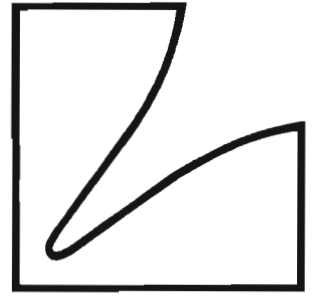


SERVICE MANUAL



Digital Synthesized AM/FM
Stereo Receiver

R-114



Contents

Specifications	2 to 3
Controls & Jacks	4 to 5
Disassembly Procedures	6 to 7
Adjustment Procedures	7 to 9
Adjustment Locations	10
Block Diagram	11
Schematic Diagram (1/2)	12 to 14
Schematic Diagram (2/2)	15 to 18
Parts Layout on P. C. Boards and Wiring Diagram	19 to 22
Electrical Parts List	23 to 28
Packing Assembly Parts List	29
Packing Method View	29
Cabinet Assembly Parts List	30
Exploded View (Cabinet)	31 to 33
Semi-Conductor Lead Identifications	34 to 39

Specifications

<Audio Section>

Ratio Power Output/THD(8 ohm at Input CD/AUX 1kHz)	50W/0.05 %
Input Sensitivity (1kHz at Po = 50W Output)	PHONO: 2.5mV ±10 % AUX/CD/AV/TAPE-1/TAPE-2/MAIN: 150mV ±10 %
Input Impedance (1kHz)	PHONO: 47Kohm ±10 % AUX/CD/AV/TAPE-1/TAPE-2/MAIN: 43Kohm ±10 %
Frequency Response (±3dB)	AUX/CD/AV/TAPE-1/TAPE-2/MAIN: 5Hz ~ 150KHz
Phono Overload (1kHz, SP. Output, 0.1% THD)	120mV
S/N Ratio (Input Shorted)	PHONO: 76dB AUX/CD/AV/TAPE-1/TAPE-2/MAIN: 94dB
Tone Control Characteristics	(BASS) 100Hz: ±10±2dB (TREBLE) 10kHz: ±10±2dB
Separation	PHONO (at 1kHz): 56dB AUX/CD/AV/TAPE-1/TAPE-2/MAIN (at 10kHz): 42dB
Residual Noise	1mV
Cross Talk (1kHz)	PHONO to Other Input: 60dB AUX to Other Input: 46dB CD to Other Input: 46dB AV to Other Input: 46dB TAPE-1 to Other Input: 46dB TAPE-2 to Other Input: 46dB MAIN to Other Input: 46dB

Specifications

<FM Section>

Intermediate Frequency	10.7MHz
Frequency Range	87.5 ~ 108MHz
Usable Sensitivity (98.1MHz)	16.3dBf
Quieting Sensitivity (50dB S/N, 98.1MHz)	20.3dBf
Signal to Noise Ratio (98.1MHz)	74dB
Frequency Response (30Hz to 15kHz)	+0.8, -1.7dB
Distortion (98.1MHz)	0.4 %
Image Response Ratio (106.1MHz)	32dB
IF Response Ratio (90.1MHz)	65dB
Output Level (98.1MHz)	650mV±3dB

<FM MPX Section>

Quieting Sensitivity (Stereo, 50dB S/N, 98.1MHz)	43.3dBf
Signal to Noise Ratio (98.1MHz)	67dBf
Distortion (Stereo, 98.1MHz)	0.4 %
Stereo Separation (98.1MHz)	100Hz: 35dB
	1kHz: 40dB
	10kHz: 30dB

<AM Section>

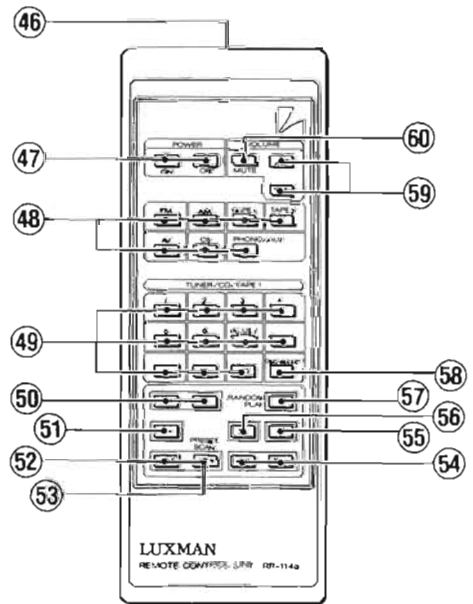
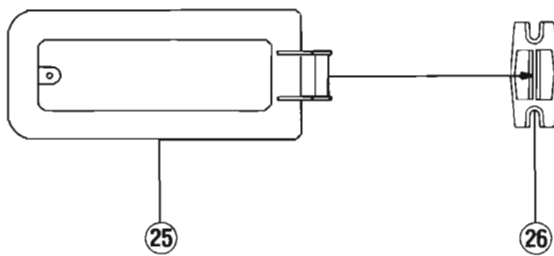
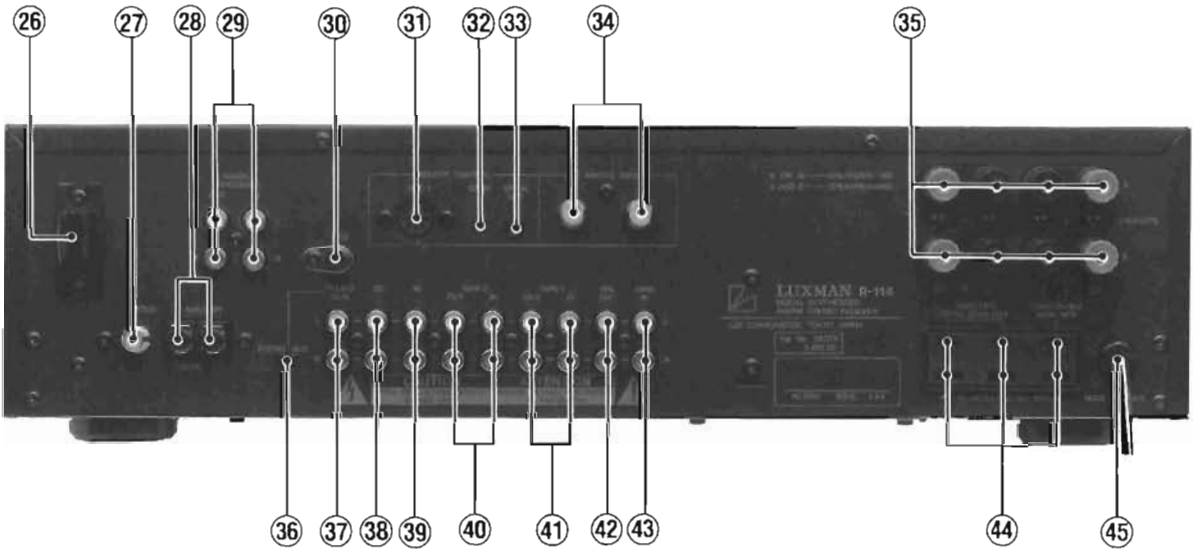
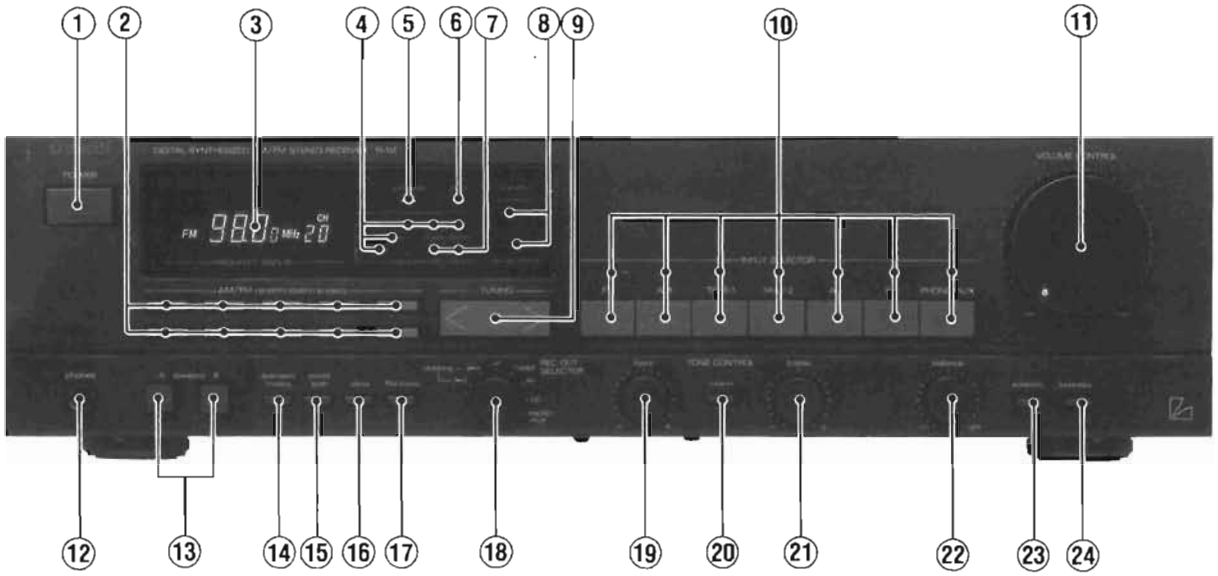
Intermediate Frequency	450kHz
Frequency Range	520 to 1,710KHz
Quieting Sensitivity (20dB S/N, 1,000kHz)	891μV/m
Signal to Noise Ratio (1,000kHz)	45dB
IF Rejection Ratio (600kHz)	40dB
Image Rejection Ratio (1,400kHz)	36dB
Distortion (1,000kHz)	0.5 %
Frequency Response (Ref. 400Hz, 100Hz to 2kHz)	-3±3dB
Output Level (1,000Hz)	200mV±3dB

