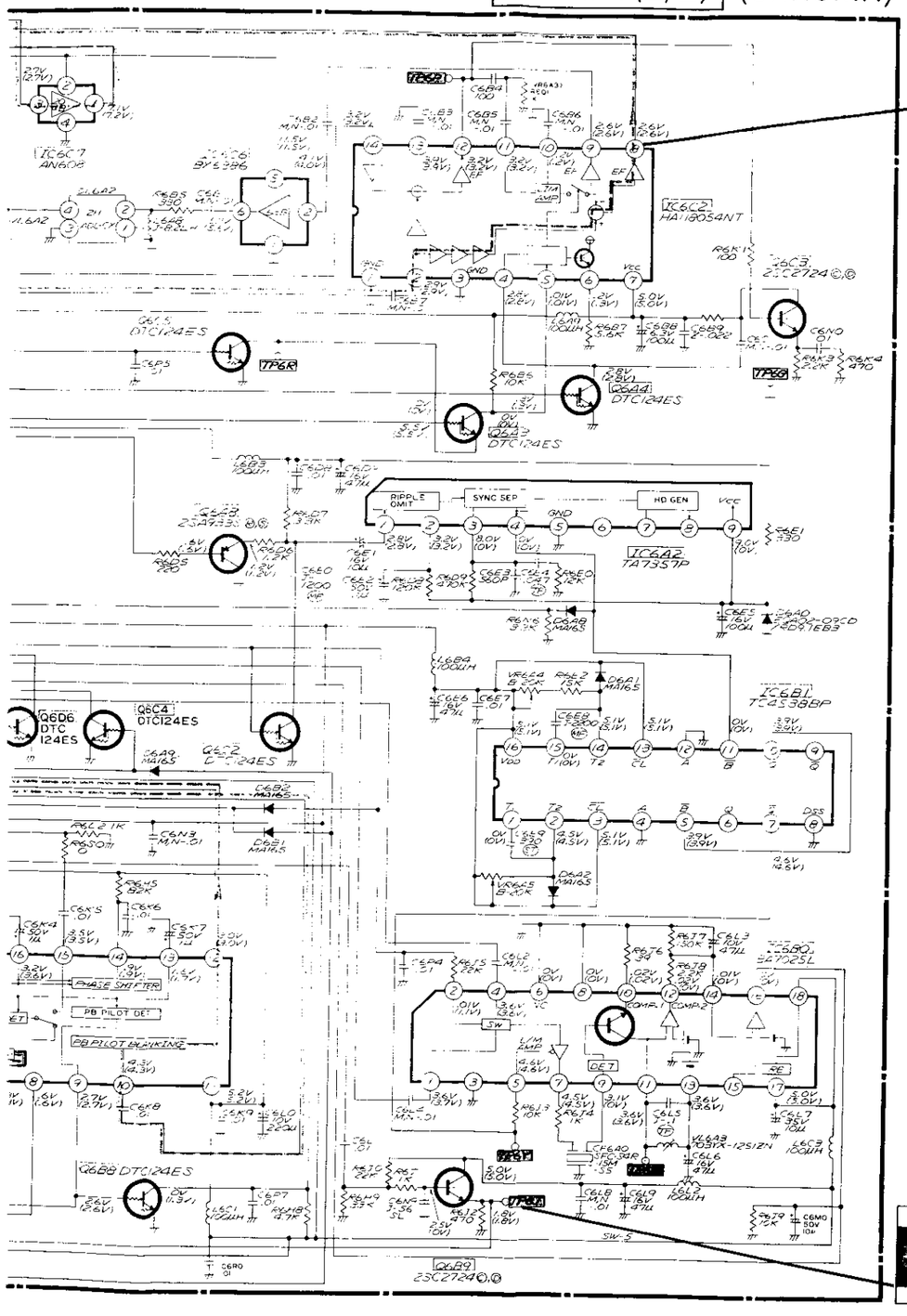
16 17 18

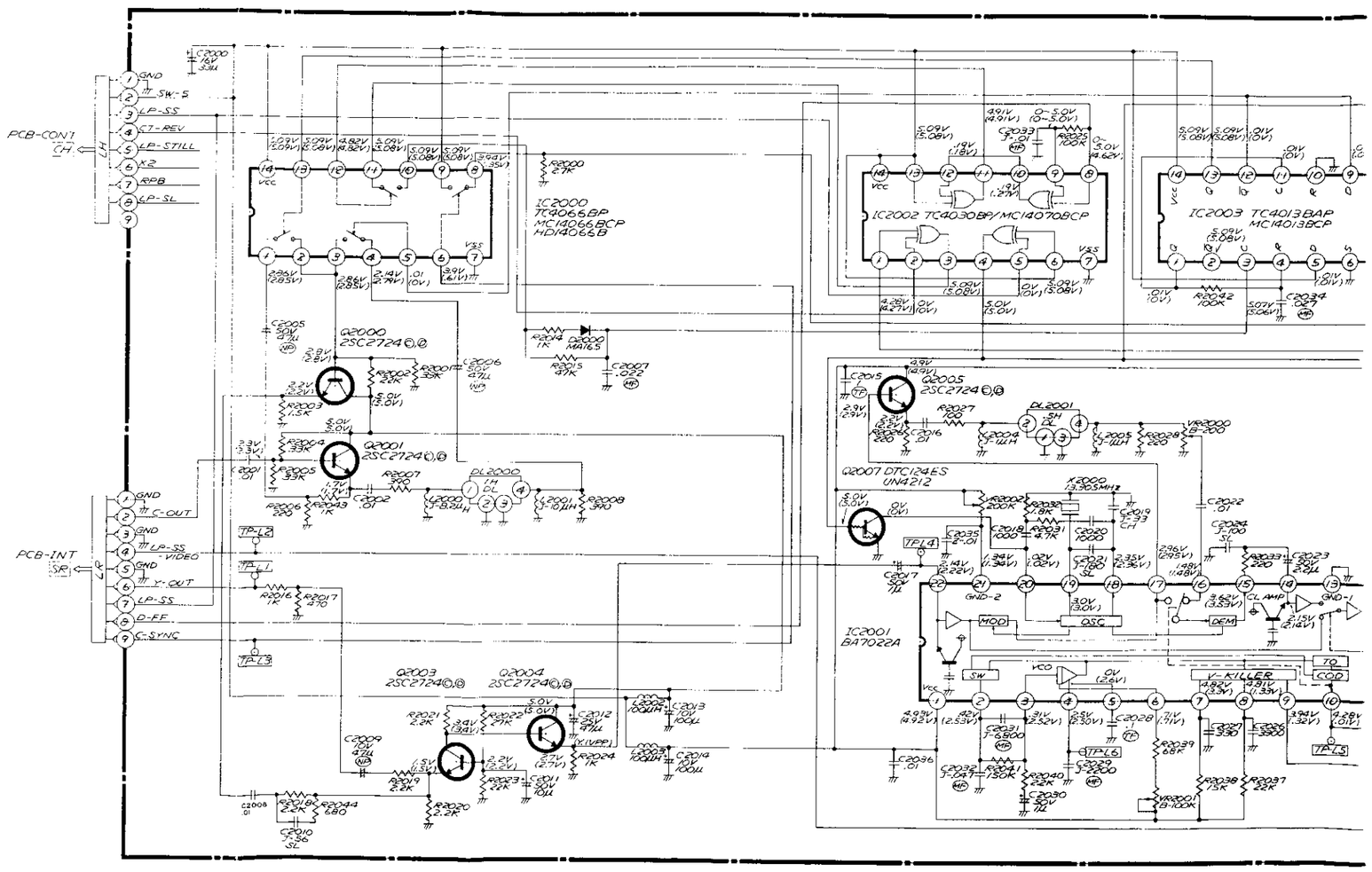


VS-S99EK
LPSS PCB

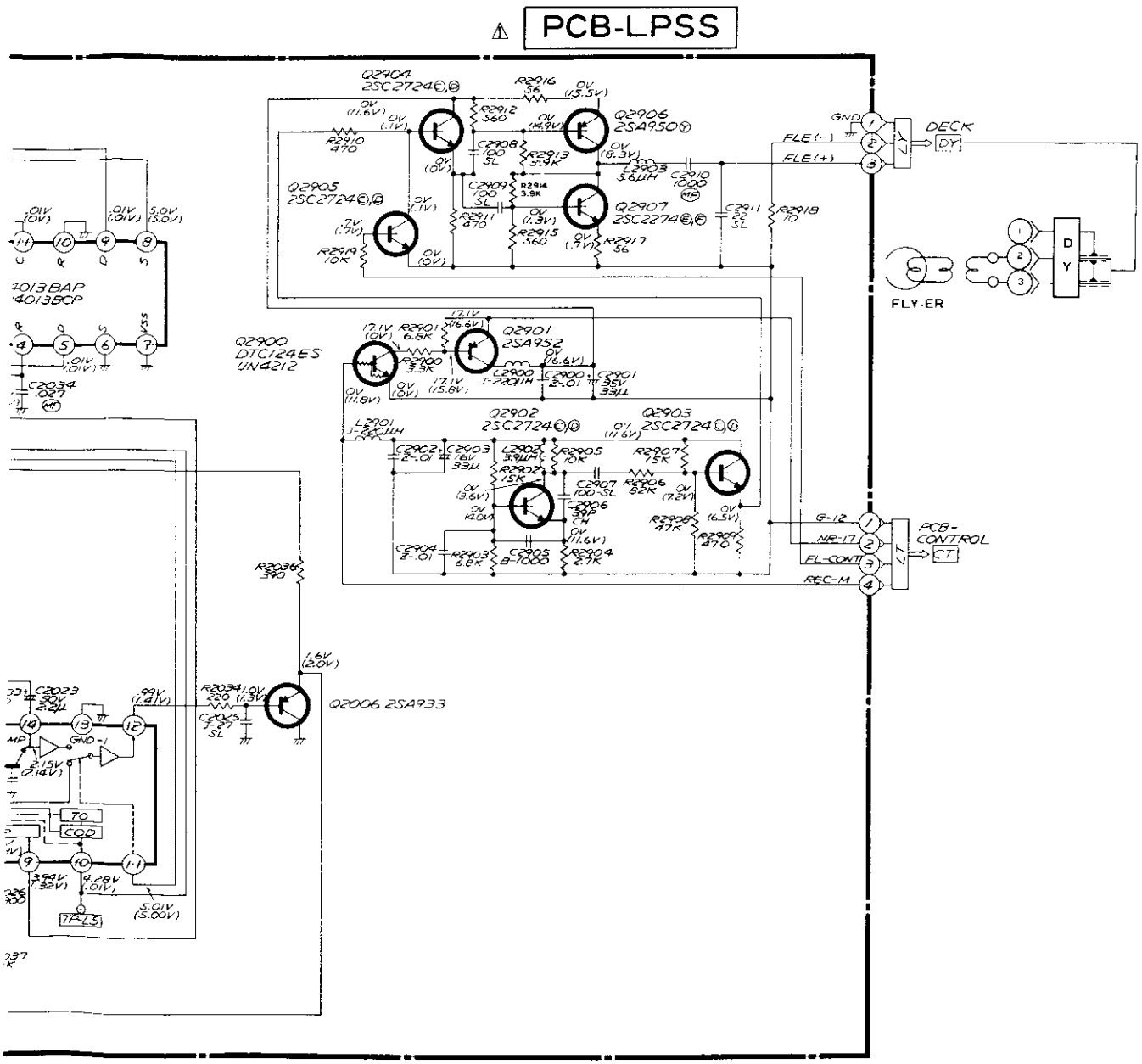

IC6A0④PLAY
0.2Vp-p(H)
IC6A0④REC/PLAY
0.2Vp-p(H)
IC6A0⑥REC
0.4Vp-p(H)
TP6B
0.2Vp-p(H)
Q6D5
DTC124ES
IC6C4
AN608
IC6C5
AN608
IC6C0 LA7016
IC6D0
LA7016
IC6C1 BA7021
IC6C9
BX6387
IC6C3
CX22013
IC6C8
78M05
IC6A0
IC6A1
CORRELATION
AUTO BALANCE
MAIN CONV
LOGIC CCT
BURST POLAR P.D
PHASE DET
Q6C6
DTC124ES

⚠ PCB-INT(2/2) (CHROMA)



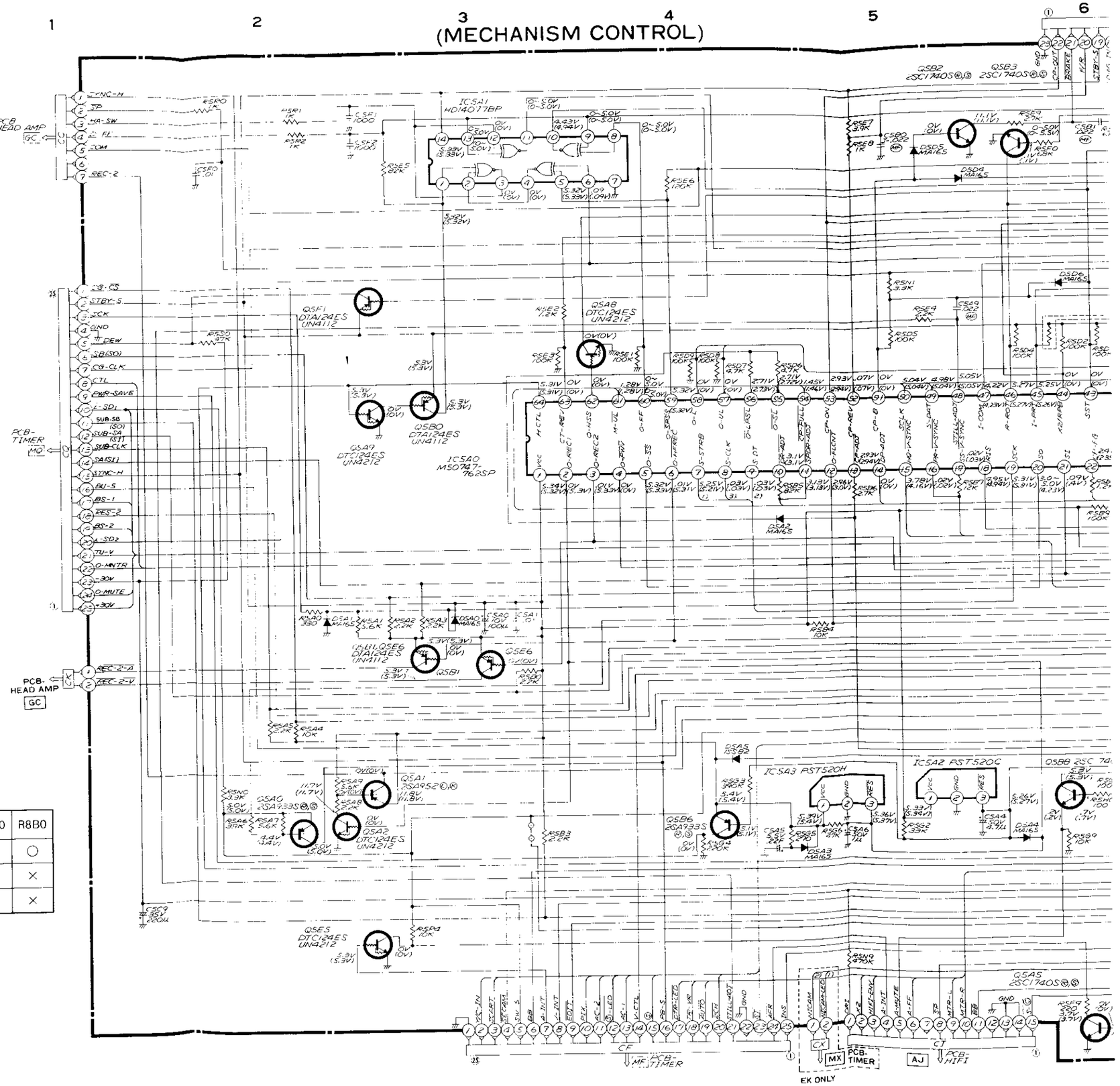


VS-S99EO·EOG
INT PCB (2/2)



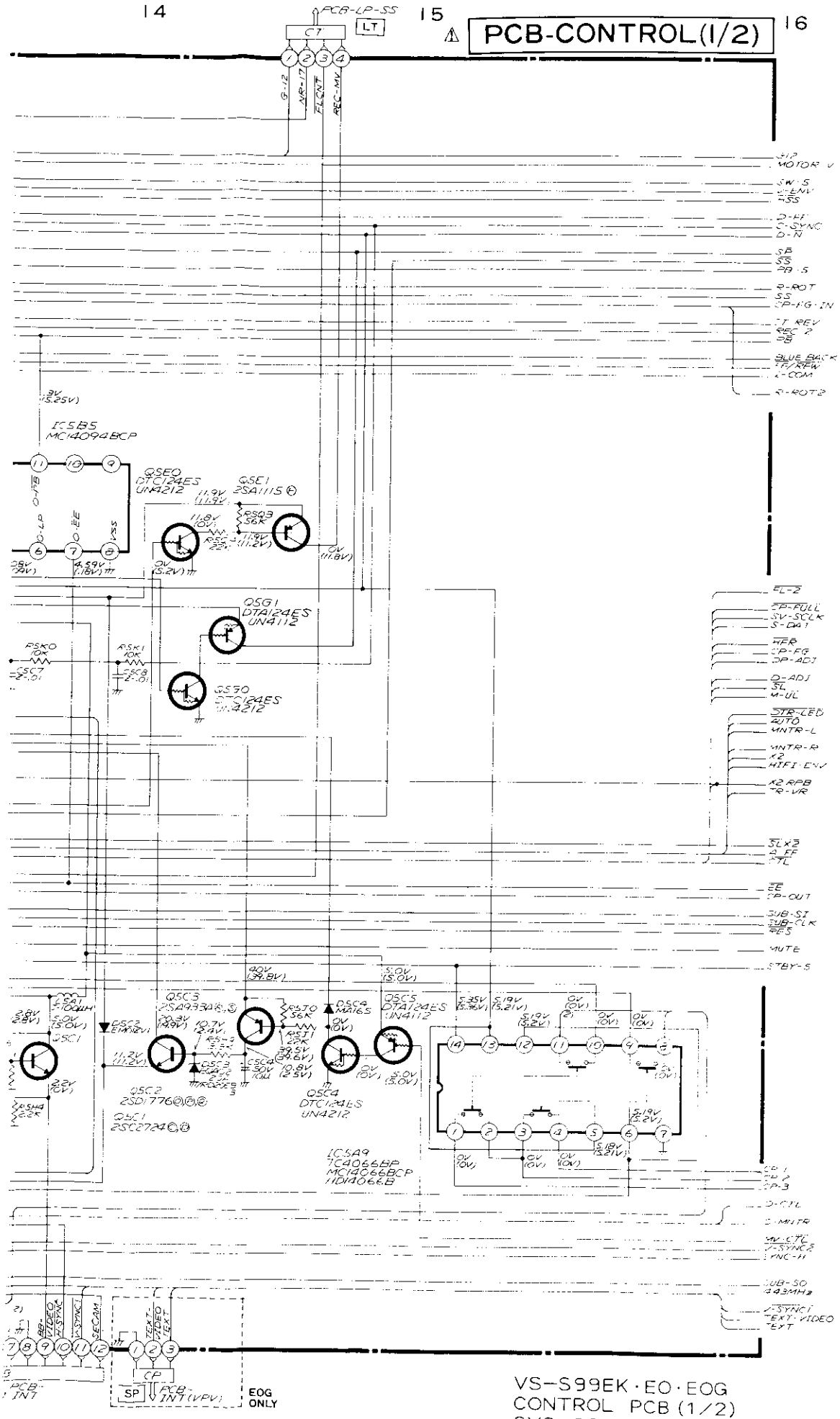
VS-S99EO·EOG
LPSS PCB

(MECHANISM CONTROL)

