

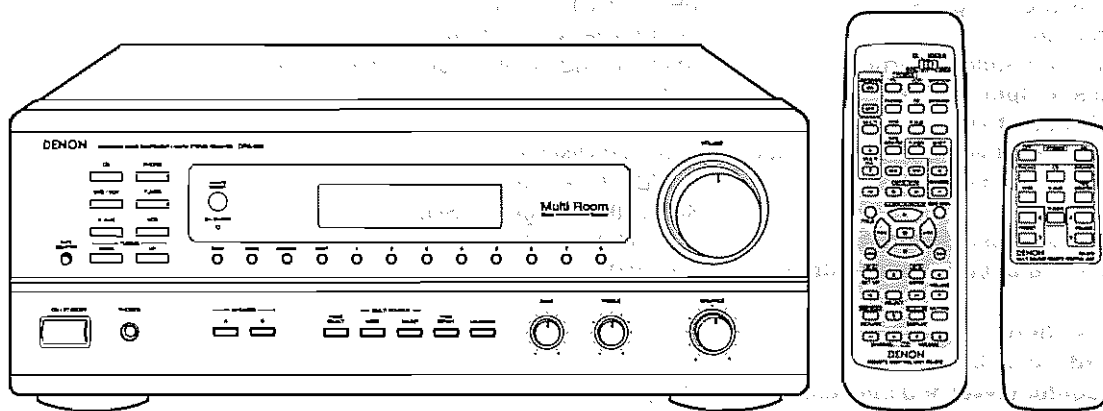
DENON

Hi-Fi AM-FM Stereo Receiver

SERVICE MANUAL

MODEL DRA-685

AM-FM STEREO RECEIVER



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• Some illustrations using in this service manual are slightly different from the actual set.

NIPPON COLUMBIA CO., LTD.

SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 460 kohms, the unit is defective.

SPECIFICATIONS

• Audio Section

(Power Amplifier)

Rated output: 100W + 100W (8Ω/ohms, 20Hz ~ 20kHz with 0.05% T.H.D.)
 Output terminals: A or B 4 to 16Ω/ohms
 A or B 8 to 16Ω/ohms

(Analog)

LINE input - PRE OUT

Input sensitivity/input impedance: 200mV/47kΩ/kohms
 Frequency response: 10Hz ~ 50kHz: ±1.5dB
 S/N ratio: 100 dB (IHF-A weighted)
 Total harmonic distortion: 0.009% (-3dB at rated output, 8Ω/ohms) (1kHz)
 Rated output: 1.2V

PHONO input - REC OUT

Input sensitivity/input impedance: 3.0mV/47kΩ/kohms
 RIAA deviation: ±0.5dB (20Hz ~ 20kHz)
 S/N ratio: 74dB (IHF-A weighted, with 5mV input)
 Total harmonic distortion: 0.03% (1kHz, 3V)
 Rated output/Maximum output: 150mV/7V

• Video Section

(Standard Video Jacks)

Input/output level and impedance: 1V p-p, 75Ω/ohms
 Frequency response: 5Hz ~ 10MHz +1, -3dB

• Tuner Section

	[FM] (note: μV at 75Ω/ohms, 0dBf = 1×10 ⁻¹⁵ W)	[AM]
Receiving range:	87.50MHz ~ 107.90 MHz	520kHz ~ 1710kHz
Usable sensitivity:	1.4μV (14.2dBf)	18μV
50dB quieting sensitivity:	MONO 2.8μV (20.2dBf) STEREO 23μV (38.5dBf)	
S/N ratio:	MONO 80dB (IHF-A weighted) STEREO 75dB (IHF-A weighted)	
Total harmonic distortion:	MONO 0.15% (1kHz) STEREO 0.3% (1kHz)	

• General

Power supply: AC120V, 60Hz
 Power consumption: 3.4A
 Maximum external dimensions: 434 (W) × 171 (H) × 416 (D) mm (17-1/16" × 6-23/32" × 16-3/8")
 Weight: 10.0kg (22lbs)

• Remote Control Unit

RC-872

Batteries: R6P/AA Type (two batteries)
 External dimensions: 54 (W) × 172 (H) × 27.2 (D) mm (2-1/8" × 6-3/4" × 1-1/16")
 Weight: 100g (Approx. 6 oz) (including batteries)

RC-873

Batteries: R03/AAA Type (two batteries)
 External dimensions: 47.5 (W) × 127 (H) × 18 (D) mm (1-27/32" × 5 × 11/16")
 Weight: 70g (Approx. 2.4oz)

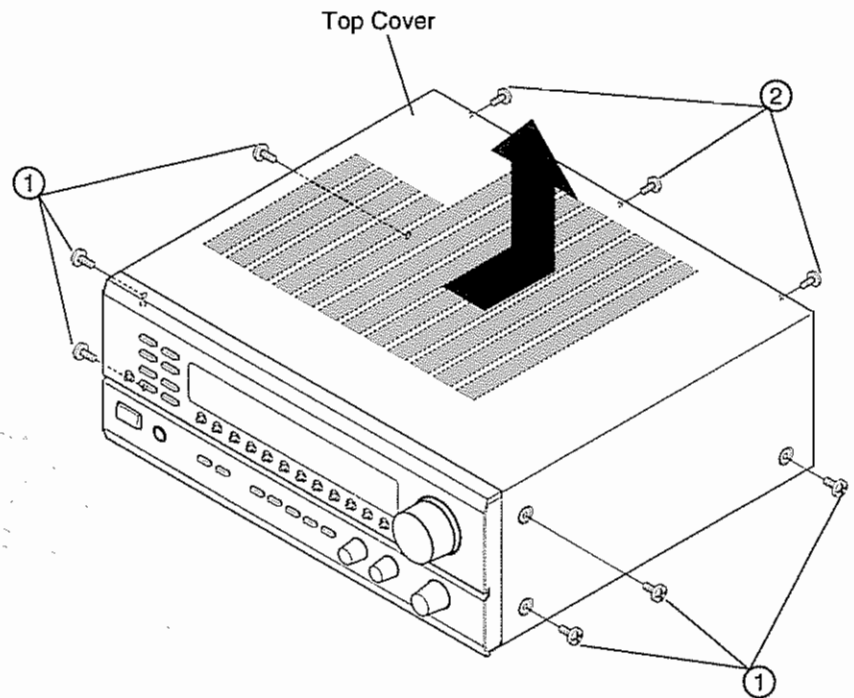
* For purposes of improvement, specifications and design are subject to change without notice.

DISASSEMBLY

(To reassemble reverse disassembly)

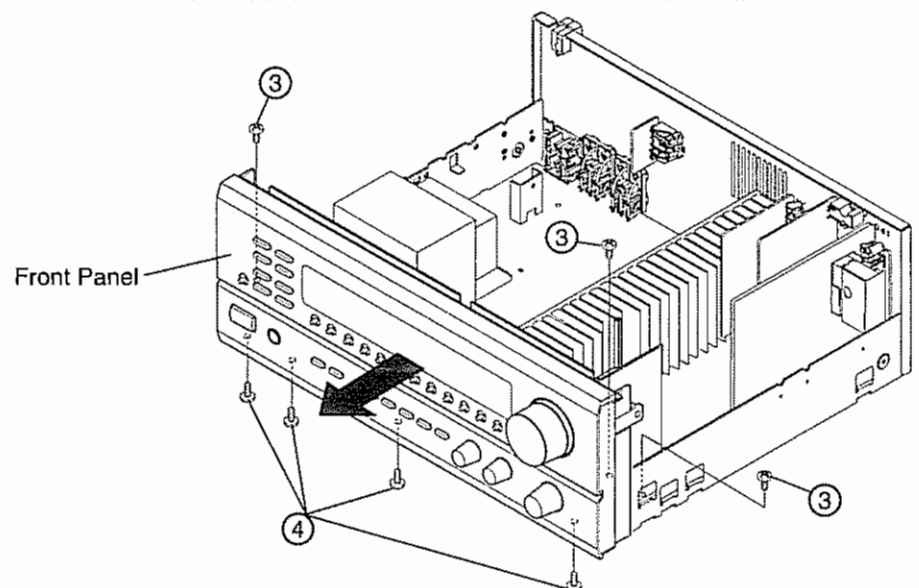
Top Cover

Remove 6 screws ① and 3 screws ②, detach the Top Cover in the arrow direction.



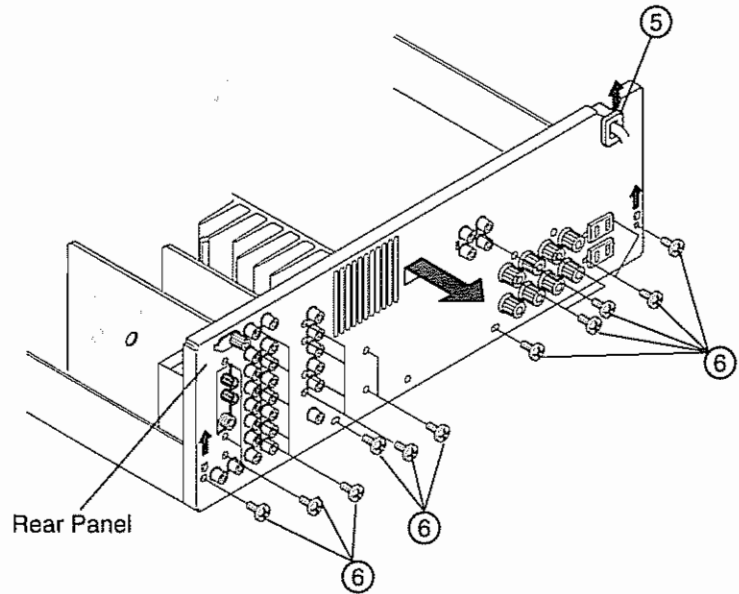
Front Panel

1. Remove 3 screws ③.
2. Remove 4 screws ④.
3. Detach the Front Panel in the arrow direction.



Rear Panel

1. Remove cord bushing (5) from the Rear Panel.
2. Remove 23 screw (6).
3. While releasing 2 hooks, detach the Rear Panel in the arrow direction.

**Note:**

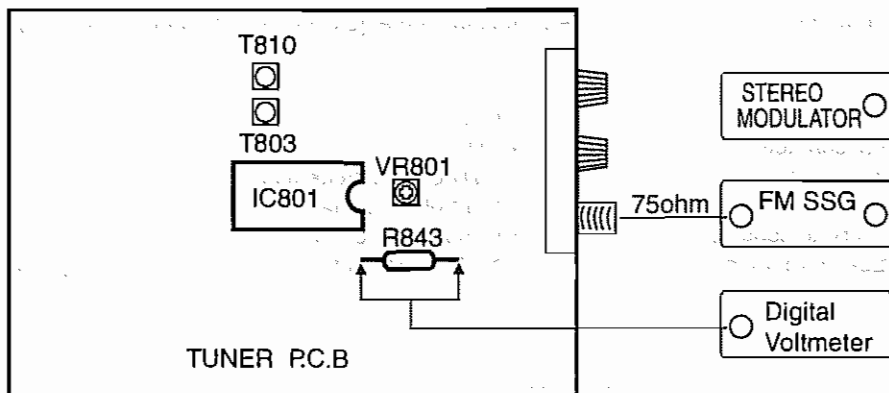
When working on the unit with removing its main chassis or back chassis, be sure to short-circuit GND of the Pin Jack and BRK701 of the Connector PCB.

ADJUSTMENT

Tuner Section

CONNECTION DIAGRAM OF MEASURING INSTRUMENTS

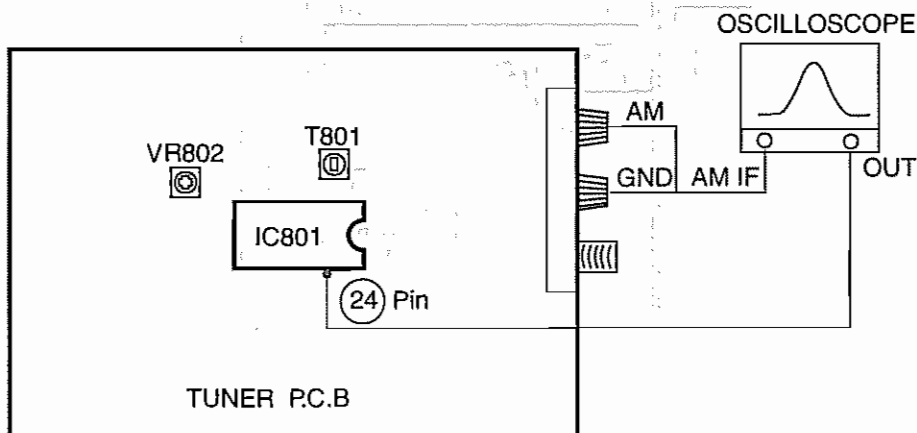
● FM



FM ALIGNMENT

Item	Alignment Item	Tuning Frequency Setting	Input					Output		Adjustment	
			Type	Frequency	Input Level	Modulation	Coupling	Type	Connect to	Points	Adjust to
1	Center Adjustment	98.1MHz	FMSSG	98.1MHz	60dB μ	Mono 1kHz 100%	Antenna Terminal	Digital Voltmeter	R843	T803	$\pm 50mV$
2	Distortion	98.1MHz	FMSSG	98.1MHz	60dB μ	Mono 1kHz 100%	Antenna Terminal	Distortion Meter	Output Terminal (L)	T810	Minimum Distortion
3	Signal Level	98.1MHz	FMSSG	98.1MHz	20dB μ	OFF	Antenna Terminal			VR801	Light TUNED on FL Display

● AM



AM ALIGNMENT

Step	Alignment Item	Frequency	Input	Output		Adjustment		Remarks
				Type	Connect to	Points	Adjust to	
1	IF	—	IF SWEEP (Input level is not over to work A.G.C.)	Oscilloscope	IC801 24Pin	T801	Maximum height and best symmetry curve	
2	Signal Level	999 (1000) μ Hz	AM SSG	—	—	VR802	Light [TUNED] on FL Display	SSG OUTPUT 74dB μ (EMF)

Audio Section

IDLING CURRENT (MAIN PCB)

Required measurement equipment: DC Voltmeter

Arrangement

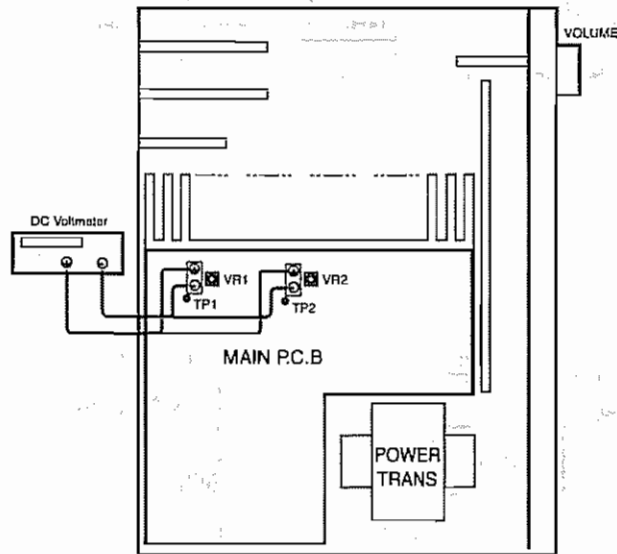
- (1) Avoid direct blow from an air conditioner or an electric fan, and adjust the unit at normal room temperature 15°C ~ 30°C. (59°F ~ 86°F)
- (2) Presetting

<ul style="list-style-type: none"> ● POWER (Power source switch) ● FUNCTION (Function button) ● VOLUME (Volume control) ● BALANCE (Volume control) ● BASS, TREBLE (Tone control) ● SPEAKER-A (Speaker terminal) 	<ul style="list-style-type: none"> → OFF → CD → Fully counterclockwise (⤿ min) → Controls to center → Controls to center → No load (Do not connect speaker, dummy resistor, etc.)
---	--

Adjustment

- (1) Remove top cover and turn VR1, VR2 counterclockwise fully.
- (2) Connect DC Voltmeter to test points (Lch TP1, Rch TP2).
- (3) Connect power cord to AC Line, and turn power switch "ON".
- (4) Turn VR1, VR2 clockwise (⤵) and adjust the TEST POINTS voltage to 4mV ±0.5mV DC.
- (5) After 1 minutes from preset, turn VR1, VR2 to set the voltage to 3mV ±0.5mV DC.