<GENERAL>

Power Supply	AC 120V, 60Hz
Power Consumption	200W
Semiconductors	21 IC's, 56 Transistors, 47 Diodes, 9 Zener Diodes, 1FET
Dimensions	438(W) × 123(H) × 369(D) mm
Weight	7.8kg

NOTE: Due to continuing product improvement, specifications and designs are subject to change without notice.

Controls & Jacks



RR-114a

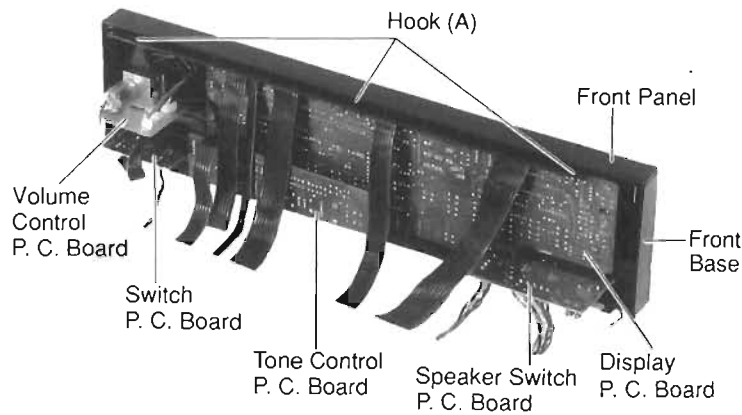
- ① POWER Button
- ② AM/FM RANDOM STATION PRESETS
- ③ DIGITAL DISPLAY
- ④ SIGNAL STRENGTH Indicators
- ⑤ AUTO SEEK Indicator
- ⑥ STORE Indicator
- ⑦ MONO/STEREO Indicators
- ⑧ REMOTE SENSOR and STANDBY COMMAND Indicator
- ⑨ TUNING Button (< >)
- ⑩ INPUT SELECTOR Buttons/Indicators
- ⑪ VOLUME CONTROL
- ⑫ PHONES Jack
- ⑬ SPEAKERS A and B Buttons
- ⑭ AUTO SEEK MUTING Button
- ⑮ PRESET SCAN BUTTON
- ⑯ STORE Button
- ⑰ FM MONO Button
- ⑱ REC OUT SELECTOR
- ⑲ BASS Control
- ⑳ TONE IN Button
- ㉑ TREBLE Control
- ㉒ BALANCE Control
- ㉓ SUBSONIC Filter Button
- ㉔ LOUDNESS Button
- ㉕ AM Loop Antenna
- ㉖ HOLDER-AM Antenna
- ㉗ 75 ohm FM Antenna "F" Connector
- ㉘ AM Loop Antenna Terminals
- ㉙ SIGNAL PROCESSOR IN and OUT Jacks
- ㉚ GND Terminal
- ㉛ CASSETTE DECK REMOTE DIN Jack for TAPE- 1.
- ㉜ DZ-92 REMOTE Jack
- ㉝ SERIAL REMOTE OUT Jack
- ㉞ EXTERNAL REMOTE SENSOR INPUTS
- ㉟ SPEAKERS A and B Terminals
- ㊱ PHONO/AUX Switch
- ㊲ PHONO/AUX Jacks
- ㊳ CD Jacks
- ㊴ AV Jacks
- ㊵ TAPE-2 OUT and IN Jacks
- ㊶ TAPE-1 OUT and IN Jacks
- ㊷ PRE-OUT Jacks
- ㊸ MAIN-IN Jacks
- ㊹ AC OUTLETS
- ㊺ AC POWER CORD
- ㊻ Infrared Transmission Window
- ㊼ POWER ON and OFF Buttons
- ㊽ Input Selector Buttons
- ㊾ Direct Access Select Buttons (1 through 10 and +10)
- ㊿ Record Buttons (●), (●)
- ① Play Button (▶)
- ② Forward/Backward Skip Buttons (⏮, ⏭)
- ③ PRESET SCAN Button (▶▶)
- ④ Fast Forward/Backward Buttons (⏪, ⏩)
- ⑤ Stop Button (■)
- ⑥ Pause Button (⏸)
- ⑦ RANDOM Button
- ⑧ DISC SELECT Button
- ⑨ BOLUME Buttons (∨), (∧)
- ⑩ MUTE Button

Disassembly Procedures

1. Caution on Removing the Front Base

You cannot remove the Front Base unless you remove the Front Panel first. When you remove the Front Panel, follow the procedure given below.

- (1) Remove the four screws that fix the lower Part of the Front Panel. To remove the Front Panel, push the panel in the direction of arrow C as you press down Hook (A) (located in three places) in the direction of arrow B using a minus (-) screwdriver (see Figures 1 and 2).



<Figure 1>

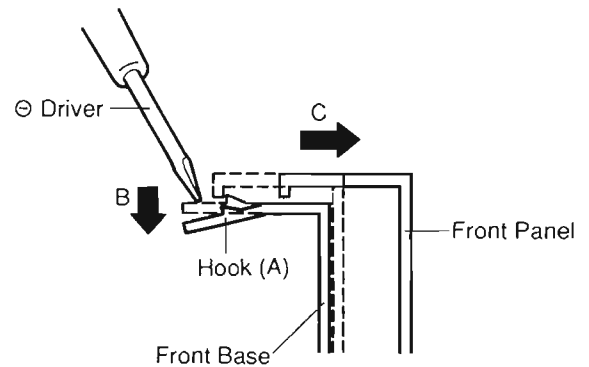
2. Caution on Removing the Display P. C. Board

Remove the four screws fixing the Board, knob (REC OUT SELECTOR), and nut which fit the inside of the knob. Remove the Display P. C. Board as you press Hook (D) (located in seven places) in the direction of arrow E using your fingers (see Figure 3 and 4).

Note: Be careful when you handle Hooks (A) and (D). They may break easily.

3. Caution on Removing the Volume Control P. C. Board

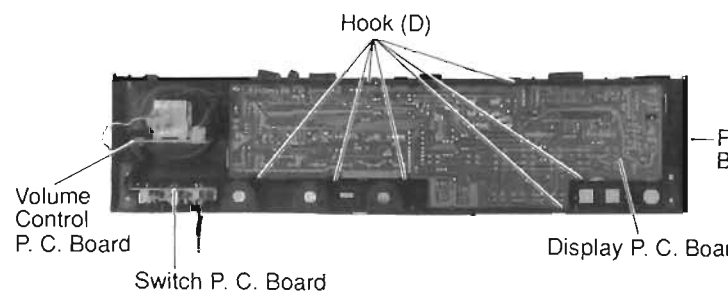
To prevent cutting off the Connector (F) which comes out from the Volume Indicator P. C. Board at the rear of the Volume Control Knob, disconnect the connector before removing the knob (see Figure 5).



