

# Service Manual

Stereo Integrated Amplifier

Amplifier

## SU-X880

Color

(K) . . . . Black Type



Color	Areas
(K)	[EX] . . . . Continental Europe
(K)	[EH] . . . . Holland
(K)	[EB] . . . . Belgium
(K)	[EF] . . . . France
(K)	[EK] . . . . United Kingdom
(K)	[EG] . . . . F.R. Germany
(K)	[EW] . . . . Switzerland
(K)	[Ei] . . . . Italy
(K)	[XL] . . . . Australia
(K)	[XA] . . . . Asia, Latin America, Middle Near East, Africa & Oceania
(K)	[PA] . . . . East PX.
(K)	[PE] . . . . European Military
(K)	[XB] . . . . Saudi Arabia

## SPECIFICATIONS

(DIN 45 500)

### ■ AMPLIFIER SECTION

<b>DIN power output</b>	
1 kHz THD: 1%	2 × 80W (8Ω)
<b>Total harmonic distortion</b>	
rated power at 1 kHz	1% (8Ω)
half power at 1 kHz	0.007% (8Ω)
<b>Residual hum and noise</b>	0.2 mV
<b>Damping factor</b>	30 (8Ω)
<b>Input sensitivity and impedance</b>	
PHONO	3 mV/47kΩ
TUNER, CD, AUX, TAPE 1, TAPE 2	200 mV/22kΩ
<b>Maximum input voltage (1 kHz, RMS)</b>	
PHONO	120 mV
<b>S/N (rated power 8Ω)</b>	
PHONO	75 dB (IHF, A, 79 dB)
TUNER, CD, AUX, TAPE 1, TAPE 2	82 dB (IHF, A: 83 dB)

### Frequency response

<b>PHONO</b>	RIAA standard curve ±0.8 dB (30 Hz~15 kHz)
<b>TUNER, CD, AUX, TAPE 1, TAPE 2</b>	10 Hz~60 kHz (-3 dB)
<b>Tone controls</b>	
<b>BASS</b>	50 Hz, +10 dB~-10 dB
<b>TREBLE</b>	20 kHz, +10 dB~-10 dB
<b>Muting</b>	-20 dB
<b>Super bass</b>	70 Hz, +10 dB
<b>Output voltage</b>	
TAPE 1, TAPE 2, REC OUT	200 mV
<b>Channel balance, AUX 250 Hz~6,300 Hz</b>	±1.0 dB
<b>Channel separation, AUX 1 kHz</b>	60 dB
<b>Headphones output level and impedance</b>	
	590 mV/330Ω
<b>Load impedance</b>	
<b>MAIN or REMOTE</b>	8Ω~16Ω
<b>SURROUND</b>	8Ω~16Ω

### ■ GENERAL

<b>Power consumption</b>	370W
<b>Power supply</b>	
<b>For continental Europe</b>	AC 50 Hz/60 Hz, 220V
<b>For others</b>	AC 50 Hz/60 Hz, 110V/127V/220V/240V
<b>Dimensions (W×H×D)</b>	360 × 128 × 303 mm (14-3/16" × 5-1/32" × 11-30/32")
<b>Weight</b>	7.7 kg (17 lb.)

#### Note:

Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).

Specifications are subject to change without notice for further improvement.

## ■ CONTENTS

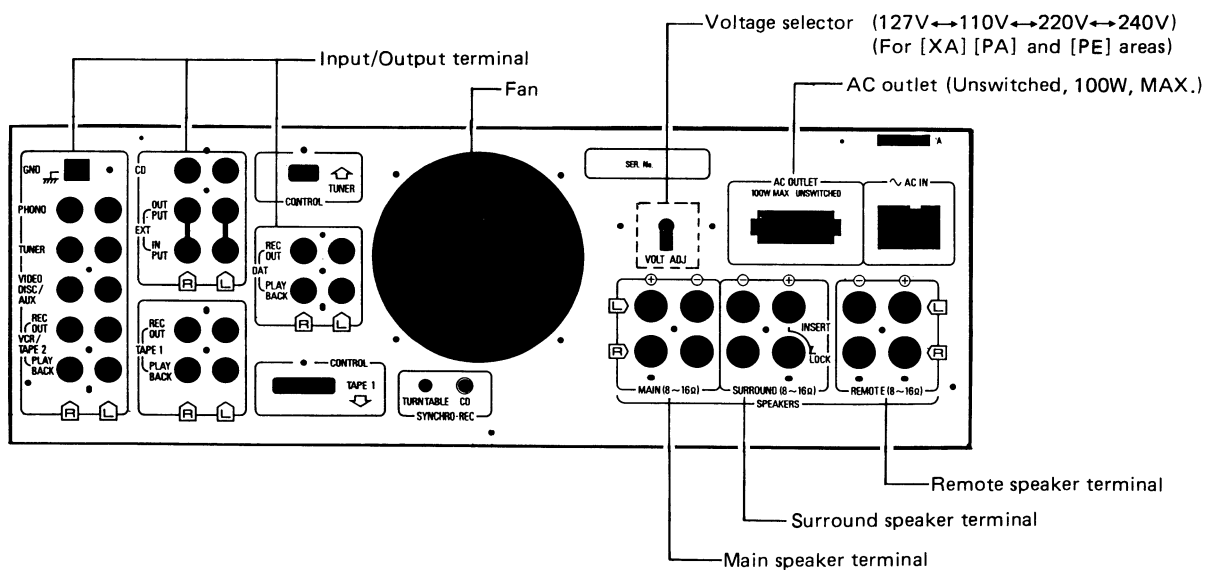
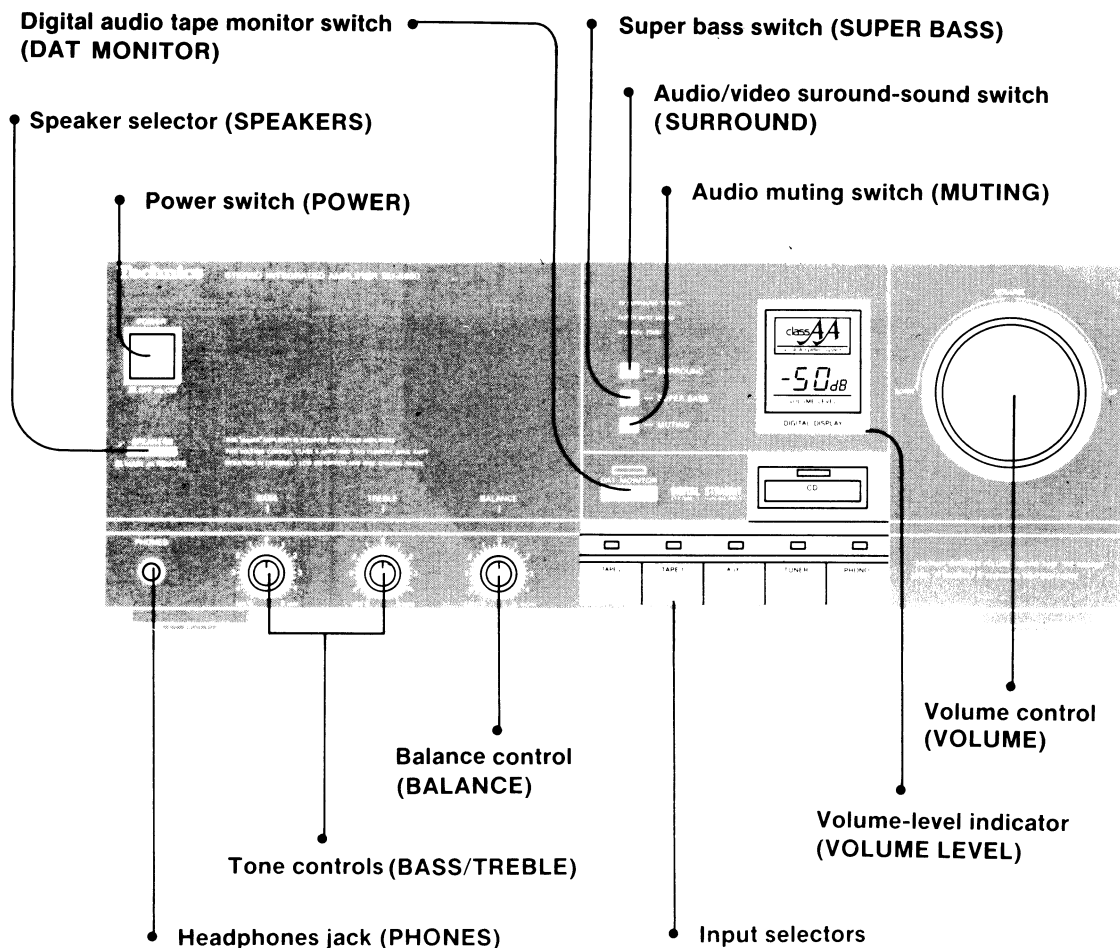
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# Technics

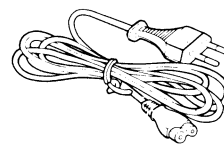
Matsushita Electric Trading Co., Ltd.  
P.O. Box 288, Central Osaka JapanPanasonic Tokyo Office  
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6th Floor, World Trade Center Bldg.,  
No. 4-1, Hamamatsu-cho 2-Chome, Minato-ku,  
Tokyo 105, Japan

## LOCATION OF CONTROLS



## ACCESSORY

- AC power supply cord ..... 1



## DISASSEMBLY INSTRUCTIONS

### "ATTENTION SERVICER"

SOME CHASSIS COMPONENTS MAY HAVE SHARP EDGES. BE CAREFUL WHEN DISASSEMBLING AND SERVICING.

#### Ref. No. 1 How to remove the cabinet

- Procedure 1  
1. Remove the 4 screws from both sides of the cabinet and the 2 screws from its back.

#### Ref. No. 2 How to remove the front panel

##### Procedure 1 → 2

1. Remove the 3 screws (① ~ ③) from the front panel.
2. Remove the connector (J401B).

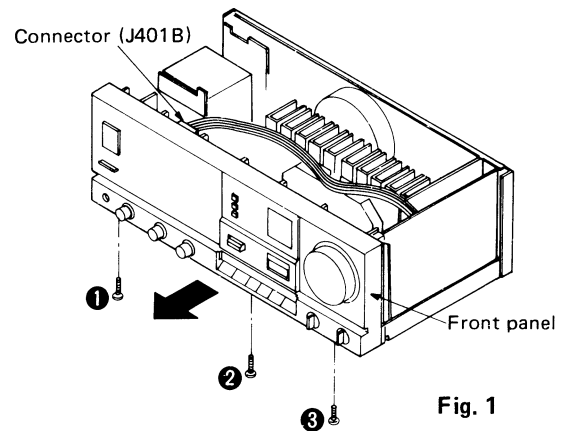


Fig. 1

#### Ref. No. 3 How to remove the headphone jack P.C.B. and microcomputer/FL P.C.B.

##### Procedure 1 → 2 → 3

1. Remove the balance, treble and bass knobs, as well as their respective nuts (① ~ ③).
2. Remove the deck A and deck B knobs, as well as their respective nuts (④, ⑤) and washers (⑥, ⑦).
3. Remove the 2 screws (⑧, ⑨) from the microcomputer/FL P.C.B., and undo the 2 tabs.
4. Remove the 2 screws (⑩, ⑪) from the headphone jack P.C.B.

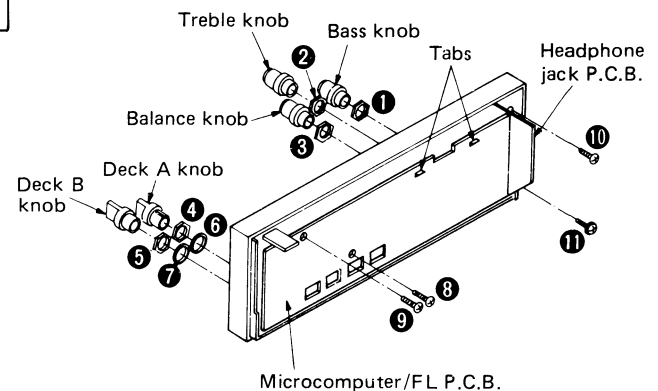


Fig. 1

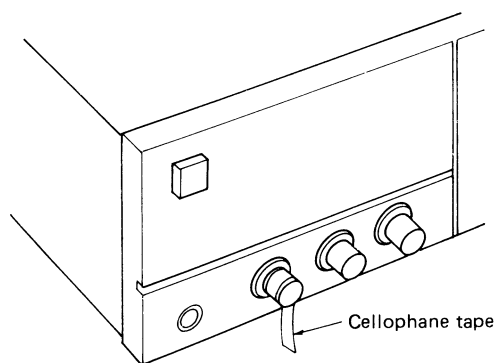


Fig. 2

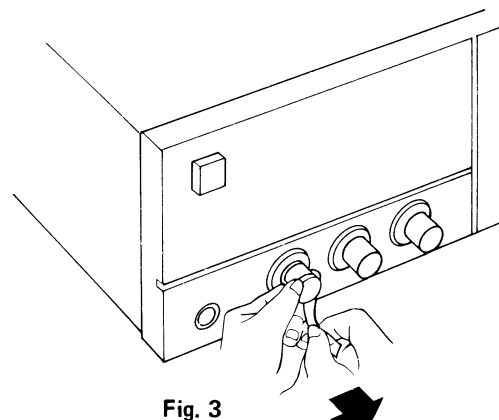


Fig. 3

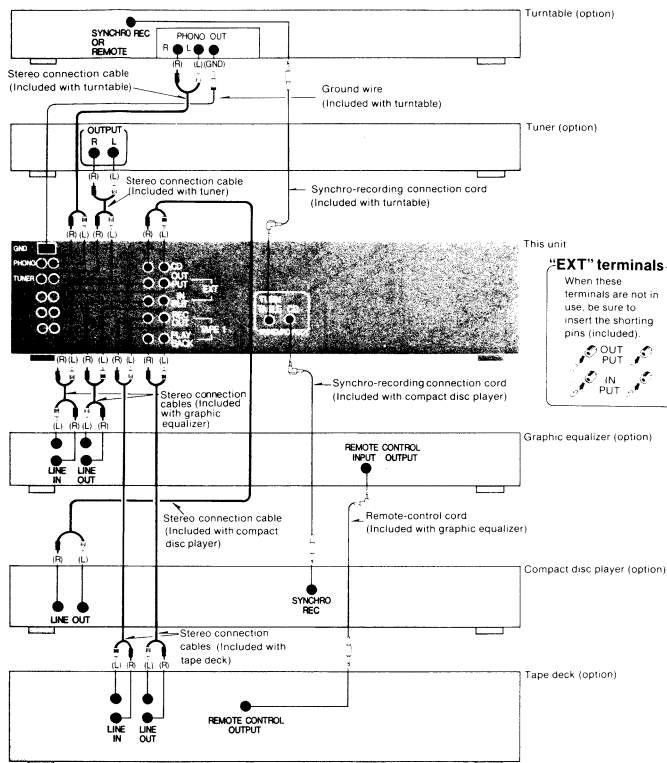
#### Remove the knob

Wind cellophane tape around the knob and put it the direction of the arrow as shown in Fig. 2 and Fig. 3.

## CONNECTION

### 1. Make the connections of the stereo connection cables, the synchro-recording connection cords, and the remote-control cords.

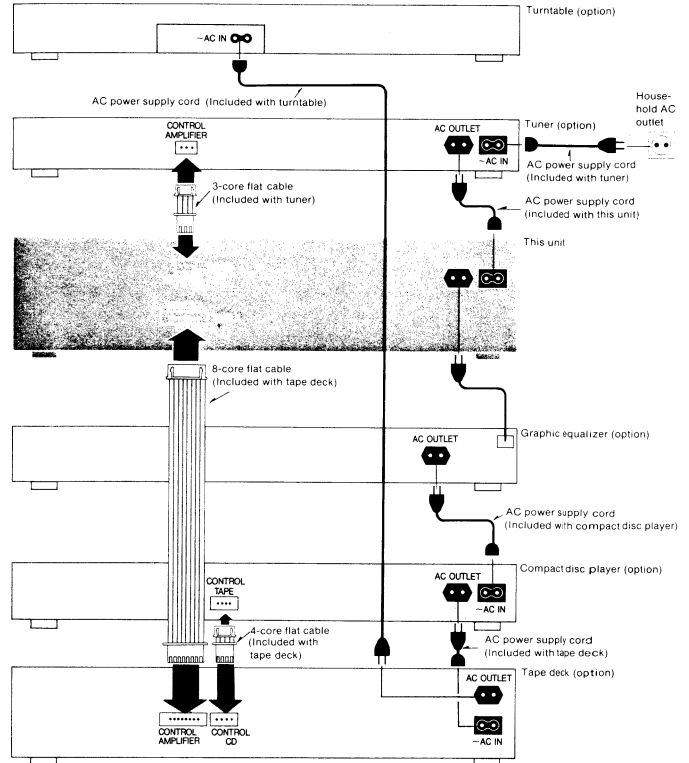
**Note:** Although the synchro-recording connection cords and the remote-control cords are differentiated in the figure below, actually they are the same shape.