Main Unit (Component Side)



INITIATING (Memory clearing) METHOD

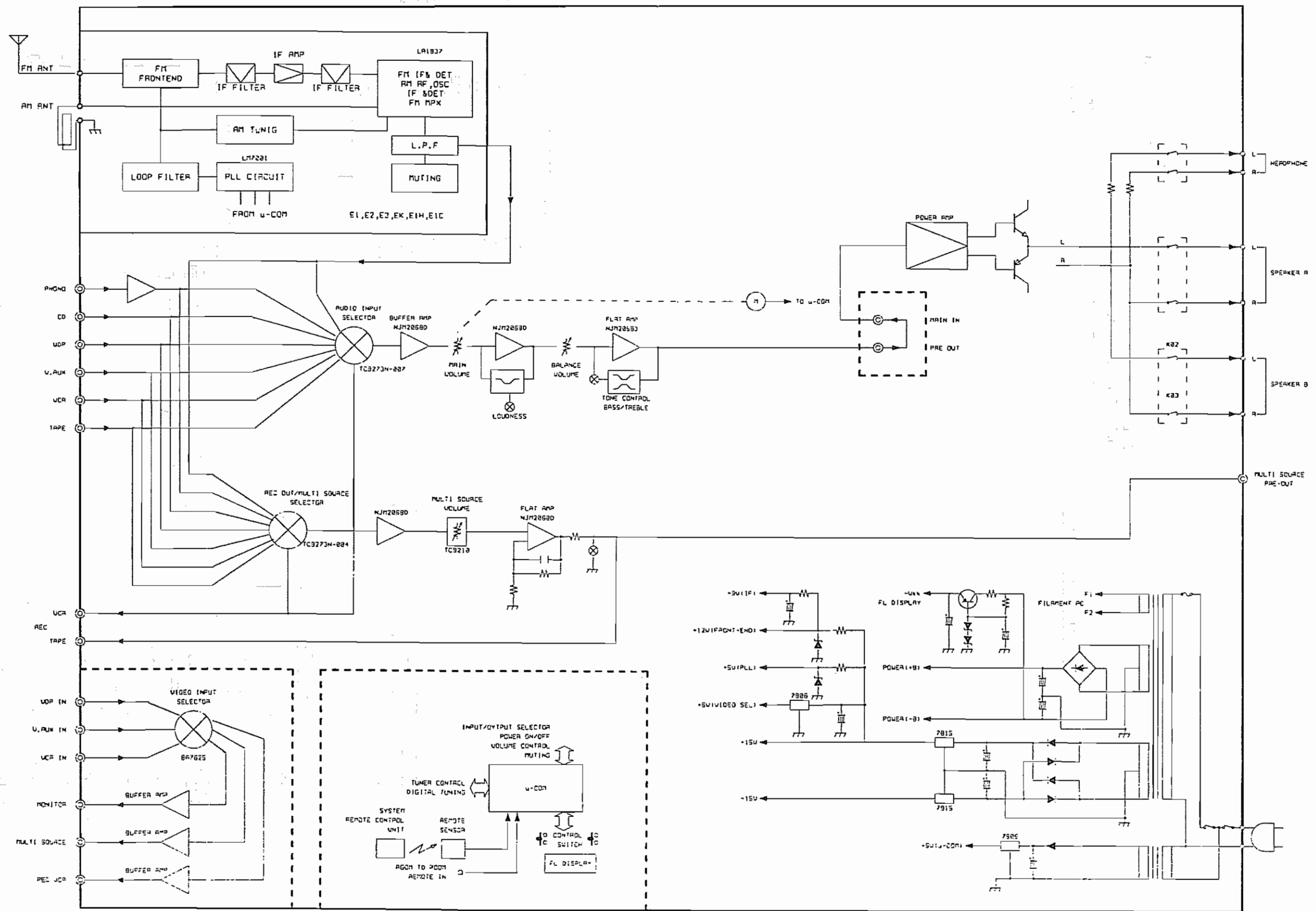
To clear memory contents of microcomputer and restore to the initial state, take the following steps;

1. Press power switch to turn off the unit, and set to standby mode.
2. Pull out power cord from wall outlet temporarily.
3. Insert power cord into outlet while simultaneously pressing two keys of UP and DOWN.
4. Press power switch to confirm that memory contents are cleared.

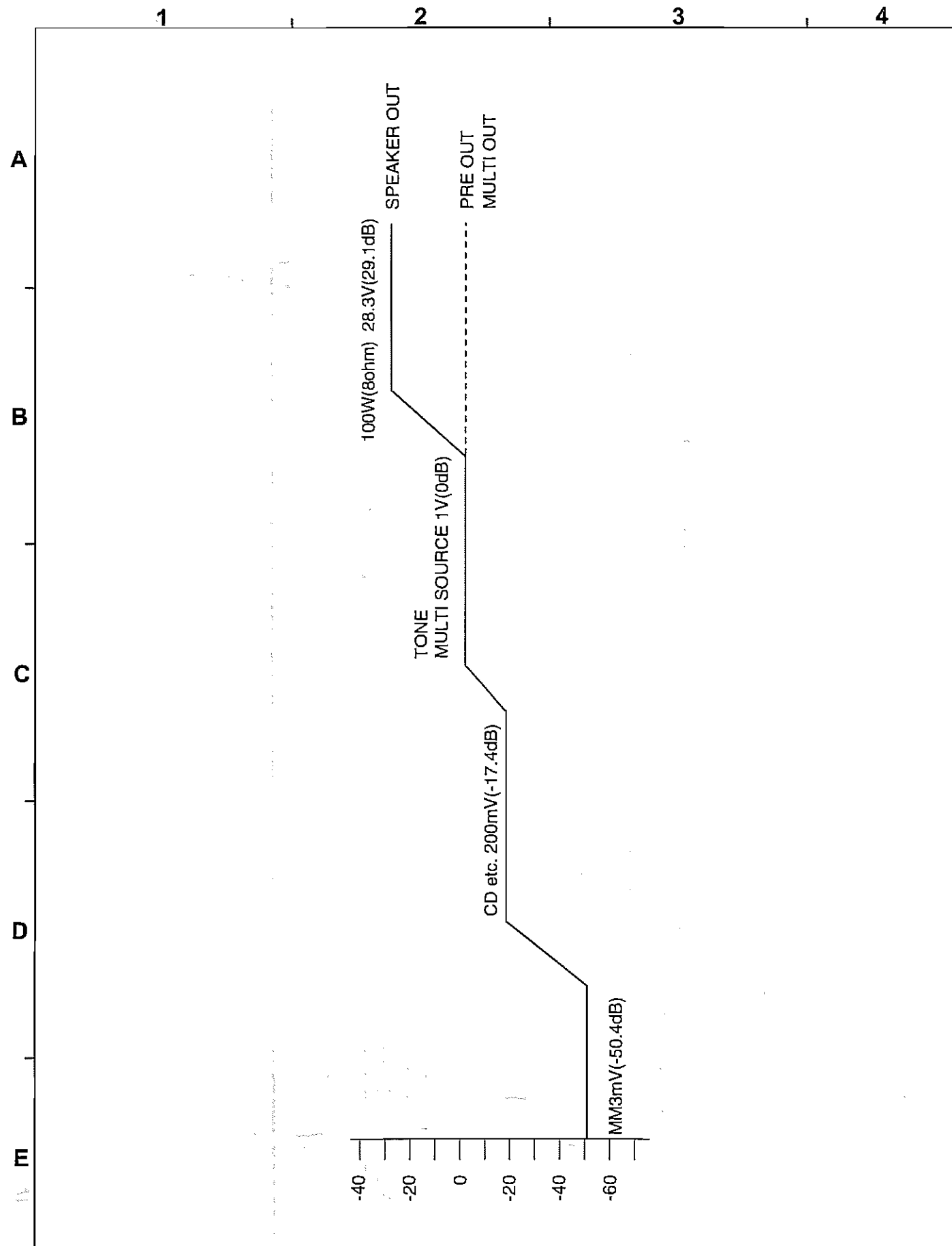
By completion of the above, the initial state is restored. In case the memory can not be cleared due to some reasons, repeat steps 1 through 3.

BLOCK DIAGRAM

1 2 3 4 5 6 7 8



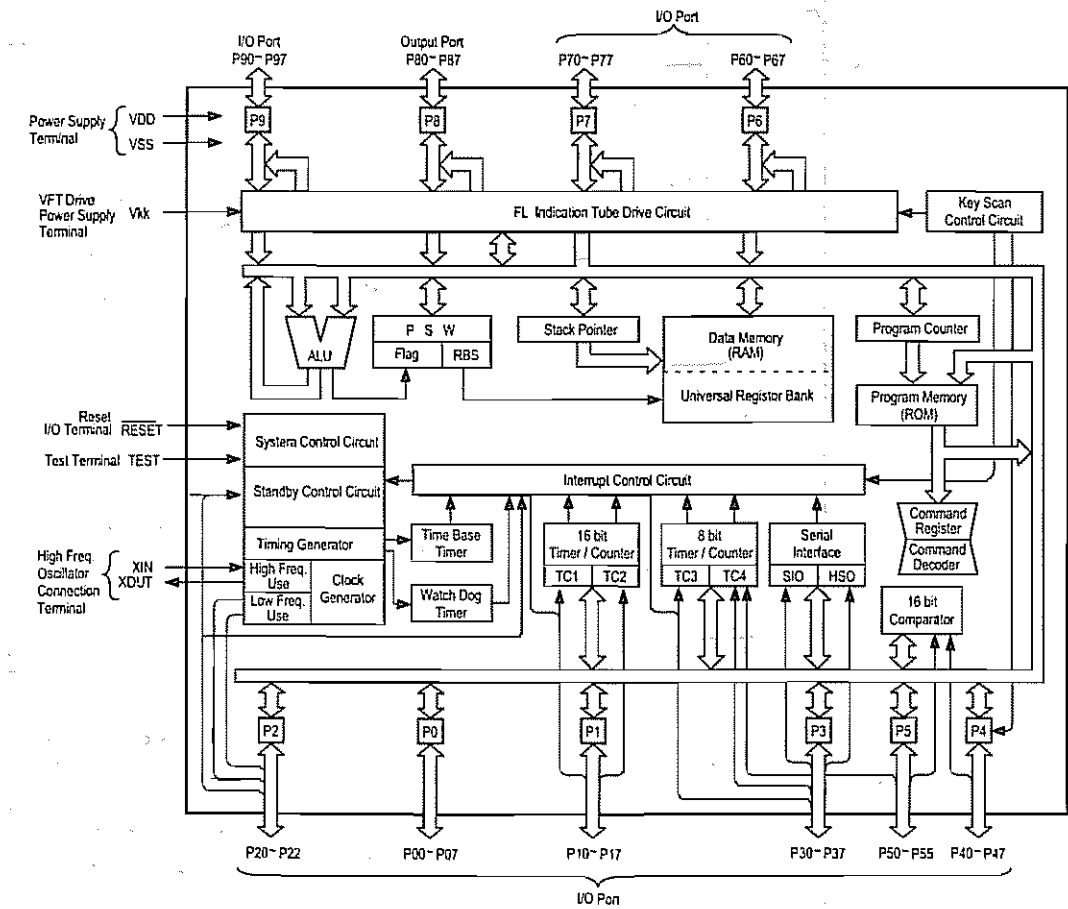
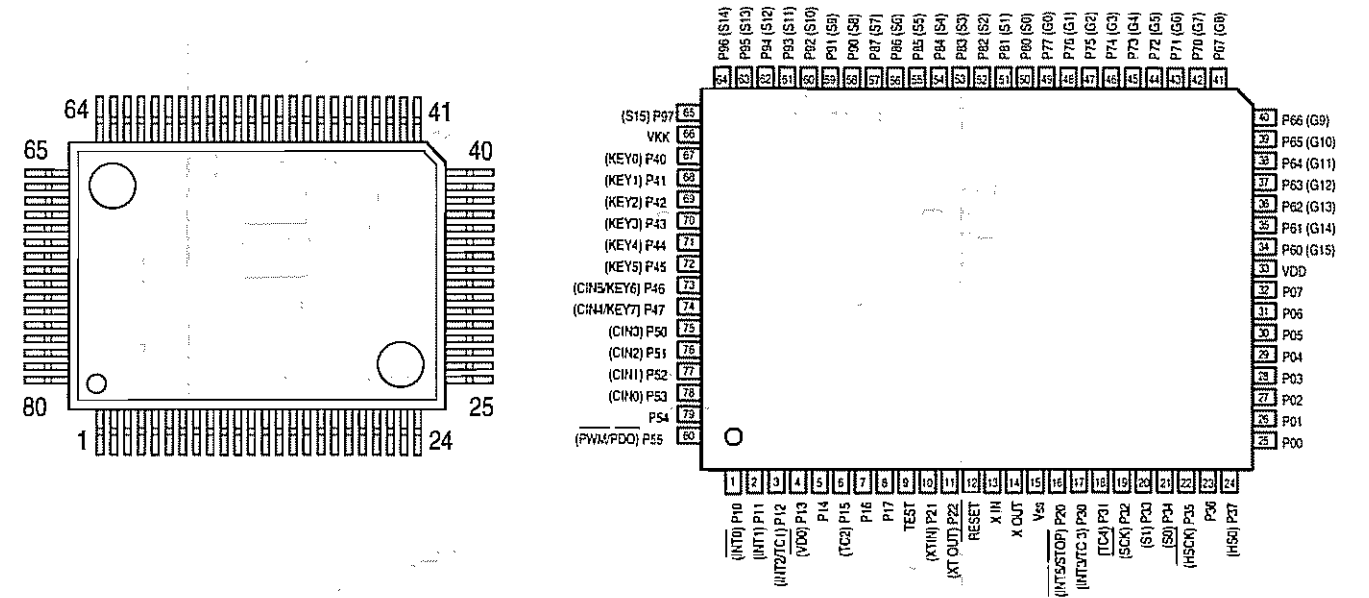
LEVEL DIAGRAM



SEMICONDUCTORS

● IC's

TMP87CM71-1G66 (IC201)



TMP87CM71F-1G66 Terminal Function

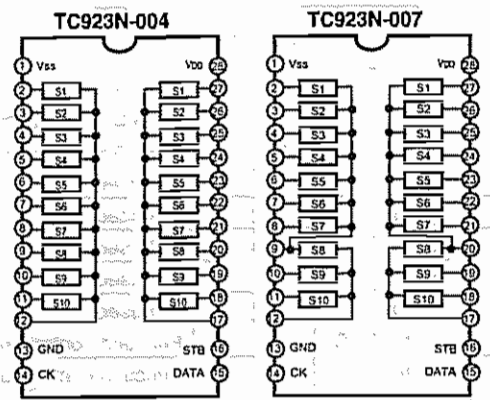
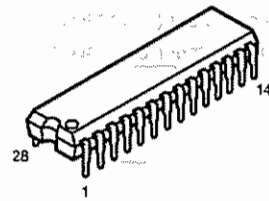
Pin No.	Name	Symbol	I/O	Typ.	Op.	Det.	Res.	Ini.	Function
1	P10/INT 0	POWER DOWN	I	—	Eu	Lv	Z	—	Power down delection ("L" at power down).
2	P11/INT 1	PROTECTION	I	—	Eu	E&L	Z	—	Protection ("H" at ptotection).
3	P12/INT 2	MULTIREMOCON	I	—	Eu	E&L	Z	—	Multiple Remote control input.
4	P13/DVD	STEREO/MONO	O	C	—	—	Z	L	STEREO/MONO control signal ("L" at STEREO).
5	P14	SLL-ST	O	C	—	—	Z	L	LM7001 control output.
6	P15/TC2	PLL-CLK	O	C	—	S	Z	L	LM7001 control output.
7	P16	PLL-DATA	O	C	—	S	Z	L	LM7001 control output.
8	P17	TUNER MUTE	O	C	—	—	Z	H	TUNER MUTE output ("H" at MUTE).
9	TEST	TEST	I	—	GND	—	—	—	Connect to GND.
10	P21/XTIN	STEREO SIGNAL	I	—	Eu	Lv	Z	—	Tuning detection ("L" at tuning).
11	P22/XTO	TUNED SIGNAL	I	—	Eu	Lv	Z	—	"L" at stereo reception.
12	RESET	RESET	I	—	Eu	Lv	Z	—	Reset input.
13	XIN		I	—	—	—	—	—	Oscillation circuit (44MHz)
14	XOUT		O	—	—	—	—	—	Oscillation circuit (4MHz)
15	Vss	GND	I	—	GND	—	—	—	
16	P20/INT 5	RDS START	I	—	—	Ed	Z	—	RDS data input (LC7074).
17	P30/INT 3	REMOCON	I	—	Eu	E&L	Z	—	Remote control signal input.
18	P31/TC 4	RDS RES	O	N	Eu	—	Z	H	RDS data output (LC7074).
19	P32/SCK	RDS CLK	I	—	—	S	Z	—	RDS data input (LC7074).
20	P33/SI	RDS DATA	I	—	—	S	Z	—	RDS data input (LC7074).
21	P34/S0		O	—	—	—	Z	—	Not used.
22	P35/HSCK		O	—	—	—	Z	—	Not used.
23	P36		O	—	—	—	Z	—	Not used.
24	P37/HSO		O	—	—	—	Z	—	Not used.
25	P00	POWER	O	C	—	—	Z	H	Power supply relay control output ("H" at ON).
26	P01		O	—	—	—	Z	—	Not used.
27	P02		O	—	—	—	Z	—	Not used.
28	P03		O	—	—	—	Z	—	Not used.
29	P04		O	—	—	—	Z	—	Not used.
30	P05		O	—	—	—	Z	—	Not used.
31	P06		O	—	—	—	Z	—	Not used.
32	P07		O	—	—	—	Z	—	Not used.
33	Vdd	Vdd	I	—	—	—	—	—	Connect to +5V.
34	P60		O	P	Id	—	L	L	Not used.
35	P61		O	P	Id	—	L	L	Not used.
36	P62		O	P	Id	S	L	L	Not used.
37	P63		O	P	Id	S	L	L	Not used.
38	P64		O	P	Id	S	L	L	Not used.
39	P65		O	P	Id	S	L	L	Not used.
40	P66		O	P	Id	—	L	L	Not used.
41	P67		O	P	Id	—	L	L	Not used.
42	P70	LOUDNESS	O	P	Id	—	L	H	Loudness control output ("L" at ON).
43	P71	E. VOL CLK	O	P	Id	—	L	L	Electronic volume control output (TC9210).
44	P72	E. VOL DATA	O	P	Id	—	L	L	Electronic volume control output (TC9210).
45	P73	E. VOL ST	O	P	Id	—	L	L	Electronic volume control output (TC9210).
46	P74	VOL. UP	O	P	Id	—	L	L	Motor volume control output (BA6208F).
47	P75	VOL. DOWN	O	P	Id	—	L	L	Motor volume control output (BA6208F).
48	P76	FL DATA	O	P	Id	—	L	H	FL tube in indication control output (MSC1937).
49	P77	FL RES	O	P	Id	—	L	L	FL tube indication control output (MSC1937).
50	P80	FL CLK	O	P	Id	—	L	H	FL tube indication control output (MSC1937).
51	P81	STANDBY LED	O	P	Id	—	L	H	Standby indication LED drive output ("H" at lighted).
52	P82	TONE DEFEAT	O	P	Id	—	L	H	Tone defeat control output ("L" at ON).
53	P83	H/P PRE MUTE	O	P	Id	—	L	H	Headphone and pre-out relay control output ("L" at MUTE).
54	P84		O	P	Id	—	L	L	Not used.