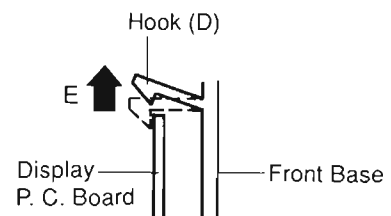
<Figure 2>

4. Caution on Removing the Amp. Tuner P. C. Board

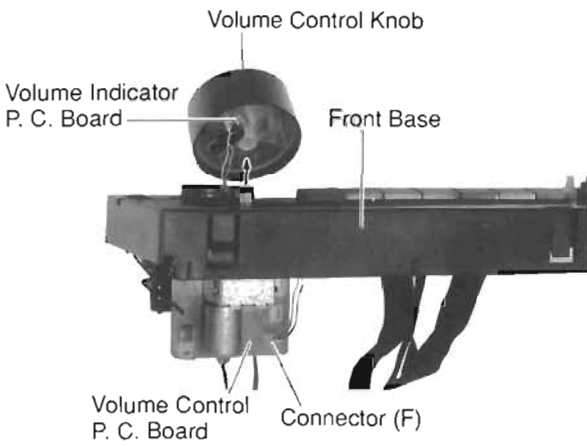
To prevent the six Transistors and one Thermistor from being damaged when you remove the Amp. Tuner P. C. Board, first remove all the screws fixing the Amp. Tuner P. C. Board and the Heat Sink. Then, remove the P. C. board together with the Heat Sink (see Figure 6).



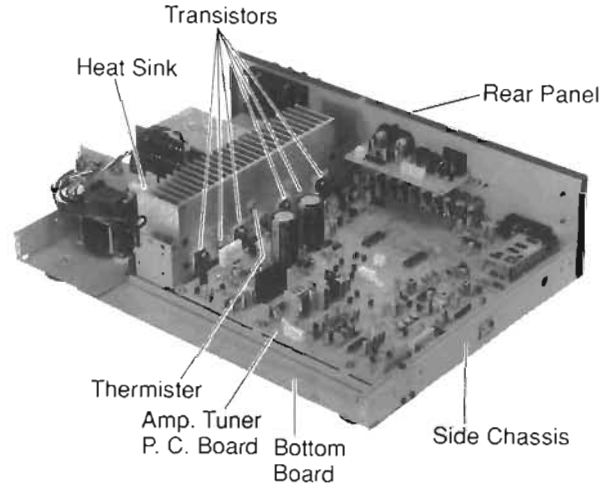
<Figure 3>



<Figure 4>



<Figure 5>



<Figure 6>

Ajustment Procedures

1. Audio Section

(1) Connection

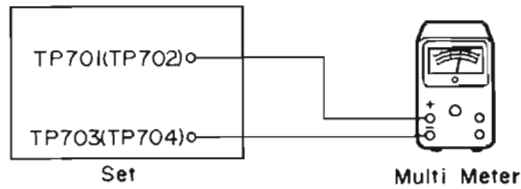


Figure 7

(2) Control Settings

Volume Control Minimum
 Speaker Switch OFF

(3) Procedures

Step	Description	Adjust Points	Test Points	Connection	Remarks
1	Idling Adjustment	VR601 (L)	TP701 (L) TP703 (L)	Figure 7	Power switch on and wait 5 minutes for warming-up. Adjust to $7 \pm 2\text{mV}$.
		VR602 (R)	TP702 (R) TP704 (R)		

2. Tuner Section

AM
(1) Connection

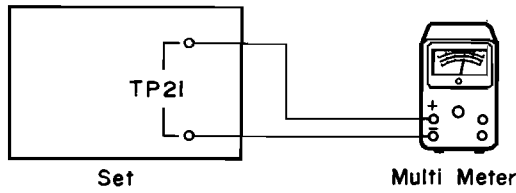


Figure 8

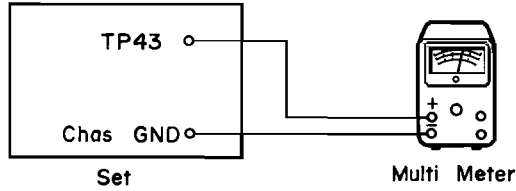


Figure 9

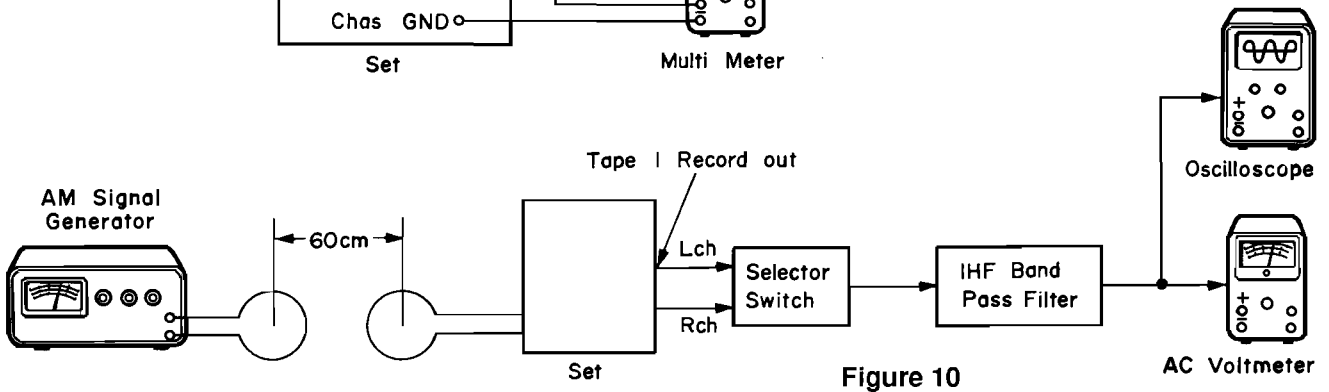


Figure 10

(2) Control Settings

Input Selector AM
Rec Selector TUNER

(3) Procedures

Step	Description	Signal Generator	Dial Control	Adjust Points	Test Points	Connection	Remarks
1	Tracking Adjustment	-	(1) 520kHz	L23	TP21	Figure 8	Adjust to $1 \pm 0.05V$.
			(2) 1,710kHz	VC21			Adjust to $8 \pm 0.5V$.
			(3)				Repeat Step 1-(1), (2).
2	IF Adjustment	450kHz MOD: 400Hz 30%	1,000kHz	T42	Tape 1 Rec out	Figure 10	To maximum output.
3	Sensitivity Adjustment	(1) 600kHz	600kHz	L22	Tape 1 Rec out	Figure 10	To maximum output.
		(2) 1,400kHz	1,400kHz	VC21			To maximum output.
		(3)					Repeat Step 3-(1), (2).
4	Level Adjustment	1,000kHz 60dB $\mu V/m$	1,000kHz	VR42	TP43	Figure 9	Rotate VR42 fully clockwise. Then, return it counter-clockwise with the point from 0V to 5V.

FM
(1) Connection

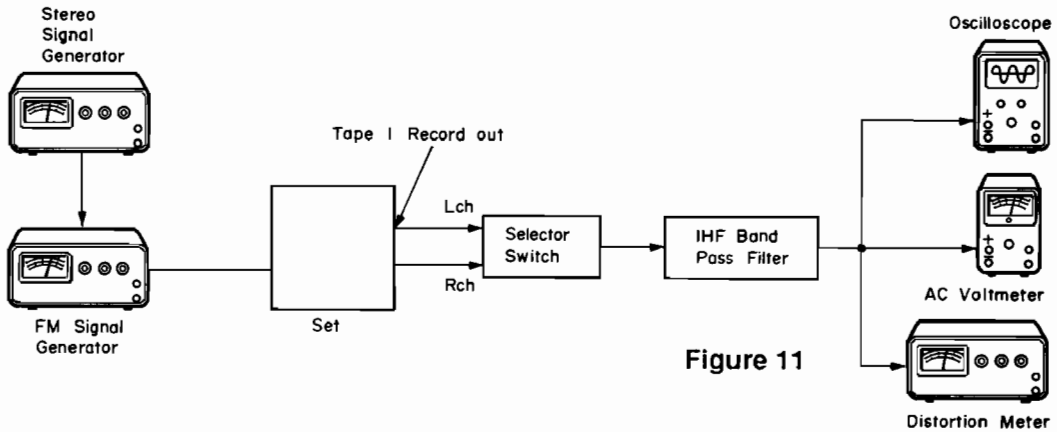


Figure 11

- (2) Control Settings
- Input Selector FM
 - Muting OFF
 - Rec Selector TUNER

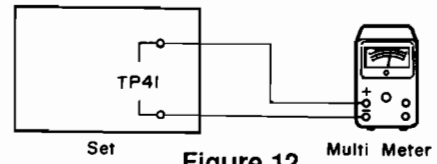


Figure 12

(3) Procedures

Step	Description	Signal Generator	Dial Control	Adjust Points	Test Points	Connection	Remarks
1	Center Voltage and THD Adjustment	98.1MHz 65dBf MOD: 1kHz 100% MONO	98.1MHz	T41	TP41 Tape 1 Rec out	Figure 12 Figure 11	Adjust T41 to 0±3mV.
2	IF Adjustment	98.1MHz 65dBf MD: 1kHz L (R) only	98.1MHz	Front-end IFT	Tape 1 Rec out	Figure 11	Adjust Front-end IFT to minimum distortion.
3	Muting Level Adjustment	98.1MHz 31.2dBf MONO	98.1MHz	VR41	Tape 1 Rec out	Figure 11	Muting Switch ON. Rotate VR41 fully counterclockwise. Then, return it counterclockwise with a waveform appears.
4	Signal Strength Meter Level Adjustment	98.1MHz MONO	98.1MHz	VR43	-		Adjust VR43 so that Segment 5 of the signal strength meter light up.
5	Separation Adjustment	98.1MHz 65dBf MOD: 1kHz L (R) only	98.1MHz	VR71	Tape 1 Rec out	Figure 11	Adjust VR71 to minimum at R (L) channel output.