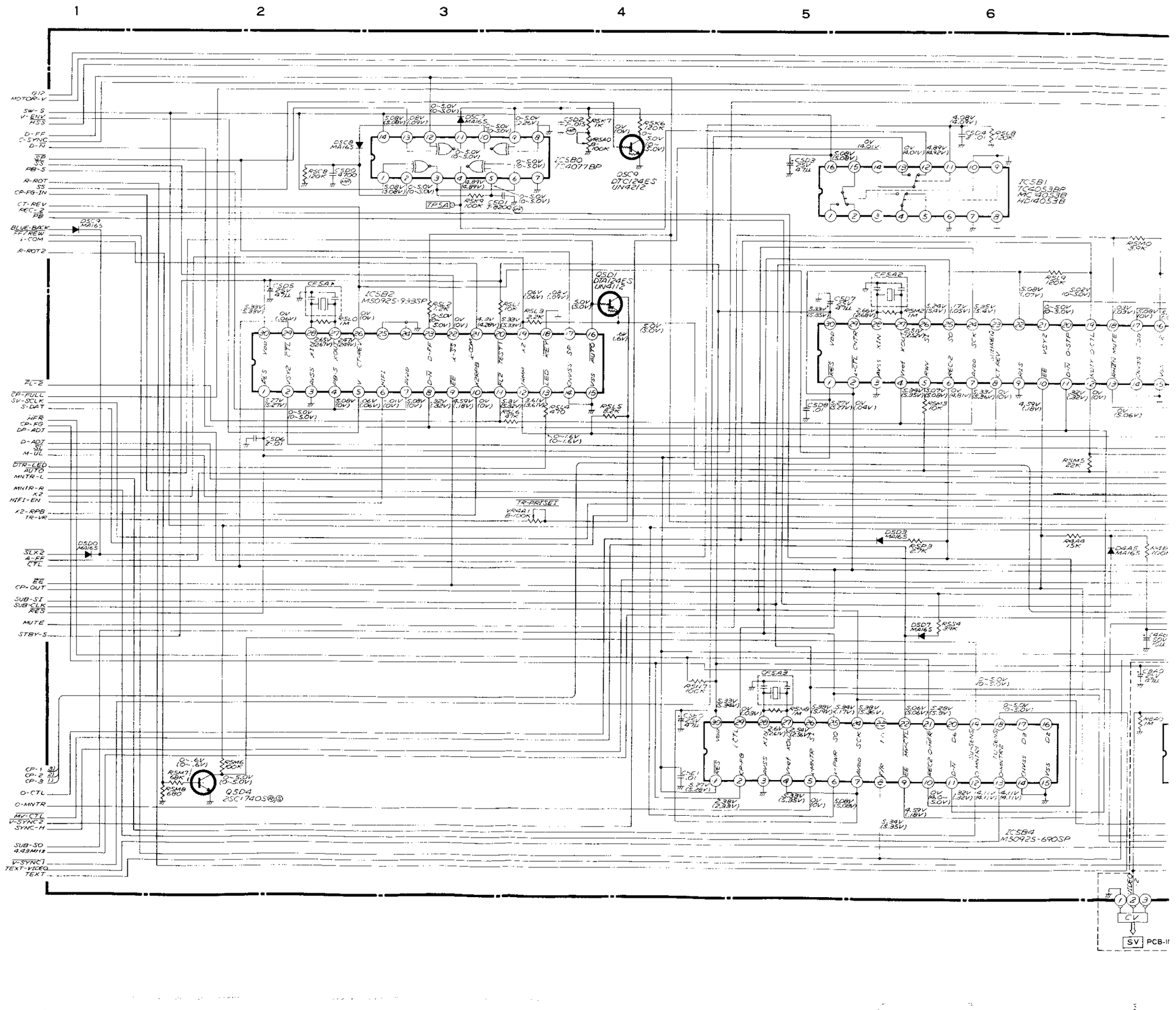


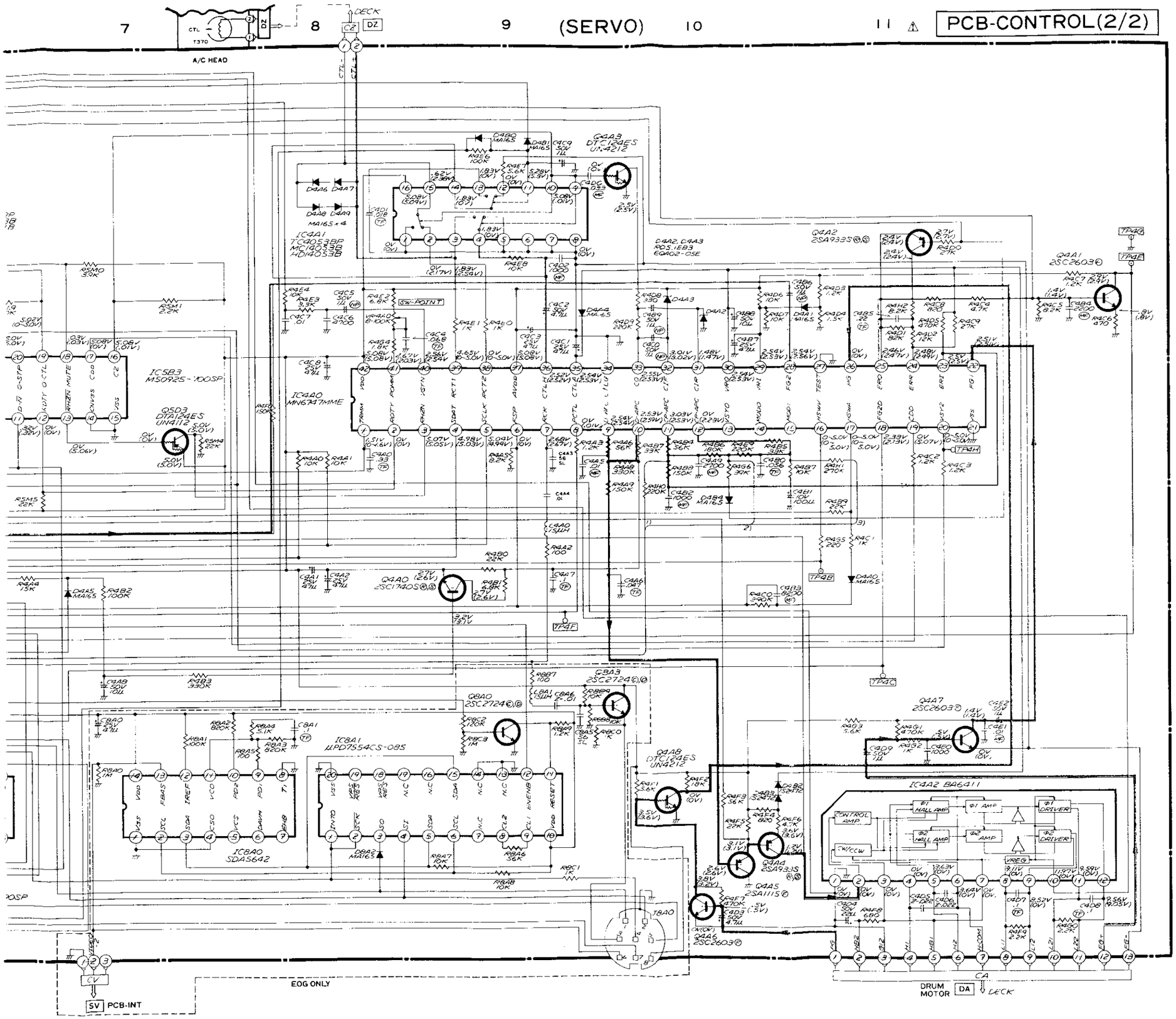
SYMBOL NO / MODEL	Q5B6	Q5F1	D5A4	D5D6	R5G2	R5G3	R5S0	R8B0
EK	2SA933S Ⓡ,Ⓢ	○	MA165	○	33K	390K	○	○
EOG	2SA933S Ⓠ	×	1SS97	×	2.7K	1M	×	×
EO	2SA933S Ⓡ,Ⓢ	○	MA165	○	33K	390K	○	×

6
DM PCB-WIRING
7
CM
8 LH PCB-LP-SS
CH
9
YR PCB-Y
10
CR
11
PG PCB-POWER
12
CG
DECODER
EO-EOG
EY
PCB NICAM
EK
CY
13
TD PCB-TUNER
CD
14
QSB5 2SC1740S
QSB4 2SC1740S
QSF0 DTC124ES UN4212
QSF0
DSA8 MA165
DSA9 MA165
DSB0 MA165
A-ONLY
QSD5 DTC124ES UN4212
DSD2 MA165
ICSA8 TA7291S
ICSB5 MC14094BCP
QSE0 DTC124ES UN4212
QSC6 2SA933S
QSC7 DTA124ES UN4117
QSC8 2SC2603
DSA6 EMO1ZV1
ICSA6 TC4001BP MC14001BCP HD14001B
ICSA7 TC4081BP MC14081BCP HD14081B
QSA6 2SC1740S
DSC6 MA165
CFSA0
MOTOR-V
ICSA4 TC4001BP MC14001BCP HD14001B
QSC0 2SC1740S
DSB7 MA165
XSA0 7.73MHz
ICSA5 MS0455-090SP
QSC1
QSC2 2SD1776
QSC1 2SC2724
QSC3 2SA933S
DSC2 EMO1ZV1
DSC1 MA165
DSB9 MA165
DSB8 MA165
NICAM/NICAM-LED
QSE4 2SA933S
QSA4 2SC1740S
QSE2,QSB9 DTC124ES UN4212
QSE2
QSB9
DSC0 MA165
CL
PCB-HIFI
AL
QSD8 2SC1740S
QSE1 2SA933S
CB
SB PCB-INT
CP
SP PCB-INT



VS-S99EK·EO·EOG
CONTROL PCB (1/2)
SYS-CON BLK


1
2
3
4
5
6
A
B
C
D
E
IC5B0 TC4077BP
IC5B1 TC4053BP MC14053B HD14053B
IC5B2 M50925-933SP
IC5B4 M50925-690SP
Q5C0 DTC124ES UN4212
Q5D1 DTA124ES UN4112
Q5D4 2SC1740S
TP5A
TR-PRESET
CF5A1
CF5A2
CF5A3
SV
PCB-11


A/C HEAD
CTL
T370
DZ
DECK
C2
IC4A1 TC4053BP MC14053B HD14053B
IC4A0 MN6747NME
IC5B3 M50925-100SP
Q5D3 DTA124ES UN4112
Q4A3 DTC124ES UN4212
Q4A2 2SA933S
Q4A1 2SC2603
Q4A0 2SC1740S
IC8A1 μPD7554CS-085
IC8A0 SDA5642
Q8A0 2SC2724
Q8A3 2SC2724
Q4A8 DTC124ES UN4212
Q4A7 2SC2603
Q4A6 2SC2603
Q4A5 2SA1115
Q4A4 2SA933S
IC4A2 BA6411
SW-POINT
EOG ONLY
PCB-INT
DRUM MOTOR
CAPSTAN MOTOR
Drum Servo System
Capstan Servo System
VS-S99EK·EO·EOG
CONTROL PCB (2/2)
SERVO BLK

NOTE) PARTS WITHOUT INDICATION IN SCHEMATIC DIAGRAM.

● NPN TRANSISTORS ARE 2SCI740S(R,S)