### 2. Make the connections of the flat cables and the AC power supply cords.

- Do not connect video-related equipment (such as a TV, etc.) to the power outlets of these components. (These outlets are especially for audio equipment.) Also do not exceed the indicated (as shown in the figure) power ratings when connecting to these outlets.
- The tuner's power outlet is interlocked with the power 'STAND BY ON' switch of the tuner.
- If the graphic equalizer is not used in combination with these components, connect the AC power supply cord of the compact disc player to the AC outlet of the amplifier. If the compact-disc player is not used in combination with these components, connect the AC power supply cord of the cassette tape deck to the AC outlet of the graphic equalizer.

**Note:** The configurations of the AC outlets and AC power supply cords differ according to area.



## PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:

- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of this unit are used.

If this occurs, follow the procedure outlines below:

- Turn off the power.
- Determine the cause of the problem and correct it.
- Turn on the power once again after one minute.

### Note

When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

## BEFORE REPAIR AND ADJUSTMENT

- Turn off the power supply. Using a 10Ω, 5W resistor, shortcircuit both ends of power supply capacitors ((C701,C702) in order to discharge the voltage.
- Before turning the power supply on, after completion of repair, slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current at 50Hz/60Hz in NO SIGNAL mode should be shown below with respect to supply voltage 110V/127V/220V/240V.

Power supply voltage		AC110V	AC127V	AC220V	AC240V
Consumed current	50Hz	210 ~ 630mA	195 ~ 585mA	106 ~ 320mA	98 ~ 294mA
	60Hz	199 ~ 597mA	184 ~ 552mA	100 ~ 302mA	93 ~ 279mA

**Ref. No. 4**      **How to remove the volume control and switch P.C.B.**

**Procedure**  
1 → 2 → 3 → 4

1. Remove the volume knob and the nut ( ❶ ).
2. Remove the 6 screws ( ❷ ~ ❹ ) from the switch P.C.B.

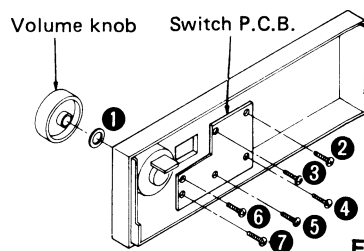


Fig. 1

**Ref. No. 5**      **How to remove the main P.C.B., power IC and constant-voltage transistor**

**Procedure**  
1 → 2 → 5

1. Remove the 8 screws ( ❶ ~ ❸ ) from the rear panel.
2. Remove the 3 screws ( ❹ ~ ❻ ) from the main P.C.B.
3. Remove the 2 screws ( ❼ , ❽ ) from the heat-sink.

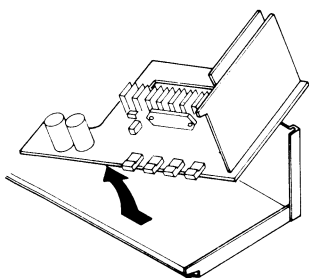


Fig. 3

7. When mounting the power IC and the constant-voltage transistor, apply silicone grease (SZ0GYG6260) over their constant areas.

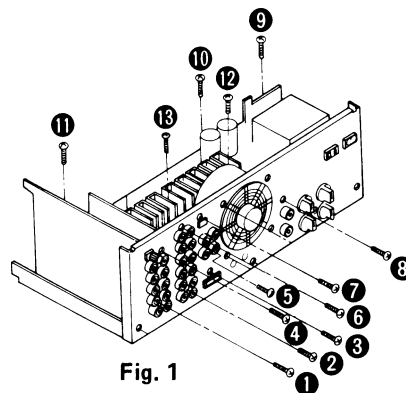


Fig. 1

4. Unsolder the power IC and the constant-voltage transistor.
5. Remove the 2 screws ( ❿ , ⓫ ) from the power IC.
6. Remove the screw ( ⓬ ) from the constant-voltage transistor.

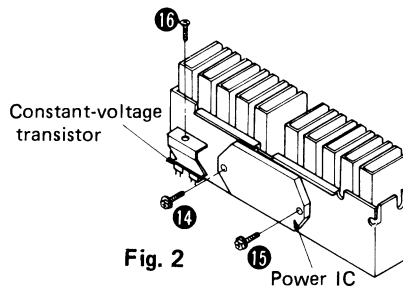


Fig. 2

**Ref. No. 6**      **How to remove the cooling fan motor**

**Procedure**  
1 → 6

1. Remove the 4 screws ( ❶ ~ ❹ ) and the connector.

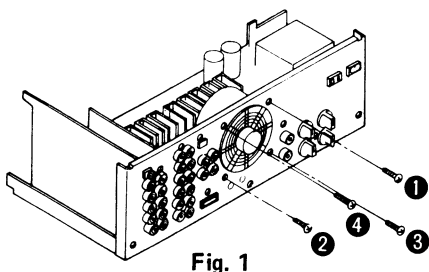


Fig. 1

2. Insert a screwdriver at the root of the cooling fan, it out of the motor shaft.

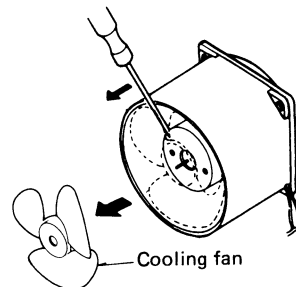


Fig. 2

3. Remove the motor cover.
4. Remove the motor from the fan casing.
5. When mounting the fan motor, align the fan casing's projection with the hole of the fan motor.

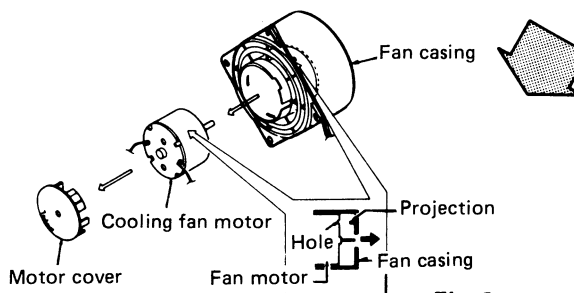


Fig. 3

## FUNCTION OF IC TERMINAL • IC601 (LC6554D-3230)

Pin No.	Symbol	Function Description																							
1 ┆ 4	G0 ┆ G3	Grid drive output for digital multi-display (FL).																							
5 ┆ 7	S0 ┆ S2	Key matrix output.	<table border="1"> <tr> <td>Output Input</td> <td>5</td> <td>6</td> <td>7</td> </tr> <tr> <td>10</td> <td>S603 VIDEO DISC/AUX</td> <td>S612 MUTE</td> <td>S608 BALANCE(R)</td> </tr> <tr> <td>11</td> <td>—</td> <td>—</td> <td>S607 BALANCE(L)</td> </tr> <tr> <td>12</td> <td>S602 TUNER</td> <td>S605 VTR/TAPE 2</td> <td>—</td> </tr> <tr> <td>13</td> <td>S601 PHONO</td> <td>S604 TAPE 1</td> <td>—</td> </tr> </table>			Output Input	5	6	7	10	S603 VIDEO DISC/AUX	S612 MUTE	S608 BALANCE(R)	11	—	—	S607 BALANCE(L)	12	S602 TUNER	S605 VTR/TAPE 2	—	13	S601 PHONO	S604 TAPE 1	—
Output Input	5		6	7																					
10	S603 VIDEO DISC/AUX	S612 MUTE	S608 BALANCE(R)																						
11	—	—	S607 BALANCE(L)																						
12	S602 TUNER	S605 VTR/TAPE 2	—																						
13	S601 PHONO	S604 TAPE 1	—																						
10 ┆ 13	K0 ┆ K3	Key matrix input.																							
8	S3	Not used.																							
9	POWER ON	Not used.																							
14	VR0	Rotary encoder input of volume control (VR601).																							
15	VR1																								
16	CSO	Not used.																							
17	HALT	Input for power detection.																							
18	CS1	Not used.																							
19	AMP	Input for power detection.																							
20	AMP POWER	Not used.																							
21	$\overline{\text{CUT}}$	Input selector noise cut muting output.																							
22	$\overline{\text{S.ON}}$	Not used.																							
23	$\overline{\text{DTS}}$	Not used.																							
24	$\overline{\text{LVTR}}$	LED selector display (VTR) output.																							
25	$\overline{\text{LTA}}$	LED selector display (TAPE) output.																							
26	$\overline{\text{LVD}}$	LED selector display (VIDEO DISC/AUX) output.																							
27	$\overline{\text{LCD}}$	LED selector display (CD) output.																							
28	$\overline{\text{LTU}}$	LED selector display (TUNER) output.																							
29	$\overline{\text{LPH}}$	LED selector display (PHONO) output.																							
30	TEST	Not used.																							
31	V <sub>SS</sub>	Grounding.																							
32	OSC1	Clock oscillation input/output.																							
33	OSC2																								
34	$\overline{\text{RES}}$	Reset signal input.																							
35	ST	ST signal control output																							
36	DATA	DATA signal control output.																							
37	CK	CK signal control output.																							
38	$\overline{\text{REM}}$	Remote control data input.																							
39	$\overline{\text{DCD}}$	Deck control output.																							
40	$\overline{\text{SID}}$	ST, CK and DATA signal control.																							
41	$\overline{\text{SYPH}}$	Player synchronized recording input.																							
42	$\overline{\text{SYCD}}$	CD synchronized recording input.																							
43	SY OUT	Deck synchronized recording output.																							
44	$\overline{\text{START}}$	Player STOP/START signal output.																							
45	$\overline{\text{STOP}}$																								
46	$\overline{\text{REC}}$	Deck on-recording signal input.																							
47	$\overline{\text{PH}}$	Input selection by phono unit signal.	Direct operation input.																						
48	$\overline{\text{TU}}$	Input selection by tuner unit signal.																							
49	$\overline{\text{CD}}$	Input selection by CD unit signal.																							
50	$\overline{\text{DECK}}$	Input selection by tape unit signal.																							
51	V <sub>P</sub>	Power supply.																							
52 ┆ 60	S0 ┆ S8	Digital multi-display (FL) output.																							
61	S music	Not used.																							
62	S movie																								
63	S mono																								
64	V <sub>DD</sub>	Power supply.																							

# RESISTORS & CAPACITORS

**Notes:** \* Important safety notice:

Components identified by  $\Delta$  mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

\* Bracketed indications in Ref. No. columns specify the area.

Parts without these indications can be used for all areas.

**Numbering System of Resistor**

Example

ERD	25	F	J	102
Type	Wattage	Shape	Tolerance	Value
ERX	2	AN	J	471
Type	Wattage	Shape	Tolerance	Value
				47x10 <sup>1</sup> (ohm)

**Numbering System of Capacitor**

Example

ECKD	1H	102	Z	F
Type	Voltage	Value	Tolerance	Peculiarity
ECEA	50	M		330
Type	Voltage	Peculiarity		Value
				(33x10 <sup>0</sup> microfarad)

Resistor Type	Wattage	Tolerance
ERD : Carbon	10 : 1/8W	J : ±5%
ERG : Metal Oxide	12 : 1/2W	F : ±1%
ERX : Metal Film	25 : 1/4W	G : ±2%
ERQ : Fuse Type Metal	1A : 1W	K : ±10%
ERD (L) : Carbon (chip)	18 : 1/8W	
ERO (K) : Metal Film (chip)	S2 : 1/4W	
ERC : Solid	S1 : 1/2W	
	2F : 1/4W	
	50 : 1/2W	
	2A : 2W	

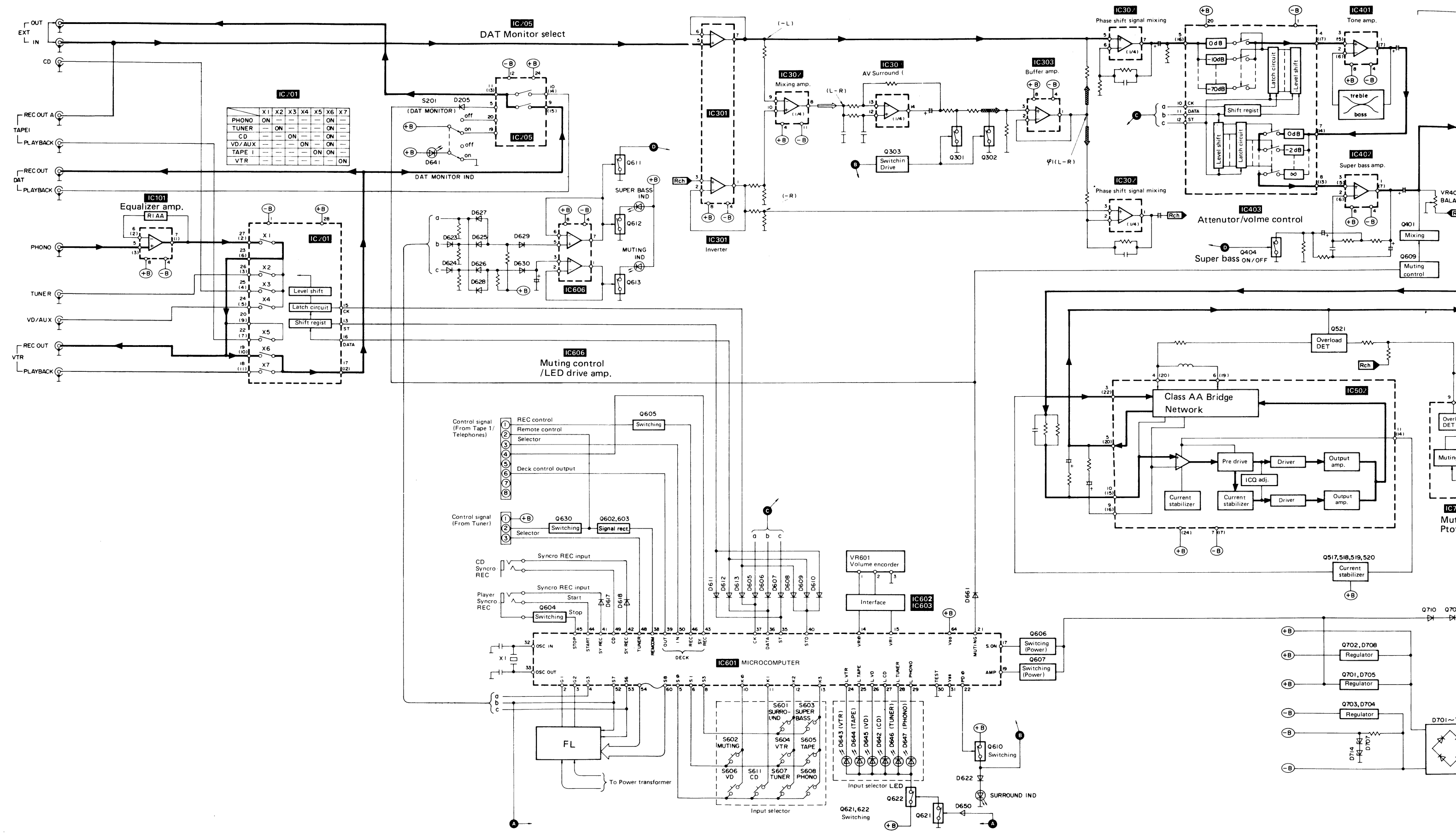
Capacitor Type	Voltage	Tolerance
ECE : Electrolytic	0J : 6.3V	C : ±0.25pF
ECCD : Ceramic	1A : 10V	J : ±5%
ECKD : Ceramic	1C : 16V	K : ±10%
ECQM : Polyester	1E : 25V	Z : +80%
	1H : 50V	-20%
ECQP : Polypropylene	1V : 35V	P : +100%
	50 : 50V	-0%
ECG : Ceramic	05 : 50V	M : ±20%
ECEADDN : Non Polar Electrolytic	2H : 500V	
	2A : 100V	D : ±0.5pF
QCU : Ceramic (Chip Type)	1 : 100V	G : ±2%
ECUX : Ceramic (Chip Type)	KC : 400V AC	
ECF : Semiconductor	KC : 125VAC (UL)	
	1J : 63V	
EECW : Liquid electrolyte double layer capacitor		