Pin No.	Name	Symbol	I/O	Typ.	Op.	Det.	Res.	Ini.	Function
55	P85		O	P	Id	—	L	L	Not used.
56	P86	SP-B	O	P	Id	—	L	L	Front B speaker relay control output ("L" at MUTE).
57	P87	SP-A	O	P	Id	—	L	H	Front A speaker relay control output ("L" at MUTE).
58	P90		O	P	Id	—	L	L	Not used.
59	P91		O	P	Id	—	L	L	Not used.
60	P92		O	P	Id	—	L	L	Not used.
61	P93		O	P	Id	—	L	L	Not used.
62	P94		O	P	Id	—	L	L	Not used.
63	P95	FUNC CLK	O	P	Id	S	L	L	Function control output (TC9273).
64	P96	FUNC DATA	O	P	Id	S	L	L	Function control output (TC9273).
65	P97	FUNC ST	O	P	Id	—	L	L	Function control output (TC9273).
66	VKK	VKK	I	—	—	—	—	—	Connect to GND.
67	P40/KEY0		O	—	—	—	Z	—	Not Used.
68	P41/KEY1	A	O	N	Eu	—	Z	H	Video input control ("L" at selection) BA7625.
69	P42/KEY2	B	O	N	Eu	—	Z	H	Video input control ("L" at selection) BA7625.
70	P43/KEY3	C	O	N	Eu	—	Z	H	Video output control ("L" at selection) BA7625.
71	P44/KEY4	D	O	N	Eu	—	Z	H	Bideo output control ("L" at selection) BA7625.
72	P45/KEY5	E	O	N	Eu	—	Z	H	Video input/output control ("L" at selection) BA7625.
73	P46/CIN5	MODE	I	—	Eu	Lv	Z	—	Forward country shifting input.
74	P47/CIN4	KEY5	I	—	Eu	Lv	Z	—	Button input 5.
75	P50/CIN3	KEY4	I	—	Eu	Lv	Z	—	Button input 4.
76	P51/CIN2	KEY3	I	—	Eu	Lv	Z	—	Button input 3.
77	P52/CIN1	KEY2	I	—	Eu	Lv	Z	—	Button input 2.
78	P53/CIN0	KEY1	I	—	Eu	Lv	Z	—	Button input 1.
79	P54	TAPE INH	O	N	Eu	—	Z	H	Tape inhibition ("L" at inhibition).
80	P55/PMW	MULTI MUTE	O	N	Eu	—	Z	L	Multi source output mute.

Notes:

- Pin No. : Terminal number of microcomputer.
- Port Name : The name mentioned the data sheet of microcomputer.
- Symbol : Symbolized interface function.
- I/O : Input of output of part.
"I" = Input port
"O" = Output port
- Type : Composition of port in case of output port.
"C" = CMOS output
"N" = NMOS open drain output
"P" = PMOS open drain output.
- OP : Pull Up/Pull down selection information.
"Iu" = Inner microcomputer pull up
"Id" = Inner microcomputer pull down
"Eu" = External microcomputer pull up
"Ed" = External microcomputer pull down
- Det : Indicates judging state of input port. Level detection is "Lv"; Edge detection is "Ed"; Detection by both shifting is "E&L"; Serial data detection is "S" (Serial data output is also "S").
- Res : State at reset.
"H" = Outputs High Level at reset
"L" = Outputs Low Level at reset
"Z" = Becomes High Impedance mode at reset
- Ini : Initial output state.
- Function : Function and logical level explanation of signals to be interface.

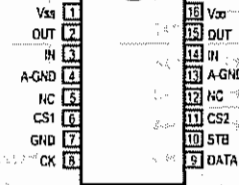
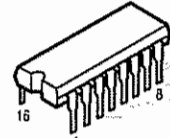
TC9273N-004 (IC402)
TC9273N-007 (IC401)



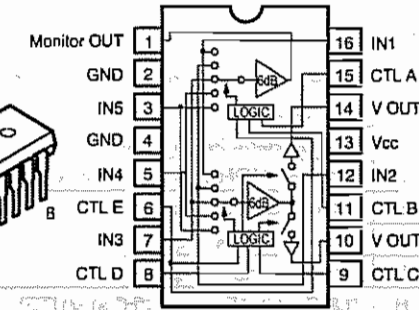
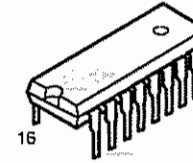
TC9273N Terminal Function

Pin No.	Symbol	Name	Function	Note
1	VSS	-Power Terminal	Dual Power Use: VDD = 8.0-17V Single Power Use: VDD = 8.0012618V	—
13	GND	Digital Ground	GND = DV	—
28	VDD	+Power Terminal	VSS = -8.0-17V	—
2-12 17-27	S1-11	I/O Terminal	Input terminal of analog switch.	—
14	CK	Clock Input	Clock input for data transfer.	Low level
15	DATA	Data Input	Serial input for switch setting.	Border input
16	STB	Strobe Input	Strobe input for data writing.	Terminal

TC9210P (IC405)



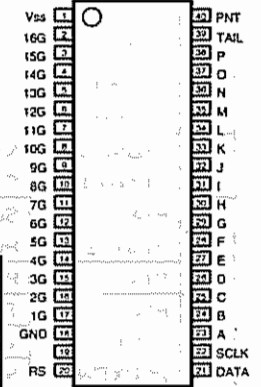
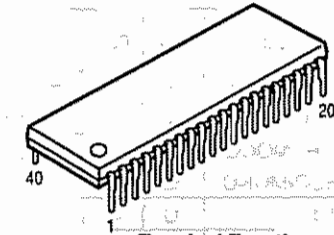
BA7625(701)



A	B	C	MONITOR OUT	C	D	E	V OUT 1	C	D	E	V OUT 2
L	L	*	IN 1	L	L	*	IN 2	L	L	*	IN 1
H	L	*	IN 2	H	L	*	IN 2	H	L	*	IN 1
L	H	*	IN 3	L	H	*	IN 3	L	H	*	IN 3
H	H	L	IN 4	H	H	L	IN 4	H	H	L	IN 4
H	H	H	IN 5	H	H	H	IN 5	H	H	H	IN 5

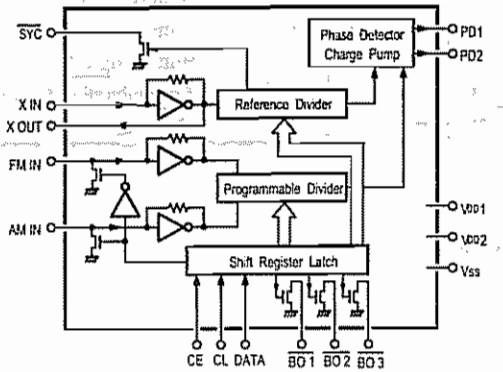
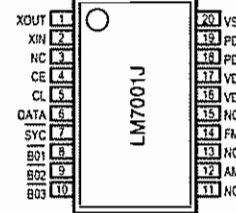
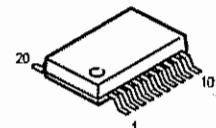
Note 1: * mark means that feasible for H or L.
Note 2: Each input terminal is provided with sink chip clamp (BA7625).

MSC1937-03RS(IC301)

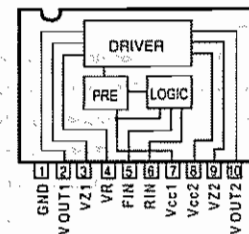
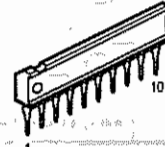


Pin No.	Terminal Function
1	Power Supply (+5V)
2	Digit 1 Output
3	Digit 2 Output
4	Digit 3 Output
5	Digit 4 Output
6	Digit 5 Output
7	Digit 6 Output
8	Digit 7 Output
9	Digit 8 Output
10	Digit 9 Output
11	Digit 10 Output
12	Digit 11 Output
13	Digit 12 Output
14	Digit 13 Output
15	Digit 14 Output
16	Digit 15 Output
17	Digit 16 Output
18	Digit 17 Output
19	Digit 18 Output
20	POWER-ON-RESET
21	Data Input
22	Shift Clock Input
23	Segment A Output
24	Segment B Output
25	Segment C Output
26	Segment D Output
27	Segment E Output
28	Segment F Output
29	Segment G Output
30	Segment H Output
31	Segment I Output
32	Segment J Output
33	Segment K Output
34	Segment L Output
35	Segment M Output
36	Segment N Output
37	Segment O Output
38	Segment P Output
39	Segment Q Output
40	POINT Output

LM7001JUM(IC802)



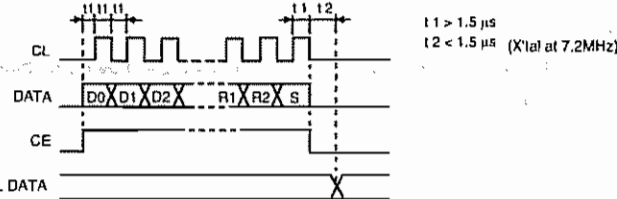
BA6209N(IC502)



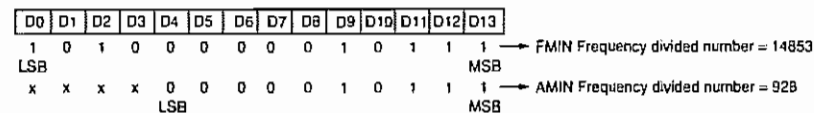
Terminal Description

- SYC : Clock for controller(400kHz)
- XIN,XOUT : X'tal OSC(7.2MHz)
- FMIN,AMIN : Station oscillation signal input
- CE,CL,DATA : Data input
- BO1,BO2,BO3 : Band data output. BO1 is feasible for time base output(BHz).
- VDD1,VDD2,VSS : Power supply.(VDD2 is for back-up)
- PD1,PD2 : Charge pump output.

Data input

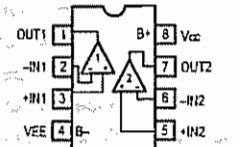
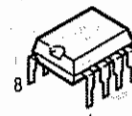


(1) D0(LSB) - D13(MSB): Frequency dividend data for FMIN, use D0 - D13.

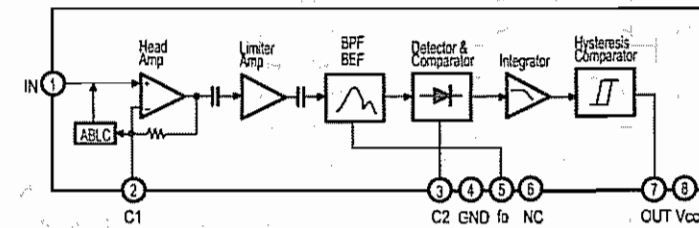
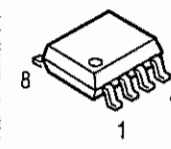


(2) T0,T1: For test of LSI (0,0)

NJM2068DD (IC202,403,404,406,501,601)

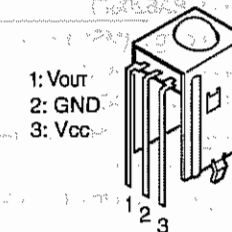


CXA1511M(IC702)

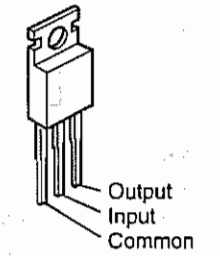


IR SENSOR

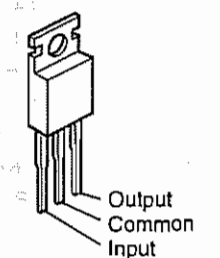
NJL64H380A(SEN301)



KIA7915PI (IC1)



KIA7815PI (IC2)
KIA7806P (IC3,4)