DTCI24ES
UN4212

DTAI24ES
UN4112

1 5 6 7 8

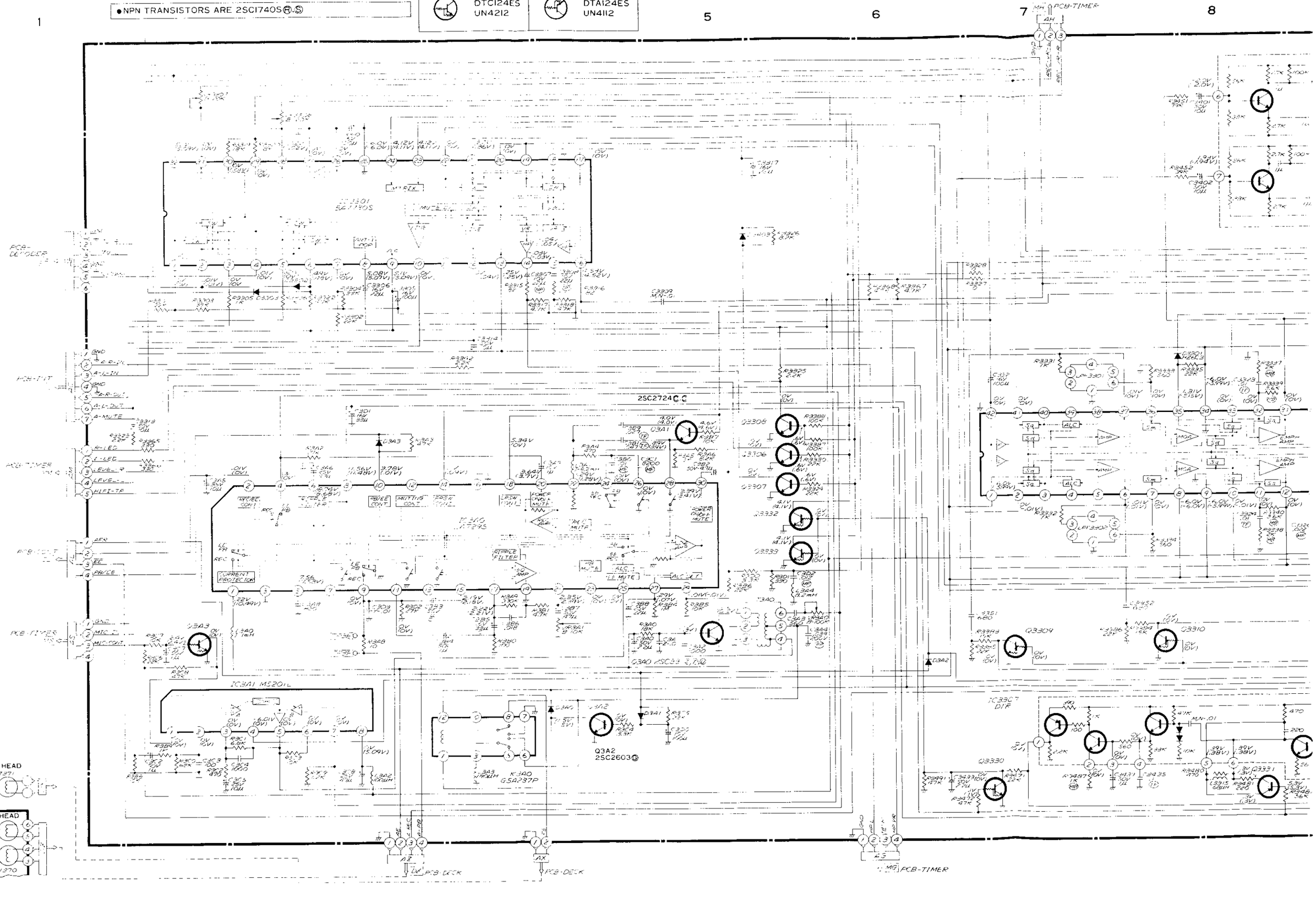
A

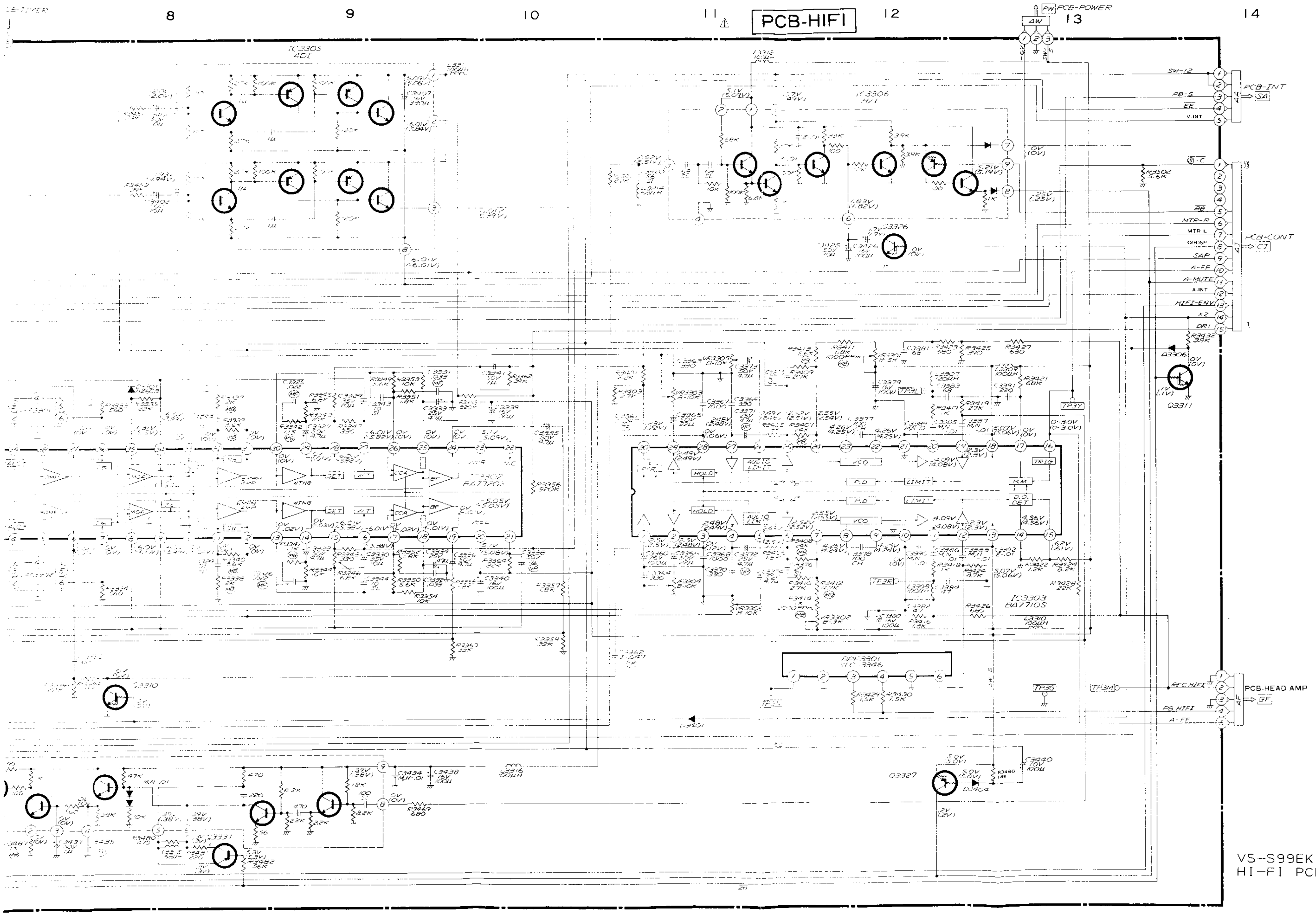
B

C

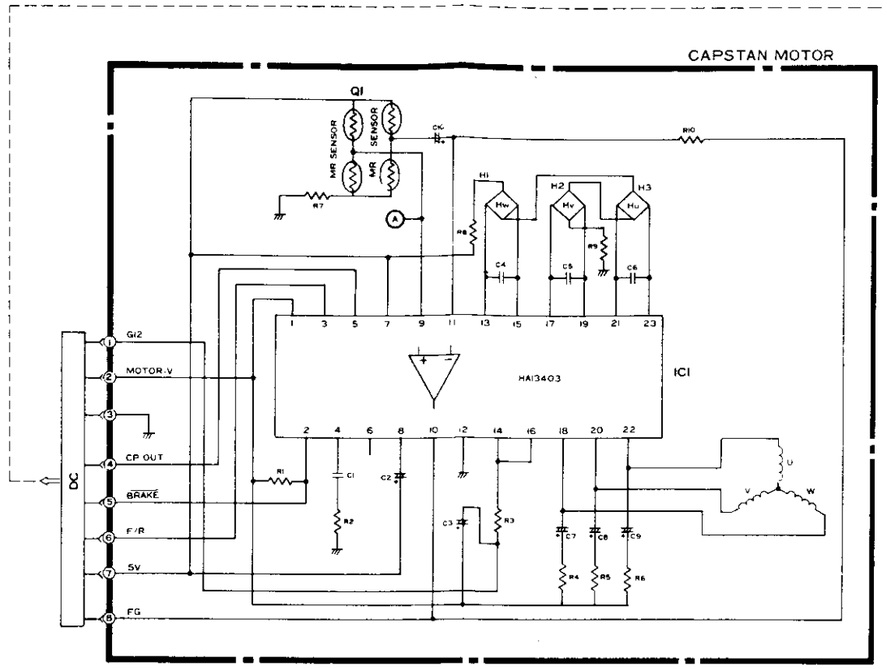
D

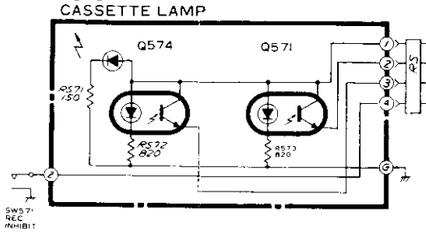
E

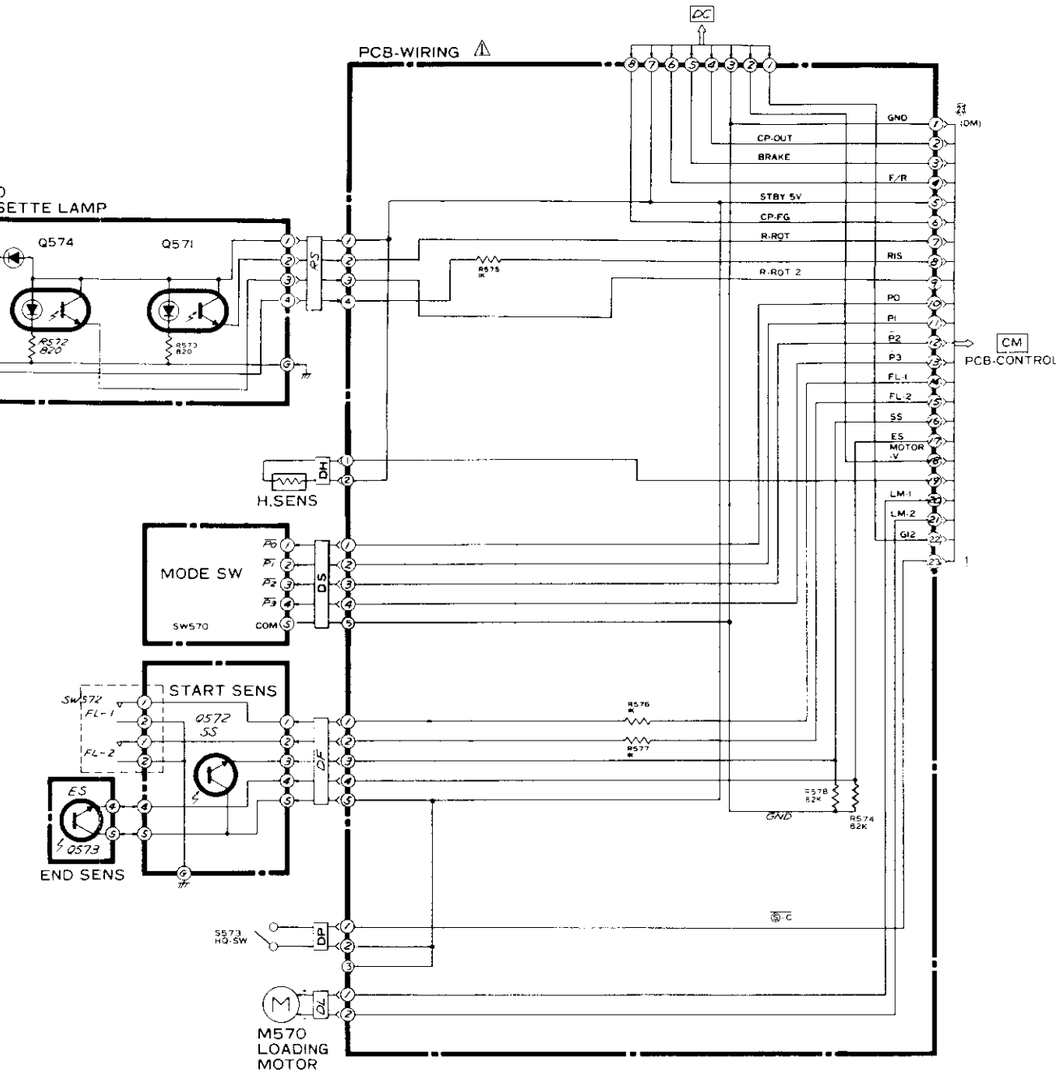


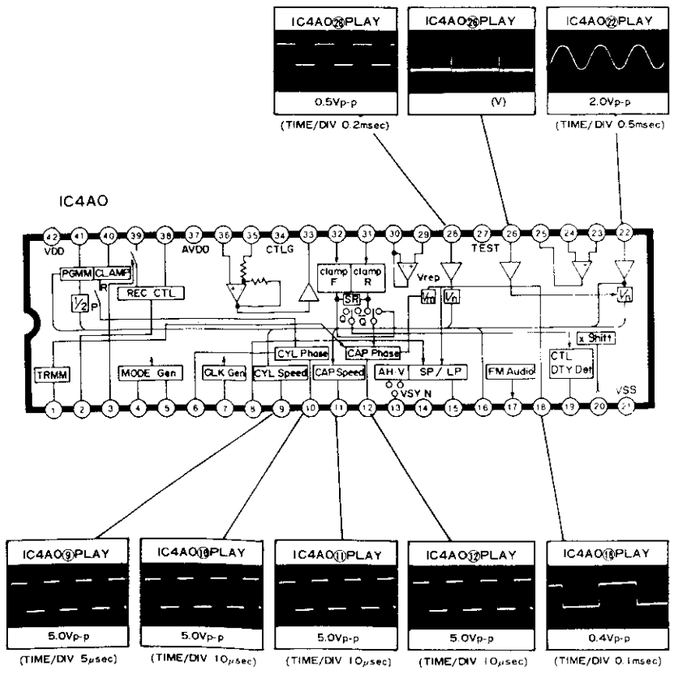


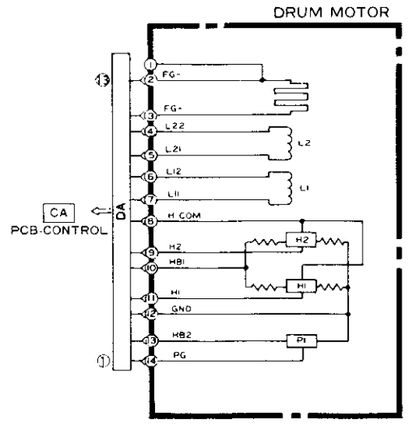
VS-S99EK·EO·EOG
HI-FI PCB





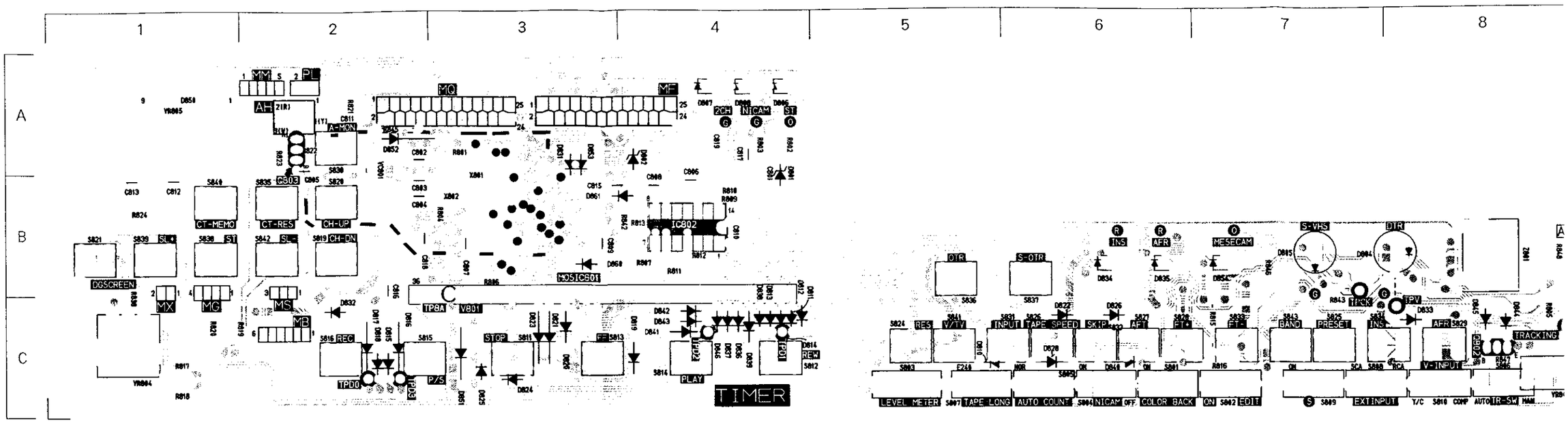




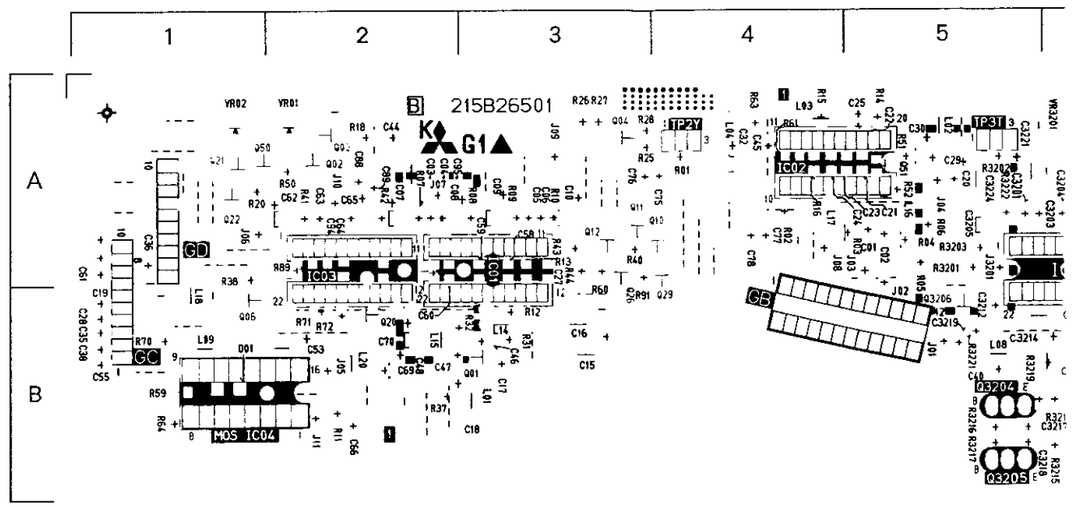


VS-S99EK·EO·EOG
WIRING PCB
CAPSTAN MOTOR
& DRUM MOTOR

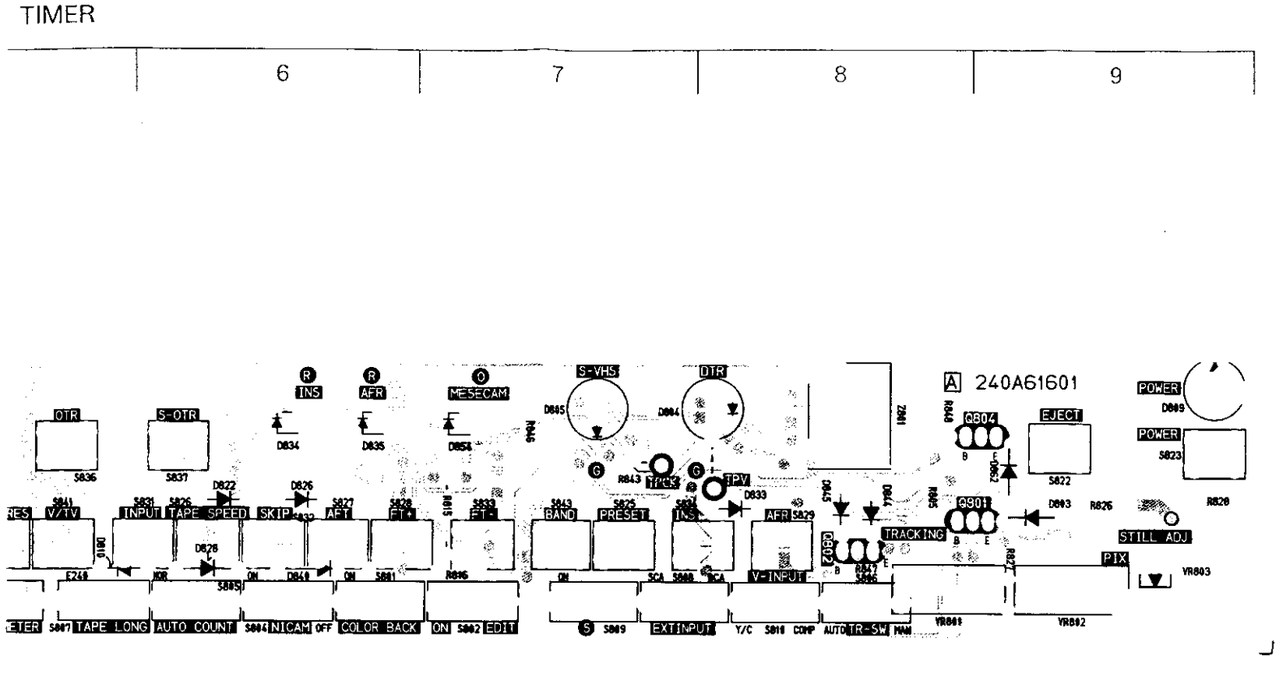
PCB TIMER



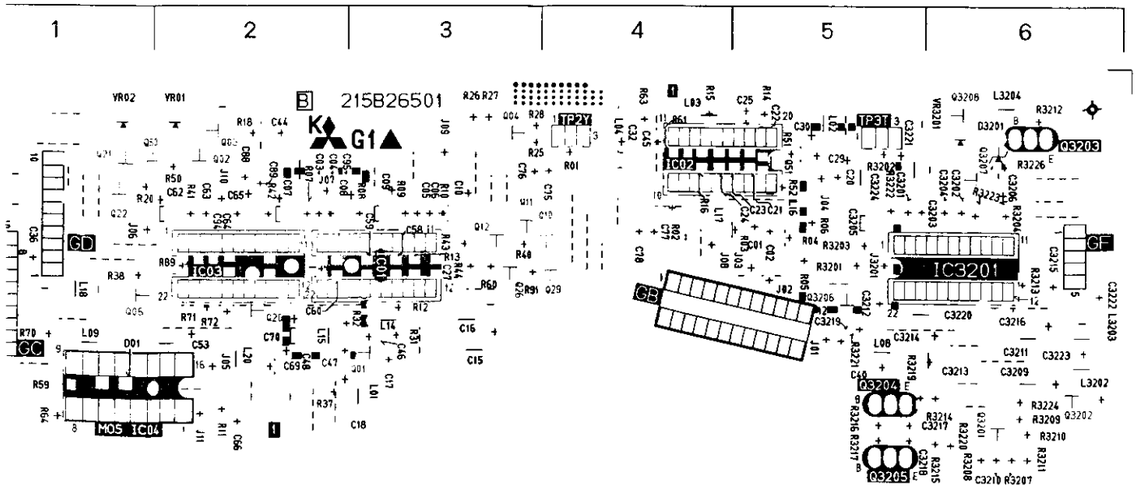
PCB HEAD AMP



TIMER



PCB HEAD AMP



PCB TIMER

SYMBOL NO.	ADDRESS
D802	A-4
D803	C-9
D804	B-7
D805	B-7
D806	A-4
D807	A-4
D808	A-4
D809	B-9
D810	C-5
D811	C-4
D812	C-4
D813	C-4
D814	C-4
D815	C-2
D816	C-2
D817	C-2
D818	C-2
D819	C-4
D820	C-3
D821	C-3
D822	C-6
D823	C-3
D824	C-3
D825	C-3
D826	C-6
D828	C-6
D831	A-3
D832	C-2
D833	C-8
D834	B-6
D835	B-6
D836	C-4
D837	C-4
D838	C-4
D839	C-4
D840	C-6
D841	C-4
D842	C-4
D843	C-4
D844	C-8
D845	C-8
D846	C-4
D850	A-1
D851	C-3
D852	A-2
D853	A-3
D854	B-7
D860	B-3
D861	B-3
D862	B-9

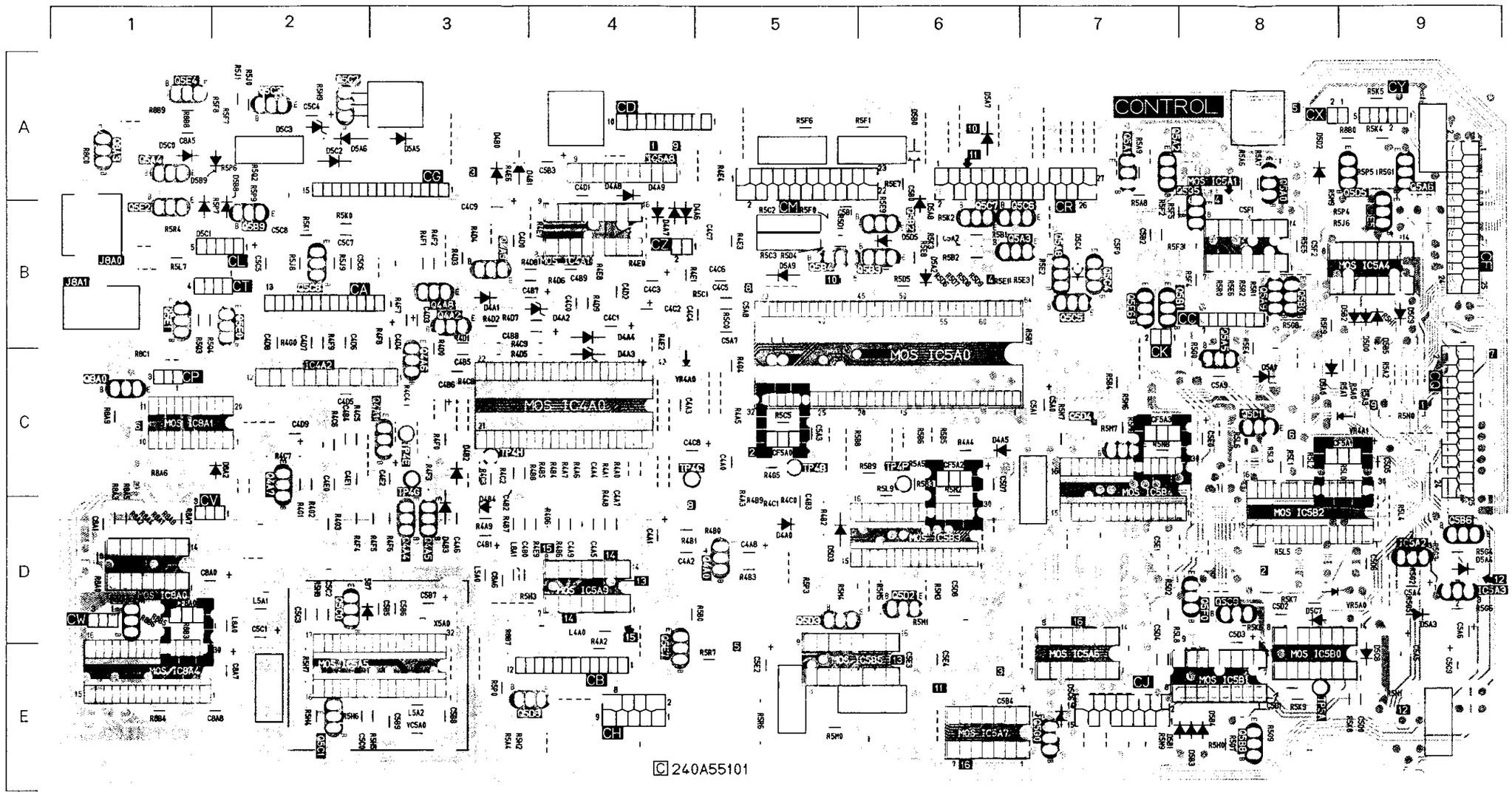
SYMBOL NO.	ADDRESS
IC801	B-3
IC802	B-4
Q801	C-8
Q802	C-8
Q803	A-2
Q804	B-9
TP8A	B-3
TPCK	B-7
TPD1	C-4
TPD2	C-4
TPD3	C-2
TPD0	C-2
TPV	C-8
VC801	A-2
VR801	C-8
VR802	C-9
VR803	C-9
VR804	C-1
VR805	A-1
X801	A-3
X802	B-3