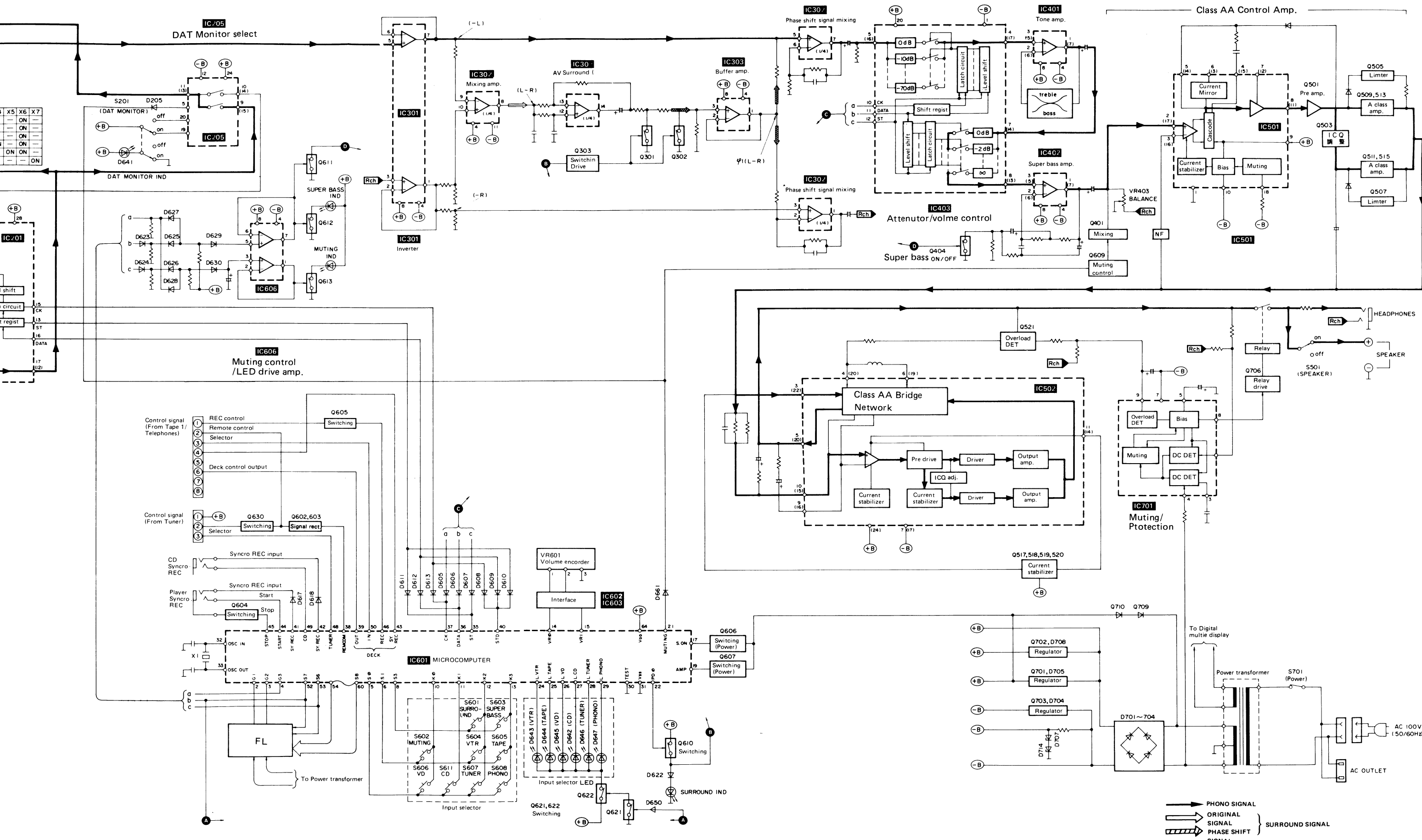
Ref. No.	Part No.	Part Code	Ref. No.	Part No.	Part Code	Ref. No.	Part No.	Part Code
<b>RESISTORS</b>								
R101, R102 [EG]	ERDS2TJ471		R239	ERDS2TJ102	001 152 2346 4	R320	ERDS2TJ224	001 152 2433 6
R103, R104	ERDS2TJ391	001 152 2360 6	R239	ERDS2TJ222	001 152 2353 5	R321	ERDS2TJ473	001 152 2363 3
R105, R106	ERDS2TJ224	001 152 2433 6	R240	ERDS2TJ102	001 152 2346 4	R322	ERDS2TJ104	001 152 2348 2
R107, R108	ERDS2TJ563	001 152 2446 1	R240	ERDS2TJ222	001 152 2353 5	R322	ERDS2TJ104	001 152 2348 2
R109, R110	ERDS2TJ221	001 152 2431 8	R241	ERDS2TJ102	001 152 2346 4	[EG]		
R111, R112	ERDS2TJ680	001 152 2448 9	R241	ERDS2TJ222	001 152 2353 5	R323	ERDS2TJ103	001 152 2347 3
R113, R114	ERDS2TJ184	001 152 2588 8	[EG]			R324, R326	ERDS2TJ332	001 152 2357 1
R115, R116	ERDS2TJ123	001 152 2424 7	R242	ERDS2TJ102	001 152 2346 4	R327, R328	ERDS2TJ332	001 152 2357 1
R117, R118	ERDS2TJ563	001 152 2446 1	R242	ERDS2TJ222	001 152 2353 5	R329, R330	ERDS2TJ332	001 152 2357 1
R119, R120	ERDS2TJ102	001 152 2346 4	[EG]			R331, R331	ERDS2TJ104	001 152 2348 2
R201, R202	ERDS2TJ102	001 152 2346 4	R248	ERDS2TJ273	001 152 2436 3	R332	ERDS2TJ104	001 152 2348 2
R201, R202 [EG]	ERDS2TJ222		R249	ERDS2TJ103	001 152 2347 3	R332	ERDS2TJ104	001 152 2348 2
R203, R204	ERDS2TJ102	001 152 2346 4	R250	ERDS2TJ333	001 152 2358 0	[EG]		
R203, R204 [EG]	ERDS2TJ222		R251, R252	ERDS2TJ103	001 152 2347 3	R400, R404	ERDS2TJ224	001 152 2433 6
R205, R206	ERDS2TJ102	001 152 2346 4	R253	ERDS2TJ103	001 152 2347 3	R407, R408	ERDS2TJ474	001 152 2443 4
R207, R208	ERDS2TJ102	001 152 2346 4	R263, R264	ERDS2TJ104	001 152 2348 2	R409, R410	ERDS2TJ822	001 152 2455 0
R209, R210	ERDS2TJ152	001 152 2350 8	R265, R266	ERDS2TJ104	001 152 2348 2	R413, R414	ERDS2TJ473	001 152 2363 3
R219	ERDS2TJ182	001 152 2352 6	R267, R268	ERDS2TJ104	001 152 2348 2	R415, R416	ERDS2TJ182	001 152 2352 6
R220, R221	ERDS2TJ562	001 152 2445 2	R301	ERDS2TJ102	001 152 2346 4	R417, R418	ERDS2TJ562	001 152 2445 2
R222	ERDS2TJ562	001 152 2445 2	R301	ERDS2TJ222	001 152 2353 5	R419, R420	ERDS2TJ474	001 152 2443 4
R229	ERDS2TJ102	001 152 2346 4	[EG]			R421, R422	ERDS2TJ223	001 152 2432 7
R229 [EG]	ERDS2TJ222	001 152 2353 5	R302	ERDS2TJ102	001 152 2346 4	R423, R424	ERDS2TJ392	001 152 2439 0
R230	ERDS2TJ102	001 152 2346 4	R302	ERDS2TJ222	001 152 2353 5	R425, R426	ERDS2TJ182	001 152 2352 6
R230 [EG]	ERDS2TJ222	001 152 2353 5	[EG]			R427, R428	ERDS2TJ821	001 152 2454 1
R231	ERDS2TJ102	001 152 2346 4	R303	ERDS2TJ102	001 152 2346 4	R429, R430	ERDS2TJ273	001 152 2436 3
R231 [EG]	ERDS2TJ222	001 152 2353 5	R303	ERDS2TJ102	001 152 2346 4	R433, R434	ERDS2TJ104	001 152 2348 2
R232	ERDS2TJ102	001 152 2346 4	[EG]			R437, R438	ERDS2TJ224	001 152 2433 6
R232 [EG]	ERDS2TJ222	001 152 2353 5	R304	ERDS2TJ102	001 152 2346 4	R439, R440	ERDS2TJ332	001 152 2357 1
R235	ERDS2TJ102	001 152 2346 4	R304	ERDS2TJ102	001 152 2346 4	R441, R442	ERDS2TJ103	001 152 2347 3
R235 [EG]	ERDS2TJ222	001 152 2353 5	[EG]			R443, R444	ERDS2TJ103	001 152 2347 3
R236	ERDS2TJ102	001 152 2346 4	R305, R306	ERDS2TJ223	001 152 2432 7	R445, R446	ERDS2TJ222	001 152 2353 5
R236 [EG]	ERDS2TJ222	001 152 2353 5	R307	ERDS2TJ393	001 152 2440 7	R447, R448	ERDS2TJ392	001 152 2439 0
R237	ERDS2TJ102	001 152 2346 4	R308	ERDS2TJ223	001 152 2432 7	R451	ERDS2TJ122	001 152 2423 8
R237 [EG]	ERDS2TJ222	001 152 2353 5	R309, R310	ERDS2TJ332	001 152 2357 1	R452, R453	ERDS2TJ103	001 152 2347 3
R238	ERDS2TJ102	001 152 2346 4	R311	ERDS2TJ223	001 152 2432 7	R454	ERDS2TJ681	001 152 2449 8
R238 [EG]	ERDS2TJ222	001 152 2353 5	R312	ERDS2TJ393	001 152 2440 7	R455	ERDS2TJ222	001 152 2353 5
			R313, R314	ERDS2TJ223	001 152 2432 7	R456	ERDS2TJ153	001 152 2351 7
			R315	ERDS2TJ223	001 152 2432 7	R458	ERDS2TJ393	001 152 2440 7
			R316	ERDS2TJ562	001 152 2445 2	R503	ERDS2TJ102	001 152 2346 4
			R317	ERDS2TJ822	001 152 2455 0	[EG]		
			R318, R319	ERDS2TJ562	001 152 2445 2	R504	ERDS2TJ102	001 152 2346 4
						R504	ERDS2TJ102	001 152 2346 4