PRINTED WIRING BOARDS

1 2 3 4 5 6 7 8

9600178003 MAIN P.C.B. ASS'Y

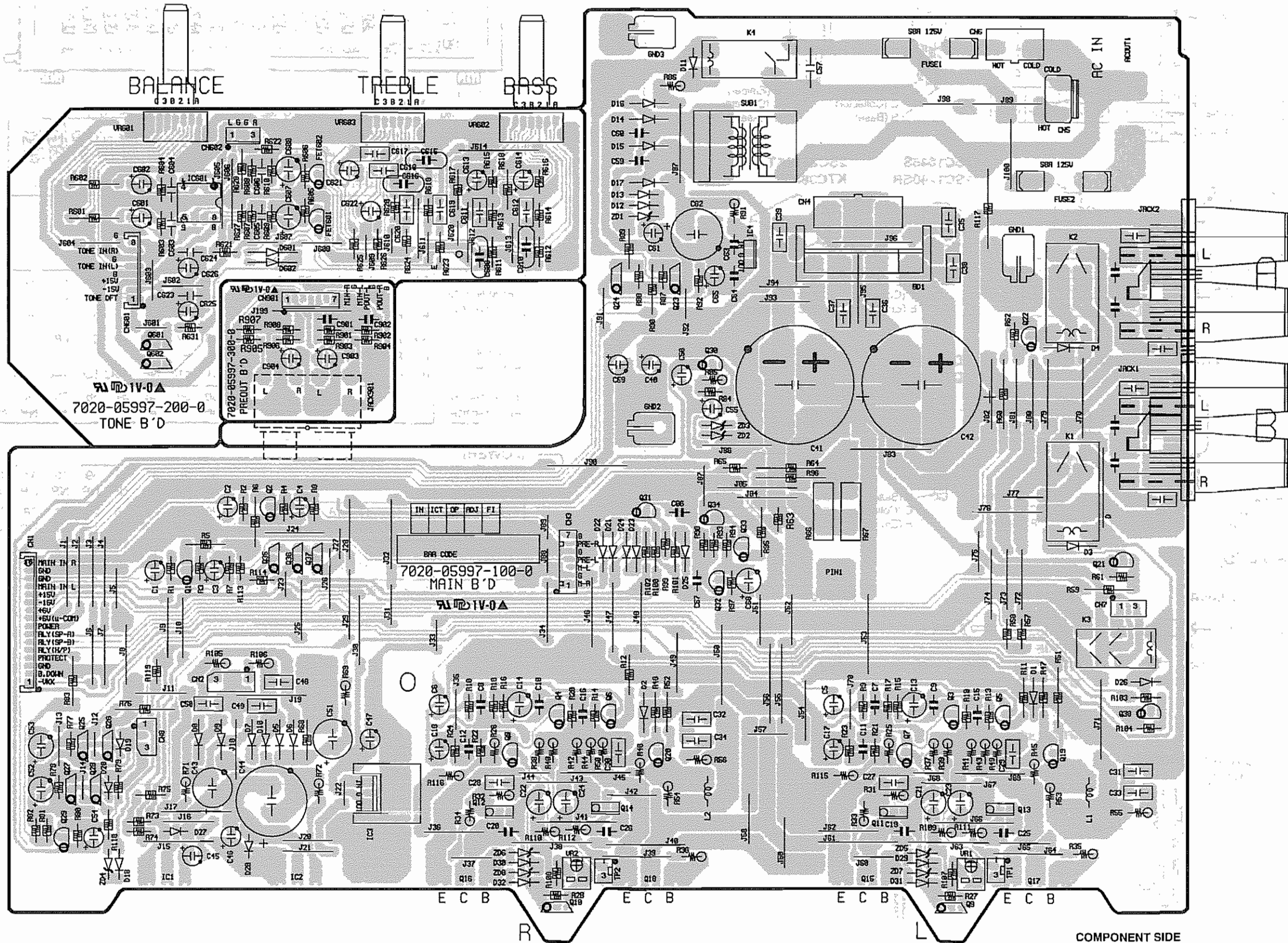
A

B

C

D

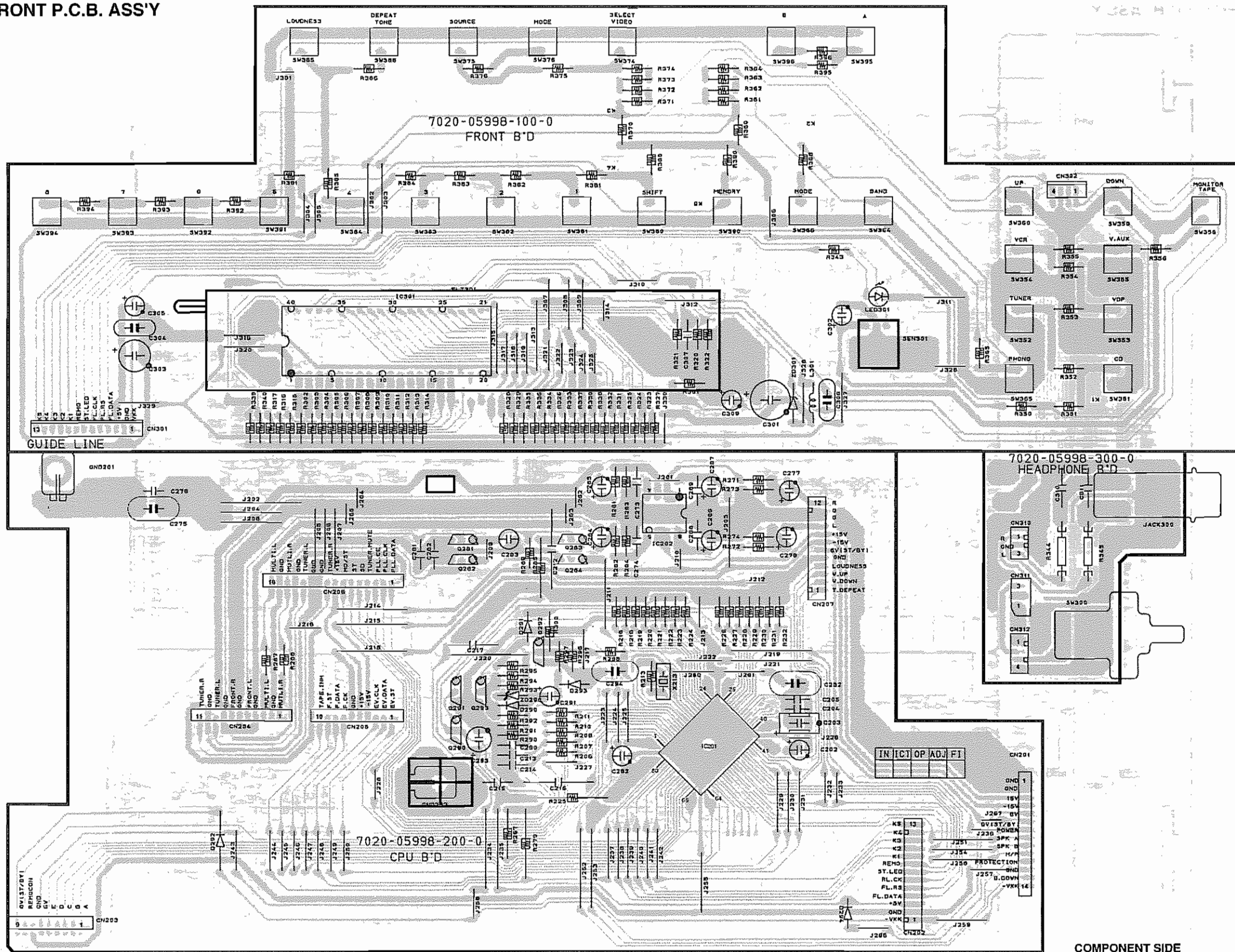
E



COMPONENT SIDE

1 2 3 4 5 6 7 8

9600178100 FRONT P.C.B. ASS'Y



A

B

C

D

E

COMPONENT SIDE

1 2 3 4 5 6 7 8

9600178207 INPUT P.C.B. ASS'Y

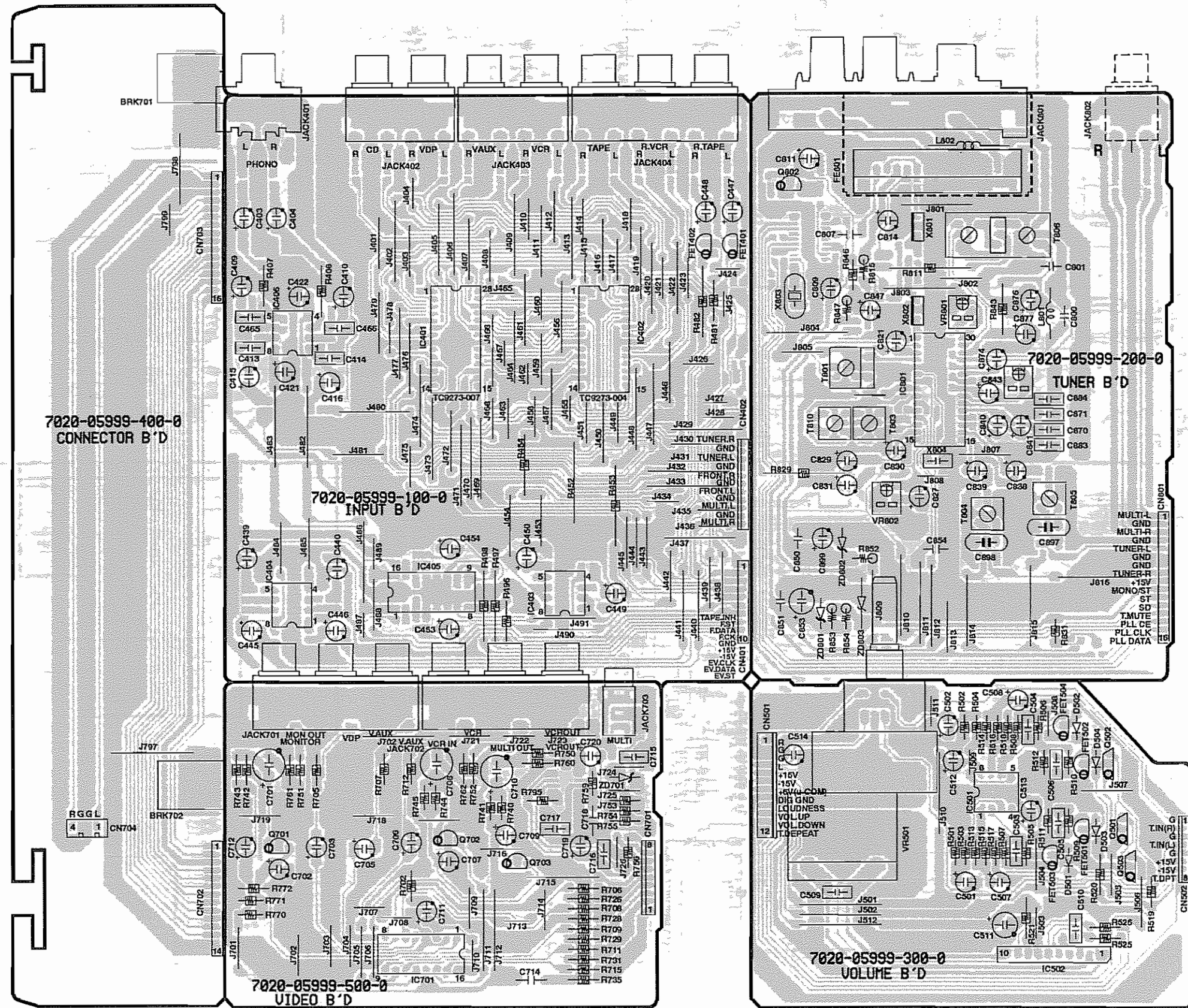
A

B

C

D

E



COMPONENT SIDE

1

2

3

4

5

6

7

8

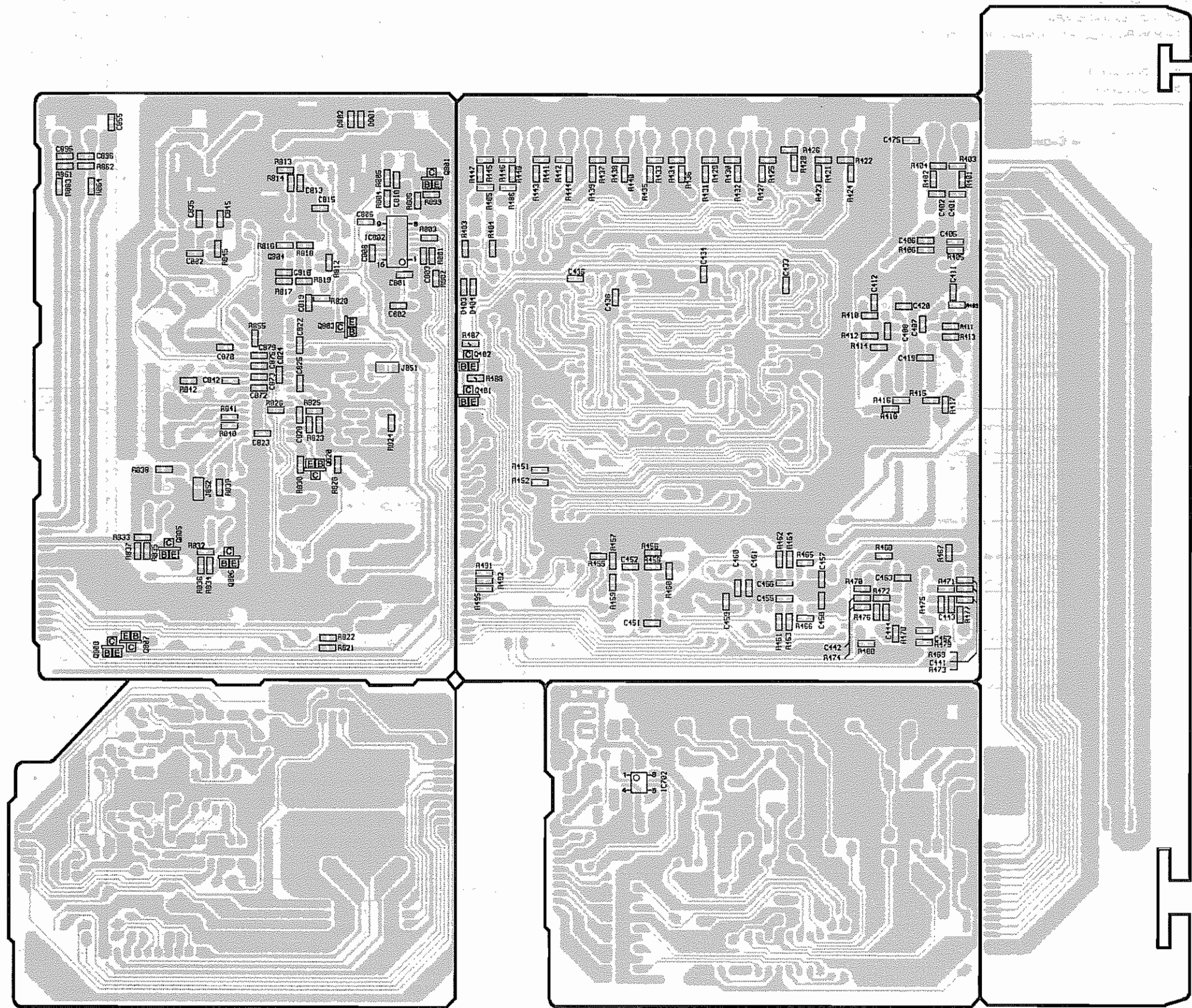
A

B

C


D

E



FOIL SIDE

NOTE FOR PARTS LIST

- Part indicated with the mark "⊙" are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
 - When ordering of part, clearly indicate "1" and "I" (I) to avoid mis-supplying.
 - Ordering part without stating its part number can not be supplied.
 - Part indicated with the mark "*" is not illustrated in the exploded view.
 - Not including Carbon Film ±5%, 1/4W Type in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)
- WARNING:**
Parts marked with this symbol  have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

● Resistors

Ex.: **RN** **14K** **2E** **182** **G** **FR**
 Type Shape Power Resist- Allowable Others
 and- ance- error

RD : Carbon	2B : 1/8W	F : ±1%	P : Pulse-resistant type
RC : Composition	2E : 1/4W	G : ±2%	NL : Low noise type
RS : Metal oxide film	2H : 1/2W	J : ±5%	NB : Non-burning type
RW : Winding	3A : 1W	K : ±10%	FR : Fuse-resistor
RN : Metal film	3B : 2W	M : ±20%	F : Lead wire forming
RK : Metal mixture	3F : 3W		
	3H : 5W		

* Resistance
 $\overset{1}{\uparrow} \text{R} \overset{2}{\downarrow} \Rightarrow 1800 \text{ ohm} = 1.8 \text{ kohm}$
 Indicates number of zeros after effective number.
 2-digit effective number.
 • Units: ohm

$\overset{1}{\uparrow} \text{R} \overset{2}{\downarrow} \Rightarrow 1.2 \text{ ohm}$
 1-digit effective number.
 2-digit effective number, decimal point indicated by R.
 • Units: ohm

● Capacitors

Ex.: **CE** **04W** **1H** **2R2** **M** **BP**
 Type Shape Dielectric Capacity Allowable Others
 and- strength- error

CE : Aluminum foil electrolytic	0J : 6.3V	F : ±1%	HS : High stability type
CA : Aluminum solid electrolytic	1A : 10V	G : ±2%	BP : Non-polar type
CS : Tantalum electrolytic	1C : 16V	J : ±5%	HR : Ripple-resistant type
CQ : Film	1E : 25V	K : ±10%	DL : For charge and discharge
CK : Ceramic	1V : 35V	M : ±20%	HF : For assuring high frequency
CC : Ceramic	1H : 50V	Z : +80%	U : UL part
CP : Oil	2A : 100V	-20%	C : CSA part
CM : Mica	2B : 125V	P : +100%	W : UL-CSA type
CF : Metallized	2C : 160V	-0%	F : Lead wire forming
CH : Metallized	2D : 200V	C : ±0.25pF	
	2E : 250V	D : ±0.5pF	
	2H : 500V	= : Others	
	2J : 630V		

* Capacity (electrolyte only)
 $\overset{2}{\uparrow} \overset{2}{\downarrow} \overset{2}{\downarrow} \Rightarrow 2200 \mu\text{F}$
 Indicates number of zeros after effective number.
 2-digit effective number.
 • Units: μF .

$\overset{2}{\uparrow} \text{R} \overset{2}{\downarrow} \Rightarrow 2.2 \mu\text{F}$
 1-digit effective number.
 2-digit effective number, decimal point indicated by R.
 • Units: μF .

* Capacity (except electrolyte)
 $\overset{2}{\uparrow} \overset{2}{\downarrow} \overset{2}{\downarrow} \Rightarrow 2200 \text{ pF} = 0.0022 \mu\text{F}$
 (More than 2) — Indicates number of zeros after effective number.
 2-digit effective number.
 • Units: pF.

$\overset{2}{\uparrow} \overset{2}{\downarrow} \overset{1}{\downarrow} \Rightarrow 220 \text{ pF}$
 (0 or 1) — Indicates number of zeros after effective number.
 2-digit effective number.
 • Units: pF.

• When the dielectric strength is indicated in AC, "AC" is included after the dielectric strength value.