Adjustment Locations

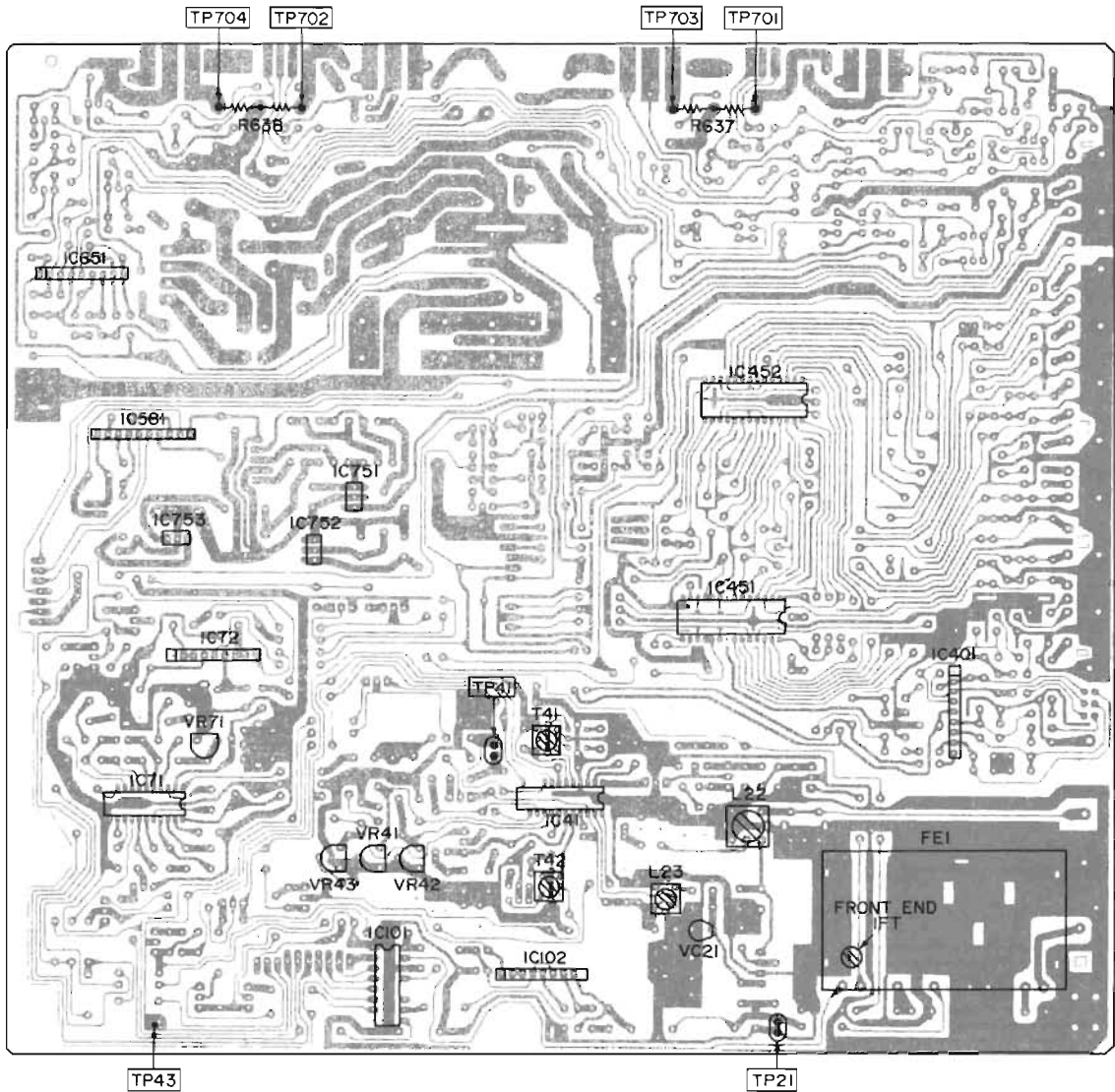
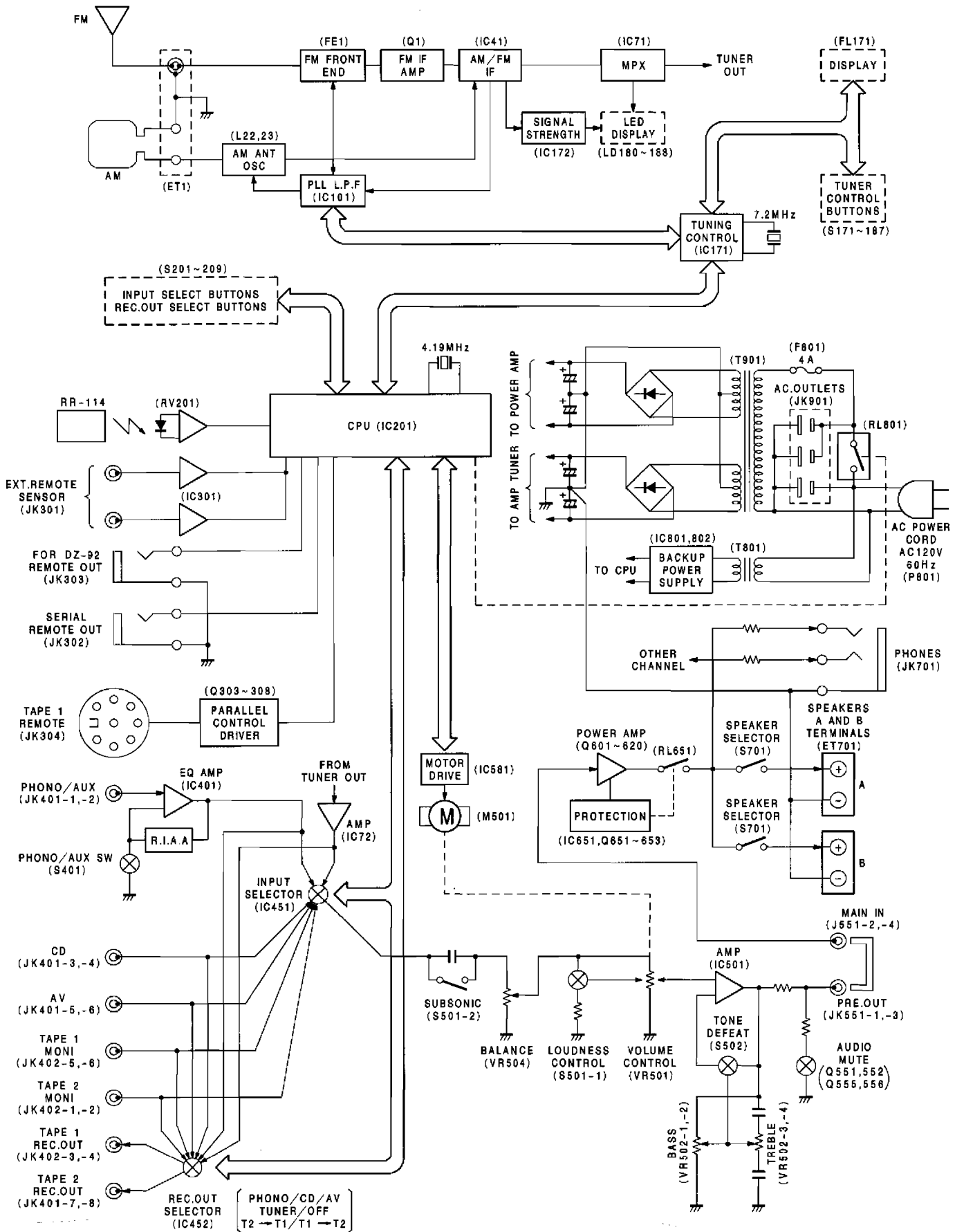