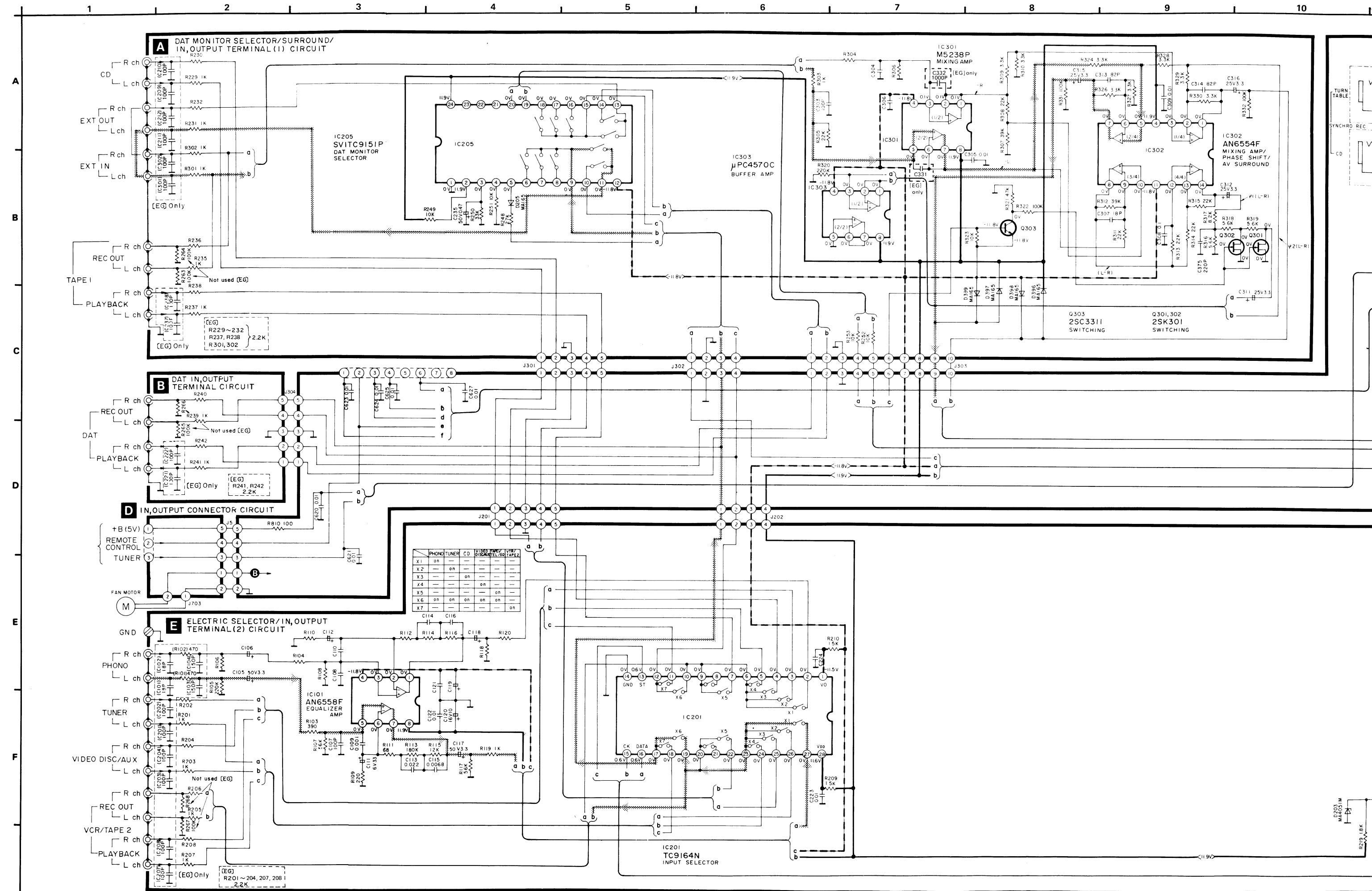


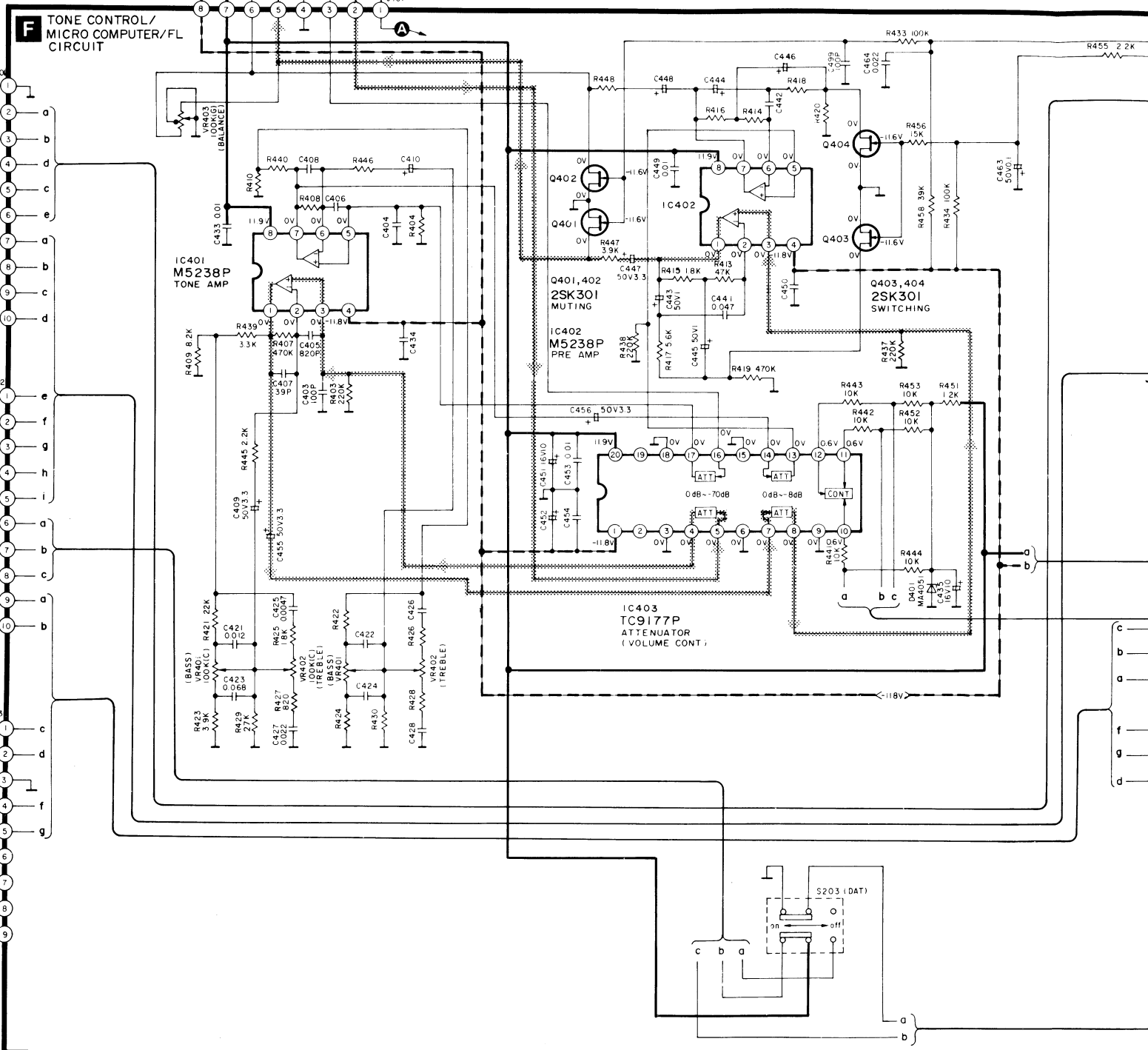
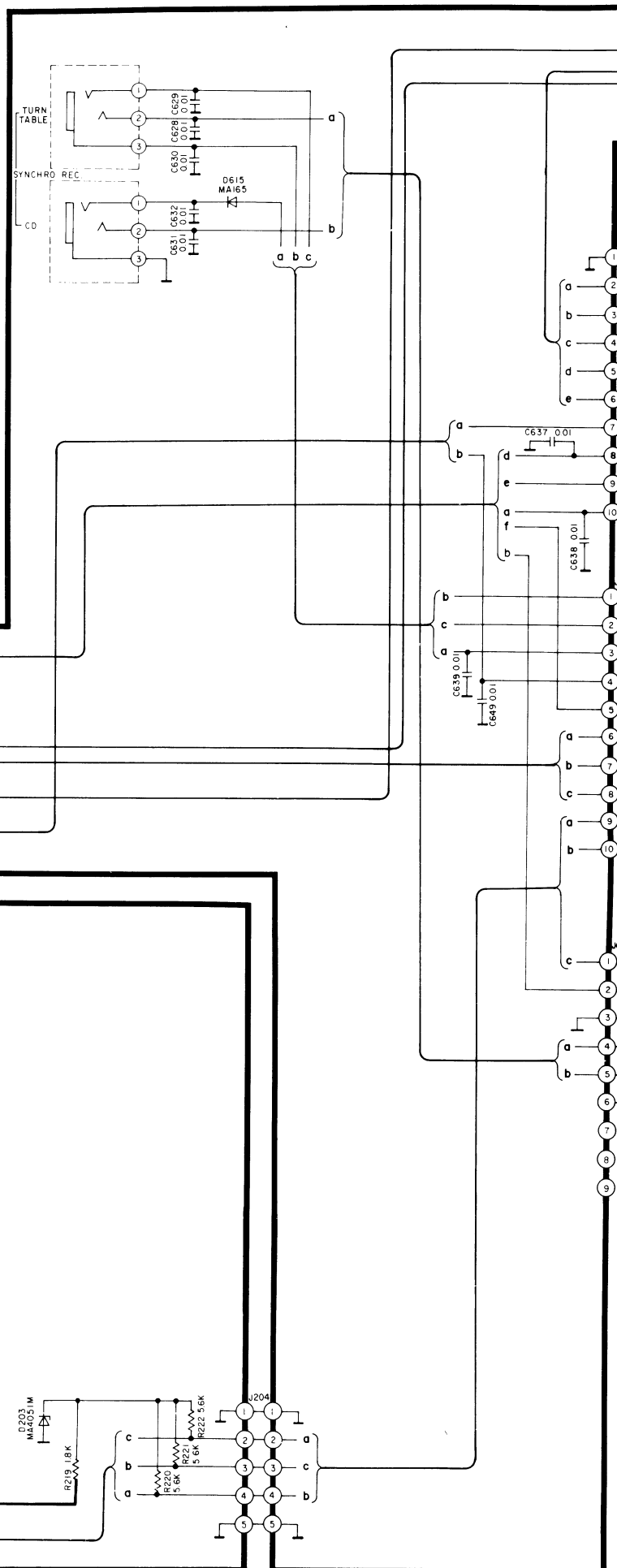
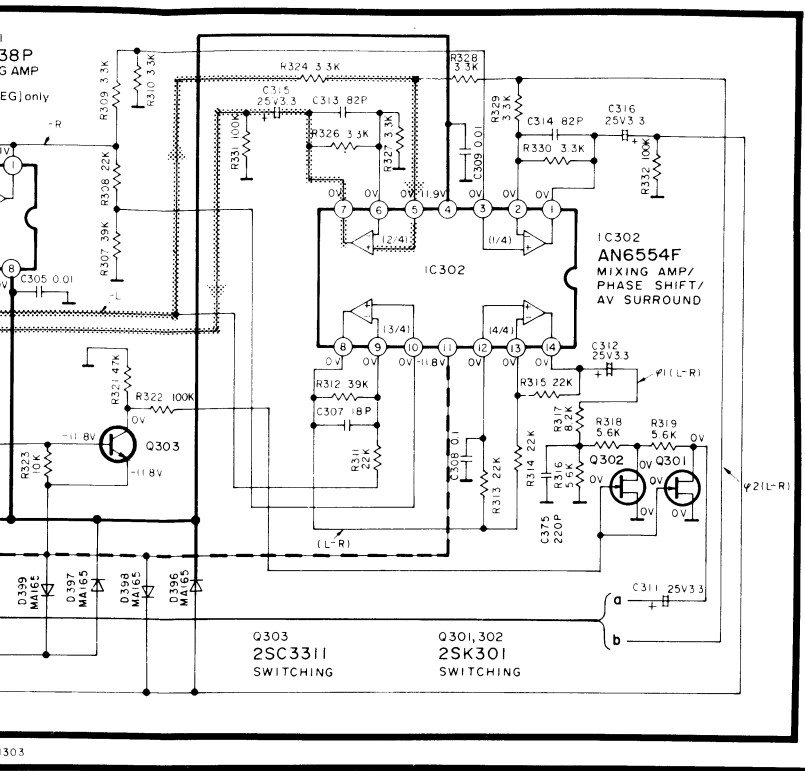


# BLOCK DIAGRAM



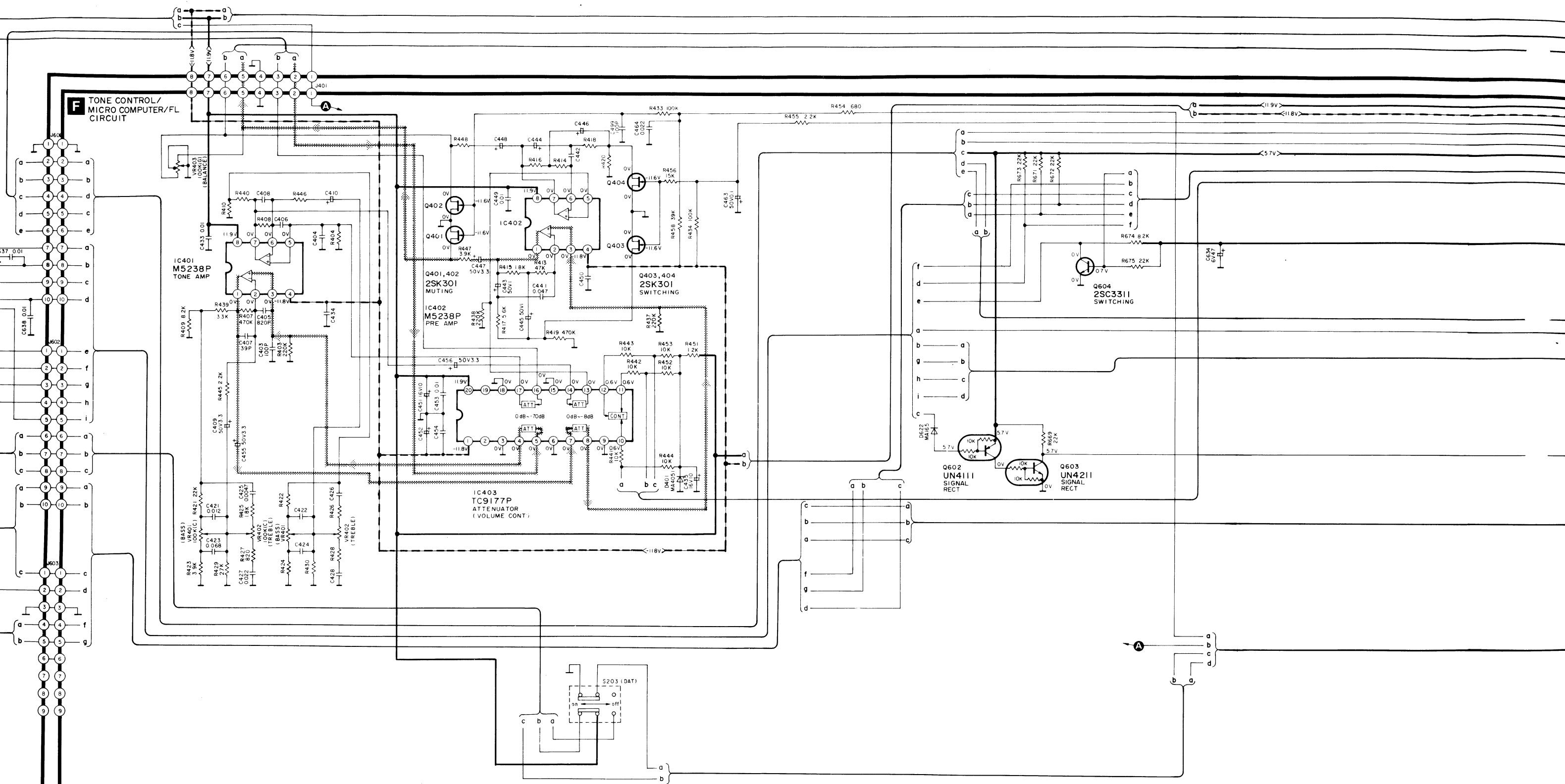






- Notes:**
- 1. S201 : Rec selector DECK A switch in "source" position.
  - 2. S202 : Rec selector DECK B switch in "source" position.
  - 3. S203 : DAT monitor switch.
  - 4. S501 : Speakers switch (  off,  on)
  - 5. S601 : Surround switch.
  - 6. S602 : Muting switch.
  - 7. S603 : Super-bass switch.
  - 8. S604 ~ S608 : Input selector switches.  
S604 : VTR/tape 2, S605 : tape 1, S606 : video disc/aux.  
S607 : tuner, S608 : phono, S611 : CD
  - 9. S701 : Power switch. (  off,  on)

- 10. Indicated voltage values are the standard values for the unit measured by the electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
- 11. Left-channel phono signal route.  
 Microphone signal.  
 Phase difference signal.  
 B voltage line B voltage line.
- 12. Important safety notice:  
Components identified by mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified components.

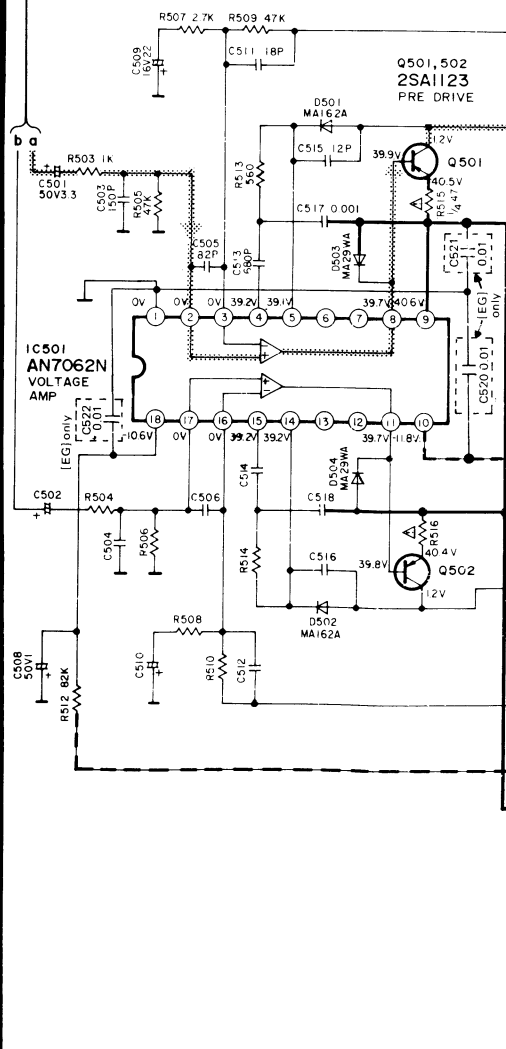
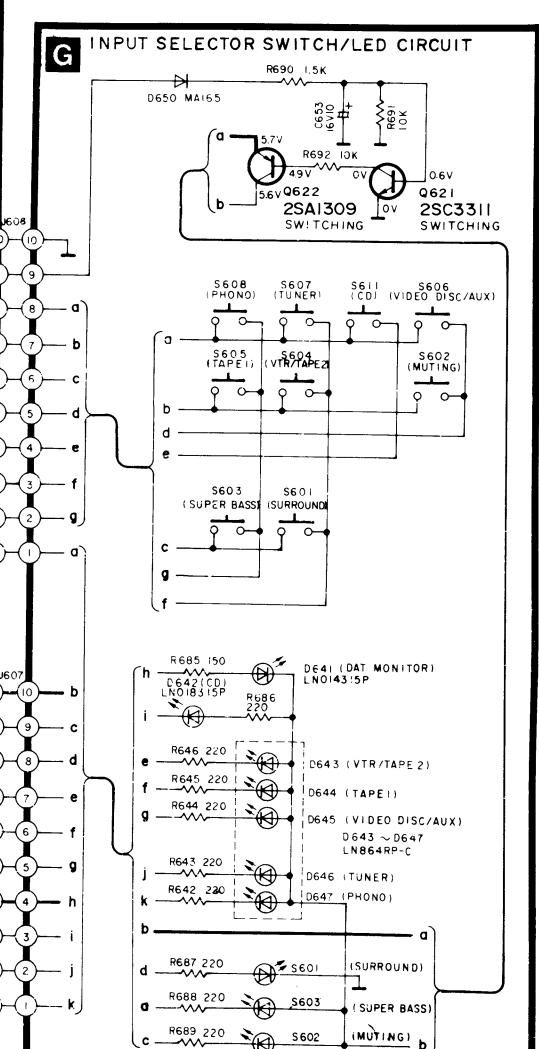
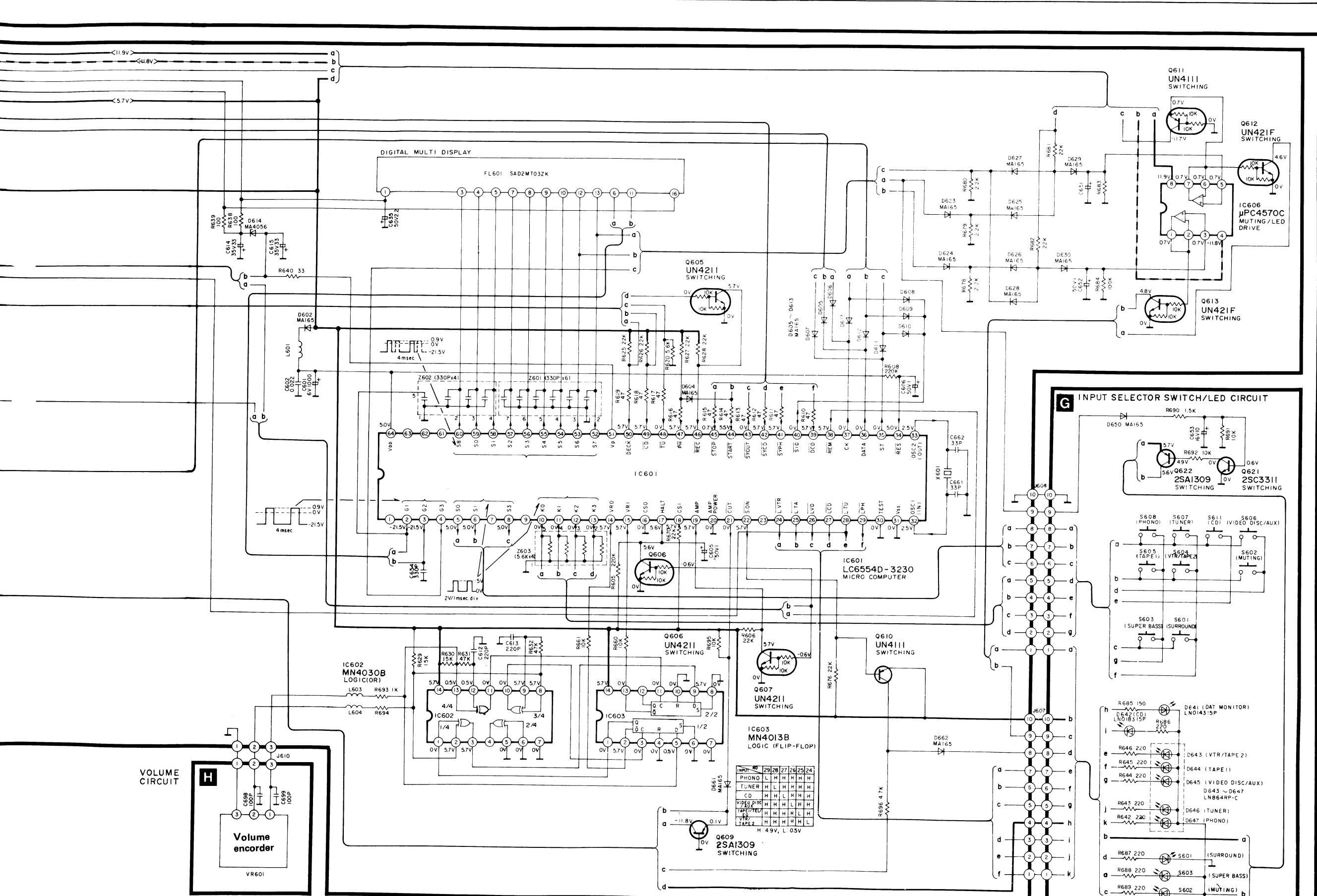