PARTS LIST OF P.W.B. UNIT ASS'Y
9600178003 MAIN P.C.B. ASS'Y

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC3,4	960 0174 803	IC KIA7806P	J12678060020
.IC601	960 0174 502	IC NJM2068DD	J12120680000
Q1,2	960 0196 603	Transistor KTC2874B	J502287400010
Q3-6	960 0196 205	Transistor KSA992F	J5000992F0050
Q7,8	960 0196 506	Transistor KSC1845F	J5021845F0000
Q9,10	963 0045 805	Transistor 2SC1645S	J5021645B0050
Q11,12	960 0175 404	Transistor 2SB1186A	J501118600010
Q13,14	960 0175 608	Transistor 2SD1763A	J503176300010
Q19,20	960 0196 506	Transistor KSC1845F	J5021845F0000
Q21,22	960 0196 700	Transistor KTC3200BL	J5023200B0050
Q23-28	960 0196 409	Transistor 2SC1740SR	J5021740S0010
Q29	960 0196 205	Transistor KSA992F	J5000992F0050
Q30	960 0189 005	Transistor KSA916Y	J5000916Y0050
Q31	960 0196 302	Transistor KTA1268BL	J5001268B0050
Q32	960 0196 700	Transistor KTC3200BL	J5023200B0050
Q33,34	960 0196 302	Transistor KTA1268BL	J5001268B0050
Q35	269 0020 906	Transistor DTC114ES	J6020114E0010
Q36	269 0046 906	Transistor DTA114ES	J6000114E0010
Q37	269 0020 906	Transistor DTC114ES	J6020114E0010
Q38	960 0196 700	Transistor KTC3200BL	J5023200B0050
Q601	269 0020 906	Transistor DTC114ES	J6020114E0010
Q602	269 0046 906	Transistor DTA114ES	J6000114E0010
FET601,602	960 0196 807	Transistor 2SK117Y	J5441170Y0050
D1-4	963 0020 309	Diode 1SS133T	K000013300520
D5-10	960 0117 608	Diode 1N4004A	K040400400520
D11-13	963 0020 309	Diode 1SS133T	K000013300520
D14-17	960 0117 608	Diode 1N4004A	K040400400520
D18-32	963 0020 309	Diode 1SS133T	K000013300520
D601,602	963 0020 309	Diode 1SS133T	K000013300520
BD1	960 0175 705	Diode D5SB20	K047400300010
ZD1	963 0047 405	Zener diode MTZJ7.5B	K06007R544520
ZD2,3	963 0046 202	Zener diode MTZJ18B	K06018R044520
ZD4	960 0128 105	Zener diode MTZJ9.1B	K06009R144520
ZD5-8	963 0047 502	Zener diode MTZJ3.3B	K06003R344520
RESISTORS GROUP			
R25,26		Metal film 47 ohm 1/4W	C060047063050
R31,32	241 2378 962	Carbon film 330 ohm 1/4W(NB)	RD14B2E331JNBST
R33-36		Metal film 3.3 ohm 1/4W	C0603R3063060
R37-44	244 2043 982	Metal oxide 1W(NB)	RS14B3A22JNBST(S)
R45,46	241 2380 947	Carbon film 1.8 kohm 1/4W(NB)	RD14B2E182JNBST
R49,50	241 2380 950	Carbon film 2 kohm 1/4W(NB)	RD14B2E202JNBST

Ref. No.	Part No.	Part Name	Remarks
R53,54	963 0047 900	Metal film 4.7 ohm 1W	C0604R7065050
R55,56	244 2043 937	Metal oxide 10 ohm 1W(NB)	RS14B3A100JNBST(S)
R66,67	963 0045 203	Winding 0.1 ohm 5W	C144R10069110
R69		Metal film 1 ohm 1/4W	C060001063050
R71,72		Metal film 3.3 ohm 1/4W	C0603R3063060
R85		Metal film 47 ohm 1/4W	C060047063050
R86		Metal film 150 ohm 1/4W	C060015163060
R91		Metal film 1 ohm 1/4W	C060001063050
R105,106		Metal film 1 ohm 1/4W	C060001063050
R109-112	244 2052 957	Metal oxide 5.6 kohm 1W(NB)	RS14B3A562JNBST(S)
R115,116	244 2043 937	Metal oxide 10 ohm 1W(NB)	RS14B3A100JNBST(S)
R117	963 0043 108	Metal film 2.2 Mohm 1/2W	C060022574000
VR601	960 0176 704	Variable resistor 100 kohm	C454121400900
VR602	960 0176 801	Variable resistor 30 kohm	C454123300100
VR603	960 0176 908	Variable resistor 5 kohm	C454125200100
VR1,2	963 0045 300	Semi fixed resistor 4.7 kohm	C544472015130
CAPACITORS GROUP			
C1,2		Electrolytic 47 μF /16V	D040470083080
C3-6		Electrolytic 10 μF /50V	D040100087050
C7,8		Ceramic 100pF/50V	D004101067060
C9,10		Ceramic 33pF/50V	D004330067060
C11,12		Ceramic 0.001 μF /50V	D004102097060
C13,14		Electrolytic 100 μF /16V	D040101083070
C15,16		Ceramic 33pF/500V	D00033006D050
C17,18		Electrolytic 1 μF /100V	D040010086060
C19,20		Ceramic 100pF/500V	D00410106D050
C21,22		Electrolytic 10 μF /100V	D04010008C050
C23,24		Electrolytic 47 μF /50V	D040470087060
C25,26		Ceramic 100pF/500V	D00410106D050
C27,28		Mylar film 0.047 μF /100V	D02047306C060
C29,30		Mylar film 0.022 μF /100V	D02022306C060
C31-34		Mylar film 0.1 μF /63V	D020104078060
C35-39		Mylar film 0.1 μF /250V	D02010407H080
C40		Electrolytic 1 μF /100V	D040010086060
C41,42	960 0177 305	Electrolytic 1000 μF /63V	D040103088380
C43	960 0186 406	Electrolytic 470 μF /35V	D040471085010
C44		Electrolytic 3300 μF /35V	D040332085030
C45-47		Electrolytic 10 μF /50V	D040100087050
C48-50		Mylar film 0.047 μF /100V	D02047306C060
C51	960 0186 202	Electrolytic 220 μF /35V	D040221085050
C52		Electrolytic 220 μF /6.3V	D040221081050
C53		Electrolytic 100 μF /16V	D040101083070
C54		Electrolytic 4.7 μF /50V	D0404R7087250
C55,56		Electrolytic 1 μF /100V	D040010086060
C57	960 0177 208	Ceramic 0.0047 μF /250V (AC)	D00847208K03D
C58		Electrolytic 1 μF /100V	D040010086060
C59,60		Ceramic 0.01 μF /50V	D004103097060
C61		Electrolytic 1 μF /100V	D040010086060

9600178100 FRONT P.C.B. ASS'Y

Ref. No.	Part No.	Part Name	Remarks
C62		Electrolytic 1000µF/25V	D040102084000
C63,64		Ceramic 0.01µF/50V	D004103097060
C65		Electrolytic 10µF/50V	D040100087050
C66,67		Ceramic 0.01µF/50V	D004103097060
C68		Electrolytic 10µF/100V	D04010008C050
C601,602		Electrolytic 10µF/35V	D040100085050
C603-606		Ceramic 100pF/50V	D005101177520
C607,608		Electrolytic 100µF/25V	D040101084060
C609,610		Ceramic 0.001µF/50V	D005102177530
C611,612		Mylar film 0.15µF/50V	D020154167050
C613,614		Electrolytic 1µF/50V	D040010087050
C615,616		Ceramic 0.0018µF/50V	D004182277050
C617,618		Mylar film 0.012µF/100V	D02012306C060
C619,620		Mylar film 0.068µF/100V	D02068306C060
C621,622		Electrolytic 0.47µF/50V	D040R47087050
C623,624		Ceramic 10000pF/50V	D005103197520
C625,626		Electrolytic 1µF/50V	D040010087050
C901,902		Ceramic 100pF/50V	D004101067060
C903,904		Electrolytic 0.1µF/100V	D0400R108C000

OTHER PARTS GROUP

				Qty
△ ACOUT1	960 0187 803	AC outlet(2P)	G435204004010	1
CN1	963 0047 201	16P connector base	L101353361610	1
CN2	960 0123 207	3P connector base	L102526700300	1
CN3	963 0047 201	7P connector base	L101530140710	1
CN4	963 0047 609	3P connector base	L108202000320	1
CN5	960 0118 908	2P connector base	L108039602010	1
CN6	960 0123 304	2P connector base	L104353280200	1
CN7	960 0189 704	3P connector cord	L000481030010	1
CN8	960 0123 207	3P connector base	L102526700300	1
CN601	963 0046 804	8P connector base	L101353360810	1
CN602	960 0189 306	4P connector cord	L000121040030	1
CN901	960 0189 403	7P connector cord	L000181070010	1
△ * FUSE1,2	960 0005 804	Fuse clip	G645000050010	4
△ FUSE1,2	960 0188 705	Fuse 8A	G650802121060	2
GND1,2,3	960 9006 600	Terminal	3790040876010	3
JACK1,2	960 0188 608	4P speaker terminal	G612041037310	2
JACK901	960 0188 200	4P pin jack	G602040610000	1
K1,2	960 0181 702	Relay (G5PA-28 24V)	G680240502020	2
K3	960 0176 500	Relay (G5V-2 24V)	G680240501010	1
K4	960 0181 605	Relay (G5PA-1-8 12V)	G680120502010	1
L1,2	963 0045 601	Inductor 1µH	D330900001320	2
PIN1	—	Wire clamp	4330000120000	1
△ SUB1	960 0185 708	Power trans. (Mini)	B200280960010	1
TP1,2	960 0161 502	2P connector base	L101530140210	2

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC201	262 2776 008	IC TMP87CM71F-1G66	
IC202	960 0174 502	IC NJM2068DD	J121206800000
IC301	262 2035 008	IC MSC1937-03RS	FL drive IC
SEN301	960 0181 100	IC NJL64H380A	E940643800000
Q281,282	960 0196 603	Transistor KTC2874B	J502287400010
Q283	269 0093 904	Transistor DTA144ES	J6000144E0010
Q284	269 0099 908	Transistor DTC143TS	J6020143T0010
Q290	269 0046 906	Transistor DTA114ES	J6000114E0010
Q291	269 0040 902	Transistor DTC144ES	J6020144E0010
Q292	960 0196 406	Transistor 2SC1740SR	J5021740S0010
Q293	269 0020 906	Transistor DTC114ES	J6020114E0010
D290-294	963 0020 309	Diode 1SS133T	K000013300520
ZD290	963 0046 105	Zener diode MTZJ3.9B	K06003R944520
ZD301	960 0095 908	Zener diode MTZJ8.2B	K06008R244520
LED301	960 0189 209	LED PI3-RD/HL-30RDRF3	K500032002080

RESISTORS GROUP

R344,345	963 0048 006	Metal oxide 330 ohm 2W	C060033166520
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CAPACITORS GROUP

C202		Electrolytic 47µF/16V	D040470083080
C203	960 0186 503	Back up cap. 0.047F/5.5V	D090473904010
C204		Ceramic 0.01µF/16V	D005103773530
C205		Ceramic 0.1µF/50V	D005104597530
C212		Ceramic 0.1µF/50V	D005104597530
C213,214		Ceramic 100pF/50V	D005101177520
C215		Ceramic 0.1µF/50V	D005104597530
C216,217		Ceramic 0.001µF/50V	D005102177530
C232		Mylar film 0.82µF/50V	D020824167060
C273,274		Ceramic 220pF/50V	D005221277520
C275		Mylar film 0.82µF/50V	D020824167060
C276		Ceramic 0.022µF/50V	D004223597050
C277,278		Electrolytic 10µF/35V	D040100085050
C281,282		Ceramic 470pF/50V	D005471277520
C283		Electrolytic 10µF/50V	D042100087050
C284,285		Electrolytic 10µF/35V	D040100085050
C286,287		Electrolytic 1µF/50V	D040010087050
C288-290		Ceramic 0.01µF/16V	D005103773530
C291		Electrolytic 4.7µF/50V	D0404R7087250
C292		Electrolytic 0.1µF/50V	D040R10087070
C293		Electrolytic 220µF/6.3V	D040221081050
C294		Mylar film 0.12µF/63V	D020124078060

9600178207 INPUT P.C.B. ASS'Y

Ref. No.	Part No.	Part Name	Remarks	Ref. No.	Part No.	Part Name	Remarks
C301		Electrolytic 100μF/50V	D040101087060	SEMICONDUCTORS GROUP			
C302		Electrolytic 10μF/35V	D040100085050	IC401	960 0174 308	IC TC9273N-007	J080927300000
C303		Electrolytic 330μF/6.3V	D040331081050	IC402	960 0174 201	IC TC9273N-004	J040927300010
C304		Mylar film 0.01μF/100V	D02010306C060	IC403,404	960 0174 502	IC NJM2068DD	J121206800000
C305		Electrolytic 10μF/35V	D040100085050	IC405	960 0174 405	IC TC9210P	J084921000010
C306		Mylar film 0.1μF/63V	D020104078060	IC406	960 0174 502	IC NJM2068DD	J121206800000
C307		Ceramic 100pF/50V	D005101177520	IC501	960 0174 502	IC NJM2068DD	J121206800000
C310		Electrolytic 10μF/50V	D040100087070	IC502	960 0175 103	IC BA6209N	J127620900010
C310,C311		Ceramic 470pF/50V	D005471277520	IC701	960 0175 200	IC BA7625	J171762500000
OTHER PARTS GROUP				IC702	960 0174 104	IC CXA1511M	J030151100010
				IC801	960 0174 609	IC LA1837	J124183700010
CN201	960 0123 003	14P connector base	L101353361410	IC802	960 0174 706	IC LM7001JUM	J124700100010
CN202	960 0123 605	13P connector base	L101530141310	Q401	269 0091 906	Transistor DTC143TK	J5220143T0210
CN203	963 0046 901	9P connector base	L101353360910	Q402	269 0055 900	Transistor DTA144EK	J5200144E0210
CN204	963 0047 104	11P connector base	L101353361110	Q501,502	269 0093 904	Transistor DTA144ES	J6000144E0010
CN205	963 0047 007	10P connector base	L101353361010	Q503	269 0040 902	Transistor DTC144ES	J6020144E0010
CN206	963 0047 201	16P connector base	L101353361610	Q701-703	960 0005 105	Transistor KTA1266Y	J5001266Y0050
CN207	963 0047 706	11P connector base	L101530141110	Q801	963 0045 902	Transistor 2SC2412KT	J5222412K0210
CN301	960 0189 607	13P connector cord	L000201130020	Q802	960 0196 506	Transistor KSC1845F	J5021845F0000
CN302	960 0189 801	4P connector cord	L000800040020	Q803	269 0055 900	Transistor DTA144EK	J5200144E0210
CN310	960 0161 405	3P connector base	L101530140310	Q804	960 0189 102	Transistor KTC3880S-O	J5223880O0210
CN311	960 0123 207	3P connector base	L102526700300	Q805,806	269 0066 902	Transistor DTC323TK	J522032300210
CN312	960 0134 005	4P connector base	L101530140410	Q807	269 0083 901	Transistor DTA114EK	J5200114E0210
FL301	960 0175 802	FL display HNA-16SM02	K530160200010	Q808	269 0082 902	Transistor DTC114EK	J5220114E0210
JACK300	960 0187 502	Head phone jack(D6.5)	G402038400031	Q820	269 0082 902	Transistor DTC114EK	J5220114E0210
L301	960 0010 307	Inductor 10μH	D330100700520	FET401,402	960 0196 807	Transistor 2SK117Y	J5441170Y0050
SW300	960 0176 209	Push switch	G000122000010	FET501-504	960 0196 807	Transistor 2SK117Y	J5441170Y0050
SW350-356	963 0045 708	Tact switch	G180000270010	D403,404	960 0197 000	Diode KDS160	K005016000010
SW360	963 0045 708	Tact switch	G180000270010	D501-505	963 0020 309	Diode 1SS133T	K000013300520
SW364-366	963 0045 708	Tact switch	G180000270010	D801,802	960 0197 000	Diode KDS160	K005016000010
SW374-376	963 0045 708	Tact switch	G180000270010	ZD501	963 0047 405	Zener diode MTZJ7.5B	K06007R544520
SW380-386	963 0045 708	Tact switch	G180000270010	ZD701	960 0095 704	Zener diode MTZJ6.2B	K06006R244520
SW390-396	963 0045 708	Tact switch	G180000270010	ZD801	960 0095 500	Zener diode MTZJ5.1B	K06005R144520
X213	960 0142 806	Ceramic resonator CST4.00MGW-TF01	960 0142 806	ZD802	960 0128 105	Zener diode MTZJ9.1B	K06009R144520
				ZD803	963 0046 008	Zener diode MTZJ2.7B	K06002R744520

Ref. No.	Part No.	Part Name	Remarks
RESISTORS GROUP			
J851,852		Carbon chip 0 ohm 1/8W	C200000061300
R401,402		Carbon chip 470 ohm 1/10W	C200047160200
R403,404		Carbon chip 150 kohm 1/10W	C200015460200
R405,406		Carbon chip 68 kohm 1/10W	C200068360200
R409,410		Carbon chip 390 ohm 1/10W	C200039160200
R411,412		Carbon chip 270 kohm 1/10W	C200027460200
R413,414		Carbon chip 22 kohm 1/10W	C200022360200
R415,416		Carbon chip 33 kohm 1/10W	C200033360200
R417,418		Carbon chip 330 ohm 1/10W	C200033160200
R421,422		Carbon chip 2.7 Mohm 1/10W	C200027560200
R423,424		Carbon chip 100 ohm 1/10W	C200010160200
R425,426		Carbon chip 2.7 Mohm 1/10W	C200027560200
R427,428		Carbon chip 100 ohm 1/10W	C200010160200
R429,430		Carbon chip 2.7 Mohm 1/10W	C200027560200
R431,432		Carbon chip 100 ohm 1/10W	C200010160200
R433,434		Carbon chip 2.7 Mohm 1/10W	C200027560200
R435,436		Carbon chip 100 ohm 1/10W	C200010160200
R437,438		Carbon chip 2.7 Mohm 1/10W	C200027560200
R439,440		Carbon chip 100 ohm 1/10W	C200010160200
R441,442		Carbon chip 2.7 Mohm 1/10W	C200027560200
R443,444		Carbon chip 1 kohm 1/10W	C200010260200
R445,446		Carbon chip 2.7 Mohm 1/10W	C200027560200
R447,448		Carbon chip 1 kohm 1/10W	C200010260200
R451,452		Carbon chip 470 kohm 1/10W	C200047460200
R455-458		Carbon chip 470 kohm 1/10W	C200047460200
R459,460		Carbon chip 100 ohm 1/10W	C200010160200
R461,462		Carbon chip 100 kohm 1/10W	C200010460200
R463-466		Carbon chip 100 ohm 1/10W	C200010160200
R467-470		Carbon chip 220 kohm 1/10W	C200022460200
R471,472		Carbon chip 100 ohm 1/10W	C200010160200
R473,474		Carbon chip 1.5 kohm 1/10W	C200015260200
R475,476		Carbon chip 6.8 kohm 1/10W	C200068260200
R477,478		Carbon chip 220 ohm 1/10W	C200022160200
R479,480		Carbon chip 100 kohm 1/10W	C200010460200
R483,484		Carbon chip 220 kohm 1/10W	C200022460200
R485,486		Carbon chip 100 kohm 1/10W	C200010460200
R487		Carbon chip 47 kohm 1/10W	C200047360200
R488		Carbon chip 2.2 kohm 1/10W	C200022260200
R491,492		Carbon chip 470 ohm 1/10W	C200047160200
R495		Carbon chip 470 ohm 1/10W	C200047160200
R521		Carbon film 10 ohm 1/4W	C000010063520
R522		Carbon film 100 ohm 1/4W	C000010163520
R801-803		Carbon chip 1 kohm 1/10W	C200010260200
R804		Carbon chip 5.6 kohm 1/10W	C200056260200
R805		Carbon chip 1 kohm 1/10W	C200010260200
R806		Carbon chip 3.3 kohm 1/10W	C200033260200
R812		Carbon chip 220 ohm 1/10W	C200022160200
R813		Carbon chip 180 ohm 1/10W	C200018160200