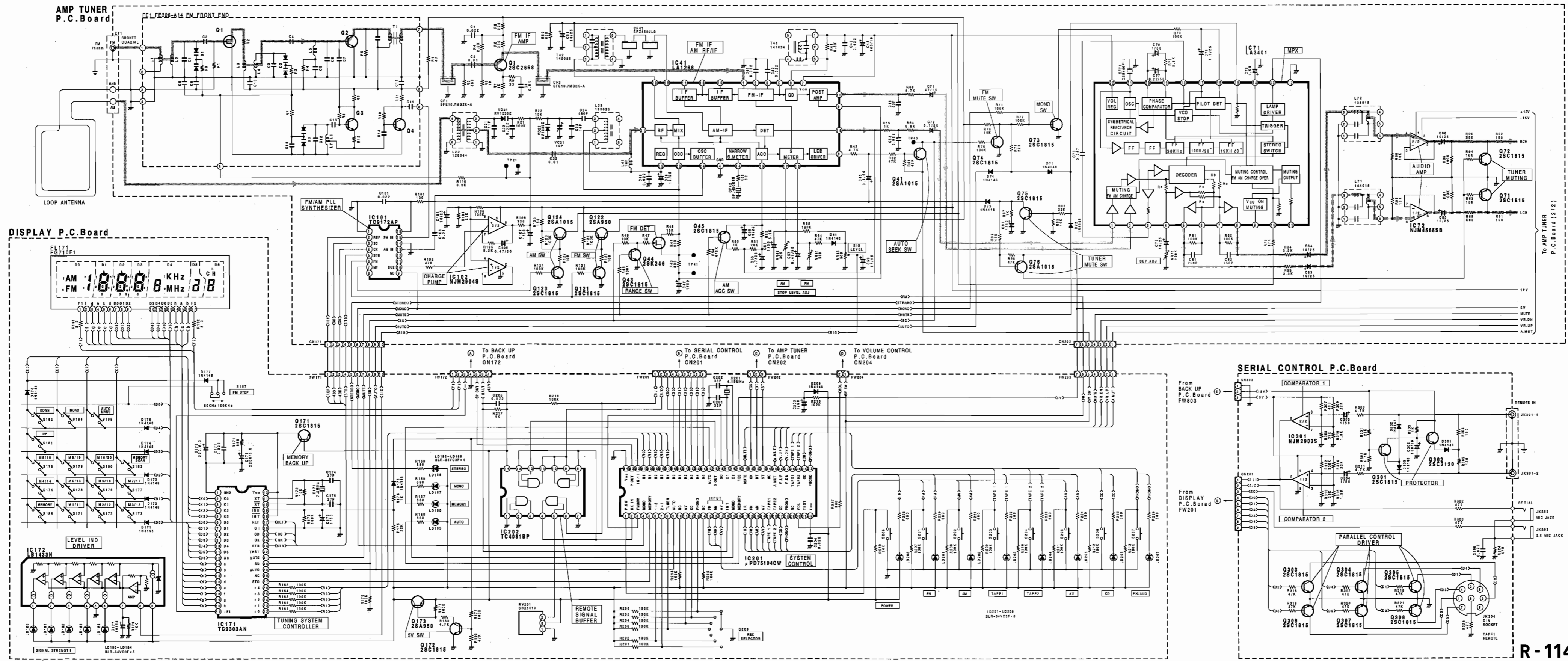
Figure 13 Amp. Tuner P. C. Board <Top View>

Block Diagram

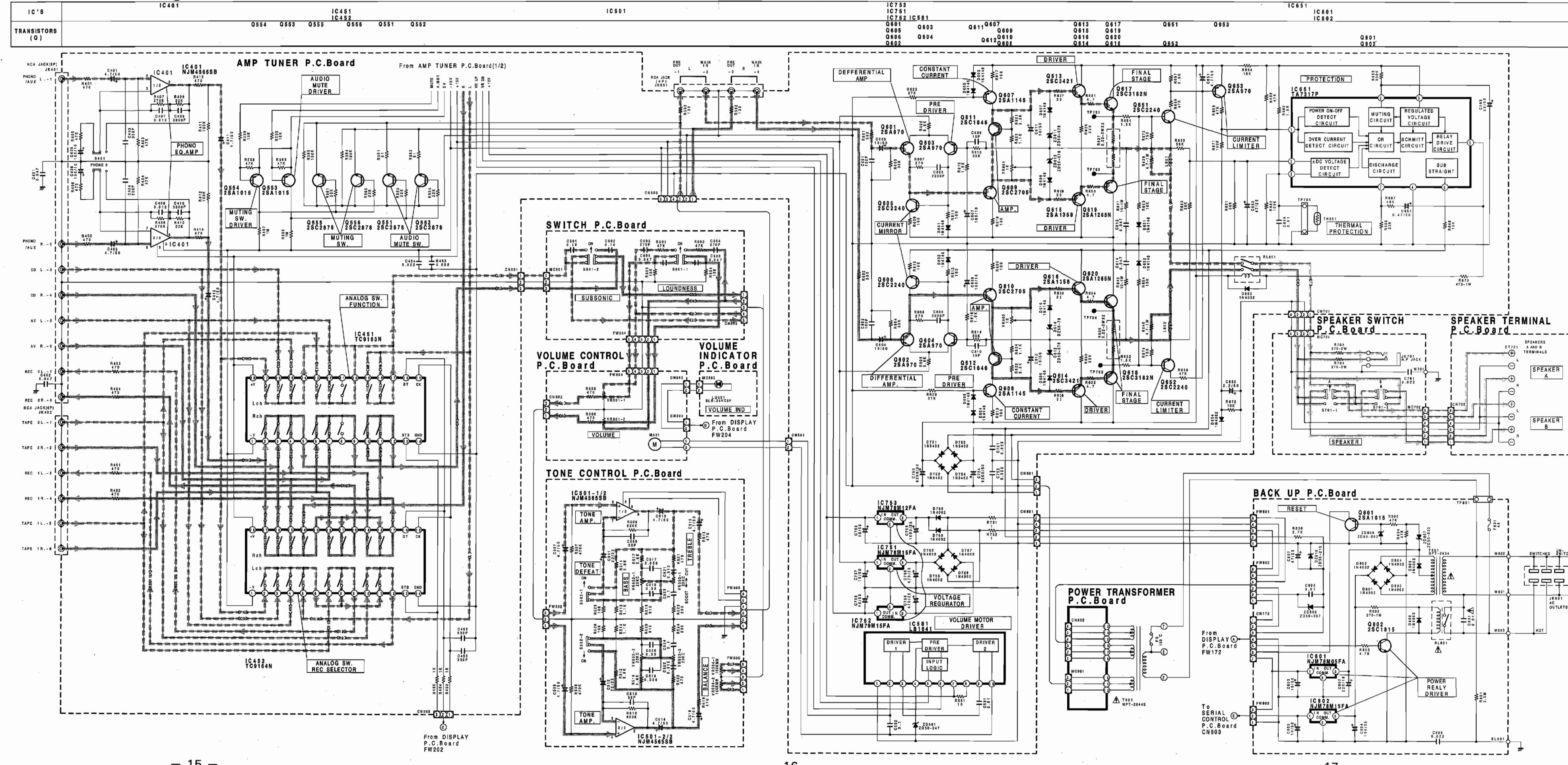


Schematic Diagram (1/2)

IC'S	IC172	IC171	IC101	IC102	IC202	IC41	IC201	IC71	IC301	IC72						
TRANSISTORS (Q)		Q171	Q173 Q172	Q124 Q123	Q122 Q121	Q44 Q43	Q45	Q41	Q74	Q73 Q75 Q76	Q303 Q305 Q308	Q304 Q307	Q305 Q308	Q301	Q302	Q72 Q71



Schematic Diagram(2/2)



NOTES

1. All resistors are 1/4watts or 1/2watts 5% Resistor values are in ohms. (K=1000 ohms/M=100K ohms)
2. All capacitor values are in microfarads (p=picofarads)
3. Each D.C. voltage shows the nominal values in volts no input signal.
4. This Safety Part: Use only replacement parts recommended by the manufacturer.
5. R=FLAME PROOF RESISTOR

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 0.5milliamp or if the resistance from chassis to either side of the cord is less than 500K ohms the unit is defective.