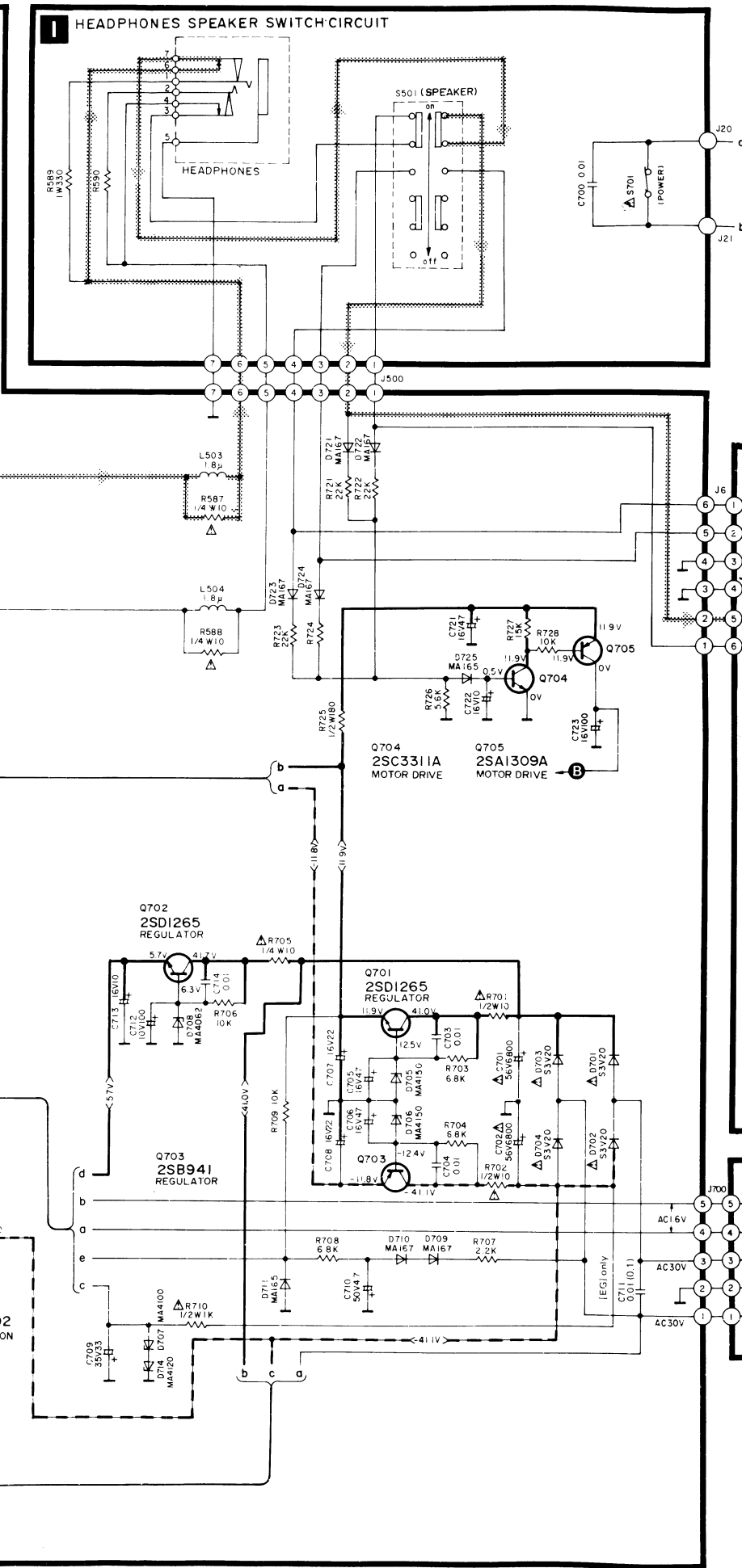
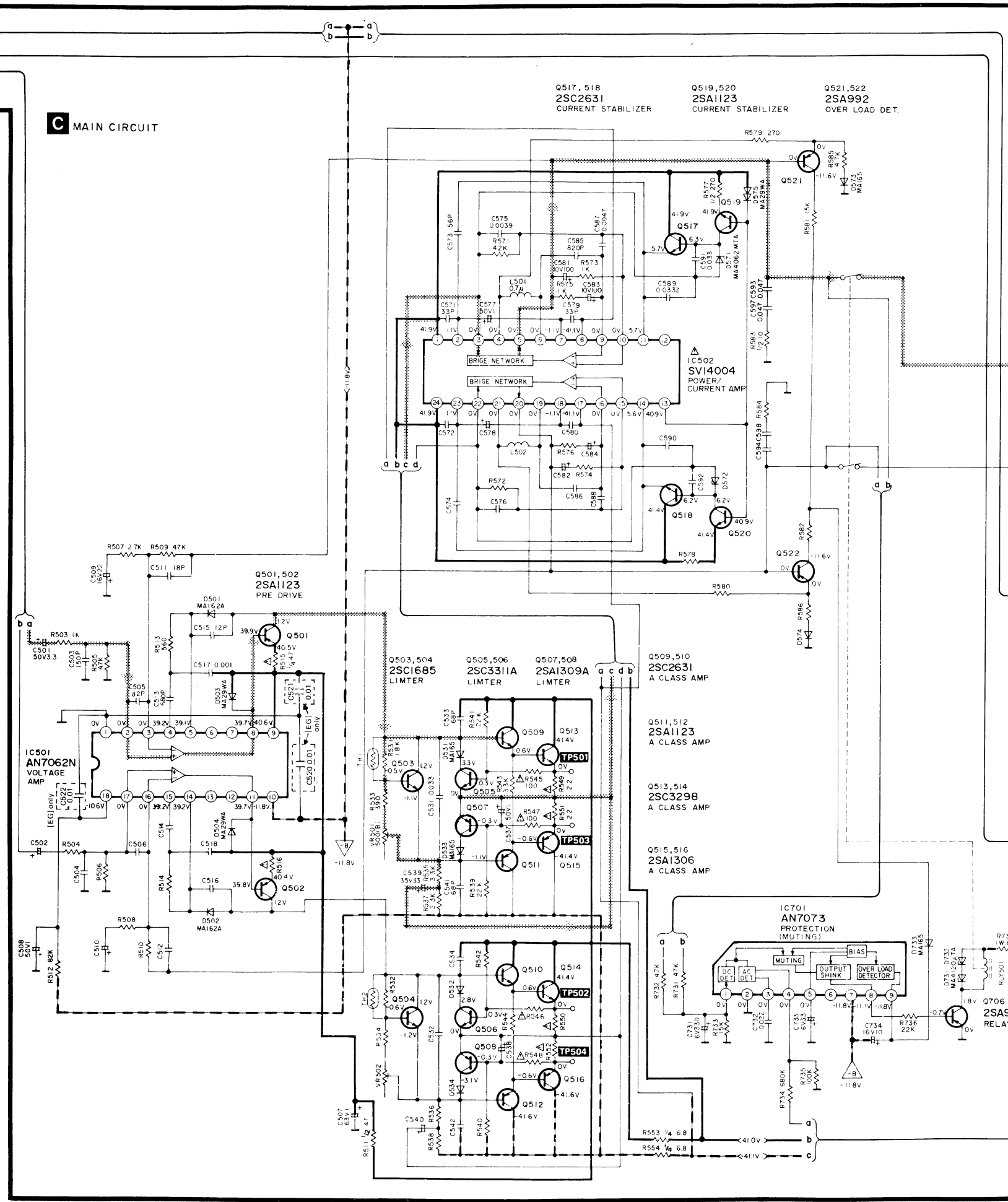
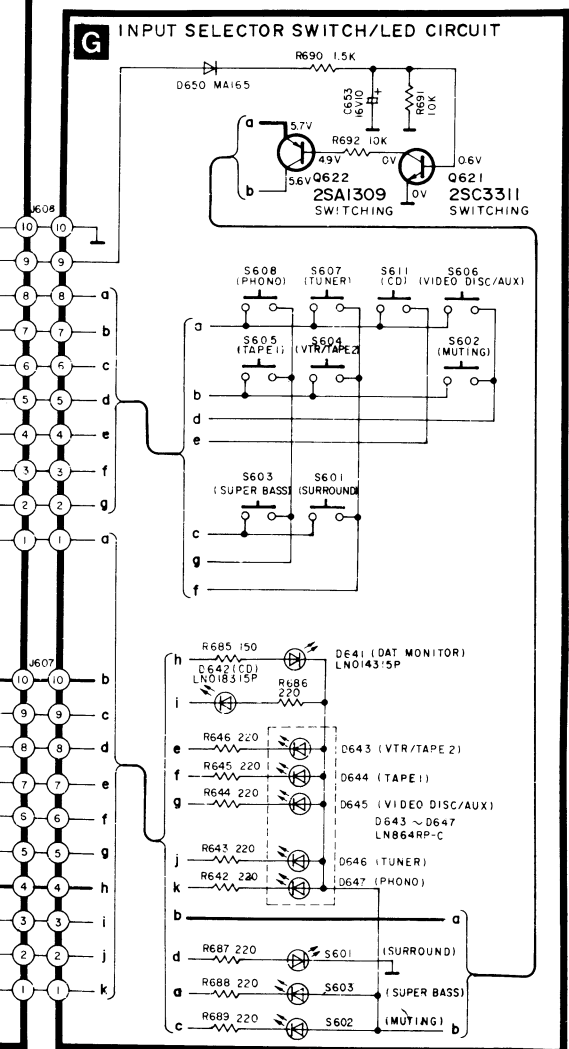
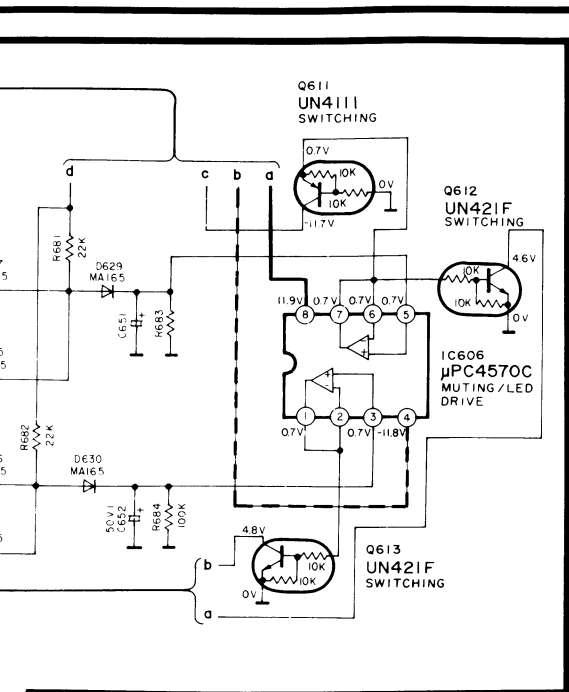
- Notes:**
- 1. S201 : Rec selector DECK A switch in "source" position.
  - 2. S202 : Rec selector DECK B switch in "source" position.
  - 3. S203 : DAT monitor switch.
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  - 5. S601 : Surround switch.
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  - 8. S604 ~ S608 : Input selector switches.  
S604 : VTR/tape 2, S605 : tape 1, S606 : video disc/aux.  
S607 : tuner, S608 : phono, S611 : CD
  - 9. S701 : Power switch. (  off,  on)

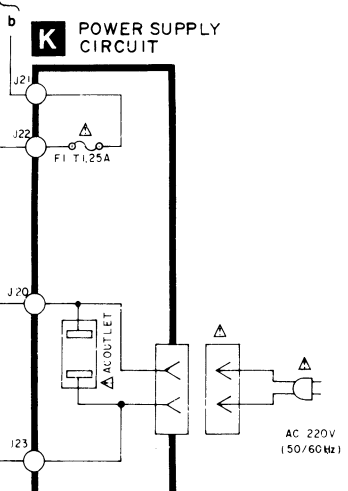
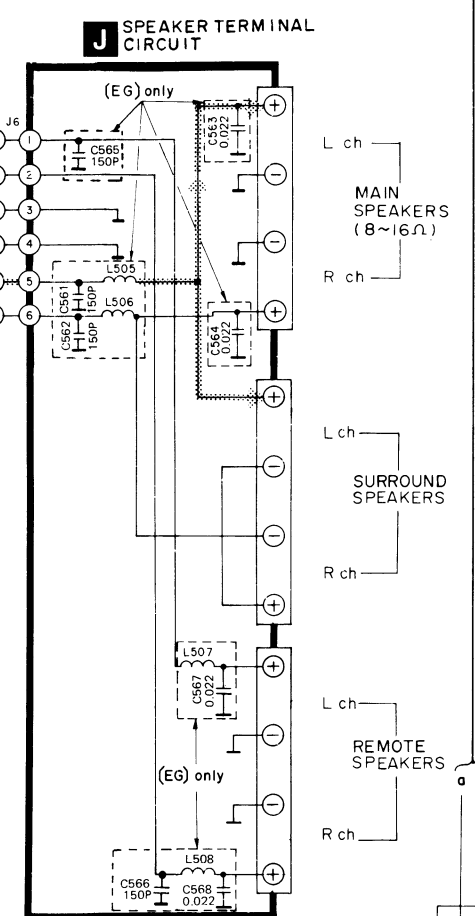
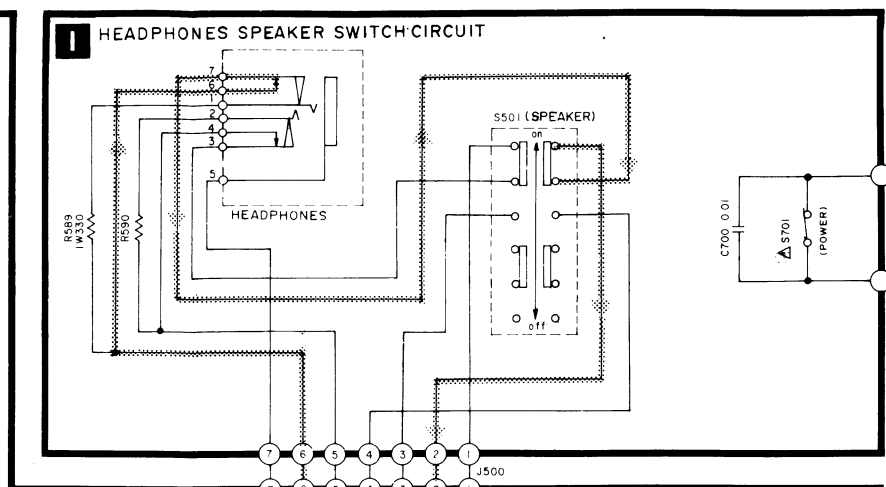
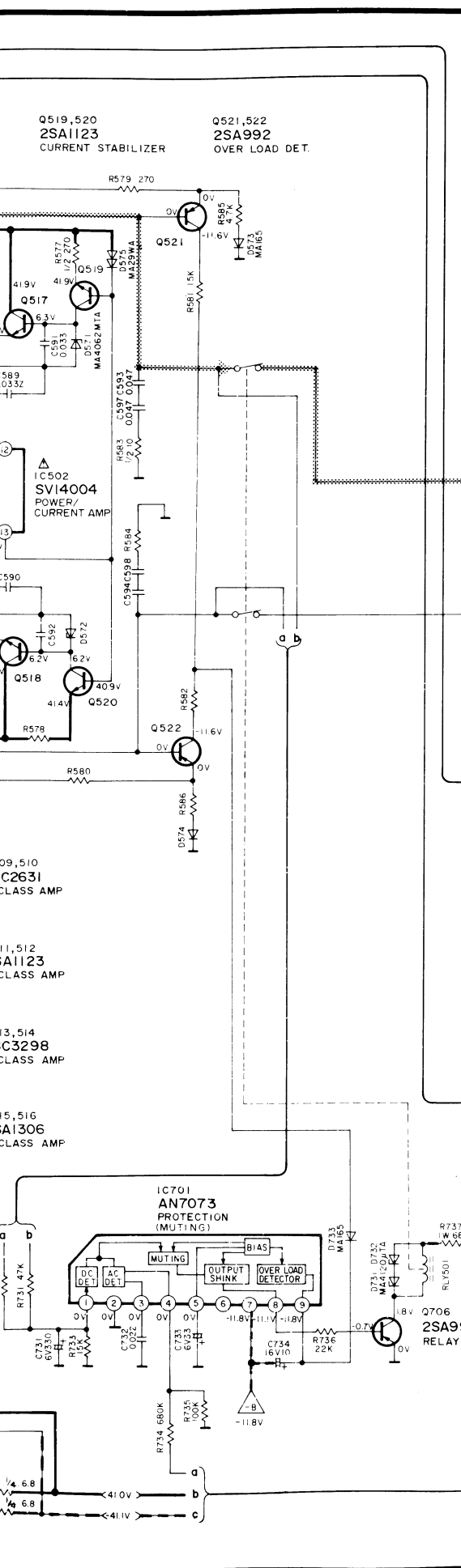
- 10. Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
- 11. Left-channel phono signal route.  
 Microphone signal.  
 Phase difference signal.  
 ⊕ B voltage line ⊖ B voltage line.
- 12. Important safety notice:  
Components identified by mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

**\* Caution!**  
IC and LSI are sensitive to static electricity. Secondary trouble can be prevented by taking care during repair.  
\* Cover the parts boxes made of plastics with aluminum foil.  
\* Ground the soldering iron.  
\* Put a conductive mat on the work table.  
\* Do not touch the legs of IC or LSI with the fingers directly.