Ref. No.	Part No.	Part Name	Remarks
R814		Carbon chip 100 ohm 1/10W	C200010160200
R815	960 9003 807	Metal film 100 ohm 1/4W	C060010163050
R816		Carbon chip 680 ohm 1/10W	C200068160200
R817		Carbon chip 470 ohm 1/10W	C200047160200
R818		Carbon chip 3.3 kohm 1/10W	C200033260200
R819		Carbon chip 330 ohm 1/10W	C200033160200
R820		Carbon chip 100 ohm 1/10W	C200010160200
R821,822		Carbon chip 10 kohm 1/10W	C200010360200
R823		Carbon chip 33 kohm 1/10W	C200033360200
R824		Carbon chip 2.7 kohm 1/10W	C200027260200
R825		Carbon chip 100 ohm 1/10W	C200010160200
R826		Carbon chip 51 ohm 1/10W	C200051060200
R828		Carbon chip 3 kohm 1/10W	C200030260200
R830		Carbon chip 5.6 kohm 1/10W	C200056260200
R832,833		Carbon chip 4.7 kohm 1/10W	C200047260200
R834,835		Carbon chip 1.5 kohm 1/10W	C200015260200
R836,837		Carbon chip 100 kohm 1/10W	C200010460200
R838,839		Carbon chip 1 kohm 1/10W	C200010260200
R840,841		Carbon chip 5.6 kohm 1/10W	C200056260200
R842		Carbon chip 8.2 kohm 1/10W	C200082260200
R845		Carbon chip 100 kohm 1/10W	C200010460200
R847	960 9003 807	Metal film 100 ohm 1/4W	C060010163050
R852	963 0048 103	Metal film 150 ohm 1W	C060015165050
R853,854	960 9005 504	Metal film 560 ohm 1W	C060056165050
R861,862		Carbon chip 470 kohm 1/10W	C200047460200
R863,864		Carbon chip 220 ohm 1/10W	C200022160200
R899		Carbon chip 1.8 kohm 1/10W	C200018260200
VR501	960 0177 004	Variable resistor 100 kohm	C495121400800
VR801,802	960 0177 101	Semi fixed resistor 10kohm	C544103015130
CAPACITORS GROUP			
C401,402		Ceramic chip 33pF/50V	D010330167200
C403,404		Electrolytic 10µF/35V	D040100085050
C405,406		Ceramic chip 82pF/50V	D010820167200
C407,408		Ceramic chip 1200pF/50V	D011122777200
C409,410		Electrolytic 100µF/16V	D040101083070
C411,412		Ceramic chip 220pF/50V	D010221167200
C413,414		Mylar film 0.0033µF/100V	D0203206C060
C415,416		Electrolytic 10µF/35V	D040100085050
C419,420		Ceramic chip 0.01µF/50V	D011103777200
C421,422		Electrolytic 47µF/16V	D040470083080
C433-436		Ceramic chip 0.022µF/50V	D011223777200
C439,440		Electrolytic 4.7µF/50V	D0404R7087250
C441,442		Ceramic chip 220pF/50V	D010221167200
C443,444		Ceramic chip 100pF/50V	D010101167200
C445-448		Electrolytic 10µF/35V	D040100085050
C449,450		Electrolytic 4.7µF/50V	D0404R7087250
C451,452		Ceramic chip 0.01µF/50V	D011103777200
C453,454		Electrolytic 10µF/35V	D040100085050
C455,456		Ceramic chip 100pF/50V	D010101167200

Ref. No.	Part No.	Part Name	Remarks
C457,458		Ceramic chip 0.022μF/50V	D011223777200
C459-461		Ceramic chip 100pF/50V	D010101167200
C462,463		Ceramic chip 0.01μF/50V	D011103777200
C465,466		Mylar film 0.012μF/100V	D02012306C060
C475		Ceramic chip 0.047μF/50V	D011473777200
C501,502		Electrolytic 10μF/35V	D040100085050
C503,504		Mylar film 0.1μF/63V	D020104078060
C505,506		Mylar film 0.024μF/50V	D020243167050
C507,508		Electrolytic 10μF/35V	D040100085050
C509,510		Mylar film 0.1μF/63V	D020104078060
C511		Electrolytic 220μF/10V	D040221082050
C512-514		Electrolytic 1μF/50V	D040010087050
C701		Electrolytic 470μF/10V	D040471082060
C702		Electrolytic 100μF/10V	D040101082060
C703		Electrolytic 4.7μF/50V	D0404R7087250
C705,706		Electrolytic 4.7μF/50V	D0404R7087250
C707		Electrolytic 10μF/35V	D040100085050
C708		Electrolytic 470μF/10V	D040471082060
C709		Electrolytic 10μF/35V	D040100085050
C710		Electrolytic 470μF/10V	D040471082060
C711		Electrolytic 1μF/50V	D040010087050
C712		Electrolytic 100μF/10V	D040101082060
C714		Ceramic 0.022μF/25V	D005223594520
C715-717		Mylar film 0.012μF/100V	D02012306C060
C718		Ceramic 100pF/50V	D005101177520
C719		Electrolytic 47μF/16V	D040470083080
C720		Electrolytic 1μF/50V	D040010087050
C801,802		Ceramic chip 22pF/50V	D010220167200
C803		Ceramic chip 100pF/50V	D010101167200
C806		Ceramic chip 1000pF/50V	D011102777200
C807		Ceramic 0.01μF/16V	D005103773530
C808		Ceramic chip 0.01μF/50V	D011103597200
C809		Electrolytic 1μF/50V	D040010087050
C810		Ceramic chip 0.022μF/50V	D011223777200
C811		Electrolytic 1μF/50V	D040010087050
C813		Ceramic chip 0.01μF/50V	D011103597200
C814		Electrolytic 47μF/16V	D040470083080
C815		Ceramic chip 0.01μF/50V	D011103597200
C818,819		Ceramic chip 0.01μF/50V	D011103597200
C821		Electrolytic 47μF/16V	D040470083080
C822		Ceramic chip 0.047μF/50V	D011473597200
C823,824		Ceramic chip 0.01μF/50V	D011103597200
C825		Ceramic chip 0.1μF/50V	D011104597200
C827		Electrolytic 1μF/50V	D040010087050
C828		Ceramic chip 0.047μF/50V	D011473597200
C829		Electrolytic 0.47μF/50V	D040R47087050
C830,831		Electrolytic 1μF/50V	D040010087050
C835		Ceramic chip 3pF/25V	D010030804210
C838-841		Electrolytic 10μF/35V	D040100085050

Ref. No.	Part No.	Part Name	Remarks
C842		Ceramic chip 0.047μF/50V	D011473597200
C843		Electrolytic 10μF/35V	D040100085050
C845		Ceramic chip 18pF/50V	D010180167200
C847		Electrolytic 47μF/16V	D040470083080
C850,851		Ceramic 0.01μF/50V	D004103097060
C853		Electrolytic 100μF/16V	D040101083070
C854		Ceramic 0.047μF/50V	D004473597050
C855		Ceramic chip 0.1μF/50V	D011104597200
C870,871		Mylar film 0.033μF/100V	D02033316C050
C872		Ceramic chip 390pF/50V	D010391167200
C873		Ceramic chip 330pF/50V	D010331167200
C874		Electrolytic 22μF/25V	D040220084050
C875		Ceramic chip 0.047μF/50V	D011473597200
C876		Electrolytic 3.3μF/50V	D0403R3087050
C877		Electrolytic 33μF/25V	D040330084050
C878		Ceramic chip 0.047μF/50V	D011473597200
C879		Ceramic chip 22pF/50V	D010220167200
C880		Ceramic 2pF/50V	D000020007050
C881		Ceramic 6pF/50V	D000060007050
C882		Ceramic chip 0.01μF/50V	D011103597200
C883,884		Mylar film 0.0027μF/100V	D02027206C060
C895,896		Ceramic chip 100pF/50V	D010101167200
C897,898		Mylar film 0.0056μF/50V	D020562067050
C899		Electrolytic 47μF/16V	D040470083080

OTHER PARTS GROUP				Qty
CN401	963 0046 503	10P connector base	L101352371010	1
CN402	963 0046 600	11P connector base	L101352371110	1
CN501	963 0047 803	11P connector cord	L000181112610	1
CN502	963 0046 600	11P connector base	L101352371110	1
CN701	963 0046 406	9P connector base	L101352370910	1
CN702	960 0124 604	14P connector base	L101352371410	1
CN703	963 0046 707	16P connector base	L101352371610	1
CN704	960 0134 005	4P connector base	L101530140410	1
CN801	963 0046 707	16P connector base	L101352371610	1
FE801	960 0187 706	Front end	E900401010020	1
JACK401	960 0188 103	2P pin jack	G601020180000	1
JACK402,403	960 0188 200	4P pin jack	G602040610000	2
JACK404	960 0188 307	6P pin jack	G603060610010	1
JACK701,702	960 0188 404	3P pin jack	G606030164020	2
JACK703	960 0187 007	Mini jack	G401031102010	1
JACK801	960 0188 501	3P antenna terminal	G61004008001B	1
JACK802	960 0188 006	2P pin jack	G601020170000	1
L801	963 0045 407	Inductor 10μH	D330100010050	1
L802	963 0045 504	Inductor 1μH	D3301R0700520	1
T801	960 0186 600	MW IF COIL PCFMAF-270	D950500200000	1
T803	960 0186 901	IF FM COIL KSZ-73A(0950/IFT1)	D951095000010	1
T804,805	960 0177 402	MPX filter 686AG-K5001	E401686500100	2


Ref. No.	Part No.	Part Name	Remarks	Q'ty
T806	960 0186 707	MW IF COIL RBW07V-K5005 6LK	D950500500000	1
T810	960 0186 804	IF FM COIL KSZ-73A(0951/IFT2)	D951095100010	1
X801,802	960 0187 104	Ceramic filter SFE10.7MA8	E430107000140	2
X803	960 0187 405	Crystal 7.2 MHz	E8007R2000071	1
X804	960 0187 609	Ceramic resonator	E830450000070	1

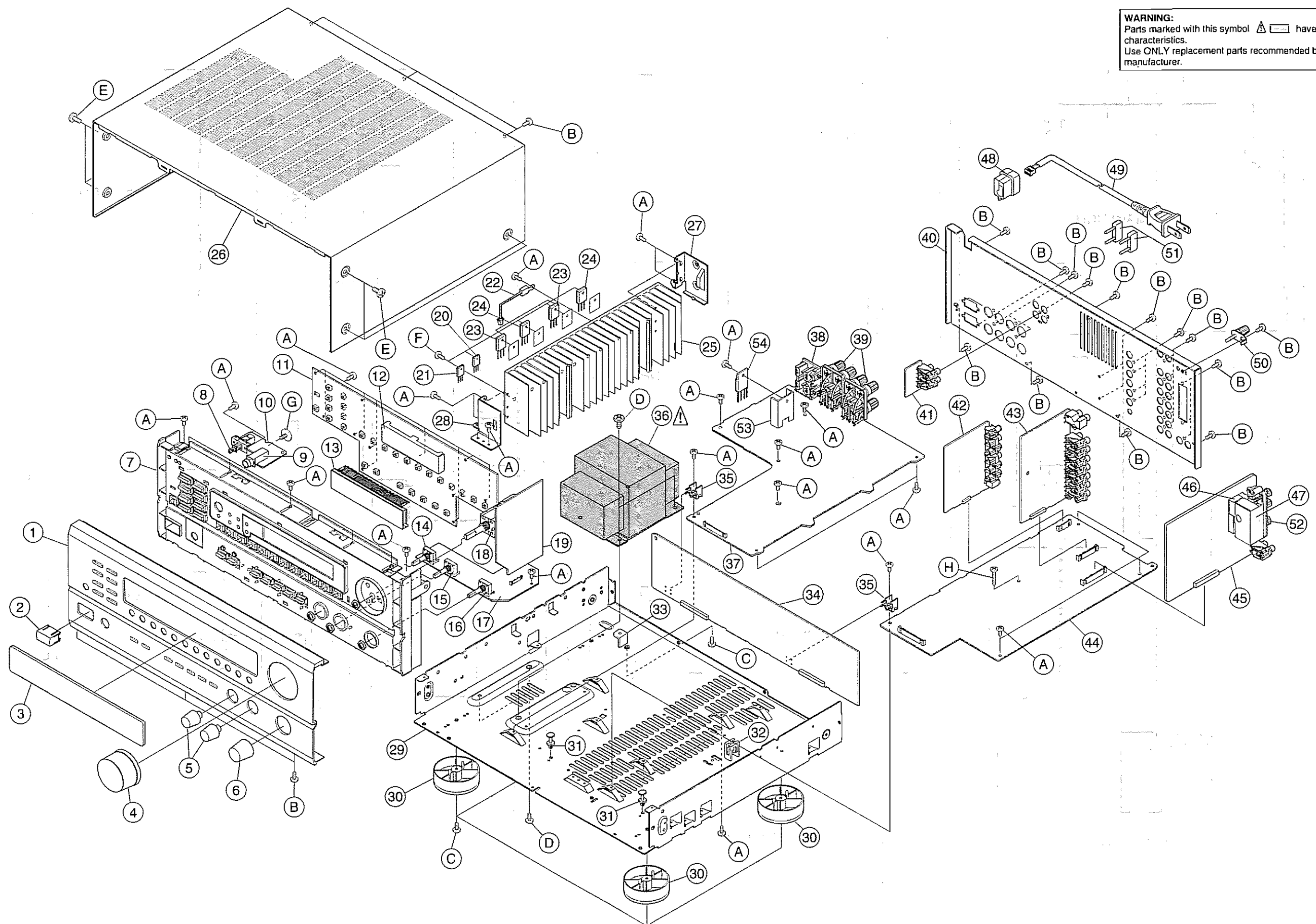
PARTS LIST OF EXPLODED VIEW

Ref. No.	Part No.	Part Name	Remarks	Q'ty	Ref. No.	Part No.	Part Name	Remarks	Q'ty
	960 0178 003	Main P.C.B ass'y	7025HK9906010	1	38	960 0187 803	AC outlet(2P)	ACOUT1 G435204004010	1
37		Main P.C.B			39	960 0188 608	4P speaker terminal	JACK1,2 G612041037310	2
17		Tone P.C.B			40	960 0183 506	Back chassis	3207210256100	1
41		Preout P.C.B			46	960 0184 602	Earth plate B	4470210146000	1
	960 0178 100	Front P.C.B ass'y	7025HK9906011	1	47	960 0184 505	Earth plate A	4470210136000	1
11		Front P.C.B			48	960 0192 403	AC cord stopper	4380210002000	1
44		CPU P.C.B			49	960 0189 908	AC cord	L061020030010	1
10		Head phone P.C.B			50	960 0183 807	Terminal	3790000090000	1
	960 0178 207	Input P.C.B ass'y	7025HK9906012	1	51	960 0190 007	RCA cord	L063040750000	2
43		Input P.C.B			52	960 0188 501	3P antenna terminal	JACK801 G61004008001B	1
45		Tuner P.C.B			53	960 0183 001	Heat sink	2120043418020	1
42		Video P.C.B			54	960 0175 705	Diode D5SB20	BD1 K047400300010	1
19		Volume P.C.B			SCREWS				
34		Connector P.C.B			A	9630018007	Screw (2S 3*8 ZNY/BH)	B020030081B10	42
1	960 0183 302	Front panel	3067210238100	1	B	9600108701	Screw (2S 3*10 DOT BK)	B020030103B11	33
2	960 0185 009	Power button	5090210201000	1	C	9630048200	Screw (2S 3*10 ZNY/BH)	B020030101B10	5
3	960 0184 709	Display window	5077210242000	1	D	9609008417	Screw (3S 4*8 ZNY/BH)	B028940081B10	4
4	960 0184 806	Volume knob	5087210191000	1	E	9630048307	Screw (2S 4*8 DOT BK)	1500040083B10	6
5	963 0045 009	Tone knob	5080210211000	2	F	9630048404	Screw (2S 3*16 ZNY/HH)	1507041146010	6
6	960 0184 903	Balance knob	5087210201000	1	G	9630048501	Screw (2S 3*8 P119 ZNY)	1508001566010	1
7	960 0183 700	Front frame	3217210061100	1	H	9630018104	Screw (2S 3*17 ZNY/BH)	B020030171B10	1
8	960 0176 209	Push switch	SW300 G000122000010	1					
9	960 0187 502	Head phone jack(D6.5)	JACK300 G402038400031	1					
12	960 0184 408	FLT holder	4320200026000	1					
13	960 0175 802	FL display HNA-16SM02	K530160200010	1					
14	960 0176 908	Variable resister 5 kohm	C454125200100	1					
15	960 0176 801	Variable resister 30 kohm	C454123300100	1					
16	960 0176 704	Variable resister 100 kohm	C454121400900	1					
18	960 0177 004	Variable resister 100 kohm	VR501 C495121400800	1					
20	960 0174 900	IC KIA7815PI	IC2 J126781500000	1					
21	963 0021 502	IC KIA7915PI	IC1 J126791500030	1					
22	960 0187 900	Posistor P437D330BW16	CN8 F320161001020	1					
23	960 0175 307	Transistor 2SA1491Y	Q15,16 J5001491Y0000	2					
24	960 0175 501	Transistor 2SC 3855	Q17,18 J5023855Y0000	2					
25	960 0183 108	Main heat sink	2120210128100	1					
26	960 0183 205	Top cabinet	3000210026001	1					
27	960 0184 204	Heat sink-B bracket	4010210386000	1					
28	960 0184 301	Heat sink-F bracket	4010210396000	1					
29	960 0183 409	Main chassis	3200210146200	1					
30	960 0183 904	Foot	4008020061010	4					
31	—	Card (A) spacer	DABS-8R 4300210002000	2					
32	960 0003 301	PCB supporter	4070001601010	1					
33	960 0184 107	Supporter bracket	4010210206000	1					
35	960 0184 000	Screw bracket	4010210196000	2					
36	960 0185 805	Power trans	8200858690040	1					