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

Q	E	C	B
Q1	2.7V	3.4V	9.8V
Q41	5V	5V	9.8V
Q43	0V	5V	0V
Q45	1.5V	1.5V	0V
Q71	0V	0V	0V
Q72	0V	0V	0V
Q73	0V	0V/2.5V	0.5V/0V
Q74	0V	0V	0.8V
Q75	0V	5V	0V
Q76	5V	0V	5V
Q79	0V	0V/1.2V	0.8V/0V
Q121	0V	0V/1.2V	0.8V/0V
Q122	1.2V	1.2V/0V	11.4V/12V
Q123	0V	1.2V/0V	0V/0.8V
Q124	1.2V	0V/1.2V	0V/11.4V
Q171	—	4.3V	5V
Q172	0V	0V	0.8V
Q173	0V	5V	4.4V
Q301	2.2V	14.8V	2.6V
Q302	14.4V	15V	14.8V
Q303	0V	0V	0V
Q304	0V	0V	0V
Q305	0V	0V	0V
Q306	0V	0V	0V
Q307	0V	0V	0V
Q308	0V	0V	0V
Q309	0V	0V	-13.8V
Q310	0V	0V	-13.8V
Q311	0V	-13.8V	5V
Q312	0V	0V	-13.8V
Q313	0V	0V	-13.8V
Q801	0.8V	-4.4V	0V
Q802	0.8V	-4.4V	0V
Q803	0.8V	-4.4V	0V
Q804	0.8V	-4.4V	0V
Q805	-4.4V	-4.4V	0V
Q806	-4.4V	-4.4V	0V
Q807	4.4V	1.1V	4.8V
Q808	4.4V	1.1V	4.8V
Q809	-4.4V	-1.1V	-4.4V
Q810	-4.4V	-1.1V	-4.4V
Q811	-1.1V	1.1V	-0.47V
Q812	-1.1V	1.1V	-0.47V
Q813	0.54V	45V	1.1V
Q814	0.54V	45V	1.1V
Q815	-0.54V	-45V	-1.1V
Q816	-0.54V	-45V	-1.1V
Q817	0V	45V	0.54V
Q818	0V	45V	0.54V
Q819	0V	-45V	-0.54V
Q820	0V	-45V	-0.54V
Q821	0V	45V	0V
Q822	0V	45V	0V
Q823	45V	45V	45V
Q824	0V	0V	0.8V

IC41	IC71	IC191	IC202
1	3.1V	1	0V
2	3.1V	2	2.2V
3	3.1V	3	3.1V
4	3.1V	4	4.0V
5	3.1V	5	4.9V
6	3.1V	6	5.8V
7	3.1V	7	6.7V
8	3.1V	8	7.6V
9	3.1V	9	8.5V
10	3.1V	10	9.4V
11	3.1V	11	10.3V
12	3.1V	12	11.2V
13	3.1V	13	12.1V
14	3.1V	14	13.0V
15	3.1V	15	13.9V
16	3.1V	16	14.8V
17	3.1V	17	15.7V
18	3.1V	18	16.6V
19	3.1V	19	17.5V
20	3.1V	20	18.4V
21	3.1V	21	19.3V
22	3.1V	22	20.2V
23	3.1V	23	21.1V
24	3.1V	24	22.0V

IC72	IC192	IC301	IC401	IC501	IC551
1	5V	5V	15V	15V	1.8V
2	0V	-1.1V	5V	0V	1.8V
3	0V	-1.1V	0.4V	0V	0V
4	0V	-1.1V	0.8V	0V	0V
5	-1.5V	0V	-1.5V	-0.7V	0V
6	0V	-1.1V	0.5V	0V	1V
7	0V	-1.1V	0.4V	0V	0V
8	0V	-1.1V	0.4V	0V	1.2V
9	15V	12V	5V	15V	3V

IC751	IC752	IC753	IC801	IC802	
1	15V	-15V	12V	5V	15V
2	0V	-2.2V	0V	0V	0V
3	21.5V	0V	21.5V	11.5V	24.5V

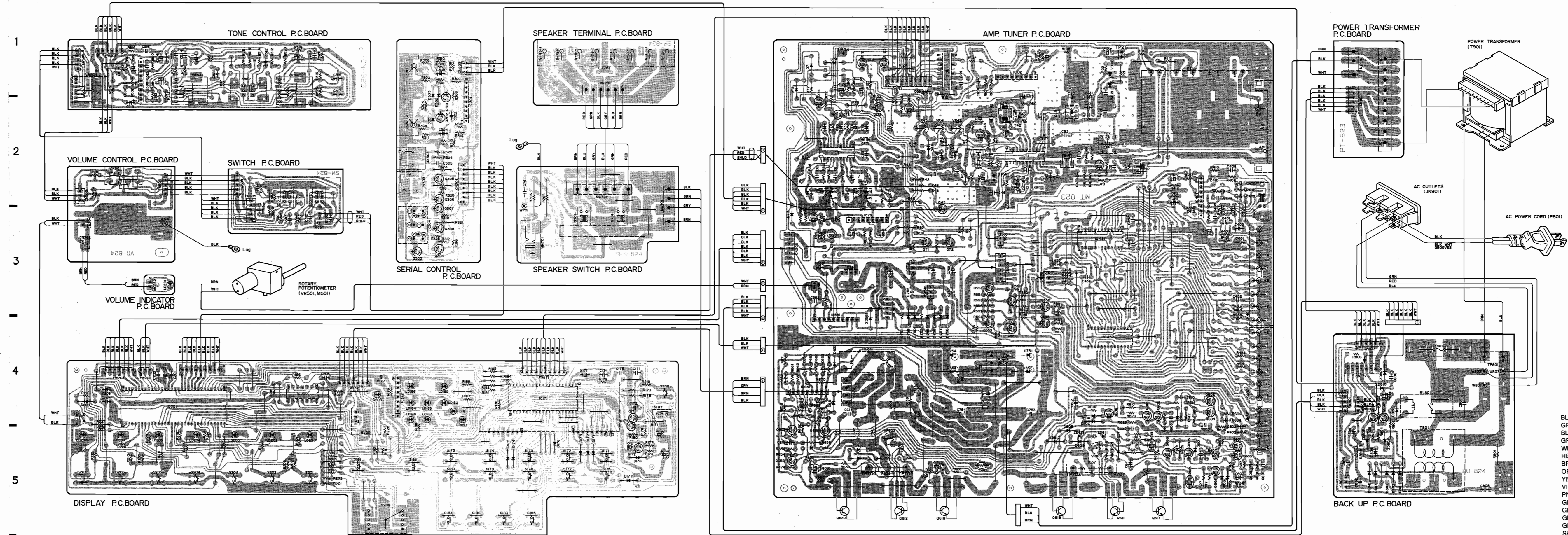
IC201	IC451	IC452
1	5V	9.8V
2	5V	9.8V
3	5V	9.8V
4	0V	0V
5	0V	0V
6	0V	0V
7	0V	0V
8	0V	0V
9	0V	0V
10	0V	0V
11	0V	0V
12	0V	0V
13	0V	0V
14	0V	0V
15	0V	0V
16	0V	0V
17	0V	0V
18	0V	0V
19	0V	0V
20	0V	0V
21	0V	0V
22	0V	0V
23	0V	0V
24	0V	0V
25	0V	0V
26	0V	0V
27	0V	0V
28	0V	0V
29	0V	0V
30	0V	0V
31	0V	0V
32	0V	0V

Q	G	S
Q44	4V	3.2V

ON	OFF
1	1.8V/2.7V
2	1.8V/2.7V
3	1.8V/2.7V
4	1.8V/2.7V
5	0V/0V
6	1.8V/2.7V
7	1.8V/2.7V
8	1.8V/2.7V
9	1.8V/2.7V
10	0V

Measuring Condition:
1. Power supply voltage: 20V
2. Measuring meter: Multi meter
3. Measuring point: reference between GND
4. Measuring Conditions: No signal input

Parts Layout on P. C. Boards and Wiring Diagram



Electrical Parts List

Resistor: Carbon resistors under 1/4 watts are not mentioned in the parts list. Please confirm them by schematic diagram.

Capacitor: μF =microfarads. pF=picofarads.