PCB HEAD AMP

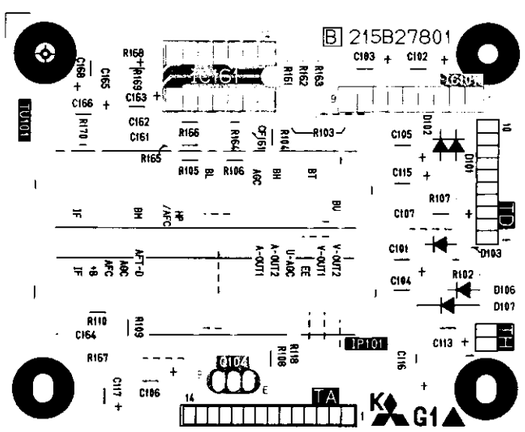
SYMBOL NO.	ADDRESS
D01	B-1
D3201	A-6
IC01	A-3
IC02	A-4
IC03	A-2
IC04	B-1
IC3201	A-5
L01	B-3
L02	A-5
L03	A-4
L04	A-4
L08	B-5
L09	B-1
L14	B-3
L15	B-2
L16	A-5
L17	A-4
L18	B-1
L20	B-2
L3202	B-6
L3204	A-6
Q01	B-3
Q02	A-2
Q03	A-2
Q04	A-3
Q06	B-1
Q10	A-3
Q11	A-3
Q20	B-2
Q12	A-3
Q21	A-1
Q22	A-1
Q26	A-3
Q29	A-4
Q50	A-1
Q51	A-5
Q3201	B-6
Q3202	B-6
Q3203	A-6
Q3204	B-5
Q3205	B-5
Q3206	B-5
Q3207	A-6
Q3208	A-6

SYMBOL NO.	ADDRESS
TP2Y	A-4
TP3T	A-5
VR01	A-2
VR02	A-1
VR3201	A-6

PCB CONTROL

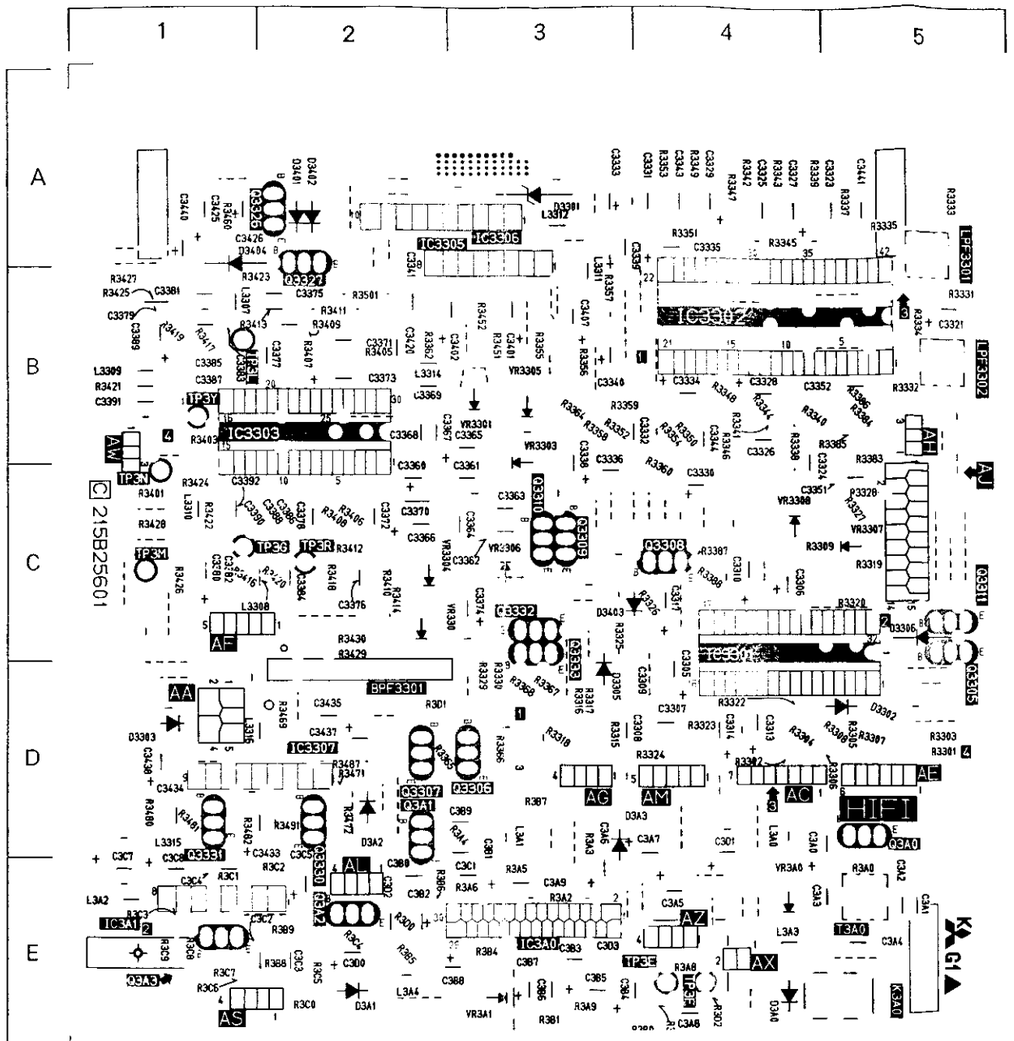


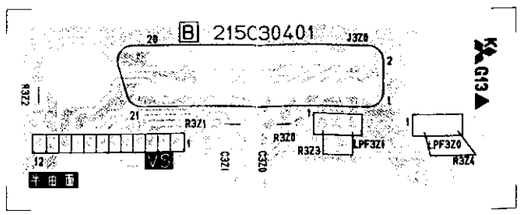
PCB TUNER



PCB CON

SYMBOL NO.	A
CF5A0	
CF5A2	
CF5A3	
CF8A0	
D4A0	
D4A1	
D4A2	
D4A3	
D4A4	
D4A5	
D4A6	
D4A7	
D4A8	
D4A9	
D4B0	
D4B1	
D4B2	
D4B3	
D4B4	
D5A0	
D5A1	
D5A2	
D5A3	
D5A4	
D5A5	
D5A6	
D5A7	
D5A9	
D5B0	
D5B1	
D5B2	
D5B3	
D5B4	
D5B5	
D5B7	
D5B8	
D5B9	
D5C0	
D5C1	
D5C4	
D5C6	
D5C7	
D5C8	
D5C9	
D5D0	
D5D2	
D5D3	
D5D5	
D8A2	





PCB CONTROL

SYMBOL NO.	ADDRESS
CF5A0	C-5
CF5A2	C-6
CF5A3	C-7
CF8A0	D-1
D4A0	D-5
D4A1	B-3
D4A2	B-4
D4A3	C-4
D4A4	B-4
D4A5	C-6
D4A6	B-4
D4A7	B-4
D4A8	A-4
D4A9	A-4
D4B0	A-3
D4B1	A-3
D4B2	C-3
D4B3	D-3
D4B4	D-3
D5A0	C-8
D5A1	C-8
D5A2	B-6
D5A3	D-9
D5A4	D-9
D5A5	A-3
D5A6	A-2
D5A7	A-6
D5A9	B-5
D5B0	A-6
D5B1	E-7
D5B2	B-9
D5B3	E-8
D5B4	E-8
D5B5	B-9
D5B7	D-2
D5B8	A-2
D5B9	A-1
D5C0	A-1
D5C1	B-1
D5C4	B-7
D5C6	E-7
D5C7	D-8
D5C8	E-9
D5C9	B-9
D5D0	B-9
D5D2	A-8
D5D3	D-5
D5D5	B-6
D8A2	C-2

SYMBOL NO.	ADDRESS
IC4A0	C-4
IC4A1	B-4
IC4A2	C-2
IC5A0	C-6
IC5A1	B-8
IC5A2	D-9
IC5A3	D-9
IC5A4	B-9
IC5A5	E-2
IC5A6	E-7
IC5A7	E-6
IC5A8	A-4
IC5A9	D-4
IC5B0	E-8
IC5B1	E-8
IC5B2	D-8
IC5B3	D-6
IC5B4	C-7
IC5B5	E-5
IC8A0	D-1
IC8A1	C-1
IC8A4	E-1
L4A0	D-4
L5A0	D-3
L5A1	D-2
L5A2	E-3
L8A0	D-2
L8A1	D-3
Q4A0	D-5
Q4A1	C-3
Q4A2	B-3
Q4A3	B-3
Q4A4	D-3
Q4A5	D-3
Q4A6	C-3
Q4A7	C-2
Q4A8	B-3
Q5A0	A-8
Q5A1	A-7
Q5A2	A-7
Q5A3	B-6
Q5A4	A-1
Q5A6	A-9
Q5A8	B-7
Q5A9	B-8
Q5B0	B-8
Q5B1	B-7
Q5B2	B-6
Q5B3	B-6

SYMBOL NO.	ADDRESS
Q5B4	B-5
Q5B5	B-8
Q5B6	D-9
Q5B8	E-8
Q5B9	B-2
Q5C0	D-2
Q5C1	E-2
Q5C2	A-2
Q5C3	A-2
Q5C4	B-7
Q5C5	B-7
Q5C6	B-6
Q5C7	B-6
Q5C8	B-2
Q5C9	D-8
Q5D1	C-8
Q5D2	D-6
Q5D3	D-5
Q5D4	C-7
Q5D5	C-8
Q5D6	A-9
Q5D8	E-3
Q5E0	B-2
Q5E1	B-1
Q5E2	B-1
Q5E4	A-1
Q5E5	B-9
Q5E6	B-7
Q5E7	E-4
Q5F0	D-8
Q5G0	E-7
Q8A0	C-1
Q8A2	D-1
Q8A3	A-1
VR4A0	C-4
VR4A1	C-8
VR5A0	D-8
VC5A0	E-3
TP4B	C-5
TP4C	C-4
TP4E	C-3
TP4F	C-6
TP4G	C-3
TP4H	C-3
TP5A	E-8
X5A0	D-3

PCB Hi−Fi

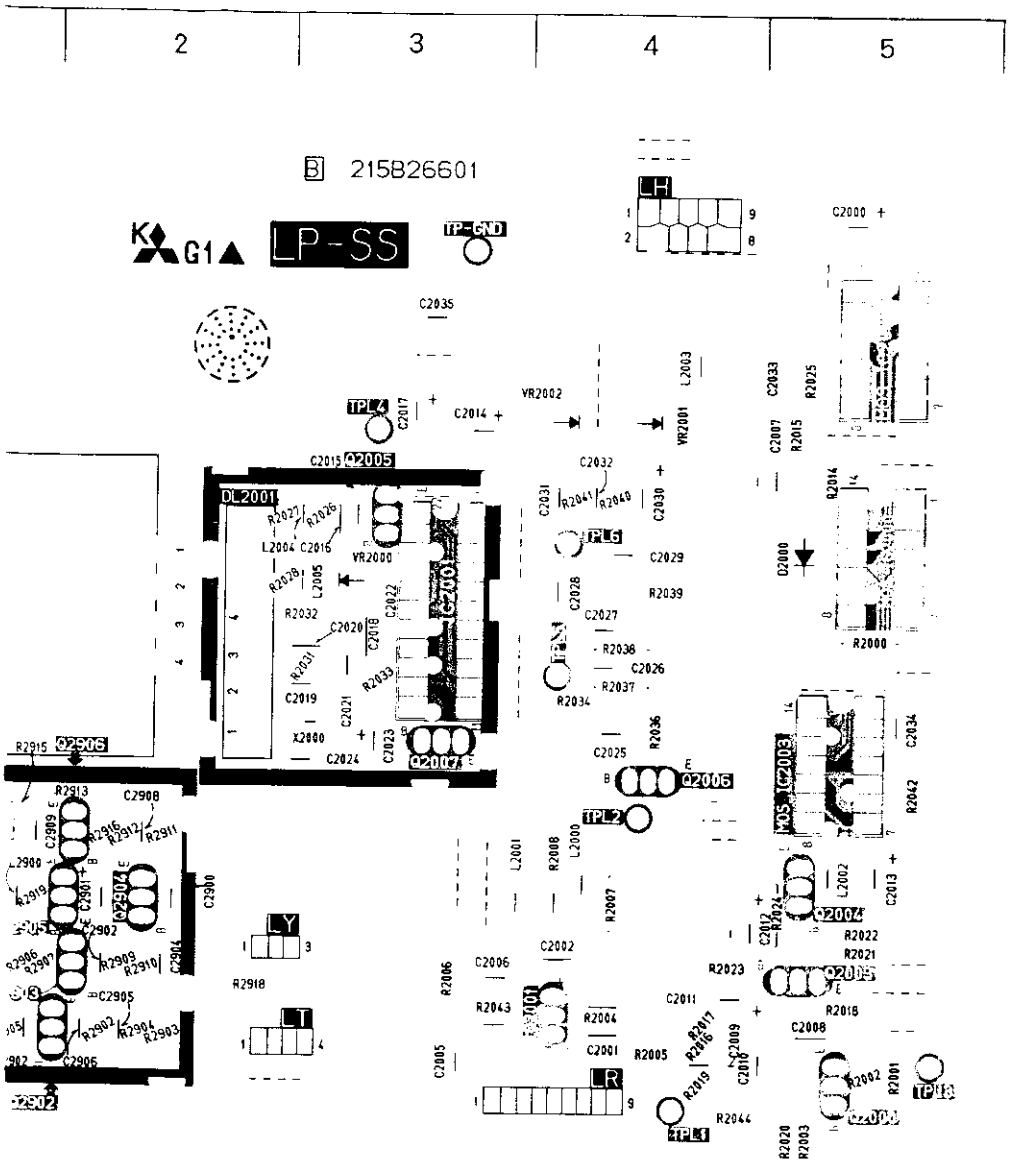
PCB CONNECTOR

PCB Hi − Fi

SYMBOL NO.	ADDRESS
BPF3301	D-2
D3301	A-3
D3302	D-5
D3303	D-1
D3305	D-3
D3306	C-5
D3401	A-2
D3402	A-2
D3403	C-3
D3404	A-1
D3A0	E-4
D3A1	E-2
D3A2	D-2
D3A3	D-3
IC3301	C-4
IC3302	B-4
IC3303	B-2
IC3305	A-3
IC3306	A-3
IC3307	D-2
IC3A0	E-3
IC3A1	E-1
L3307	B-1
L3308	C-1
L3309	B-1
L3310	C-1
L3311	B-3
L3312	A-3
L3314	B-2
L3315	D-1
L3316	D-1
L3A0	D-4
L3A1	D-3
L3A2	E-1
L3A3	E-4
L3A4	E-2
LPF3301	B-5
LPF3302	B-5
Q3305	D-5
Q3306	D-3
Q3307	D-2
Q3308	C-4
Q3309	C-3

SYMBOL NO.	ADDRESS
Q3310	C-3
Q3311	C-5
Q3326	A-2
Q3327	B-2
Q3330	D-2
Q3331	D-1
Q3332	C-3
Q3333	C-3
Q3A0	D-5
Q3A1	D-2
Q3A2	E-2
Q3A3	E-1
T3A0	E-5
TP3E	E-4
TP3F	E-4
TP3G	C-1
TP3L	B-1
TP3M	C-1
TP3N	C-1
TP3R	C-2
TP3Y	B-1
VR3301	B-3
VR3302	C-2
VR3303	B-3
VR3304	C-2
VR3305	B-3
VR3306	C-3
VR3307	C-5
VR3308	C-4
VR3A0	E-4
VR3A1	E-3

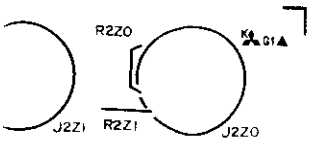
PCB LP－SS



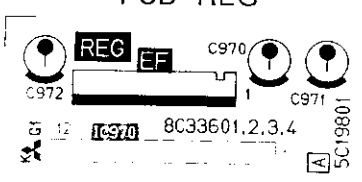
PCB LP－SS

SYMBOL NO.	ADDRESS
D2000	C-5
DL2000	B-1
DL2001	B-2
IC2001	C-3
L2000	D-4
L2001	D-3
L2002	D-5
L2003	B-4
L2004	B-3
L2005	C-3
L2900	D-1
L2901	D-1
L2902	E-1
L2903	D-1
Q2000	E-5
Q2001	E-4
Q2003	D-5
Q2004	D-5
Q2005	B-3
Q2006	D-4
Q2007	C-3
Q2900	D-1
Q2901	D-1
Q2902	E-1
Q2903	D-1
Q2904	D-2
Q2905	D-1
Q2906	C-2
Q2907	C-1
TP-GND	A-3
TPL1	E-4
TPL2	D-4
TPL3	E-5
TPL4	B-3
TPL5	C-4
TPL6	B-4
VR2000	C-3
VR2001	B-4
VR2002	B-4
X2000	C-3