C MAIN CIRCUIT

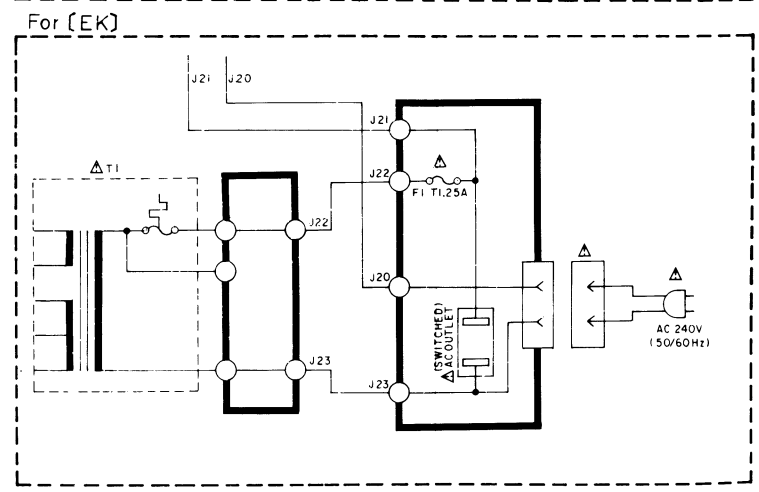
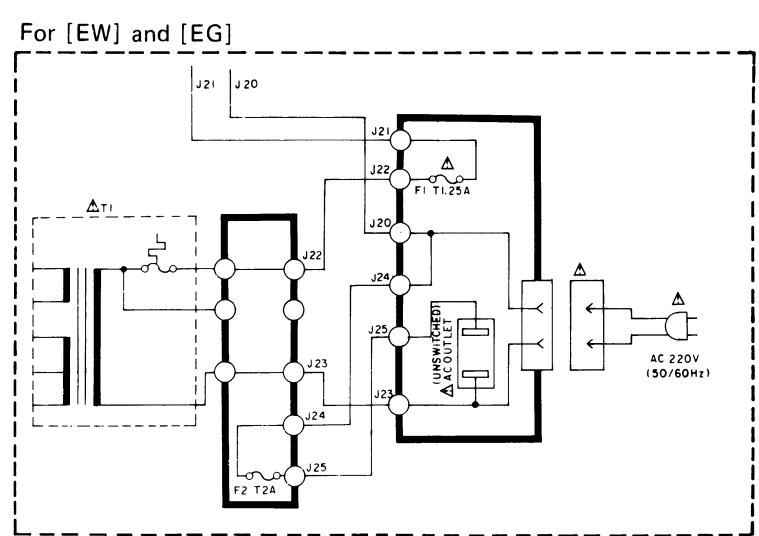
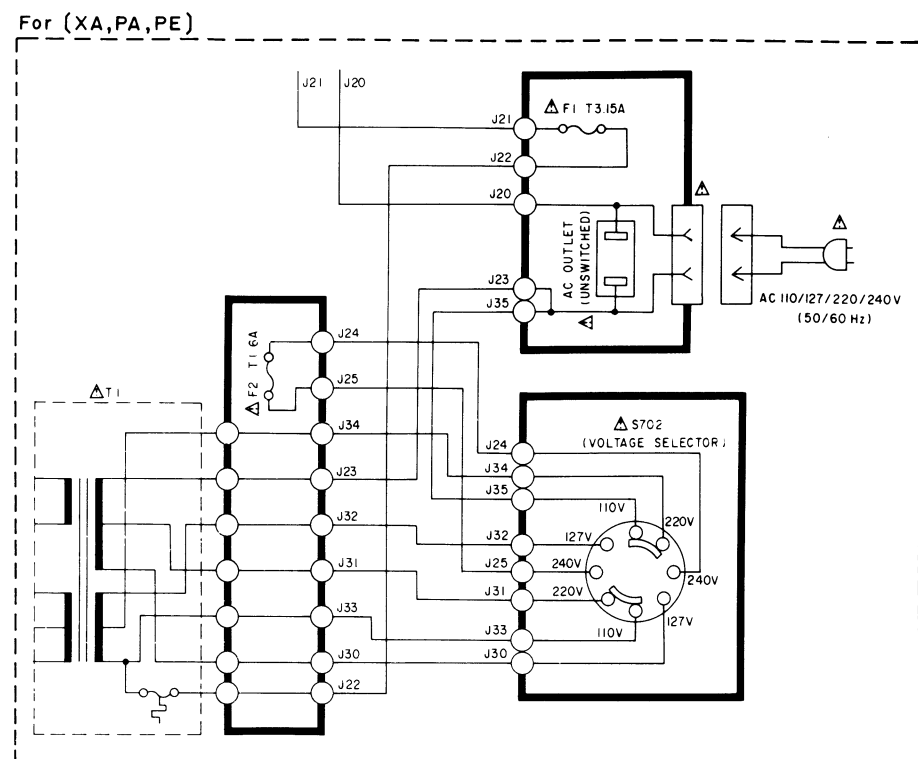






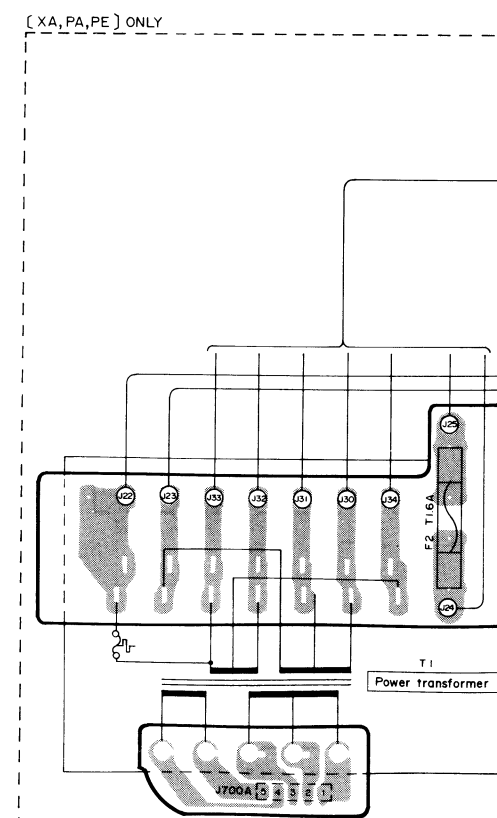
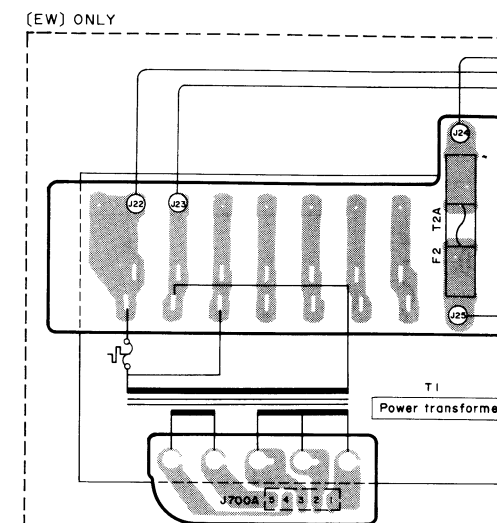
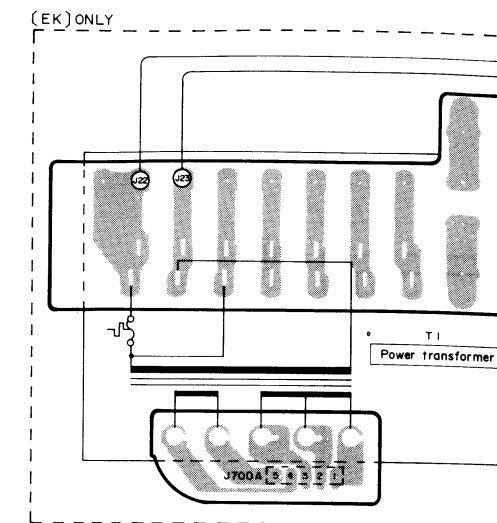
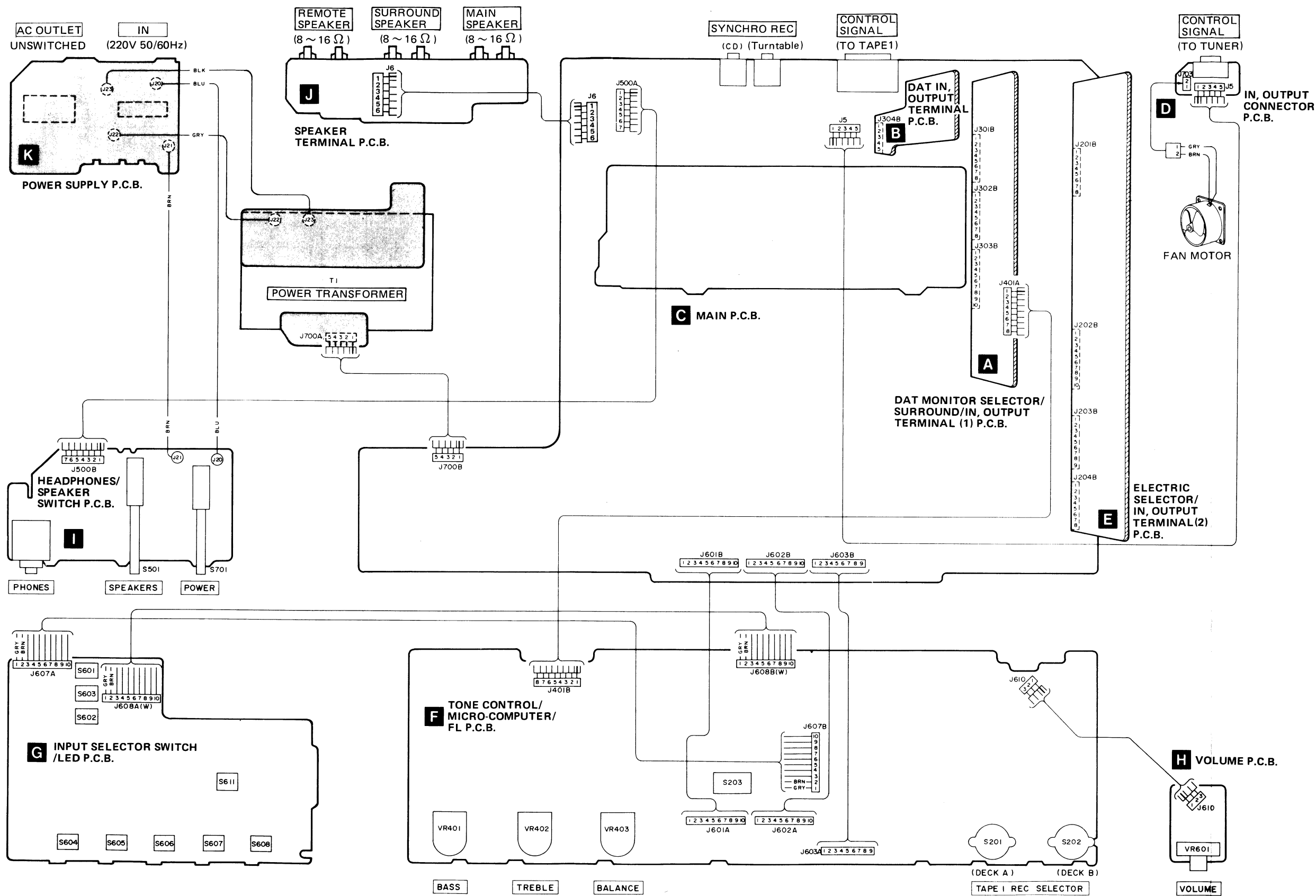
### SCHEMATIC DIAGRAM