Abbreviations			
Cap.-Capacitor		CER.-Ceramic	
CP.-Chip		ELY.-Electrolytic	
LED.-Light Emitting Diode		MIC.-Mica	
MO.-Metal Oxide Film		MF.-Metal Film	
PP.-Polypropylene		MYL.-Mylar	
SOL.-Solid		PLY.-Polyethylene	
ZEN.-Zener		TAN.-Tantalum	
Symble No.	Part No.	Description	
Amp, Tuner P. C. Board			
IC's			
IC41	51E08117S01	LA1266	
IC71	51E04222S01	LA3401	
IC72	51E07540S01	NJM4565SB	
IC101	51E08118S01	TC9172AP	
IC102	51E08119S01	NJM2904S	
IC401	51E07540S01	NJM4565SB	
IC451	51E04234S01	TC9163N	
IC452	51E04411S01	TC9164N	
IC581	51T15267W01	LB1641	
IC651	51T67437F01	TA7317P	
IC751	51E08120S01	NJM78M15FA	
IC752	51E08121S01	NJM79M15FA	
IC753	51E08122S01	NJM78M12FA	
Transistors			
Q1	48T56486F01	2SC2668	
Q41	48E04169S01	2SA1015	
Q43	48S43525F03	2SC1815	
Q44	48T69039F01	FET.. 2SK246	
Q45	48S43525F03	2SC1815	
Q71	48S43525F03	2SC1815	
Q72	48S43525F03	2SC1815	
Q73	48S43525F03	2SC1815	
Q74	48S43525F03	2SC1815	
Q75	48S43525F03	2SC1815	
Q76	48E04169S01	2SA1015	
Q121	48S43525F03	2SC1815	
Q122	48T43526F01	2SA950	
Q123	48S43525F03	2SC1815	
Q124	48E04169S01	2SA1015	
Q551	48T51878F01	2SC2878	
Q552	48T51878F01	2SC2878	
Q553	48E04169S01	2SA1015	
Q554	48E04169S01	2SA1015	
Q555	48T51878F01	2SC2878	

Symble No.	Part No.	Description		
Q556	48T51878F01	2SC2878		
Q601	48T52545F02	2SA970		
Q602	48T52545F02	2SA970		
Q603	48T52545F02	2SA970		
Q604	48T52545F02	2SA970		
Q605	48T53301F02	2SC2240		
Q606	48T53301F02	2SC2240		
Q607	48E04170S01	2SA1145		
Q608	48E04170S01	2SA1145		
Q609	48T60752F01	2SC2705		
Q610	48T60752F01	2SC2705		
Q613	48E08085S01	2SC3421		
Q614	48E08085S01	2SC3421		
Q615	48E08086S01	2SA1358		
Q616	48E08086S01	2SA1358		
Q651	48T53301F02	2SC2240		
Q652	48T53301F02	2SC2240		
Q653	48T52545F02	2SA970		
Diodes				
D41	48E08083S01	1N4148		
D71	48E08083S01	1N4148		
D72	48E08083S01	1N4148		
D73	48E08083S01	1N4148		
D74	48E08083S01	1N4148		
D601	48E08083S01	1N4148		
D602	48E08083S01	1N4148		
D603	48E08083S01	1N4148		
D604	48E08083S01	1N4148		
D605	48E08083S01	1N4148		
D606	48E08083S01	1N4148		
D607	48E08083S01	1N4148		
D608	48E08083S01	1N4148		
D609	48E08083S01	1N4148		
D610	48E08083S01	1N4148		
D651	48E08083S01	1N4148		
D652	48E08083S01	1N4148		
D653	48S40477U02	1N4002		
D654	48S40477U02	1N4002		
D751	48E04210S01	1N5402		
D752	48E04210S01	1N5402		
D753	48E04210S01	1N5402		
D754	48E04210S01	1N5402		
D755	48S40477U02	1N4002		
D756	48S40477U02	1N4002		

Symble No.	Part No.	Description		
D757	48S40477U02	1N4002		
D758	48S40477U02	1N4002		
D759	48S40477U02	1N4002		
D760	48S40477U02	1N4002		
VD21	48E08082S01	Varactor. KV1236Z		
VD22	48E08082S01	Varactor. KV1236Z		
ZD581	48E08213S01	ZEN.. ZD50-047		
ZD611	48E08084S01	ZEN.. ZD50-078		
ZD612	48E08084S01	ZEN.. ZD50-078		
ZD613	48E08084S01	ZEN.. ZD50-078		
ZD614	48E08084S01	ZEN.. ZD50-078		
Switch				
S401	40E08202S01	Slide SW-5220295 (PHONO/AUX)		
Colls				
L22	24E04243S01	MW ANT		
L23	24E08215S01	MW OSC		
L41	24E08216S01	Inductor 1mH		
L71	24E04248S01	Filter. Block		
L72	24E04248S01	Filter. Block		
L601	24E04241S01	Air-Core		
L602	24E04241S01	Air-Core		
Transformers				
T41	24E08217S01	FM IFT		
T42	24E04247S01	MW IFT		
Filters				
CF1	91E08207S01	Ceramic. SFE10.7MS2K-A		
CF2	91E08207S01	Ceramic. SFE10.7MS2K-A		
CF41	91E08208S01	Ceramic. SFZ450JL3		
CF42	91E08209S01	Ceramic. BFU450C4N		
CF71	91E08210S01	Ceramic. CSB456F11		
Jacks				
JK401	09E08185S01	RCA 8P		
JK402	09E08186S01	RCA 6P		
JK551	09E08187S01	RCA 4P		

Symble No.	Part No.	Description		
Relay				
RL651	80E08218S01	AJW5512		
Capacitors				
C2	21E04362S01	CER..	0.01 μ F	
C3	21E04362S01	CER..	0.01 μ F	
C4	21E04365S01	CER..	0.022 μ F	
C21	21E04354S09	CER.	11pF	
C22	21E04365S01	CER..	0.022 μ F	
C23	21E04354S10	CER..	10pF	
C24	08E04350S03	Styro..	450pF	
C32	21E04362S01	CER..	0.01 μ F	
C41	21E04365S01	CER..	0.022 μ F	
C42	21E04365S01	CER..	0.022 μ F	
C43	21E04365S01	CER..	0.022 μ F	
C44	23E04335S02	ELY..	100 μ F/16V	
C45	23E04338S01	ELY..	0.1 μ F/50V	
C46	21E04357S03	CER..	33pF	
C47	23E04338S04	ELY..	1 μ F/50V	
C49	21E04365S01	CER..	0.022 μ F	
C50	23E04336S01	ELY..	10 μ F/25V	
C51	23E04336S01	ELY..	10 μ F/25V	
C53	23E04336S05	ELY..	4.7 μ F/25V	
C55	23E04336S01	ELY..	10 μ F/25V	
C56	23E04338S04	ELY..	1 μ F/50V	
C57	23E04338S03	ELY..	0.47 μ F/50V	
C58	08E04348S14	MYL..	0.022 μ F	
C59	23E04335S04	ELY..	47 μ F/16V	
C71	23E04335S04	ELY..	47 μ F/16V	
C72	23E04338S01	ELY..	0.1 μ F/50V	
C73	08E04348S15	MLY..	0.047 μ F	
C75	23E04336S01	ELY..	10 μ F/25V	
C76	23E04338S04	ELY..	1 μ F/50V	
C77	23E04338S02	ELY..	0.22 μ F/50V	
C78	23E04336S05	ELY..	4.7 μ F/25V	
C79	23E04338S04	ELY..	1 μ F/50V	
C81	21E08220S01	CER..	750pF	
C82	21E08220S01	CER..	750pF	
C83	23E04336S01	ELY..	10 μ F/25V	
C84	23E04336S01	ELY..	10 μ F/25V	
C85	23E04336S01	ELY..	10 μ F/25V	
C86	23E04336S01	ELY..	10 μ F/25V	
C91	23E04338S04	ELY..	1 μ F/50V	
C101	21E04365S01	CER..	0.022 μ F	