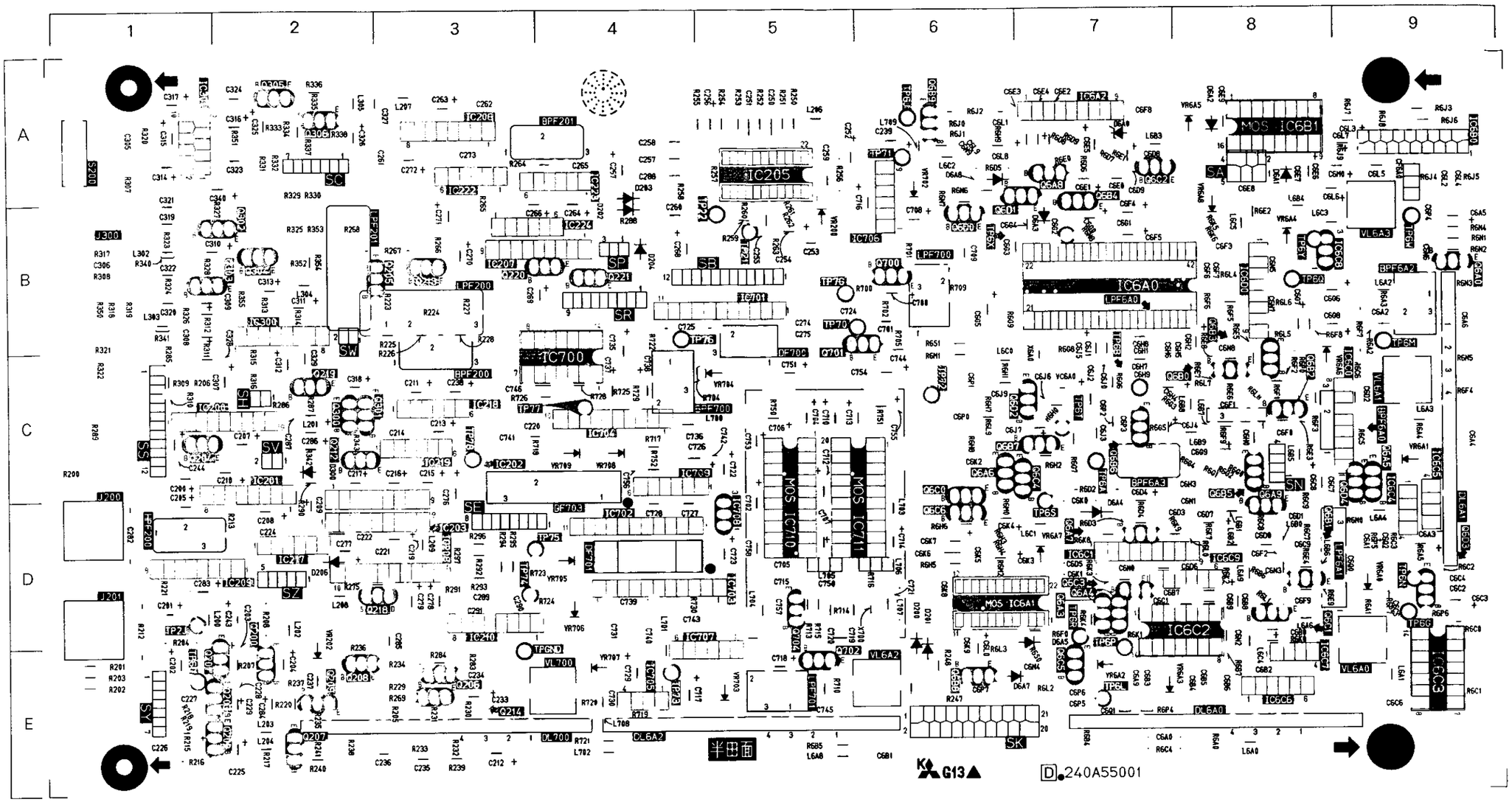
PCB JACK



PCB REG



PCB INT

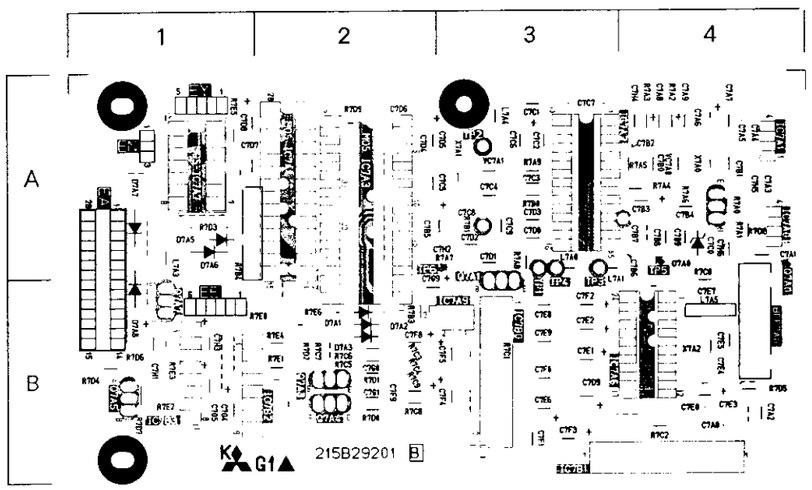


PCB INT

SYMBOL NO.	ADDRESS
BPF200	C-3
BPF201	A-4
BPF6A0	C-9
BPF6A2	B-9
BPF6A3	C-7
BPF700	C-5
CF6A0	A-9
D200	D-6
D201	D-6
D202	B-4
D203	A-4
D204	B-4
D206	D-2
D300	C-2
D6A0	A-7
D6A1	A-8
D6A2	A-8
D6A3	B-7
D6A4	D-7
D6A5	D-7
D6A7	E-7
D6A8	A-6
DF700	C-5
DF701	D-4
DF703	D-4
DL6A0	E-8
DL6A1	D-9
DL6A2	E-4
DL700	E-4
IC200	C-1
IC201	C-2
IC202	C-3
IC203	D-3
IC205	A-5
IC206	A-3
IC207	B-3
IC208	D-3
IC209	D-2
IC210	D-3
IC217	D-2
IC218	C-3
IC219	C-3
IC222	A-3

SYMBOL NO.	A
IC223	
IC224	
IC300	
IC301	
IC6A0	
IC6A1	
IC6A2	
IC6B0	
IC6B1	
IC6C0	
IC6C1	
IC6C2	
IC6C3	
IC6C4	
IC6C5	
IC6C6	
IC6C7	
IC6C8	
IC6C9	
IC6D0	
IC700	
IC701	
IC702	
IC703	
IC704	
IC705	
IC706	
IC707	
IC708	
IC709	
IC710	
IC711	
L200	
L201	
L202	
L203	
L204	
L206	
L207	
L208	
L209	
L302	
L303	
L304	
L305	
L6A0	
L6A1	
L6A2	
L6A3	
L6A4	
L6A6	

PCB NICAM



PCB NICAM

SYMBOL NO.	ADDRESS
BPF7A0	B-4
D7A0	A-4
D7A1	B-2
D7A2	B-2
D7A3	B-2
D7A5	A-1
D7A6	A-1
D7A7	A-1
D7A8	B-1

SYMBOL NO.	ADDRESS
IC7A0	A-4
IC7A1	A-4
IC7A2	A-3
IC7A3	A-2
IC7A4	A-2
IC7A6	B-4
IC7A7	A-1
IC7A9	B-3
IC7B0	B-3
IC7B1	B-4
IC7B2	B-1
IC7B3	B-1

SYMBOL NO.	ADDRESS
L7A0	A-3
L7A1	B-4
L7A3	A-1
L7A4	A-3
Q7A0	A-4
Q7A1	B-3
Q7A3	B-2
Q7A4	B-2
Q7A5	B-1
Q7A7	B-1

SYMBOL NO.	ADDRESS
VC7A0	A-4
VC7A1	A-3
X7A0	A-4
X7A1	A-3
X7A2	B-4
TP1	A-3
TP2	A-3
TP3	A-3

SYMBOL NO.	ADDRESS
TP4	A-3
TP5	A-4
TP6	A-3

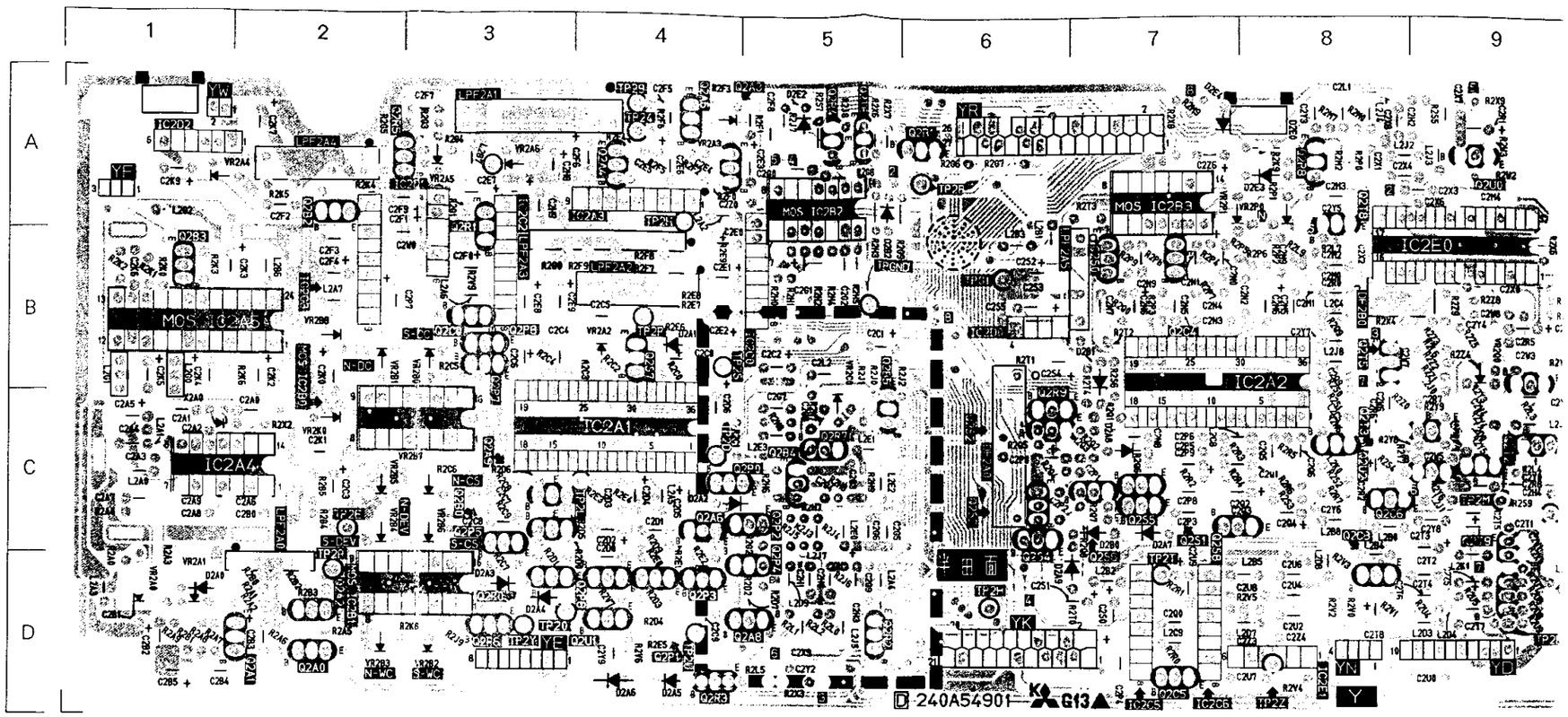
SYMBOL NO.	ADDRESS
IC223	A-4
IC224	B-4
IC300	B-2
IC301	A-1
IC6A0	B-7
IC6A1	D-7
IC6A2	A-7
IC6B0	A-9
IC6B1	A-8
IC6C0	C-9
IC6C1	D-7
IC6C2	D-8
IC6C3	E-9
IC6C4	D-9
IC6C5	C-9
IC6C6	E-8
IC6C7	E-8
IC6C8	B-8
IC6C9	D-8
IC6D0	B-8
IC700	C-4
IC701	B-5
IC702	D-4
IC703	D-5
IC704	C-4
IC705	E-4
IC706	B-6
IC707	D-5
IC708	D-5
IC709	C-5
IC710	D-5
IC711	D-5
L200	D-2
L201	C-2
L202	D-2
L203	E-2
L204	E-2
L206	A-5
L207	A-3
L208	D-2
L209	D-3
L302	B-1
L303	B-1
L304	B-2
L305	A-2
L6A0	E-8
L6A1	E-9
L6A2	B-9
L6A3	C-9
L6A4	D-9
L6A6	D-8

SYMBOL NO.	ADDRESS
L6A8	E-5
L6A9	D-8
L6B0	D-8
L6B1	D-8
L6B2	D-8
L6B3	A-7
L6B4	B-8
L6B5	C-8
L6B6	D-8
L6B7	C-8
L6B8	C-8
L6B9	C-8
L6C0	C-6
L6C1	D-7
L6C2	A-6
L6C3	B-8
L6C4	E-8
L6C5	B-8
L700	C-5
L701	D-4
L702	E-4
L703	D-6
L704	D-5
L705	D-5
L706	D-6
L707	D-6
L708	E-4
L709	A-6
LPF200	B-3
LPF201	B-3
LPF6A0	B-7
LPF6A1	D-8
LPF700	B-6
LPF701	E-5
Q200	D-2
Q201	E-1
Q202	E-2
Q203	E-2
Q204	C-1
Q205	B-3
Q206	E-3
Q207	E-2
Q208	E-2
Q209	E-2
Q212	C-2
Q213	B-3
Q214	E-3
Q218	D-3
Q219	C-2

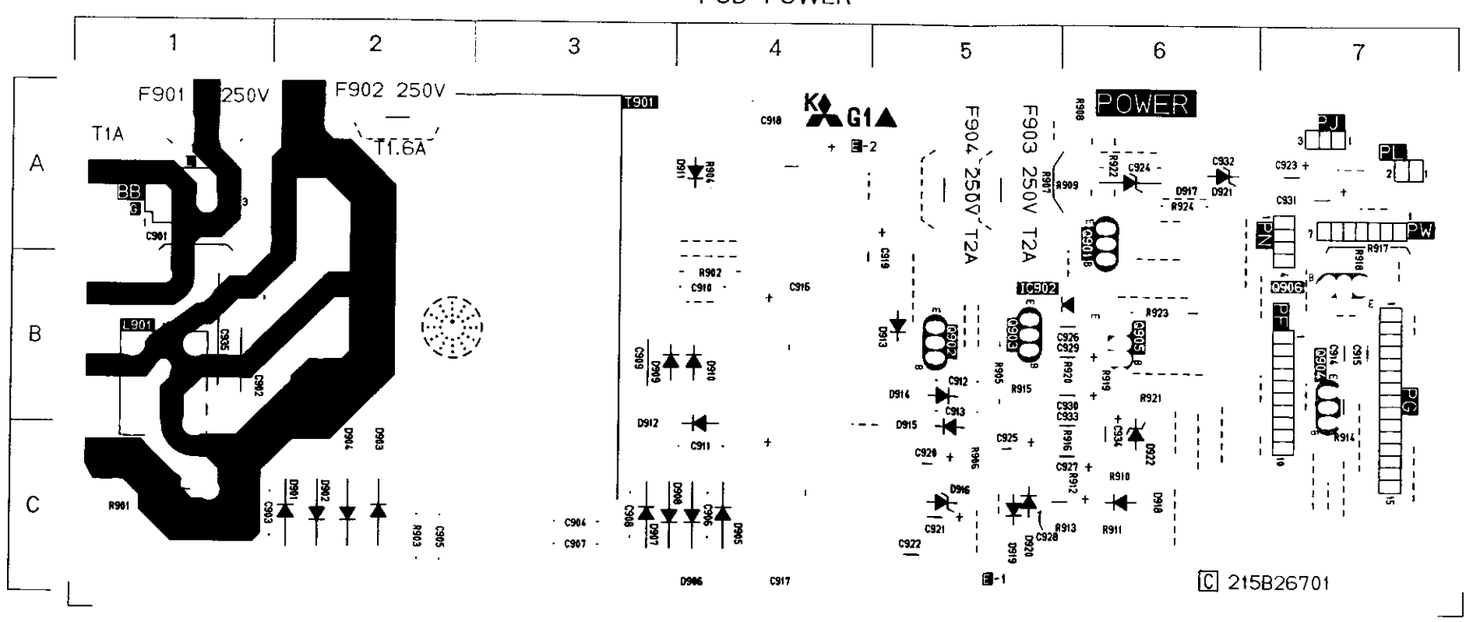
SYMBOL NO.	ADDRESS
Q220	B-3
Q221	B-4
Q300	C-2
Q301	C-3
Q302	B-2
Q303	B-2
Q304	B-2
Q305	A-2
Q306	A-2
Q6A0	B-9
Q6A3	D-7
Q6A4	D-7
Q6A5	C-9
Q6A6	C-6
Q6A7	D-7
Q6A8	A-7
Q6A9	D-8
Q6B0	C-8
Q6B1	D-8
Q6B2	C-8
Q6B3	B-8
Q6B4	A-7
Q6B5	D-8
Q6B6	C-7
Q6B7	C-6
Q6B8	E-6
Q6B9	A-6
Q6C0	C-6
Q6C1	D-8
Q6C2	A-7
Q6C3	D-7
Q6C4	C-7
Q6C5	E-7
Q6C6	D-6
Q6D0	B-6
Q6D1	B-6
Q6D2	C-6
Q6D3	D-9
Q6D4	C-9
Q700	B-6
Q701	C-5
Q702	E-5
Q704	D-5
TP21	B-5
TP22	B-5
TP2J	D-1
TP6A	C-7
TP6B	C-7
TP6C	E-1
TP6G	D-9
TP6J	A-6

SYMBOL NO.	ADDRESS
TP6L	E-7
TP6M	B-9
TP6N	D-9
TP6P	D-7
TP6Q	B-8
TP6R	D-7
TP6S	D-7
TP6T	C-7
TP6W	B-9
TP6X	B-6
TP6Y	B-8
TP70	B-5
TP71	A-6
TP72	C-6
TP73	E-4
TP74	D-3
TP75	D-4
TP76	B-5
TP77	C-4
TP78	C-3
TP7G	B-5
TPGND	E-4
VC6A0	C-7
VR200	B-5
VR202	D-2
VR6A0	D-9
VR6A1	C-9
VR6A2	E-7
VR6A3	E-7
VR6A4	B-8
VR6A5	A-8
VR6A6	C-8
VR6A7	D-7
VR6A8	B-8
VR702	A-6
VR703	E-5
VR704	C-5
VR705	D-4
VR706	D-4
VR707	E-4
VR708	C-4
VR709	C-4
X6A0	C-7
X700	D-6

PCB Y-SIGNAL



PCB POWER



PCB Y – SIGNAL

SYMBOL NO.	ADDRESS
D2A0	D-1
D2A1	B-4
D2A2	C-4
D2A3	D-3
D2A4	D-3
D2A5	D-4
D2A6	D-4
D2A7	C-7
D2A8	C-7
D2A9	D-6
D2B0	C-7
D2B1	B-7
D2B2	B-5
D2E0	A-8
D2E2	A-5
D2E3	A-8
D2E4	A-7
DF2A0	C-6
DF2B0	B-8
IC2A1	C-4
IC2A2	B-8
IC2A3	A-4
IC2A4	C-1
IC2A5	B-1
IC2B0	C-2
IC2B1	D-2
IC2B2	A-5
IC2B3	A-7
IC2C0	B-5
IC2C2	B-3
IC2C3	B-2
IC2C5	D-7
IC2C6	D-7
IC2D0	B-6
IC2D1	A-3
IC2D2	A-1
IC2E0	B-9
IC2E1	D-8
L2A0	C-1
L2A1	C-1
L2A2	A-4
L2A3	D-1
L2A4	D-5
L2A5	C-4
L2A6	B-3
L2A7	B-2
L2B0	C-8

SYMBOL NO.	ADDRESS
L2B1	B-6
L2B2	D-7
L2B3	B-6
L2B4	C-8
L2B5	D-8
L2B6	B-2
L2B7	A-3
L2B8	C-8
L2C4	B-8
L2C5	C-8
L2C8	C-7
L2C9	D-7
L2D0	C-9
L2D3	D-9
L2D4	D-9
L2D7	D-8
L2D8	D-8
L2D9	D-5
L2E0	C-5
L2E1	C-5
L2E2	C-5
L2E3	C-5
L2G0	B-1
L2G1	B-1
L2G2	A-1
L2H5	D-9
L2J0	B-9
L2J1	C-9
L2J2	A-8
L2J3	A-9
L2J4	A-8
L2J5	D-5
L2J6	C-9
L2J7	D-5
L2J8	B-8
L2K0	C-8
L2K1	D-9
LPF2A0	C-2
LPF2A1	A-3
LPF2A2	B-4
LPF2A3	B-3
LPF2A4	A-2
LPF2A5	B-6
Q2A0	D-2
Q2A1	D-2
Q2A2	D-2
Q2A3	A-5
Q2A4	A-4
Q2A5	A-4