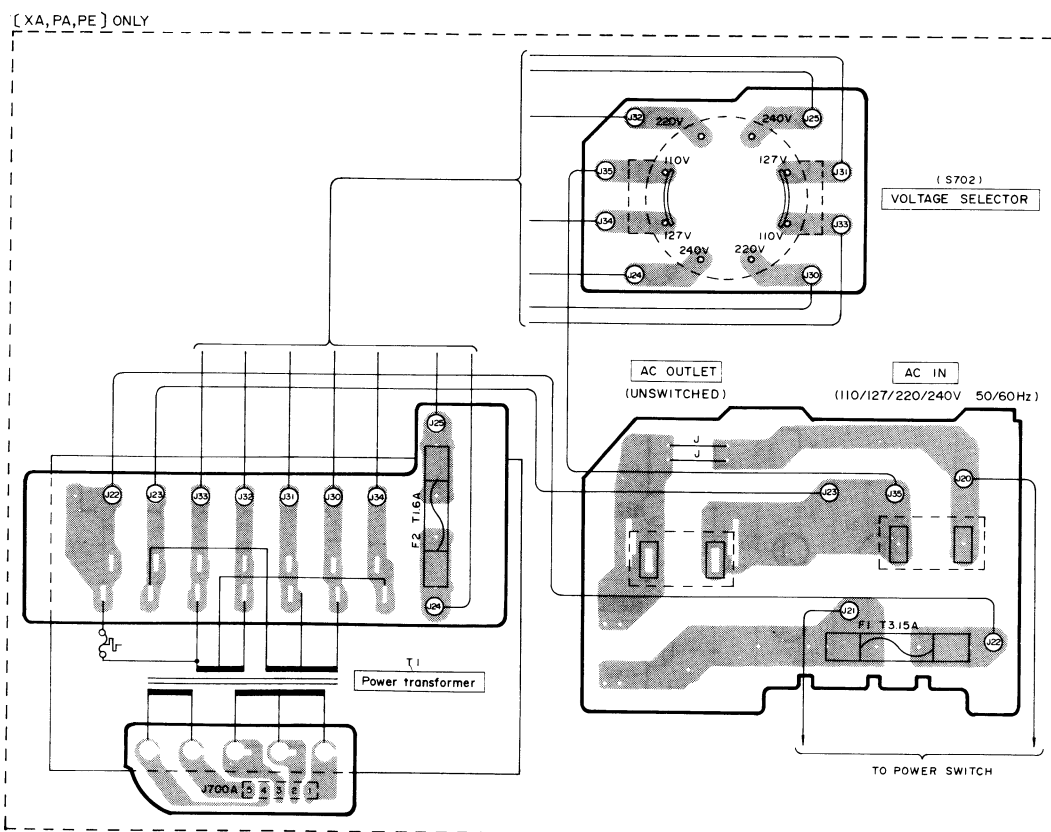
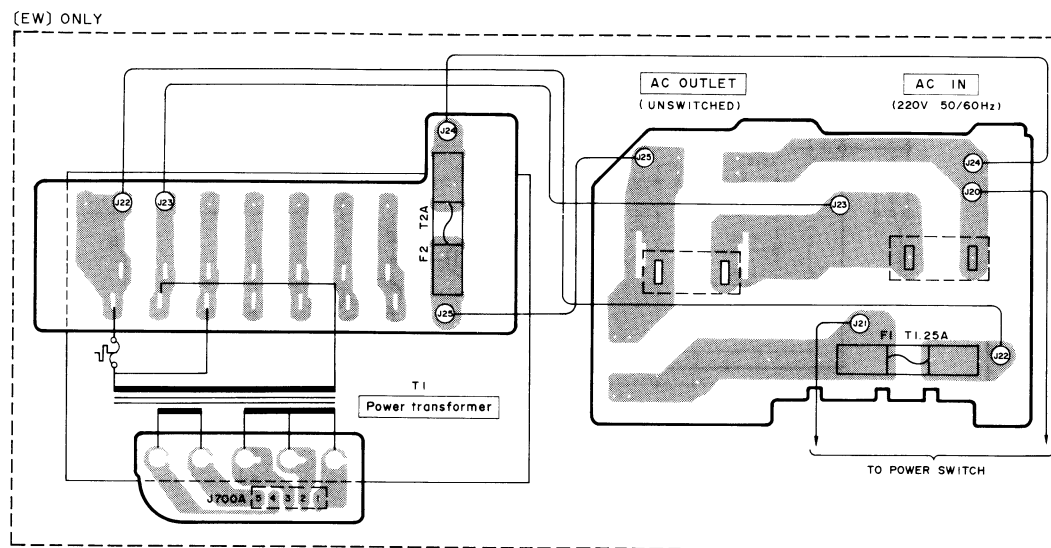
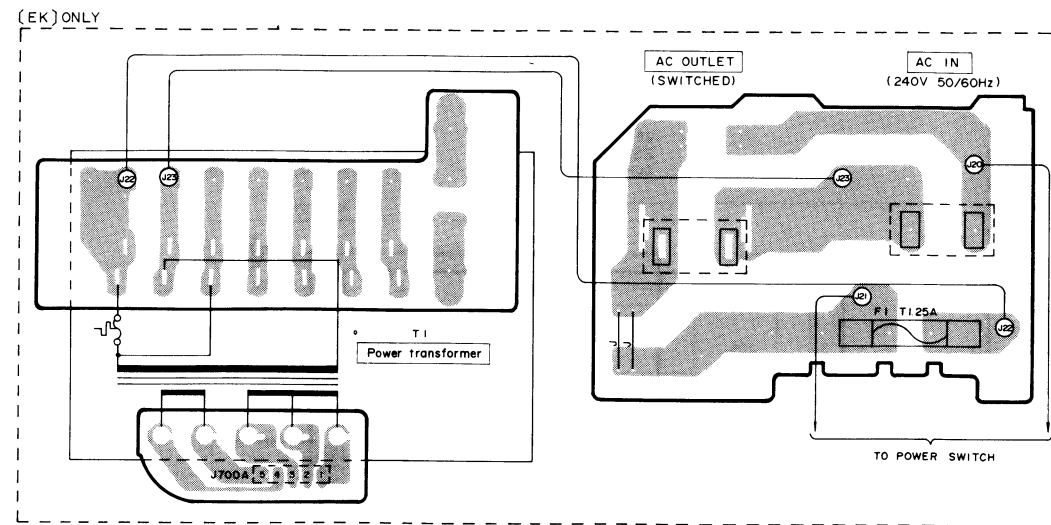
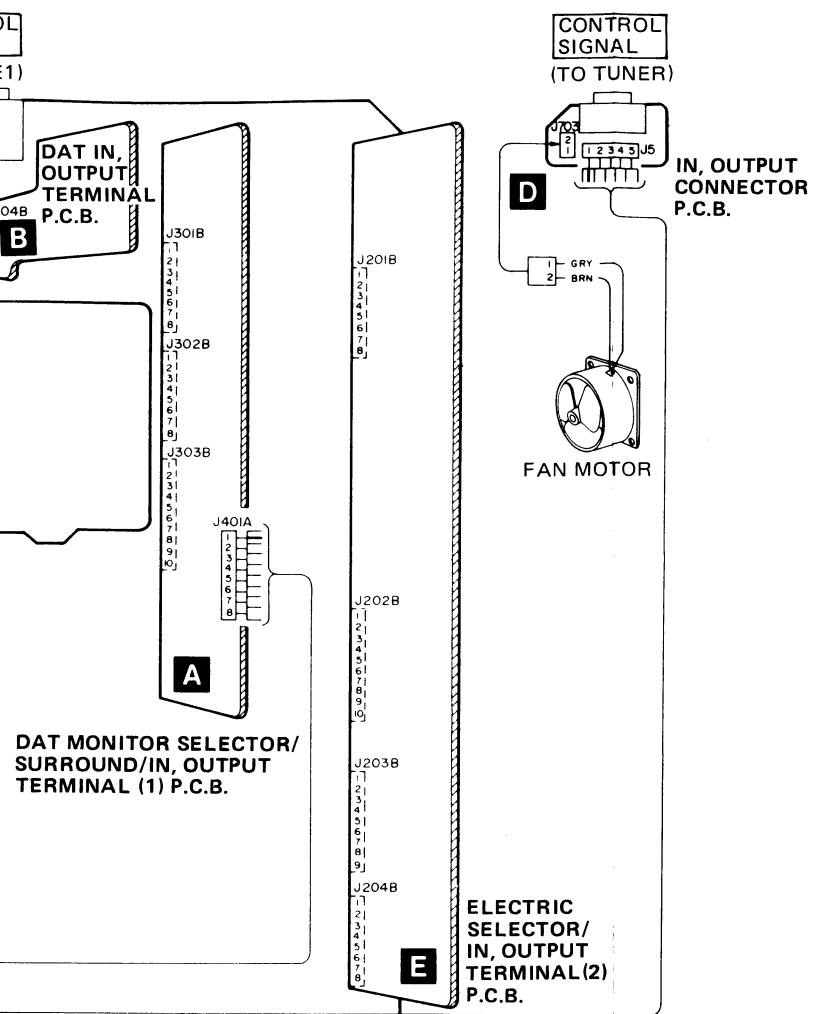
(This schematic diagram may be modified at any time with the development of new technology.)