EXPLODED VIEW

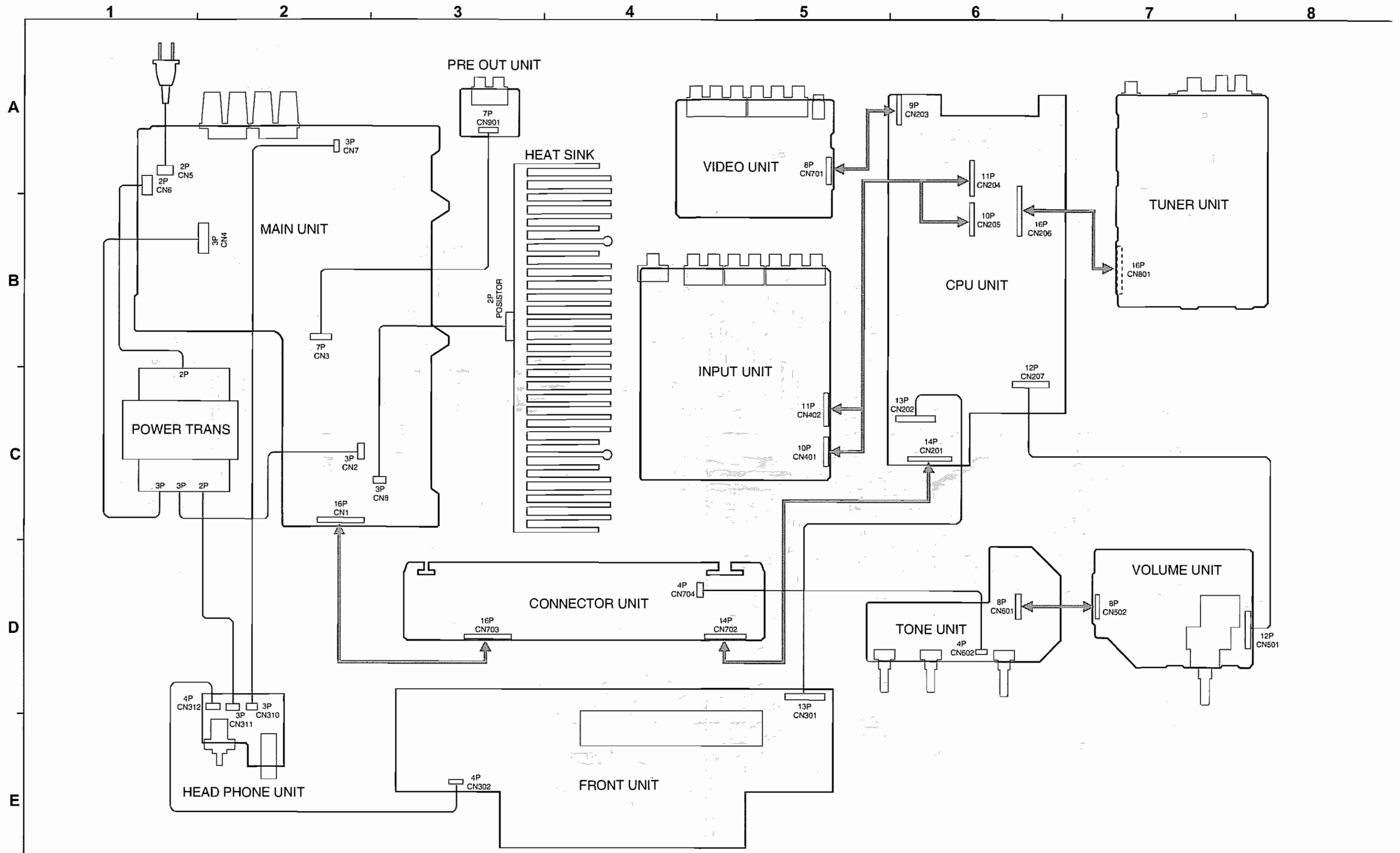
1 2 3 4 5 6 7 8

WARNING:
Parts marked with this symbol  have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.



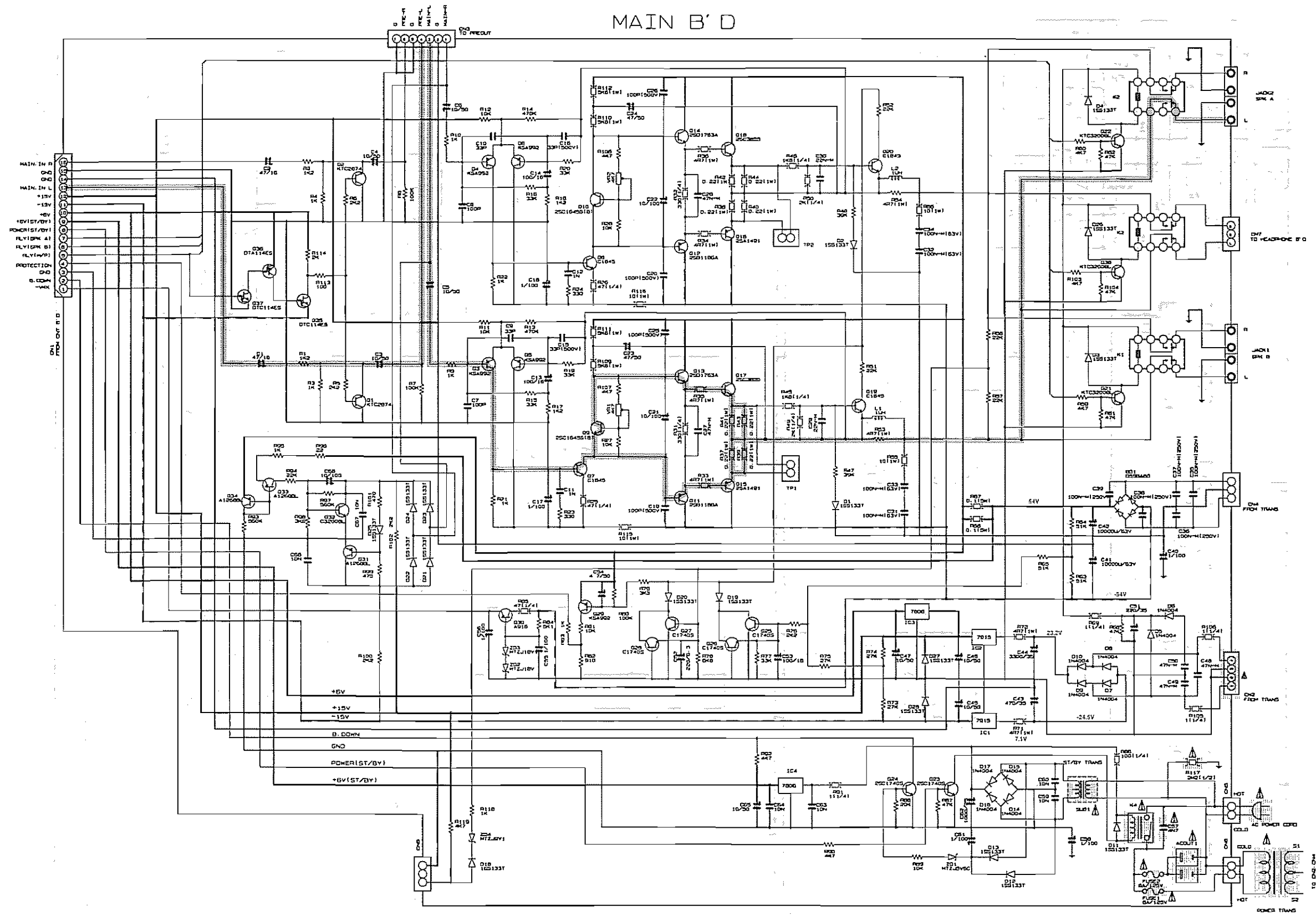
A
B
C
D
E

WIRING DIAGRAM




SCHEMATIC DIAGRAMS (1/6)

1 2 3 4 5 6 7 8



NOTICE
 ALL RESISTANCE VALUES IN OHM, k=1,000 OHM M=1,000,000 OHM
 ALL CAPACITANCE VALUES IN MICRO FARAD, p=MICRO-MICRO FARAD
 EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT
 CONDITION
 CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR
 NOTICE.

WARNING:
 Parts marked with this symbol  have critical characteristics.
 Use ONLY replacement parts recommended by the manufacturer.

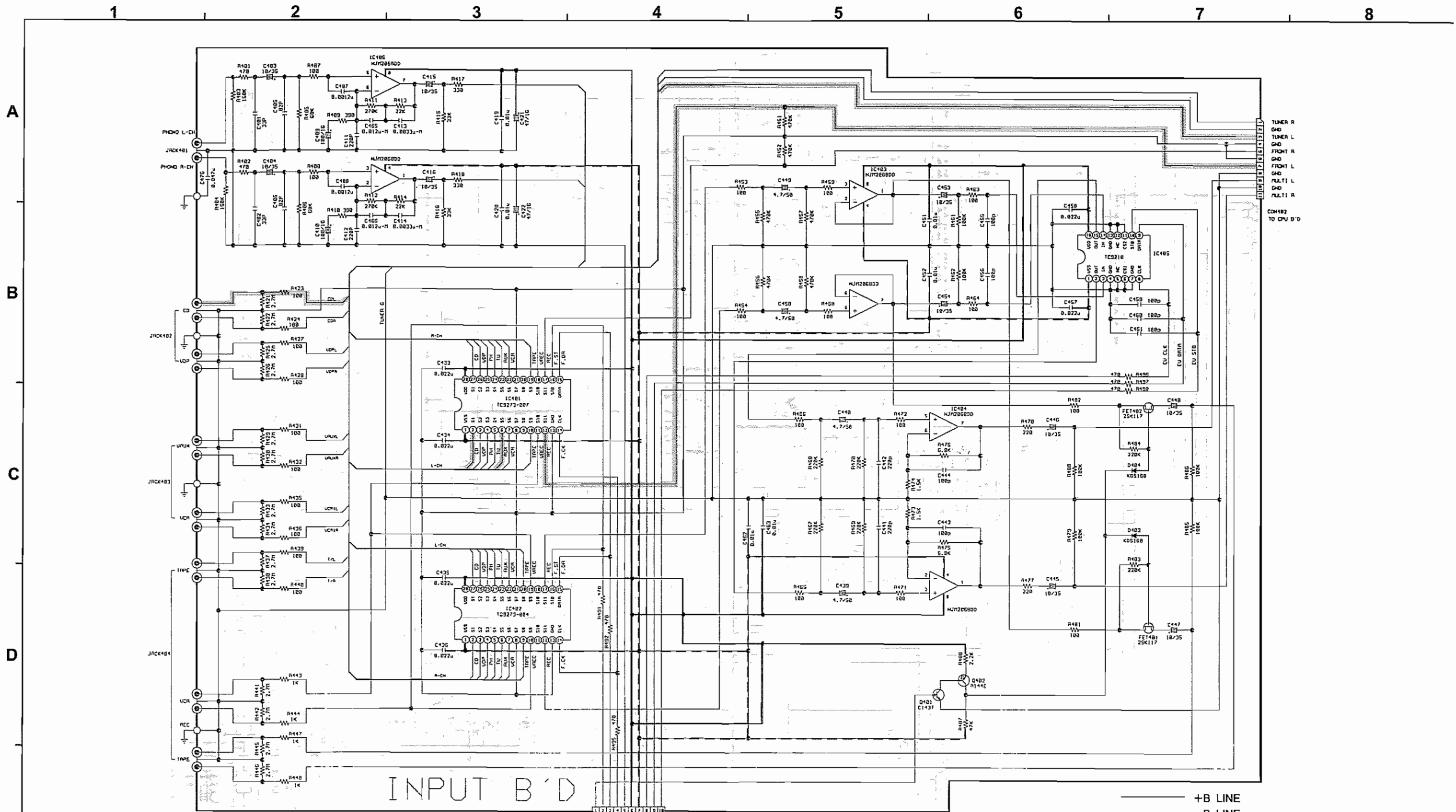
CAUTION:
 Before returning the unit to the customer, make sure you make either (1) a
 leakage current check or (2) a line to chassis resistance check. If the leakage
 current exceeds 0.5 milliamps, or if the resistance from chassis to either side
 of the power cord is less than 460 kohms, the unit is defective.

WARNING:
 DO NOT return the unit to the customer until the problem is located and corrected.

— +B LINE
 - - - -B LINE
 SIGNAL LINE

SCHEMATIC DIAGRAMS (1/6) MAIN P.C.B.

SCHEMATIC DIAGRAMS (2/6)



NOTICE
 ALL RESISTANCE VALUES IN OHM, k=1,000 OHM M=1,000,000 OHM
 ALL CAPACITANCE VALUES IN MICRO FARAD, P=PICTO-MICRO FARAD
 EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT
 CONDITION
 CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR
 NOTICE.

WARNING:
 Parts marked with this symbol have critical characteristics.
 Use ONLY replacement parts recommended by the manufacturer.

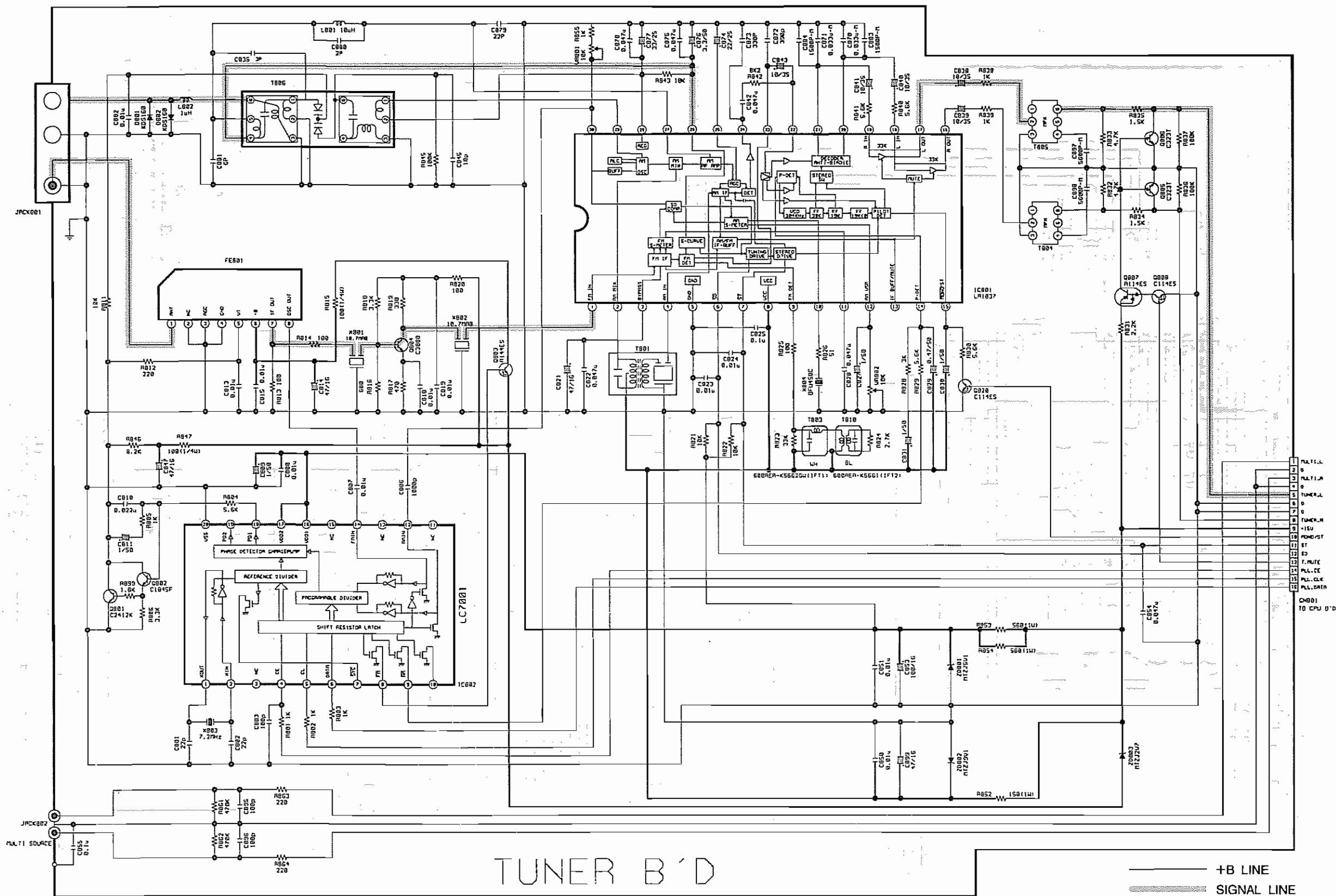
CAUTION:
 Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a die to chassis resistance check. If the leakage current exceeds 0.5 milliamperes, or if the resistance from chassis to either side of the power card is less than 460 kohms, the unit is defective.