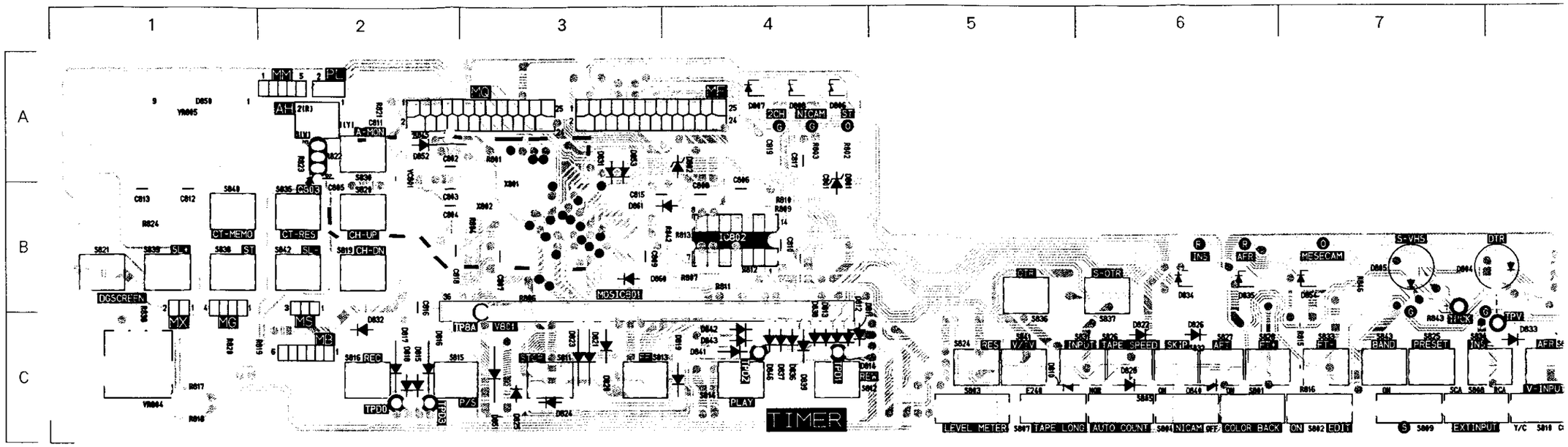
SYMBOL NO.	ADDRESS
Q2A6	C-4
Q2A8	D-5
Q2A9	C-3
Q2B0	C-3
Q2B1	A-6
Q2B2	A-2
Q2B3	B-1
Q2B4	C-5
Q2B5	B-5
Q2C0	B-3
Q2C4	B-7
Q2C5	D-7
Q2C6	C-8
Q2C8	C-8
Q2C9	D-9
Q2P0	C-5
Q2P1	D-4
Q2P2	C-5
Q2P3	D-4
Q2P4	D-5
Q2P5	C-3
Q2P6	D-3
Q2P7	B-3
Q2P8	B-3
Q2R0	D-3
Q2R1	A-3
Q2R2	D-5
Q2R3	D-4
Q2R4	A-5
Q2R5	A-2
Q2R6	D-3
Q2R7	C-5
Q2R8	A-8
Q2R9	C-6
Q2S0	B-7
Q2S1	C-7
Q2S2	C-6
Q2S3	C-6
Q2S4	D-6
Q2S5	C-7
Q2S6	C-7
Q2S7	B-4
Q2S8	C-7
Q2T1	B-9
Q2T2	C-9
Q2T3	C-8
Q2T4	C-9
Q2T5	B-8
Q2T6	A-5
Q2T7	C-9
Q2T8	A-8
Q2T9	C-9
Q2U0	A-9

SYMBOL NO.	ADDRESS
Q2U1	D-4
Q2U2	C-8
TP20	D-3
TP24	A-4
TP29	A-4
TP2A	C-9
TP2B	A-6
TP2D	C-4
TP2E	C-2
TP2H	D-6
TP2H	A-4
TP2L	C-4
TP2M	C-9
TP2N	D-9
TP2P	B-4
TP2R	D-2
TP2S	B-4
TP2T	D-7
TP2U	D-4
TP2Y	D-3
TP2Z	D-8
TPG1	B-6
TPGND	B-5
VR2A0	D-1
VR2A1	D-1
VR2A2	B-4
VR2A3	A-4
VR2A4	A-1
VR2A5	A-3
VR2A6	A-3
VR2B0	B-3
VR2B1	B-2
VR2B2	D-3
VR2B3	D-2
VR2B4	C-2
VR2B5	C-2
VR2B6	C-3
VR2B7	C-3
VR2B8	B-2
VR2C0	B-5
VR2K0	C-2
VR2P0	A-8
VR2P1	A-7
VR2Q0	B-9
X2A0	C-1

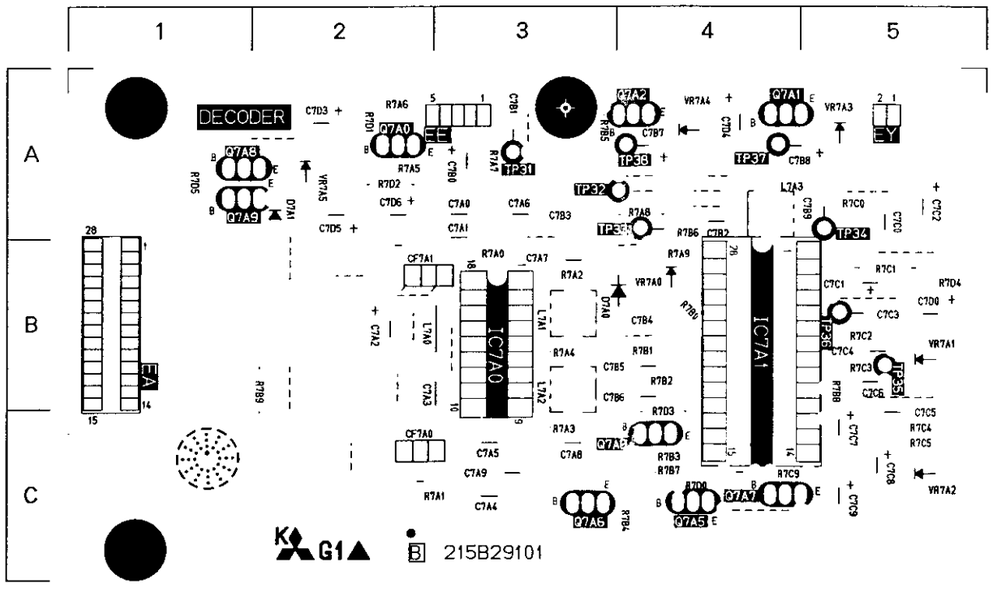
PCB POWER

SYMBOL NO.	ADDRESS
D901	C-2
D902	C-2
D903	C-2
D904	C-2
D905	C-4
D906	C-4
D907	C-3
D908	C-4
D909	B-3
D910	B-4
D911	A-4
D912	C-4
D913	B-5
D914	B-5
D915	C-5
D916	C-5
D917	A-6
D918	C-6
D919	C-5
D920	C-5
D921	A-6
D922	C-6
IC902	B-6
L901	B-1
Q901	A-6
Q902	B-5
Q903	B-5
Q904	B-7
Q905	B-6
Q906	B-7

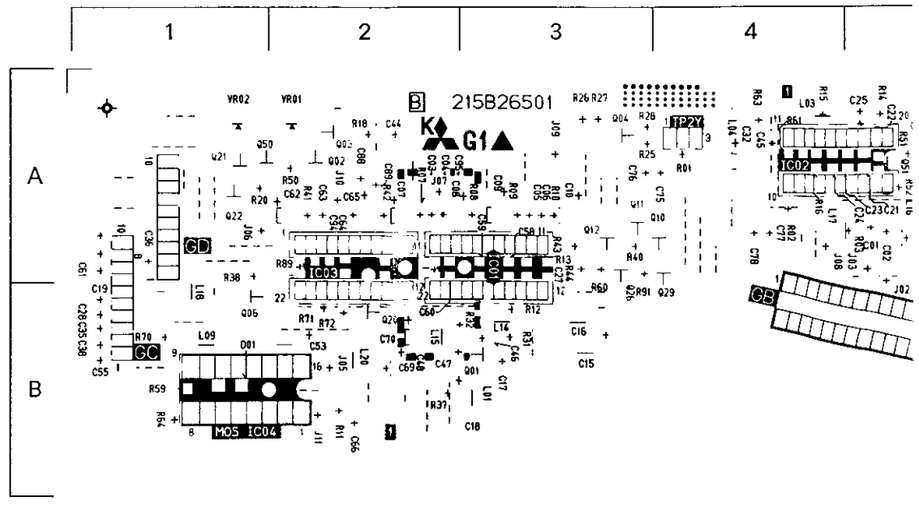
PCB TIMER



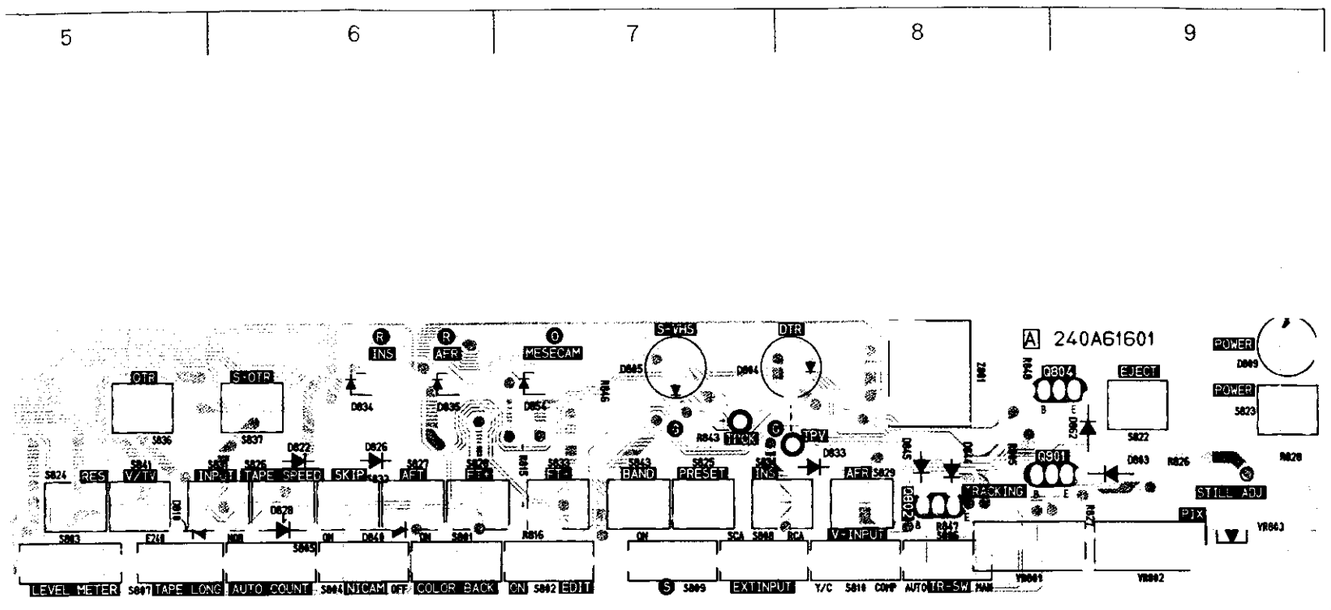
PCB DECODER



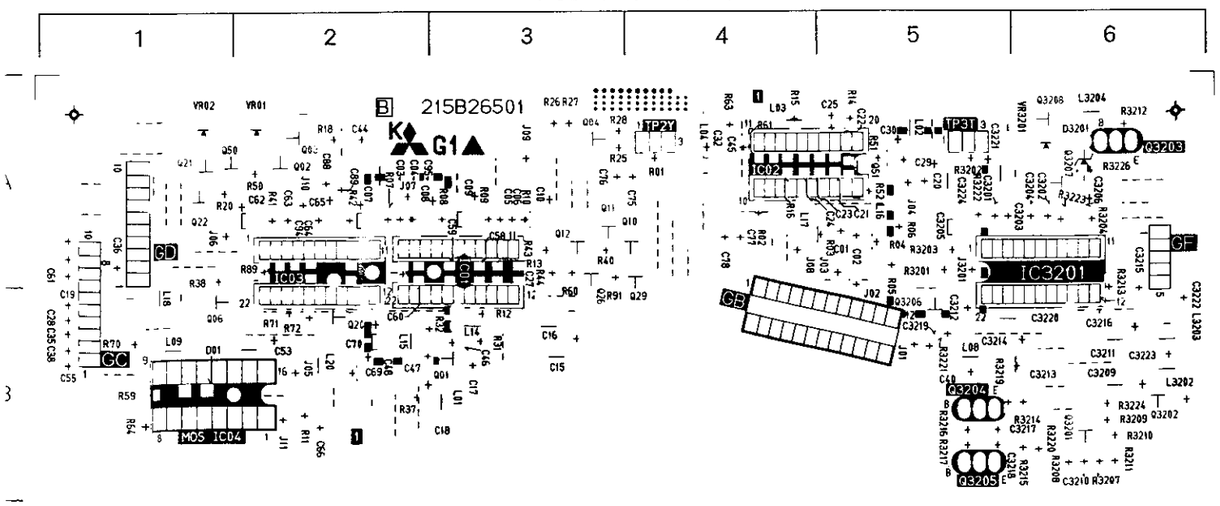
PCB HEAD AMP



PCB TIMER



PCB HEAD AMP



PCB DECODER

SYMBOL NO.	ADDRESS
CF7A0	C-2
CF7A1	B-2
D7A0	B-3
D7A1	A-2
IC7A0	B-3
IC7A1	B-4
L7A0	B-2
L7A1	B-3
L7A2	B-3
L7A3	A-4
Q7A0	A-2
Q7A1	A-4
Q7A2	A-4
Q7A3	C-4
Q7A5	C-4
Q7A6	C-3
Q7A7	C-4
Q7A8	A-1
Q7A9	A-1
TP31	A-3
TP32	A-3
TP33	A-4
TP34	A-5
TP35	B-5
TP36	B-5
TP37	A-4
TP38	A-4
VR7A0	B-4
VR7A1	B-5
VR7A2	C-5
VR7A3	A-5
VR7A4	A-4
VR7A5	A-2

PCB TIMER

SYMBOL NO.	ADDRESS
D802	A-4
D803	C-9
D804	B-7
D805	B-7
D806	A-4
D807	A-4
D808	A-4
D809	B-9
D810	C-5
D811	C-4
D812	C-4
D813	C-4
D814	C-4
D815	C-2
D816	C-2
D817	C-2
D818	C-2
D819	C-4
D820	C-3
D821	C-3
D822	C-6
D823	C-3
D824	C-3
D825	C-3
D826	C-6
D828	C-6
D831	A-3
D832	C-2
D833	C-8
D834	B-6
D835	B-6
D836	C-4
D837	C-4
D838	C-4
D839	C-4
D840	C-6
D841	C-4
D842	C-4
D843	C-4
D844	C-8
D845	C-8
D846	C-4
D850	A-1
D851	C-3
D852	A-2
D853	A-3
D854	B-7
D860	B-3
D861	B-3
D862	B-9

SYMBOL NO.	ADDRESS
IC801	B-3
IC802	B-4
Q801	C-8
Q802	C-8
Q803	A-2
Q804	B-9
TP8A	B-3
TPCK	B-7
TPD1	C-4
TPD2	C-4
TPD3	C-2
TPD0	C-2
TPV	C-8
VC801	A-2
VR801	C-8
VR802	C-9
VR803	C-9
VR804	C-1
VR805	A-1
X801	A-3
X802	B-3

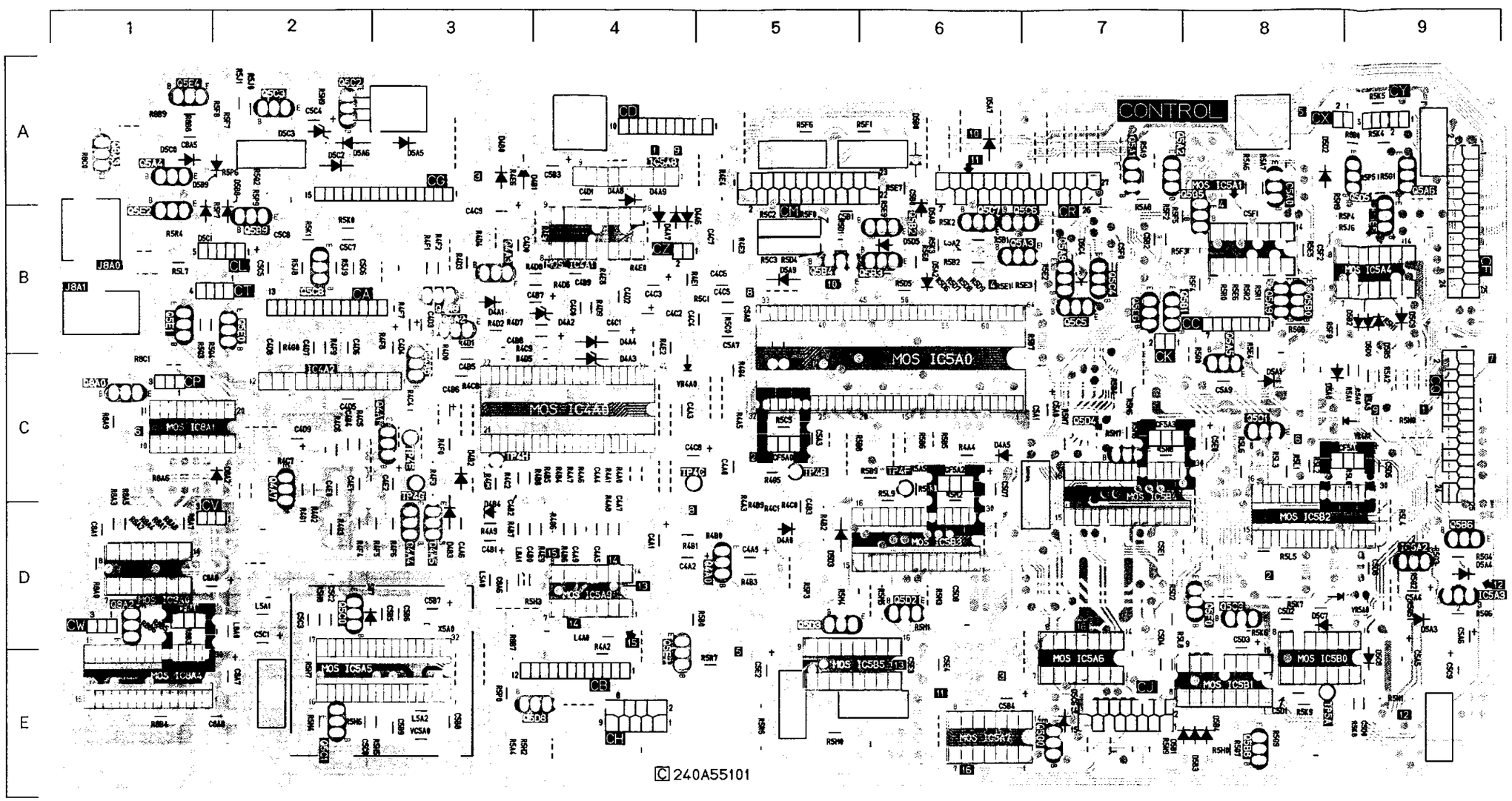
PCB HEAD AMP

SYMBOL NO.	ADDRESS
D01	B-1
D3201	A-6
IC01	A-3
IC02	A-4
IC03	A-2
IC04	B-1
IC3201	A-5
L01	B-3
L02	A-5
L03	A-4
L04	A-4
L08	B-5
L09	B-1
L14	B-3
L15	B-2
L16	A-5
L17	A-4
L18	B-1
L20	B-2
L3202	B-6
L3204	A-6
Q01	B-3
Q02	A-2
Q03	A-2
Q04	A-3
Q06	B-1
Q10	A-3
Q11	A-3
Q20	B-2
Q12	A-3
Q21	A-1
Q22	A-1
Q26	A-3
Q29	A-4
Q50	A-1
Q51	A-5
Q3201	B-6
Q3202	B-6
Q3203	A-6
Q3204	B-5
Q3205	B-5
Q3206	B-5
Q3207	A-6
Q3208	A-6

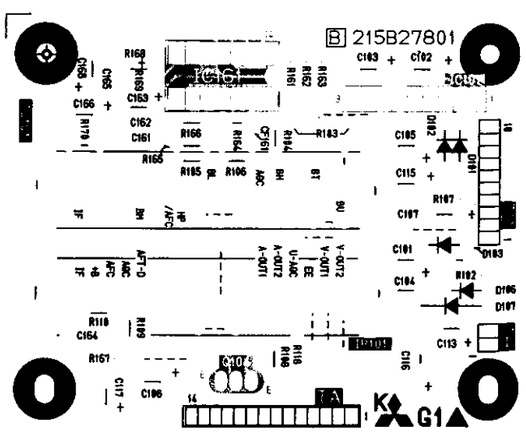
SYMBOL NO.	ADDRESS
TP2Y	A-4
TP3T	A-5
VR01	A-2
VR02	A-1
VR3201	A-6