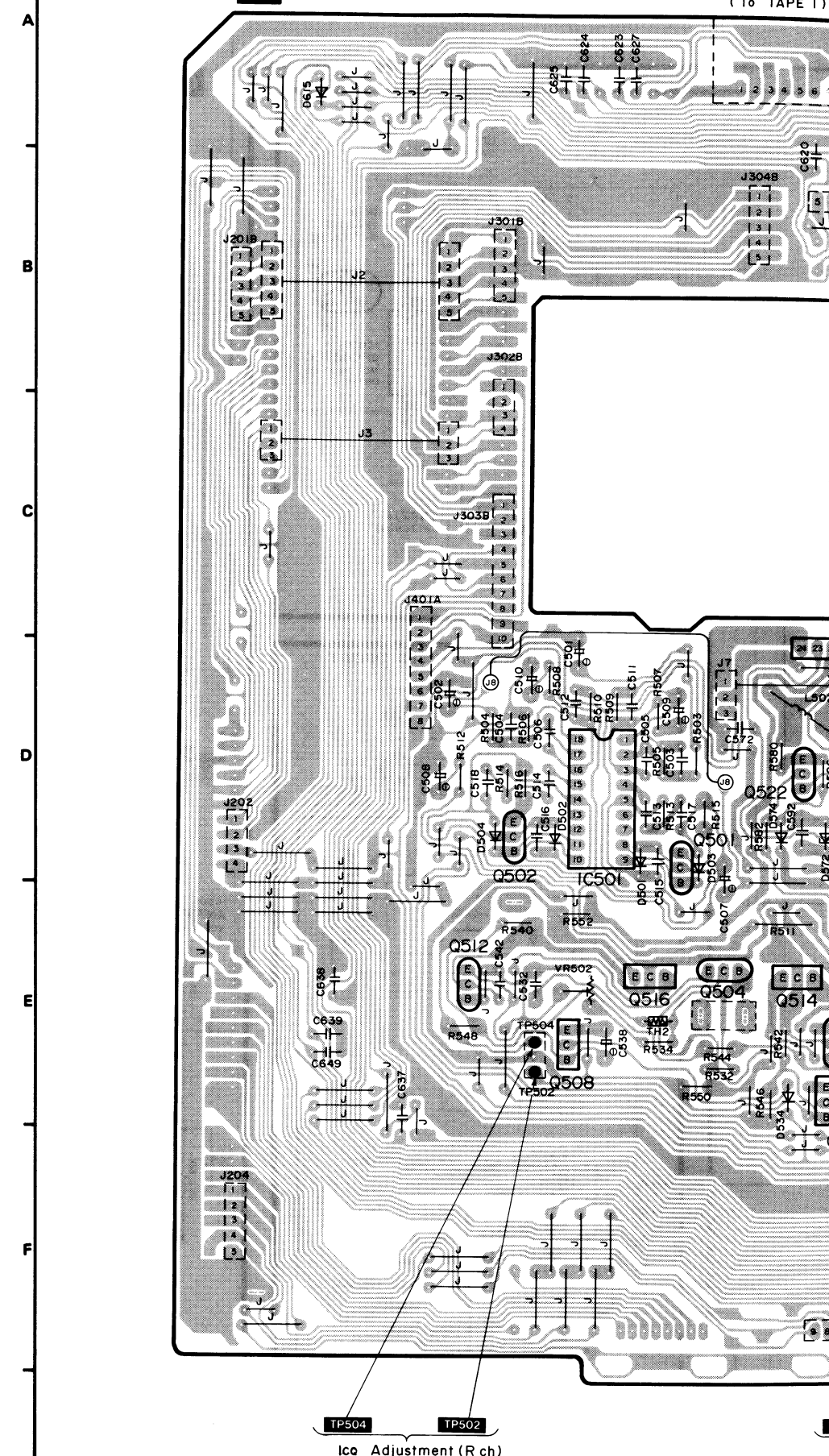
# WIRING CONNECTION DIAGRAM



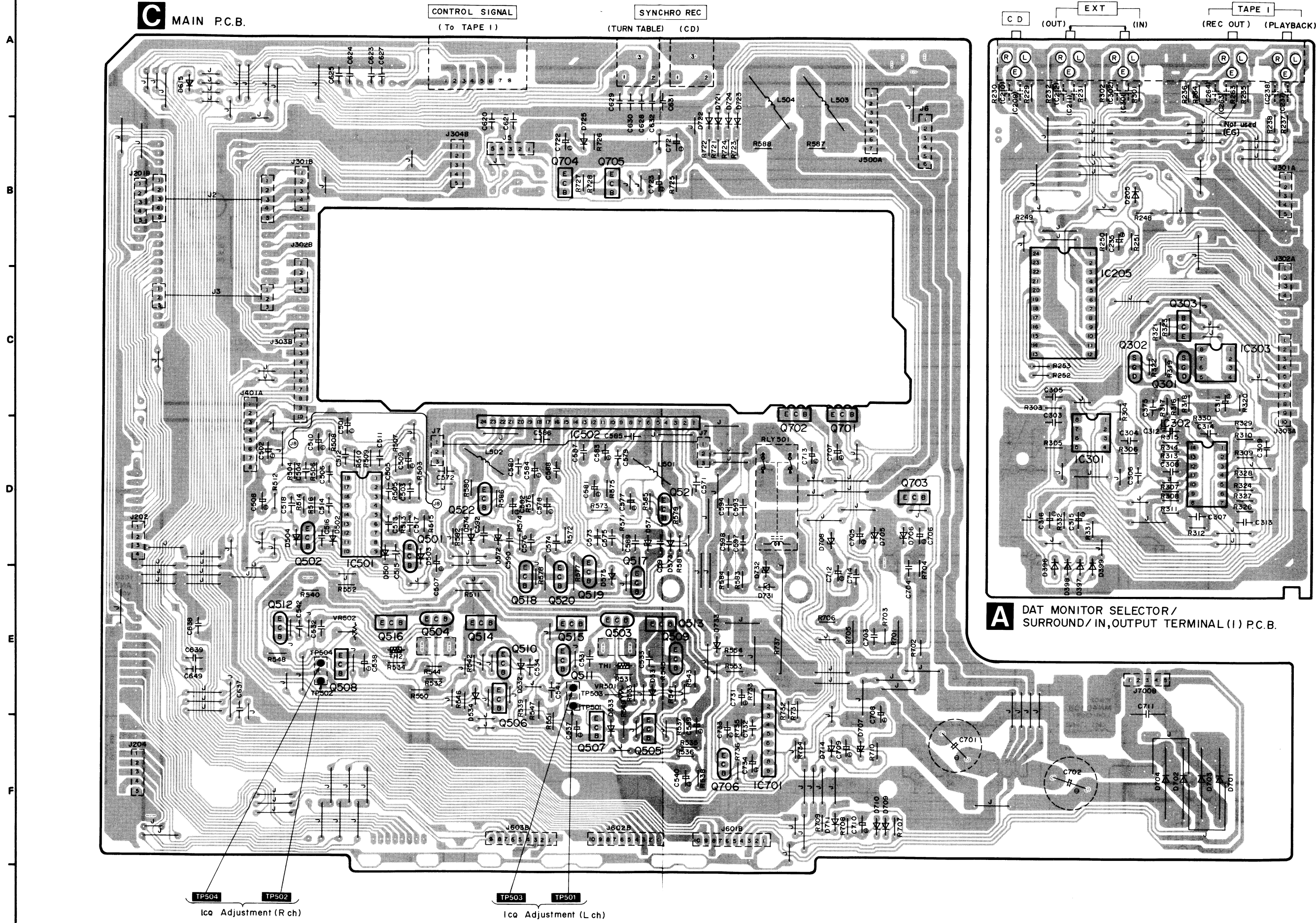


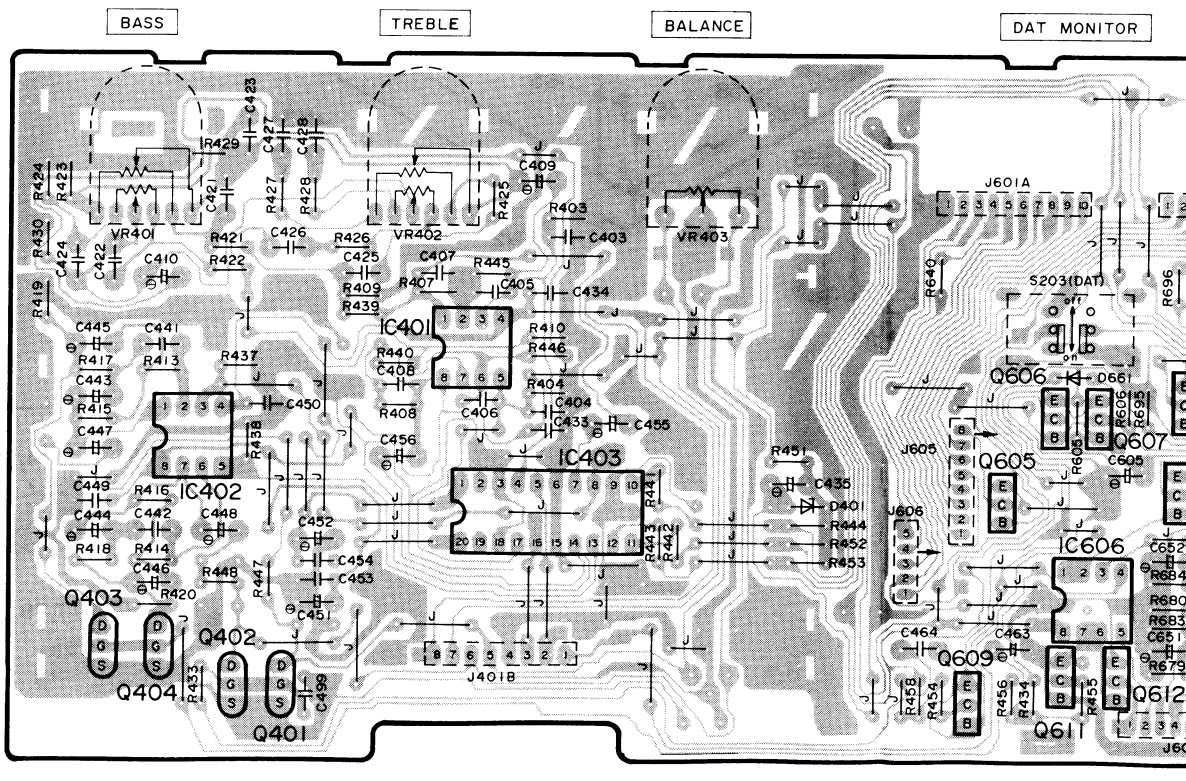
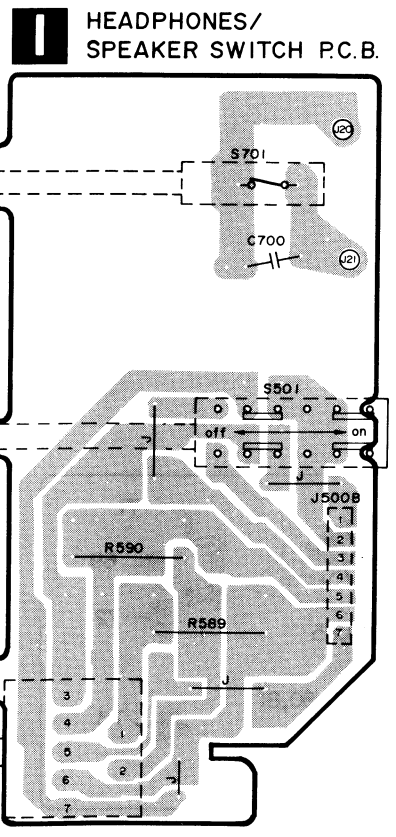
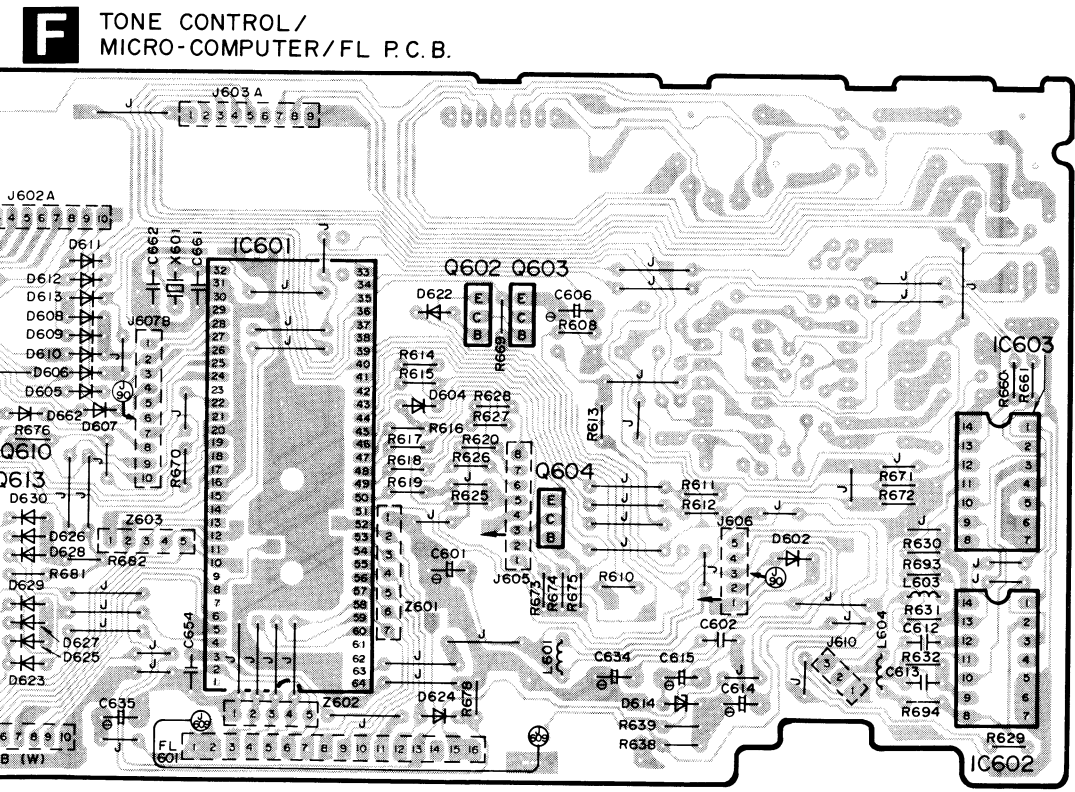
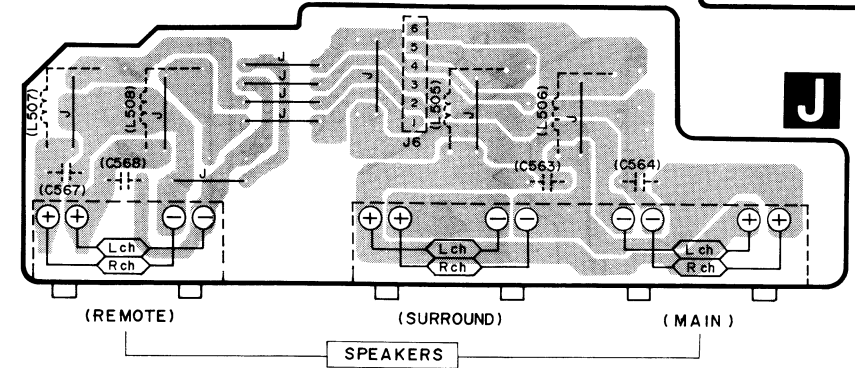
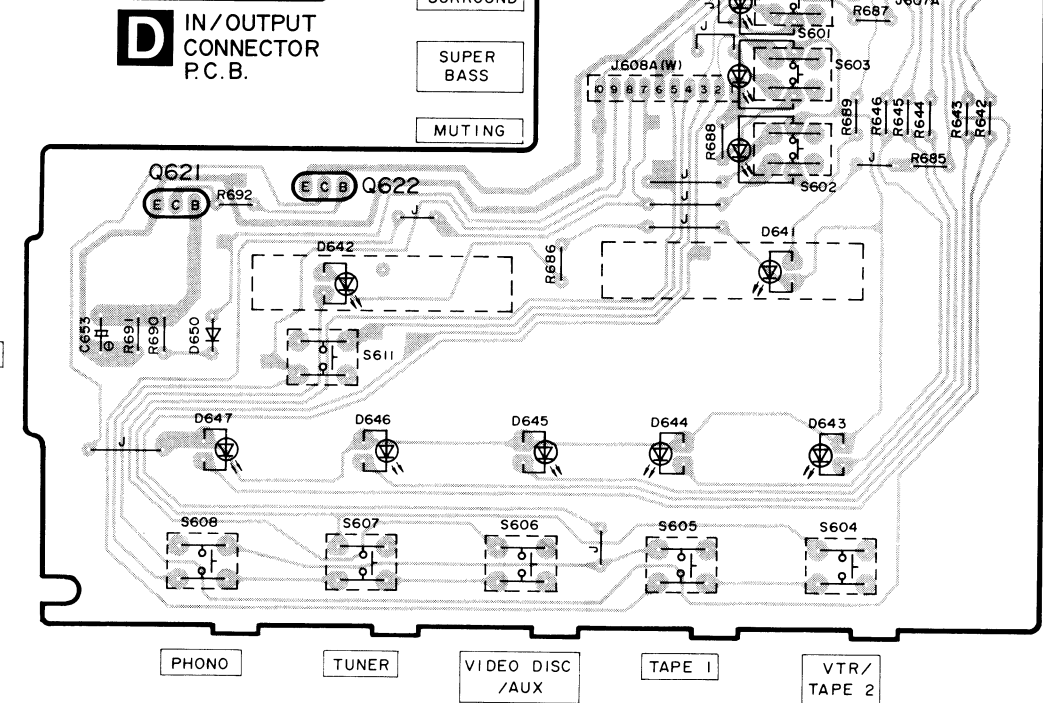
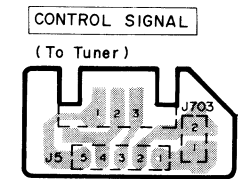
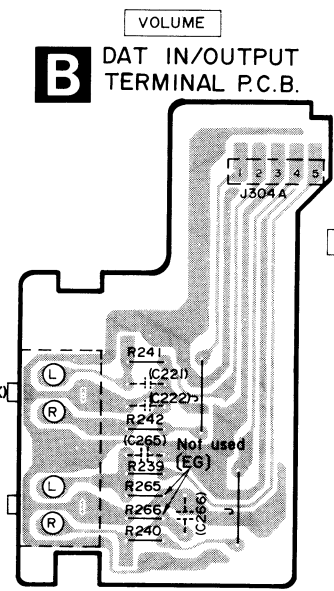
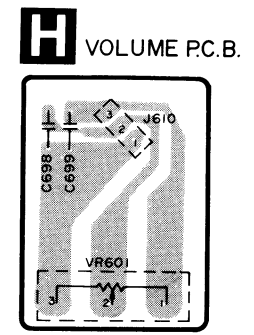
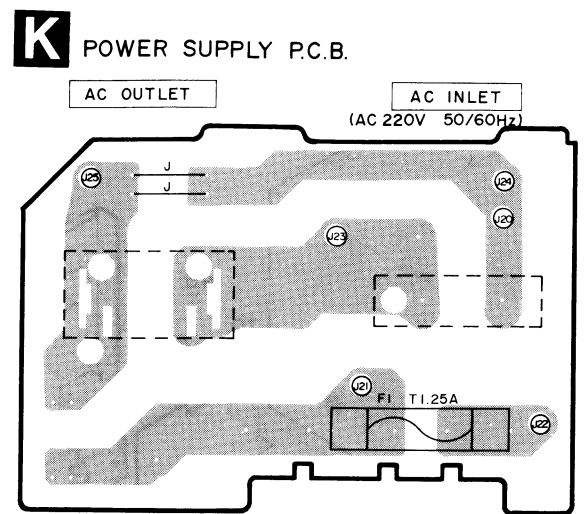
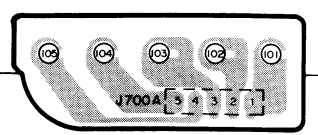
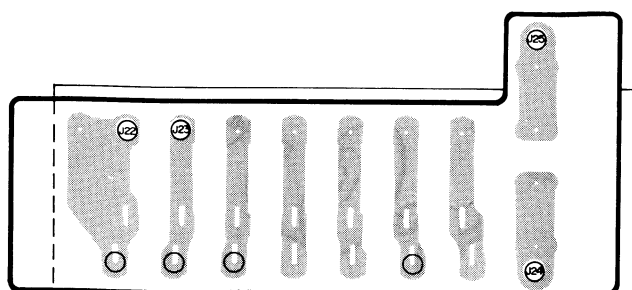
### PRINTED CIRCUIT BOARDS

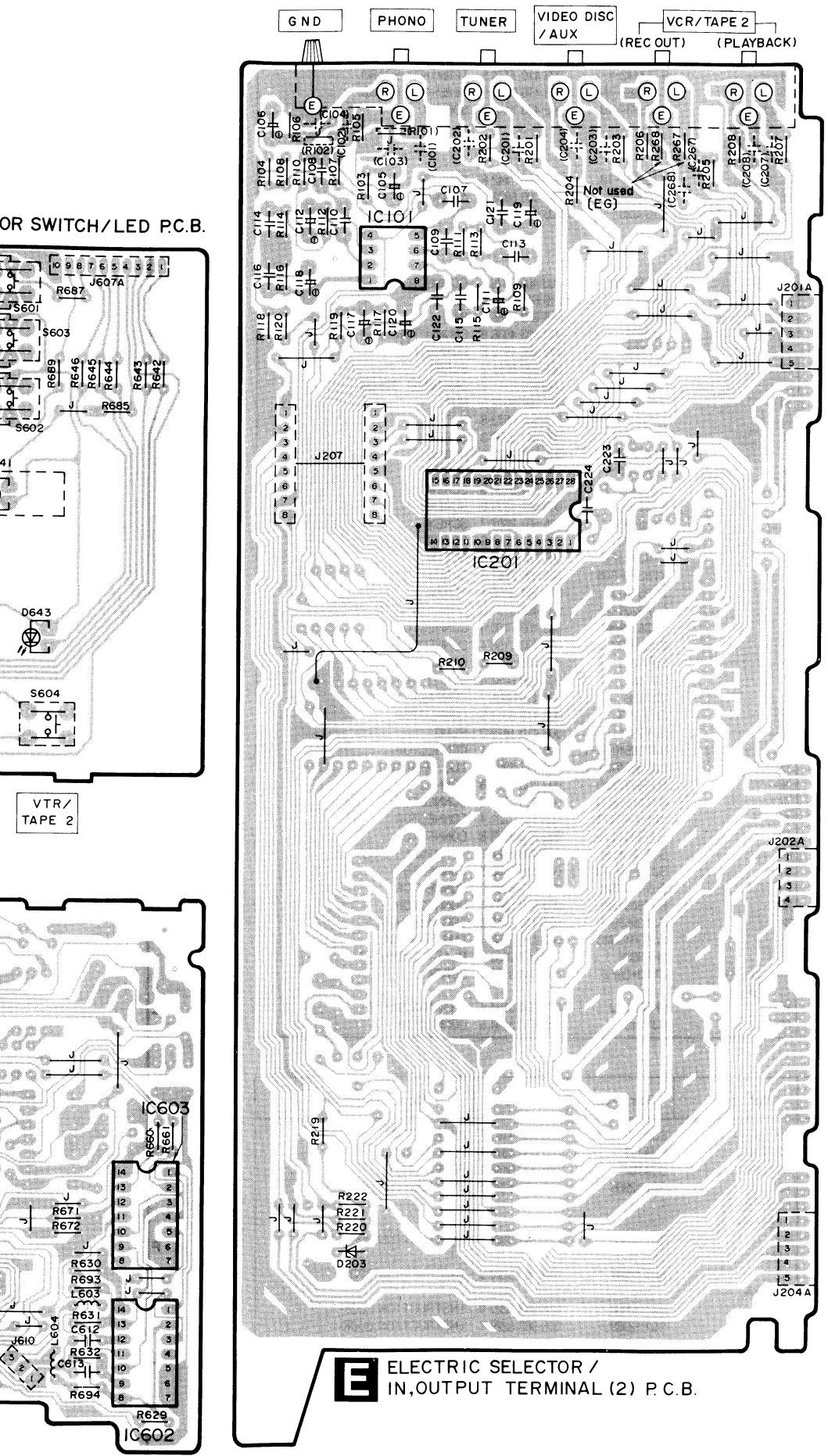
#### C MAIN P.C.B.



# PRINTED CIRCUIT BOARDS







• Terminal guide of transistors, diodes and IC's

	LC6554D-3230	64Pin
	TC9164N	28Pin
	TC9151P	24Pin
	TC9152P	24Pin
	TC9177P	20Pin
	AN7062	18Pin
	DN74LS01	14Pin
	MN4013B	
	MN4030B	
	AN6554F	
	M5238P	8 Pin
	AN6558F	
	UPC4570C	
	SVI4004	
	MA165, MA167, MA29W, SVDS3V20	Anode Cathode Ca ○ — A
	MA4100, MA4120, MA162AFU	Anode Cathode Ca ○ — A
	MA4051, MA4056, MA4062, MA4150	Anode Cathode Ca ○ — A
	LN846RP	Anode Cathode Ca ○ — A
	LN018315P, LN014315P	Anode Cathode Ca ○ — A
	2SK301	1. Drain 2. Gate 3. Source
	UN4211	

**E** ELECTRIC SELECTOR / IN, OUTPUT TERMINAL (2) P.C.B.

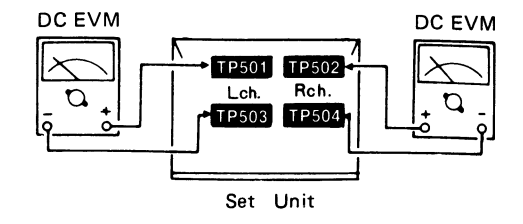
MEASUREMENTS AND ADJUSTMENTS

Control positions and equipment used.

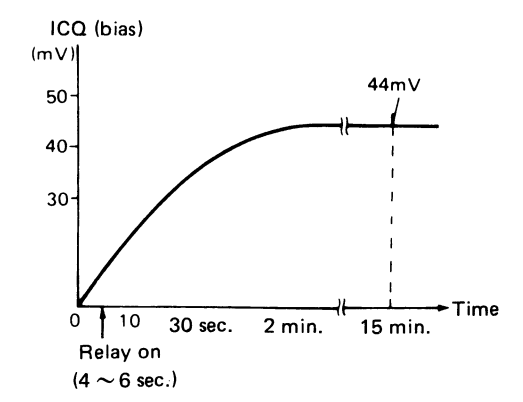
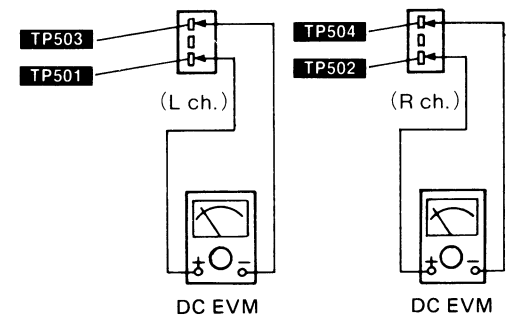
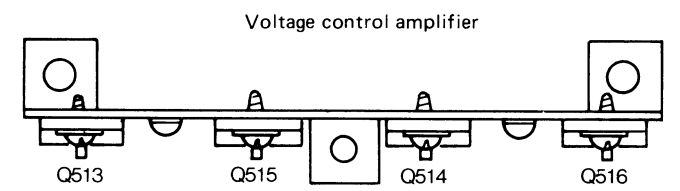
- Volume control . . . . . Minimum
- Speaker switch . . . . . off
- DC electronic voltmeter (EVM) (2 units)

Idling (ICQ) adjustment

1. Connect the set and the test instruments as shown at right.
2. Turn the ICQ adjusting controls (VR501, VR502) all the way counterclockwise.
3. Turn on the set when it is cold enough, and adjust the controls VR501 and VR502 so that the voltage of 30mV be reached 15 seconds after the relay is activated.  
(Adjust for both channels at a time.)  
Make sure the voltage is 18 ~ 47 mV (standard 44mV) in 10 ~ 15 minutes.  
(It should be below 50mV 60 minutes later.)



• Adjustment points





## EXPLODED VIEWS