WARNING:
 DO NOT return the unit to the customer until the problem is located and corrected.

SCHEMATIC DIAGRAMS (2/6) INPUT P.C.B.

SCHEMATIC DIAGRAMS (3/6)

1 2 3 4 5 6 7 8



TUNER B'D

— +B LINE
 - - - - - SIGNAL LINE

NOTICE
 ALL RESISTANCE VALUES IN OHM, K=1,000 OHM M=1,000,000 OHM
 ALL CAPACITANCE VALUES IN MICRO FARAD, P=PICTO-MICRO FARAD
 EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT
 CONDITION
 CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR
 NOTICE.

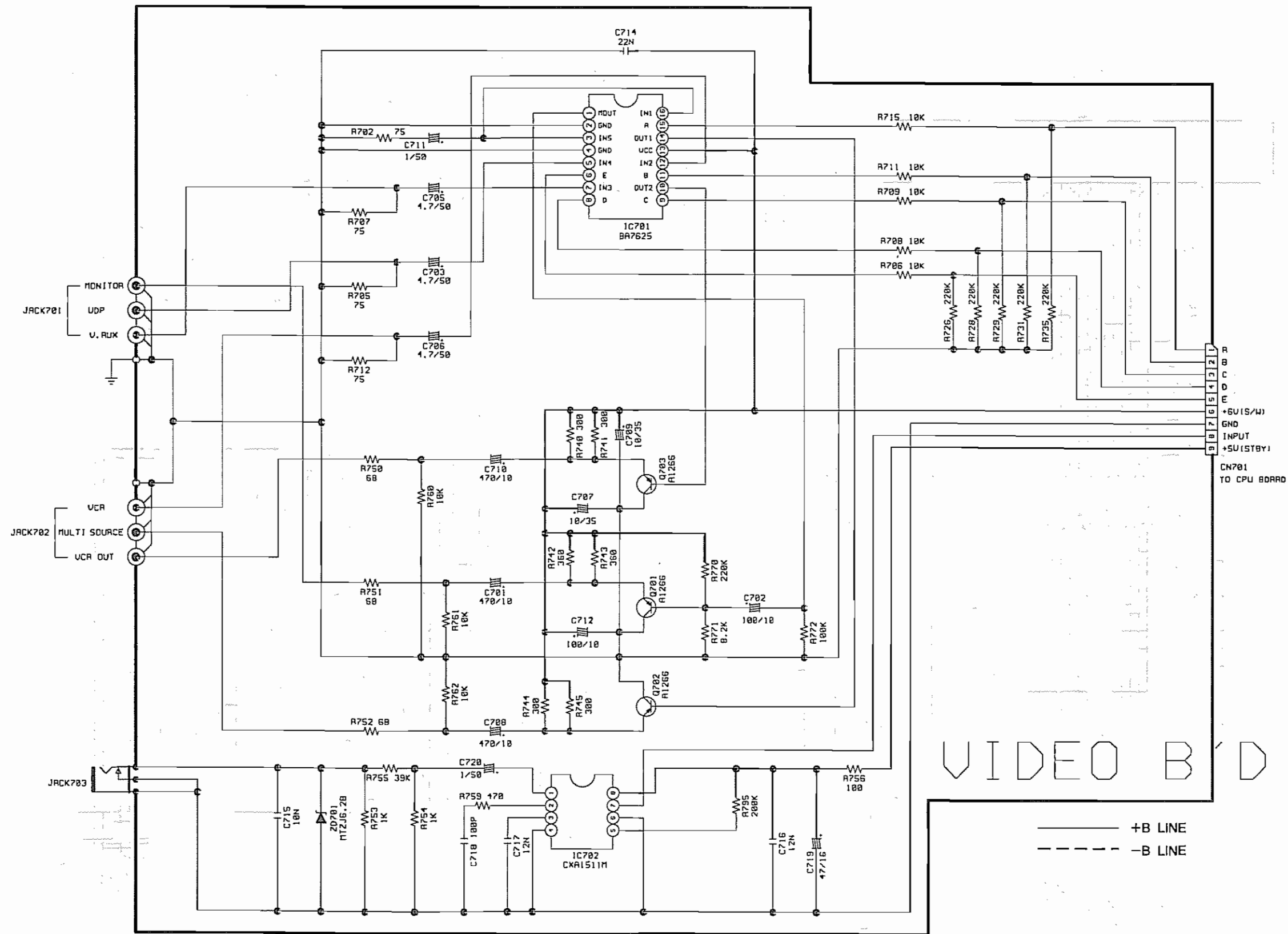
WARNING:
 Parts marked with this symbol have critical characteristics.
 Use ONLY replacement parts recommended by the manufacturer.
CAUTION:
 Before returning the unit to the customer, make sure you make either (1) a
 leakage current check or (2) a line to chassis resistance check. If the leakage
 current exceeds 0.5 microamps, or if the resistance from chassis to either side
 of the power cord is less than 460 kilohms, the unit is defective.
WARNING:
 DO NOT return the unit to the customer until the problem is located and corrected.

SCHEMATIC DIAGRAMS (3/6) TUNER P.C.B.

A
B
C
D
E

SCHEMATIC DIAGRAMS (5/6)

1 2 3 4 5 6 7 8



NOTICE
 ALL RESISTANCE VALUES IN OHM, k=1,000 OHM M=1,000,000 OHM
 ALL CAPACITANCE VALUES IN MICRO FARAD, p=MICRO-MICRO FARAD
 EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT
 CONDITION
 CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR
 NOTICE

WARNING:
 Parts marked with this symbol have critical characteristics.
 Use ONLY replacement parts recommended by the manufacturer.
CAUTION:
 Before returning the unit to the customer, make sure you make either (1) a
 leakage current check or (2) a line to chassis resistance check. If the leakage
 current exceeds 0.5 millamps, or if the resistance from chassis to either side
 of the power cord is less than 460 kohms, the unit is defective.

WARNING:
 DO NOT return the unit to the customer until the problem is located and corrected.

SCHEMATIC DIAGRAMS (5/6) VIDEO P.C.B.

SCHEMATIC DIAGRAMS (6/6)

1 2 3 4 5 6 7 8

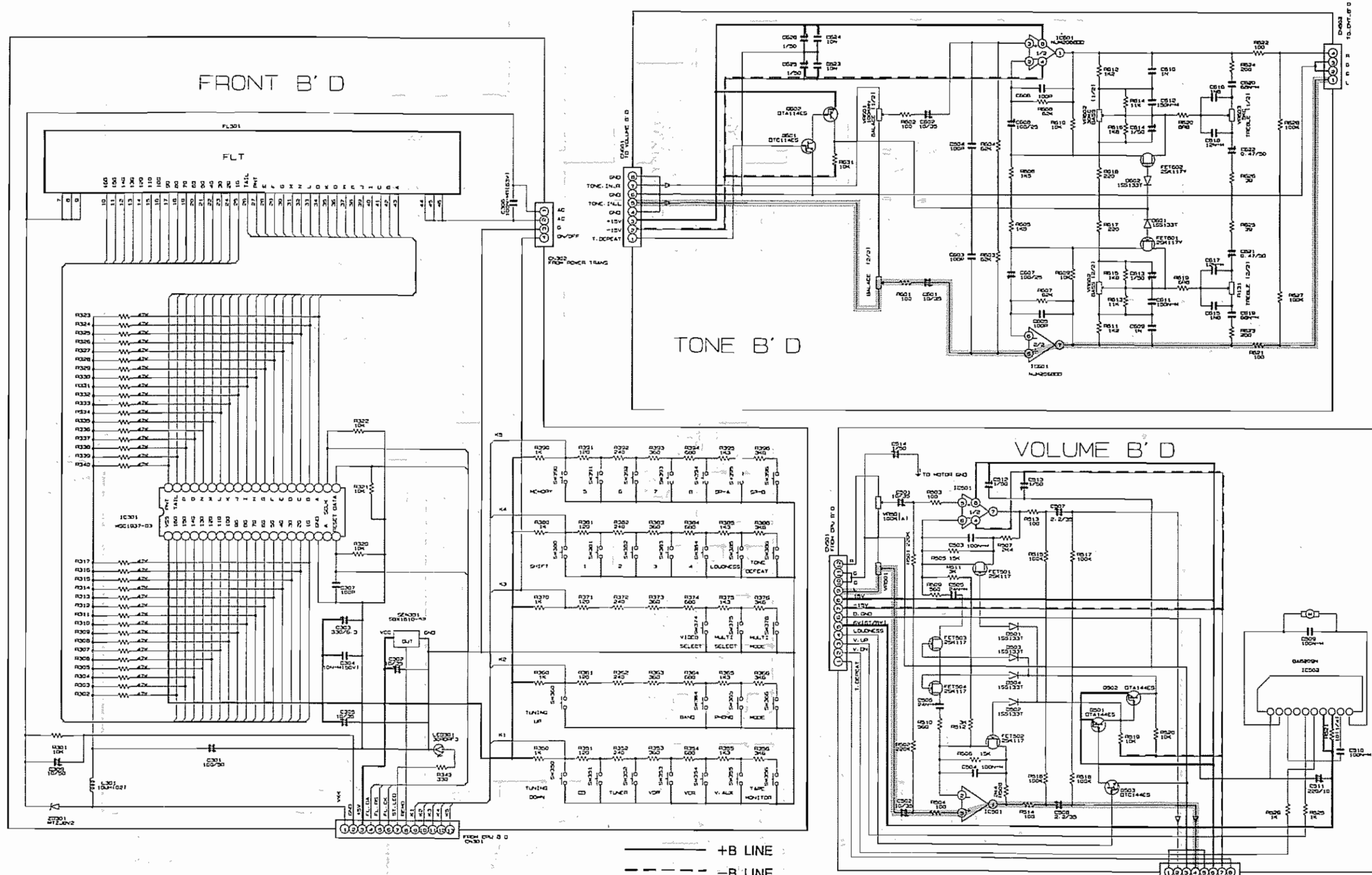
A

B

C

D

E

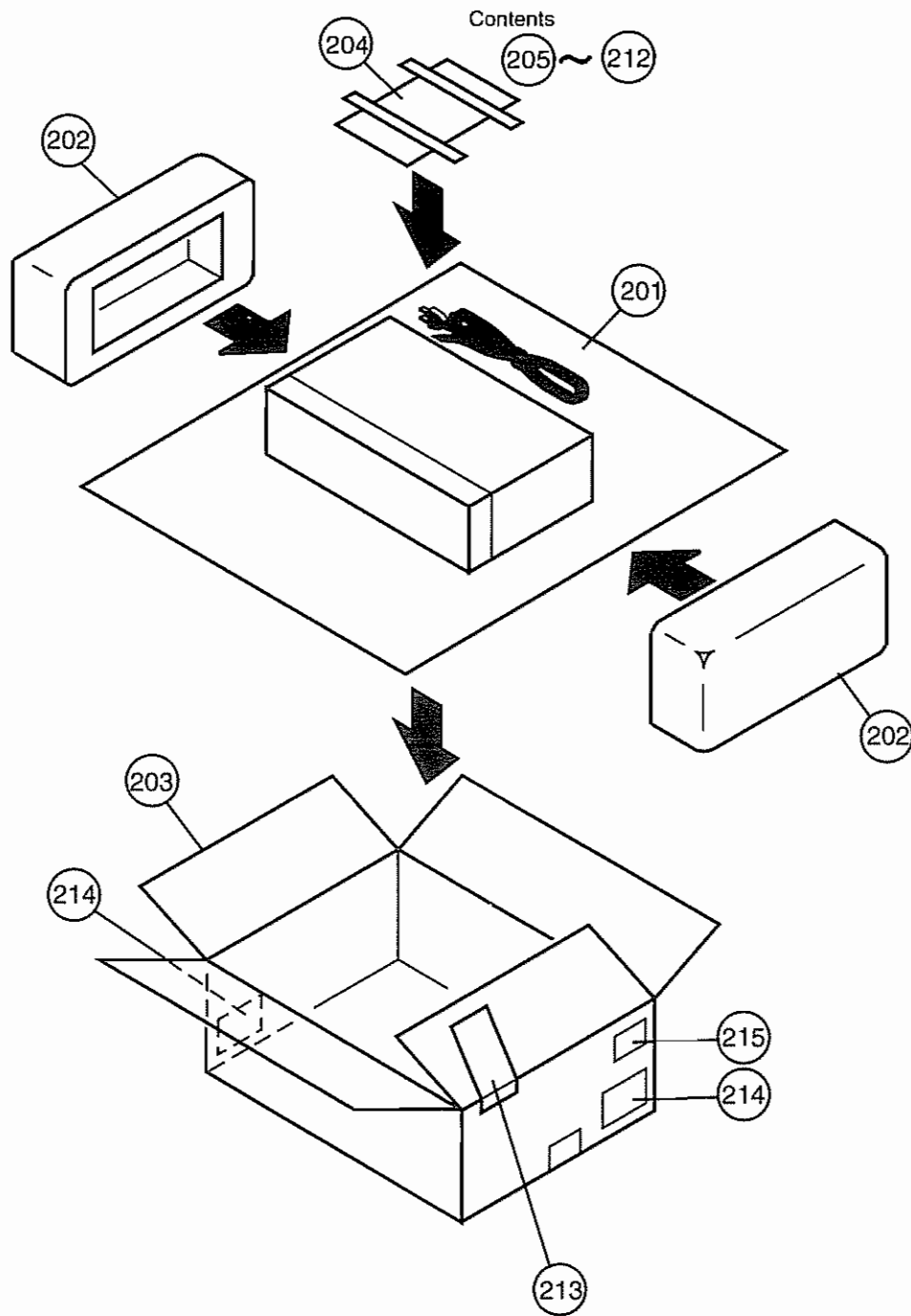


NOTICE
 ALL RESISTANCE VALUES IN OHM, k=1,000 OHM M=1,000,000 OHM
 ALL CAPACITANCE VALUES IN MICRO FARAD, P=MICRO-MICRO FARAD
 EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT
 CONDITION.
 CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR
 NOTICE.

WARNING:
 Parts marked with this symbol have critical characteristics.
 Use ONLY replacement parts recommended by the manufacturer.
CAUTION:
 Before returning the unit to the customer, make sure you make either (1) a
 leakage current check or (2) a line to chassis resistance check. If the leakage
 current exceeds 0.5 milliamperes, or if the resistance from chassis to either side
 of the power cord is less than 400 kohms, the unit is defective.
WARNING:
 DO NOT return the unit to the customer until the problem is located and corrected.

SCHEMATIC DIAGRAMS (6/6)
 TONE P.C.B.
 FRONT P.C.B.
 VOLUME P.C.B.

PACKING VIEW



PARTS LIST OF PACKING & ACCESSORIES

Ref. No.	Part No.	Part Name	Remarks	Q'ty	Ref. No.	Part No.	Part Name	Remarks	Q'ty
201	960 0185 601	Set poly bag	6330210019000	1	209	960 0185 902	Remote controller RC-872	8300872000010	1
202	960 0185 504	Cushion	6230210124000	1	210	960 0186 008	Remote controller RC-873(Multi room)	8300873000010	1
203	960 0185 407	Carton case	6007210140000	1	211	—	Battery (R6P/AA)×2	G670001R50010	1
204	963 0045 106	Poly bag	6330000240000	1	212	—	Battery (R03/AAA) ×2	G670011R50000	1
205	960 0185 106	Instruction manual	5707210170010	1	213	515 0817 009	DEL Warranty home	5777001610010	1
206	515 0867 004	Service station card	5777001620010	1	214	—	Control label	5500014920010	2
207	960 0187 201	Loop antenna	E601010000000	1	215	—	UPC label	5507028250020	1
208	960 0187 308	FM antenna ass'y	E605010070000	1					

DENON

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