VS-S99EO·EOG

PCB CONTROL



PCB TUNER



SYMBOL NO.	ADDRESS
CF5A0	C-5
CF5A2	C-6
CF5A3	C-7
CF8A0	D-1
D4A0	D-5
D4A1	B-3
D4A2	B-4
D4A3	C-4
D4A4	B-4
D4A5	C-6
D4A6	B-4
D4A7	B-4
D4A8	A-4
D4A9	A-4
D4B0	A-3
D4B1	A-3
D4B2	C-3
D4B3	D-3
D4B4	D-3
D5A0	C-8
D5A1	C-8
D5A2	B-6
D5A3	D-9
D5A4	D-9
D5A5	A-3
D5A6	A-2
D5A7	A-6
D5A9	B-5
D5B0	A-6
D5B1	E-7
D5B2	B-9
D5B3	E-8
D5B4	E-8
D5B5	B-9
D5B7	D-2
D5B8	A-2
D5B9	A-1
D5C0	A-1
D5C1	B-1
D5C4	B-7
D5C6	E-7
D5C7	D-8
D5C8	E-9
D5C9	B-9
D5D0	B-9
D5D2	A-8
D5D3	D-5
D5D5	B-6
D8A2	C-2

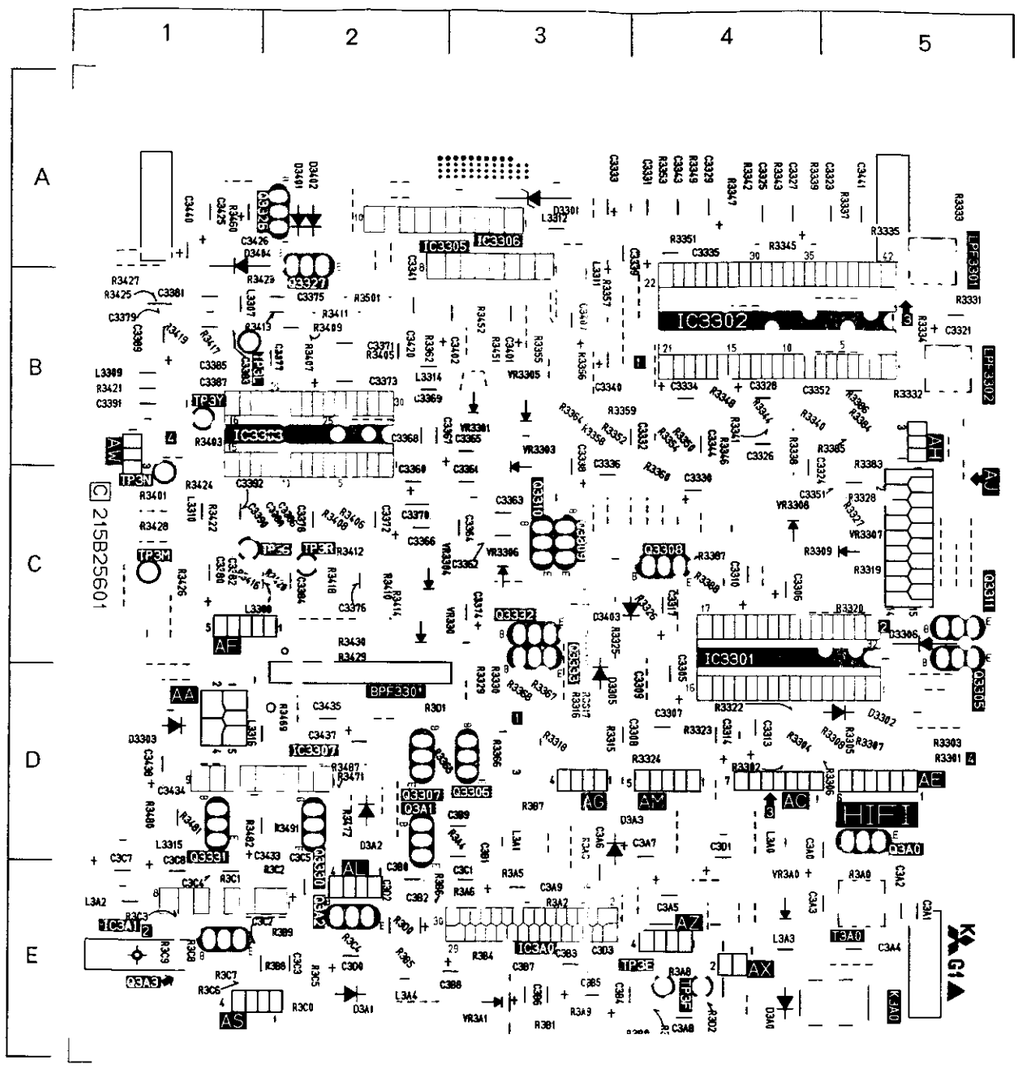
PCB CONTROL

SYMBOL NO.	ADDRESS
CF5A0	C-5
CF5A2	C-6
CF5A3	C-7
CF8A0	D-1
D4A0	D-5
D4A1	B-3
D4A2	B-4
D4A3	C-4
D4A4	B-4
D4A5	C-6
D4A6	B-4
D4A7	B-4
D4A8	A-4
D4A9	A-4
D4B0	A-3
D4B1	A-3
D4B2	C-3
D4B3	D-3
D4B4	D-3
D5A0	C-8
D5A1	C-8
D5A2	B-6
D5A3	D-9
D5A4	D-9
D5A5	A-3
D5A6	A-2
D5A7	A-6
D5A9	B-5
D5B0	A-6
D5B1	E-7
D5B2	B-9
D5B3	E-8
D5B4	E-8
D5B5	B-9
D5B7	D-2
D5B8	A-2
D5B9	A-1
D5C0	A-1
D5C1	B-1
D5C4	B-7
D5C6	E-7
D5C7	D-8
D5C8	E-9
D5C9	B-9
D5D0	B-9
D5D2	A-8
D5D3	D-5
D5D5	B-6
D8A2	C-2

SYMBOL NO.	ADDRESS
IC4A0	C-4
IC4A1	B-4
IC4A2	C-2
IC5A0	C-6
IC5A1	B-8
IC5A2	D-9
IC5A3	D-9
IC5A4	B-9
IC5A5	E-2
IC5A6	E-7
IC5A7	E-6
IC5A8	A-4
IC5A9	D-4
IC5B0	E-8
IC5B1	E-8
IC5B2	D-8
IC5B3	D-6
IC5B4	C-7
IC5B5	E-5
IC8A0	D-1
IC8A1	C-1
IC8A4	E-1
L4A0	D-4
L5A0	D-3
L5A1	D-2
L5A2	E-3
L8A0	D-2
L8A1	D-3
Q4A0	D-5
Q4A1	C-3
Q4A2	B-3
Q4A3	B-3
Q4A4	D-3
Q4A5	D-3
Q4A6	C-3
Q4A7	C-2
Q4A8	B-3
Q5A0	A-8
Q5A1	A-7
Q5A2	A-7
Q5A3	B-6
Q5A4	A-1
Q5A6	A-9
Q5A8	B-7
Q5A9	B-8
Q5B0	B-8
Q5B1	B-7
Q5B2	B-6
Q5B3	B-6

SYMBOL NO.	ADDRESS
Q5B4	B-5
Q5B5	B-8
Q5B6	D-9
Q5B8	E-8
Q5B9	B-2
Q5C0	D-2
Q5C1	E-2
Q5C2	A-2
Q5C3	A-2
Q5C4	B-7
Q5C5	B-7
Q5C6	B-6
Q5C7	B-6
Q5C8	B-2
Q5C9	D-8
Q5D1	C-8
Q5D2	D-6
Q5D3	D-5
Q5D4	C-7
Q5D5	C-8
Q5D6	A-9
Q5D8	E-3
Q5E0	B-2
Q5E1	B-1
Q5E2	B-1
Q5E4	A-1
Q5E5	B-9
Q5E6	B-7
Q5E7	E-4
Q5F0	D-8
Q5G0	E-7
Q8A0	C-1
Q8A2	D-1
Q8A3	A-1
VR4A0	C-4
VR4A1	C-8
VR5A0	D-8
VC5A0	E-3
TP4B	C-5
TP4C	C-4
TP4E	C-3
TP4F	C-6
TP4G	C-3
TP4H	C-3
TP5A	E-8
X5A0	D-3

PCB Hi−Fi

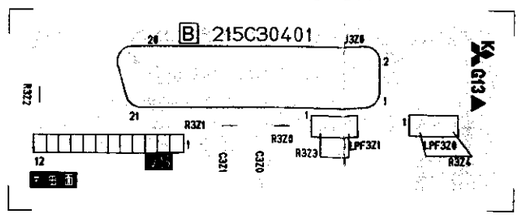


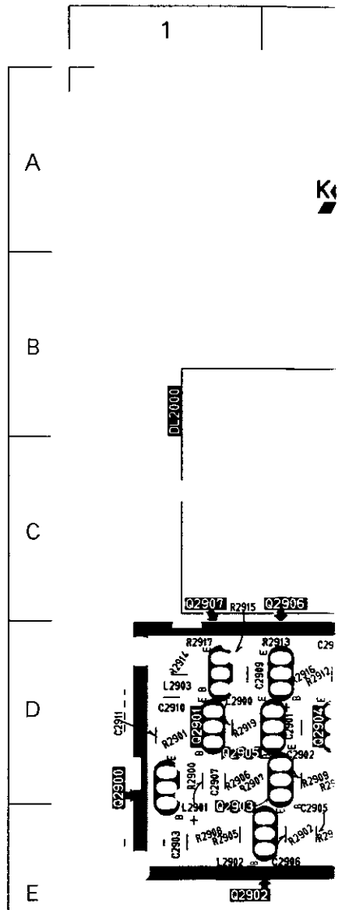
PCB Hi − Fi

SYMBOL NO.	ADDRESS
BPF3301	D-2
D3301	A-3
D3302	D-5
D3303	D-1
D3305	D-3
D3306	C-5
D3401	A-2
D3402	A-2
D3403	C-3
D3404	A-1
D3A0	E-4
D3A1	E-2
D3A2	D-2
D3A3	D-3
IC3301	C-4
IC3302	B-4
IC3303	B-2
IC3305	A-3
IC3306	A-3
IC3307	D-2
IC3A0	E-3
IC3A1	E-1
L3307	B-1
L3308	C-1
L3309	B-1
L3310	C-1
L3311	B-3
L3312	A-3
L3314	B-2
L3315	D-1
L3316	D-1
L3A0	D-4
L3A1	D-3
L3A2	E-1
L3A3	E-4
L3A4	E-2
LPF3301	B-5
LPF3302	B-5
Q3305	D-5
Q3306	D-3
Q3307	D-2
Q3308	C-4
Q3309	C-3

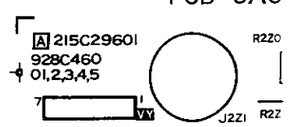
SYMBOL NO.	ADDRESS
Q3310	C-3
Q3311	C-5
Q3326	A-2
Q3327	B-2
Q3330	D-2
Q3331	D-1
Q3332	C-3
Q3333	C-3
Q3A0	D-5
Q3A1	D-2
Q3A2	E-2
Q3A3	E-1
T3A0	E-5
TP3E	E-4
TP3F	E-4
TP3G	C-1
TP3L	B-1
TP3M	C-1
TP3N	C-1
TP3R	C-2
TP3Y	B-1
VR3301	B-3
VR3302	C-2
VR3303	B-3
VR3304	C-2
VR3305	B-3
VR3306	C-3
VR3307	C-5
VR3308	C-4
VR3A0	E-4
VR3A1	E-3

PCB CONNECTOR

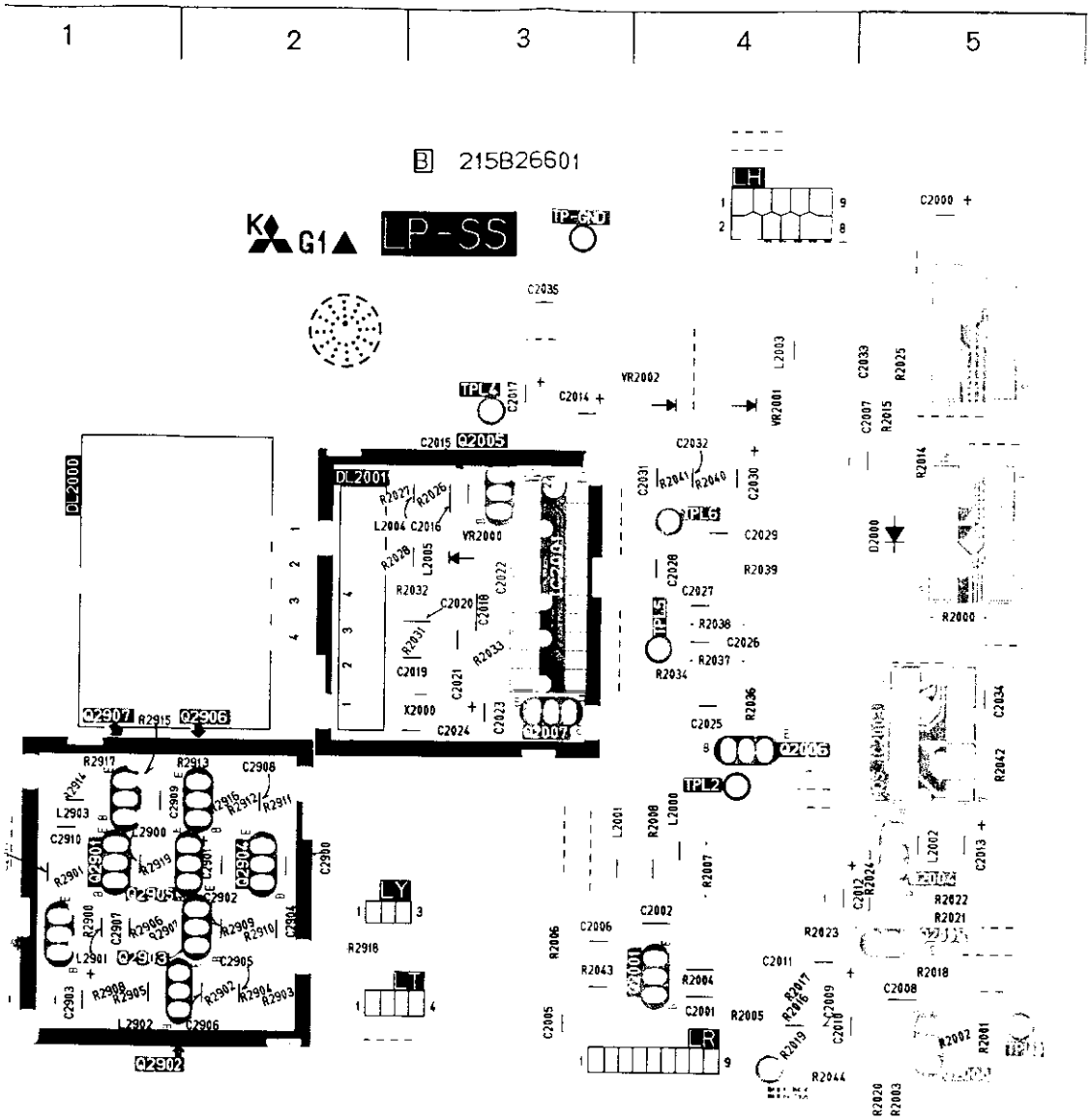




PCB JAC



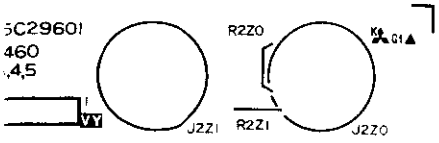
PCB LP-SS



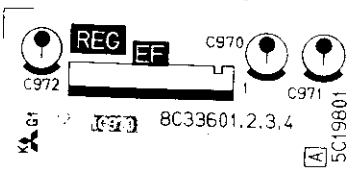
PCB LP – SS

SYMBOL NO.	ADDRESS
D2000	C-5
DL2000	B-1
DL2001	B-2
IC2001	C-3
L2000	D-4
L2001	D-3
L2002	D-5
L2003	B-4
L2004	B-3
L2005	C-3
L2900	D-1
L2901	D-1
L2902	E-1
L2903	D-1
Q2000	E-5
Q2001	E-4
Q2003	D-5
Q2004	D-5
Q2005	B-3
Q2006	D-4
Q2007	C-3
Q2900	D-1
Q2901	D-1
Q2902	E-1
Q2903	D-1
Q2904	D-2
Q2905	D-1
Q2906	C-2
Q2907	C-1
TP-GND	A-3
TPL1	E-4
TPL2	D-4
TPL3	E-5
TPL4	B-3
TPL5	C-4
TPL6	B-4
VR2000	C-3
VR2001	B-4
VR2002	B-4
X2000	C-3

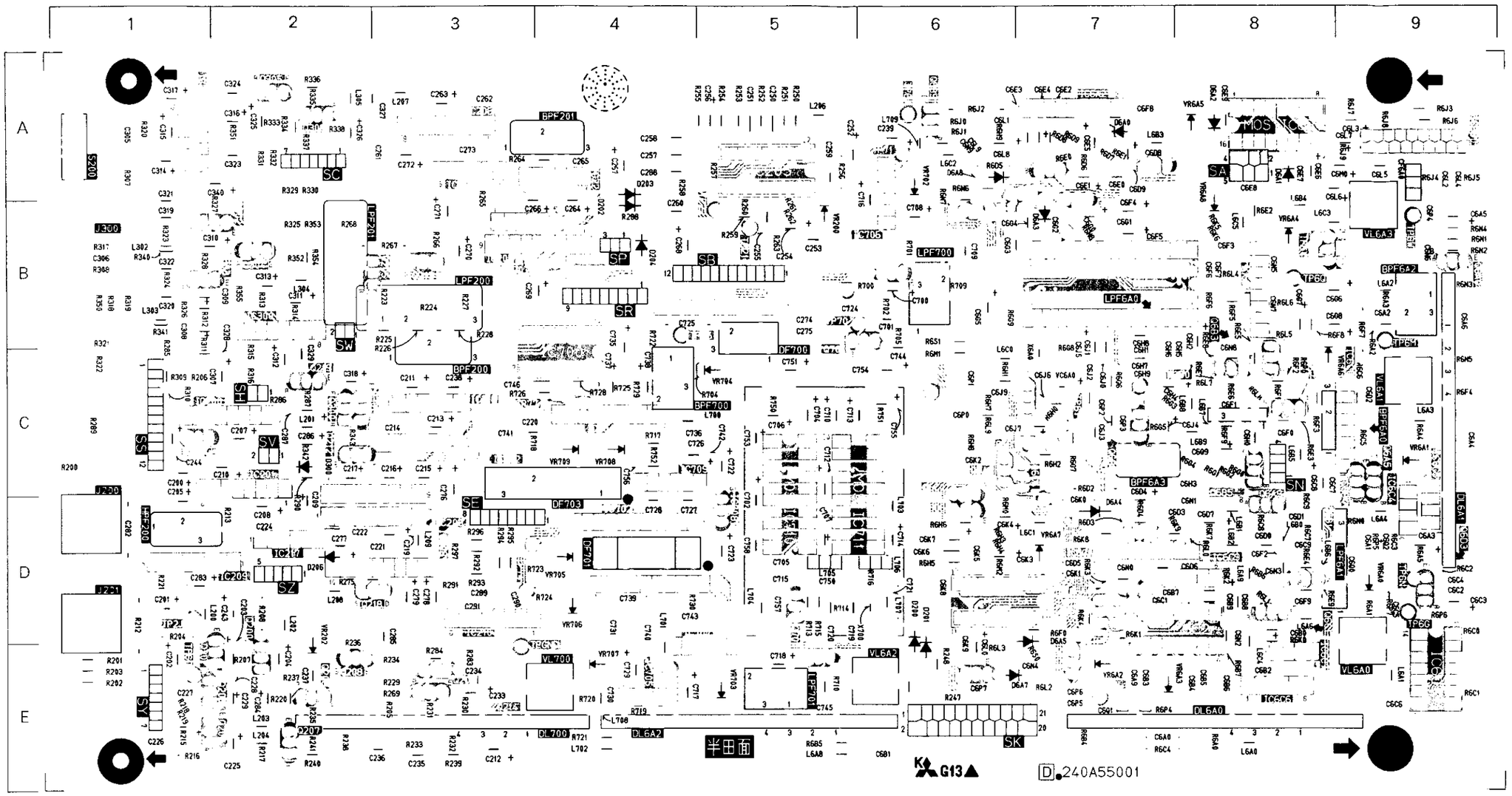
PCB JACK



PCB REG



PCB INT



PCB INT

SYMBOL NO.	ADDRESS
BPF200	C-3
BPF201	A-4
BPF6A0	C-9
BPF6A2	B-9
BPF6A3	C-7
BPF700	C-5
CF6A0	A-9
D200	D-6
D201	D-6
D202	B-4
D203	A-4
D204	B-4
D206	D-2
D300	C-2
D6A0	A-7
D6A1	A-8
D6A2	A-8
D6A3	B-7
D6A4	D-7
D6A5	D-7
D6A7	E-7
D6A8	A-6
DF700	C-5
DF701	D-4
DF703	D-4
DL6A0	E-8
DL6A1	D-9
DL6A2	E-4
DL700	E-4
IC200	C-1
IC201	C-2
IC202	C-3
IC203	D-3
IC205	A-5
IC206	A-3
IC207	B-3
IC208	D-3
IC209	D-2
IC210	D-3
IC217	D-2
IC218	C-3
IC219	C-3
IC222	A-3

SYMBOL NO.	ADDRE
IC223	A-4
IC224	B-4
IC300	B-2
IC301	A-1
IC6A0	B-7
IC6A1	D-7
IC6A2	A-7
IC6B0	A-9
IC6B1	A-8
IC6C0	C-9
IC6C1	D-7
IC6C2	D-8
IC6C3	E-9
IC6C4	D-9
IC6C5	C-9
IC6C6	E-8
IC6C7	E-8
IC6C8	B-8
IC6C9	D-8
IC6D0	B-8
IC700	C-4
IC701	B-5
IC702	D-4
IC703	D-5
IC704	C-4
IC705	E-4
IC706	B-6
IC707	D-5
IC708	D-5
IC709	C-5
IC710	D-5
IC711	D-5
L200	D-2
L201	C-2
L202	D-2
L203	E-2
L204	E-2
L206	A-5
L207	A-3
L208	D-2
L209	D-3
L302	B-1
L303	B-1
L304	B-2
L305	A-2
L6A0	E-8
L6A1	E-9
L6A2	B-9
L6A3	C-9
L6A4	D-9
L6A6	D-8

NT

SYMBOL NO.	ADDRESS
0	C-3
1	A-4
0	C-9
2	B-9
3	C-7
0	C-5
	A-9
	D-6
	D-6
	B-4
	A-4
	B-4
	D-2
	C-2
	A-7
	A-8
	A-8
	B-7
	D-7
	D-7
	E-7
	A-6
)	C-5
	D-4
3	D-4
)	E-8
1	D-9
2	E-4
0	E-4
0	C-1
1	C-2
2	C-3
3	D-3
5	A-5
6	A-3
7	B-3
8	D-3
9	D-2
0	D-3
7	D-2
8	C-3
9	C-3
2	A-3

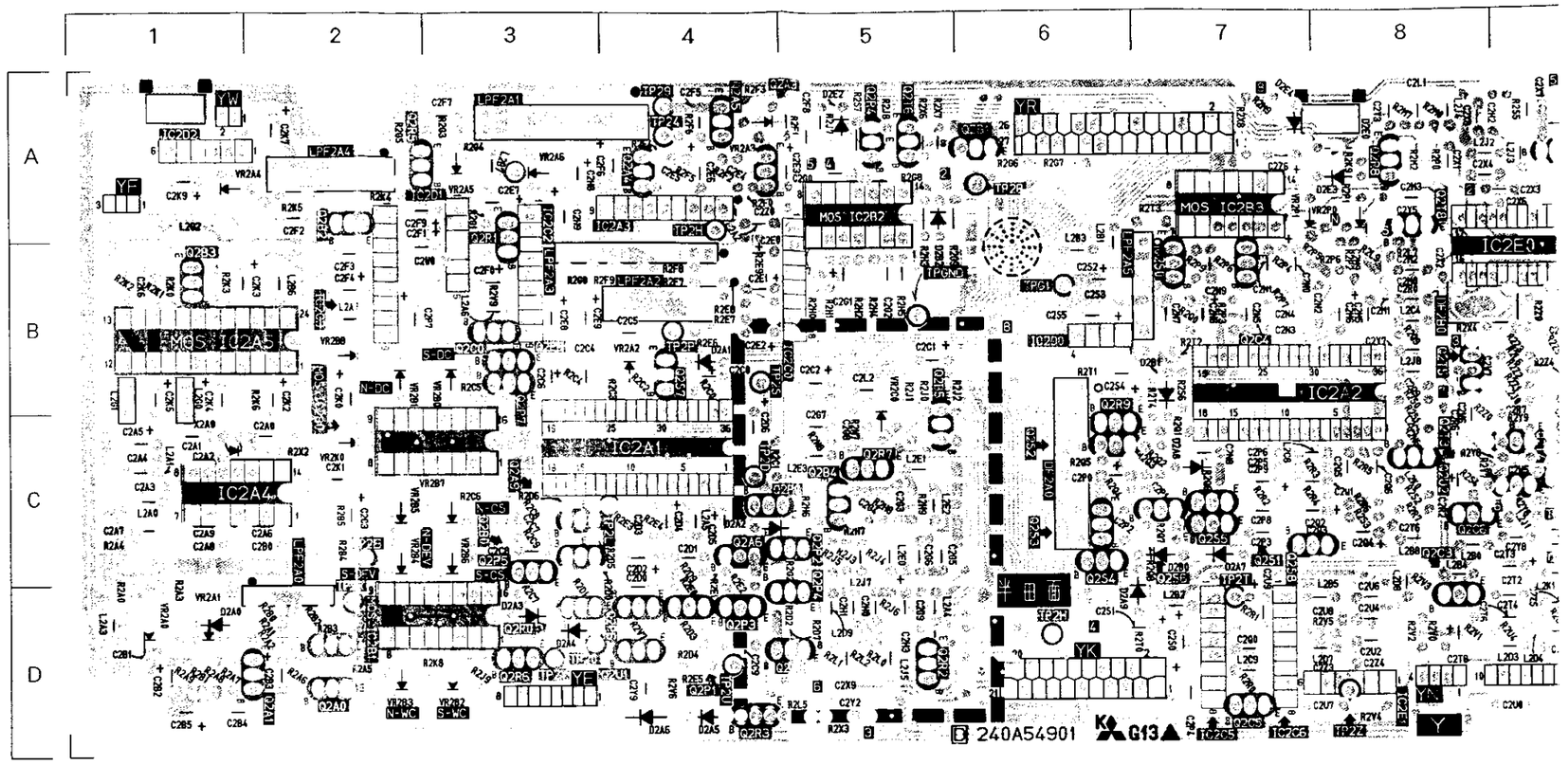
SYMBOL NO.	ADDRESS
IC223	A-4
IC224	B-4
IC300	B-2
IC301	A-1
IC6A0	B-7
IC6A1	D-7
IC6A2	A-7
IC6B0	A-9
IC6B1	A-8
IC6C0	C-9
IC6C1	D-7
IC6C2	D-8
IC6C3	E-9
IC6C4	D-9
IC6C5	C-9
IC6C6	E-8
IC6C7	E-8
IC6C8	B-8
IC6C9	D-8
IC6D0	B-8
IC700	C-4
IC701	B-5
IC702	D-4
IC703	D-5
IC704	C-4
IC705	E-4
IC706	B-6
IC707	D-5
IC708	D-5
IC709	C-5
IC710	D-5
IC711	D-5
L200	D-2
L201	C-2
L202	D-2
L203	E-2
L204	E-2
L206	A-5
L207	A-3
L208	D-2
L209	D-3
L302	B-1
L303	B-1
L304	B-2
L305	A-2
L6A0	E-8
L6A1	E-9
L6A2	B-9
L6A3	C-9
L6A4	D-9
L6A6	D-8

SYMBOL NO.	ADDRESS
L6A8	E-5
L6A9	D-8
L6B0	D-8
L6B1	D-8
L6B2	D-8
L6B3	A-7
L6B4	B-8
L6B5	C-8
L6B6	D-8
L6B7	C-8
L6B8	C-8
L6B9	C-8
L6C0	C-6
L6C1	D-7
L6C2	A-6
L6C3	B-8
L6C4	E-8
L6C5	B-8
L700	C-5
L701	D-4
L702	E-4
L703	D-6
L704	D-5
L705	D-5
L706	D-6
L707	D-6
L708	E-4
L709	A-6
LPF200	B-3
LPF201	B-3
LPF6A0	B-7
LPF6A1	D-8
LPF700	B-6
LPF701	E-5
Q200	D-2
Q201	E-1
Q202	E-2
Q203	E-2
Q204	C-1
Q205	B-3
Q206	E-3
Q207	E-2
Q208	E-2
Q209	E-2
Q212	C-2
Q213	B-3
Q214	E-3
Q218	D-3
Q219	C-2

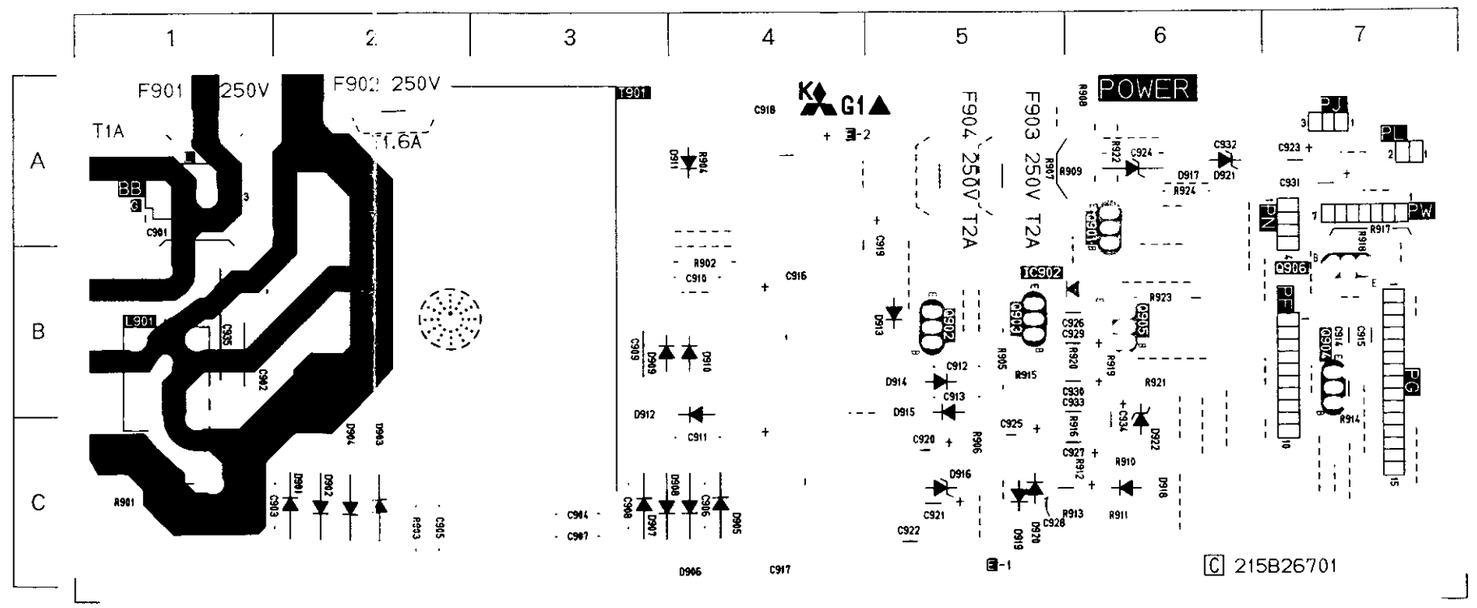
SYMBOL NO.	ADDRESS
Q220	B-3
Q221	B-4
Q300	C-2
Q301	C-3
Q302	B-2
Q303	B-2
Q304	B-2
Q305	A-2
Q306	A-2
Q6A0	B-9
Q6A3	D-7
Q6A4	D-7
Q6A5	C-9
Q6A6	C-6
Q6A7	D-7
Q6A8	A-7
Q6A9	D-8
Q6B0	C-8
Q6B1	D-8
Q6B2	C-8
Q6B3	B-8
Q6B4	A-7
Q6B5	D-8
Q6B6	C-7
Q6B7	C-6
Q6B8	E-6
Q6B9	A-6
Q6C0	C-6
Q6C1	D-8
Q6C2	A-7
Q6C3	D-7
Q6C4	C-7
Q6C5	E-7
Q6C6	D-6
Q6D0	B-6
Q6D1	B-6
Q6D2	C-6
Q6D3	D-9
Q6D4	C-9
Q700	B-6
Q701	C-5
Q702	E-5
Q704	D-5
TP21	B-5
TP22	B-5
TP2J	D-1
TP6A	C-7
TP6B	C-7
TP6C	E-1
TP6G	D-9
TP6J	A-6

SYMBOL NO.	ADDRESS
TP6L	E-7
TP6M	B-9
TP6N	D-9
TP6P	D-7
TP6Q	B-8
TP6R	D-7
TP6S	D-7
TP6T	C-7
TP6W	B-9
TP6X	B-6
TP6Y	B-8
TP70	B-5
TP71	A-6
TP72	C-6
TP73	E-4
TP74	D-3
TP75	D-4
TP76	B-5
TP77	C-4
TP78	C-3
TP7G	B-5
TPGND	E-4
VC6A0	C-7
VR200	B-5
VR202	D-2
VR6A0	D-9
VR6A1	C-9
VR6A2	E-7
VR6A3	E-7
VR6A4	B-8
VR6A5	A-8
VR6A6	C-8
VR6A7	D-7
VR6A8	B-8
VR702	A-6
VR703	E-5
VR704	C-5
VR705	D-4
VR706	D-4
VR707	E-4
VR708	C-4
VR709	C-4
X6A0	C-7
X700	D-6

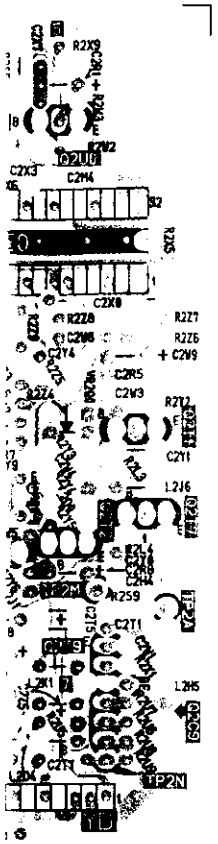
PCB Y—SIGNAL



PCB POWER



9



PCB Y – SIGNAL

SYMBOL NO.	ADDRESS
D2A0	D-1
D2A1	B-4
D2A2	C-4
D2A3	D-3
D2A4	D-3
D2A5	D-4
D2A6	D-4
D2A7	C-7
D2A8	C-7
D2A9	D-6
D2B0	C-7
D2B1	B-7
D2B2	B-5
D2E0	A-8
D2E2	A-5
D2E3	A-8
D2E4	A-7
DF2A0	C-6
DF2B0	B-8
IC2A1	C-4
IC2A2	B-8
IC2A3	A-4
IC2A4	C-1
IC2A5	B-1
IC2B0	C-2
IC2B1	D-2
IC2B2	A-5
IC2B3	A-7
IC2C0	B-5
IC2C2	B-3
IC2C3	B-2
IC2C5	D-7
IC2C6	D-7
IC2D0	B-6
IC2D1	A-3
IC2D2	A-1
IC2E0	B-9
IC2E1	D-8
L2A0	C-1
L2A1	C-1
L2A2	A-4
L2A3	D-1
L2A4	D-5
L2A5	C-4
L2A6	B-3
L2A7	B-2
L2B0	C-8

SYMBOL NO.	ADDRESS
L2B1	B-6
L2B2	D-7
L2B3	B-6
L2B4	C-8
L2B5	D-8
L2B6	B-2
L2B7	A-3
L2B8	C-8
L2C4	B-8
L2C5	C-8
L2C8	C-7
L2C9	D-7
L2D0	C-9
L2D3	D-9
L2D4	D-9
L2D7	D-8
L2D8	D-8
L2D9	D-5
L2E0	C-5
L2E1	C-5
L2E2	C-5
L2E3	C-5
L2G0	B-1
L2G1	B-1
L2G2	A-1
L2H5	D-9
L2J0	B-9
L2J1	C-9
L2J2	A-8
L2J3	A-9
L2J4	A-8
L2J5	D-5
L2J6	C-9
L2J7	D-5
L2J8	B-8
L2K0	C-8
L2K1	D-9
LPF2A0	C-2
LPF2A1	A-3
LPF2A2	B-4
LPF2A3	B-3
LPF2A4	A-2
LPF2A5	B-6
Q2A0	D-2
Q2A1	D-2
Q2A2	D-2
Q2A3	A-5
Q2A4	A-4
Q2A5	A-4

SYMBOL NO.	ADDRESS
Q2A6	C-4
Q2A8	D-5
Q2A9	C-3
Q2B0	C-3
Q2B1	A-6
Q2B2	A-2
Q2B3	B-1
Q2B4	C-5
Q2B5	B-5
Q2C0	B-3
Q2C4	B-7
Q2C5	D-7
Q2C6	C-8
Q2C8	C-8
Q2C9	D-9
Q2P0	C-5
Q2P1	D-4
Q2P2	C-5
Q2P3	D-4
Q2P4	D-5
Q2P5	C-3
Q2P6	D-3
Q2P7	B-3
Q2P8	B-3
Q2R0	D-3
Q2R1	A-3
Q2R2	D-5
Q2R3	D-4
Q2R4	A-5
Q2R5	A-2
Q2R6	D-3
Q2R7	C-5
Q2R8	A-8
Q2R9	C-6
Q2S0	B-7
Q2S1	C-7
Q2S2	C-6
Q2S3	C-6
Q2S4	D-6
Q2S5	C-7
Q2S6	C-7
Q2S7	B-4
Q2S8	C-7
Q2T1	B-9
Q2T2	C-9
Q2T3	C-8
Q2T4	C-9
Q2T5	B-8
Q2T6	A-5
Q2T7	C-9
Q2T8	A-8
Q2T9	C-9
Q2U0	A-9

SYMBOL NO.	ADDRESS
Q2U1	D-4
Q2U2	C-8
TP20	D-3
TP24	A-4
TP29	A-4
TP2A	C-9
TP2B	A-6
TP2D	C-4
TP2E	C-2
TP2H	D-6
TP2H	A-4
TP2L	C-4
TP2M	C-9
TP2N	D-9
TP2P	B-4
TP2R	D-2
TP2S	B-4
TP2T	D-7
TP2U	D-4
TP2Y	D-3
TP2Z	D-8
TPG1	B-6
TPGND	B-5
VR2A0	D-1
VR2A1	D-1
VR2A2	B-4
VR2A3	A-4
VR2A4	A-1
VR2A5	A-3
VR2A6	A-3
VR2B0	B-3
VR2B1	B-2
VR2B2	D-3
VR2B3	D-2
VR2B4	C-2
VR2B5	C-2
VR2B6	C-3
VR2B7	C-3
VR2B8	B-2
VR2C0	B-5
VR2K0	C-2
VR2P0	A-8
VR2P1	A-7
VR2Q0	B-9
X2A0	C-1

PCB POWER

SYMBOL NO.	ADDRESS
D901	C-2
D902	C-2
D903	C-2
D904	C-2
D905	C-4
D906	C-4
D907	C-3
D908	C-4
D909	B-3
D910	B-4
D911	A-4
D912	C-4
D913	B-5
D914	B-5
D915	C-5
D916	C-5
D917	A-6
D918	C-6
D919	C-5
D920	C-5
D921	A-6
D922	C-6
IC902	B-6
L901	B-1
Q901	A-6
Q902	B-5
Q903	B-5
Q904	B-7
Q905	B-6
Q906	B-7