Symble No.	Part No.	Description		
C103	21E04362S01	CER.. 0.01 μ F		
C104	23E04336S01	ELY.. 10 μ F/25V		
C105	23E04333S04	ELY.. 0.47 μ F/50V		
C107	23E04333S05	ELY.. 1 μ F/50V		
C401	23E04338S07	ELY.. 4.7 μ F/50V		
C402	23E04338S07	ELY.. 4.7 μ F/50V		
C403	21E08221S01	CER.. 330pF		
C404	21E08221S01	CER.. 330pF		
C405	23E04334S01	ELY.. 100 μ F/10V		
C406	23E04334S01	ELY.. 100 μ F/10V		
C407	08E04348S16	MYL.. 0.012 μ F		
C408	08E04348S16	MYL.. 0.012 μ F		
C409	08E04348S07	MYL.. 3300pF		
C410	08E04348S07	MYL.. 3300pF		
C411	23E04338S07	ELY.. 4.7 μ F/50V		
C412	23E04338S07	ELY.. 4.7 μ F/50V		
C451	21E08222S01	CER.. 0.047 μ F		
C452	21E08222S01	CER.. 0.047 μ F		
C453	21E04365S01	CER.. 0.022 μ F		
C454	21E04365S01	CER.. 0.022 μ F		
C455	21E04355S03	CER.. 330pF		
C456	21E04355S03	CER.. 330pF		
C581	08E04348S17	MYL.. 0.01 μ F		
C582	08E0434ES19	MYL.. 0.1 μ F		
C601	21E04358S01	CER.. 100pF		
C602	21E04358S01	CER.. 100pF		
C603	23E04338S05	ELY.. 10 μ F/50V		
C604	23E04338S05	ELY.. 10 μ F/50V		
C605	08E04348S18	MYL.. 2200pF		
C606	08E04348S18	MYL.. 2200pF		
C607	23E04334S01	ELY.. 100 μ F/10V		
C608	23E04334S01	ELY.. 100 μ F/10V		
C609	21E04354S11	CER.. 10pF		
C610	21E04354S11	CER.. 10pF		
C611	23E04338S05	ELY.. 10 μ F/50V		
C612	23E04338S05	ELY.. 10 μ F/50V		
C613	08E04348S15	MYL.. 0.047 μ F		
C614	08E04348S15	MYL.. 0.047 μ F		
C651	23E04338S07	ELY.. 4.7 μ F/50V		
C652	23E04338S06	ELY.. 47 μ F/25V		
C653	23E04338S08	ELY.. 22 μ F/50V		
C654	23E04338S03	ELY.. 0.47 μ F/50V		
C655	23E04338S06	ELY.. 2.2 μ F/50V		
C656	21E04362S01	CER.. 0.01 μ F		
C751	21E08223S01	CER.. 0.022 μ F		

Symble No.	Part No.	Description		
C752	21E08223S01	CER.. 0.022 μ F		
C753	23E08212S01	ELY.. 8200 μ F/50V		
C754	23E08212S01	ELY.. 8200 μ F/50V		
C755	23E04336S07	ELY.. 470 μ F/25V		
C756	23E04336S07	ELY.. 470 μ F/25V		
C757	23E04338S05	ELY.. 10 μ F/50V		
C758	23E04338S05	ELY.. 10 μ F/50V		
C759	23E04336S08	ELY.. 1000 μ F/25V		
C760	23E04338S05	ELY.. 10 μ F/50V		
VC21	20E08214S01	Trimmer, CTZ51C135		
Resistors				
R637	06E08225S01	MPC.. 0.22ohm 5WX2		
R638	06E08225S01	MPC.. 0.22ohm 5WX2		
R639	06E04319S03	MO.. 4.7ohm 1W		
R640	06E04319S03	MO.. 4.7ohm 1W		
R641	06E04319S04	MO.. 10ohm 1W		
R642	06E04319S04	MO.. 10ohm 1W		
R670	06E04319S05	MO.. 470ohm 1W		
VR41	18E08227S01	Variable, 50Kohm		
VR42	18E08228S01	Variable, 30Kohm		
VR43	18E08227S01	Variable, 50Kohm		
VR71	18E08229S01	Variable, 100Kohm		
VR601	18E08226S01	Variable, 1Kohm		
VR602	18E08226S01	Variable, 1Kohm		
Display P. C. Board				
IC's				
IC171	51E08123S01	TC9303AN		
IC172	51E08124S01	LB1433N		
IC201	51E08125S01	μ PD75104CW		
IC202	51T56684F01	TC4081BP		
RV201	01E08159S01	Remote Signal Receiving Unit (SBX1610-12)		
Transistors				
Q171	48S43525F03	2SC1815		
Q172	48S43525F03	2SC1815		
Q173	48T43526F01	2SA950		

Symble No.	Part No.	Description		
Diodes				
D171	48E08083S01	1N4148		
D172	48E08083S01	1N4148		
D173	48E08083S01	1N4148		
D174	48E08083S01	1N4148		
D175	48E08083S01	1N4148		
D176	48E08083S01	1N4148		
D177	48E08083S01	1N4148		
D178	48E08083S01	1N4148		
D209	48E08083S01	1N4148		
LED's				
LD180	48E08087S01	SLR-34VC3F (RED)		
LD181	48E08087S01	SLR-34VC3F (RED)		
LD182	48E08087S01	SLR-34VC3F (RED)		
LD183	48E08087S01	SLR-34VC3F (RED)		
LD184	48E08087S01	SLR-34VC3F (RED)		
LD185	48E08087S01	SLR-34VC3F (RED)		
LD186	48E08087S01	SLR-34VC3F (RED)		
LD187	48E08087S01	SLR-34VC3F (RED)		
LD188	48E08087S01	SLR-34VC3F (RED)		
LD201	48E08087S01	SLR-34VC3F (RED)		
LD202	48E08087S01	SLR-34VC3F (RED)		
LD203	48E08087S01	SLR-34VC3F (RED)		
LD204	48E08087S01	SLR-34VC3F (RED)		
LD205	48E08087S01	SLR-34VC3F (RED)		
LD206	48E08087S01	SLR-34VC3F (RED)		
LD207	48E08087S01	SLR-34VC3F (RED)		
LD208	48E08087S01	SLR-34VC3F (RED)		
Switches				
S171	40E08198S01	Tact SOA-132HS(M1/11)		
S172	40E08198S01	Tact SOA-132HS(M2/12)		
S173	40E08198S01	Tact SOA-132HS(M3/13)		
S174	40E08198S01	Tact SOA-132HS(M4/14)		
S175	40E08198S01	Tact SOA-132HS(M5/15)		
S176	40E08198S01	Tact SOA-132HS(M6/16)		
S177	40E08198S01	Tact SOA-132HS(M7/17)		
S178	40E08198S01	Tact SOA-132HS(M8/18)		
S179	40E08198S01	Tact SOA-132HS(M9/19)		
S180	40E08198S01	Tact SOA-132HS(M10/20)		

Symble No.	Part No.	Description		
S181	40E08198S01	Tact SOA-132HS(UP)		
S182	40E08198S01	Tact SOA-132HS(DOWN)		
S183	40E08199S01	Tact SKHDA (MEMORY SCAN)		
S184	40E08199S01	Tact SKHDA (MONO)		
S185	40E08199S01	Tact SKHDA (AUTO/MANU)		
S186	40E08199S01	Tact SKHDA (MEMORY)		
S187	40E08200S01	Slide SSS212B(FM STEP)		
S201	40E08198S01	Tact SOA-132HS(FM)		
S202	40E08198S01	Tact SOA-132HS(AM)		
S203	40E08198S01	Tact SOA-132HS(TAPE 1)		
S204	40E08198S01	Tact SOA-132HS(TAPE 2)		
S205	40E08198S01	Tact SOA-132HS(AV)		
S206	40E08198S01	Tact SOA-132HS(CD)		
S207	40E08198S01	Tact SOA-132HS(PH/AUX)		
S208	40E08198S01	Tact SOA-132HS(POWER)		
S209	40E08201S01	Rotary SW-2174294 (REC. SELECTOR)		
Crystals				
X171	48E08167S01	Quartz. Oscillator Unit 7.2MHz		
X201	91E08206S01	CER. Oscillator Unit 4.19MHz		
Capacitors				
C171	21E04365S01	CER.. 0.022 μ F		
C172	23E08211S01	ELY.. 220 μ F/ 6.3V		
C173	23E04332S03	ELY.. 2200 μ F/ 5.5V		
C174	21E04357S01	CER.. 27pF		
C175	21E04357S01	CER.. 27pF		
C176	23E04345S01	ELY.. 1 μ F/50V		
C177	23E04344S02	ELY.. 10 μ F/25V		
C201	21E04357S02	CER.. 33pF		
C202	21E04357S02	CER.. 33pF		
C203	23E04345S01	ELY.. 1 μ F/50V		
C204	21E04365S01	CER.. 0.022 μ F		
C205	21E04365S01	CER.. 0.022 μ F		
Tone Control P. C. Board				
IC				
IC501	51E07540S01	NJM4565SB		

Symble No.	Part No.	Description		
Switch				
S502	40E08204S01	Push ESB88561 (TONE DEFEAT)		
Capacitors				
C507	23E04345S02	ELY.. 4.7 μ F/50V		
C508	23E04345S02	ELY.. 4.7 μ F/50V		
C509	21E04354S12	CER.. 56pF		
C510	21E04354S12	CER.. 56pF		
C511	23E04344S01	ELY.. 22 μ F/25V		
C512	23E04344S01	ELY.. 22 μ F/25V		
C513	23E04345S02	ELY.. 4.7 μ F/50V		
C514	23E04345S02	ELY.. 4.7 μ F/50V		
C515	23E04345S02	ELY.. 4.7 μ F/50V		
C516	23E04345S02	ELY.. 4.7 μ F/50V		
C517	08E04348S20	MYL.. 0.056 μ F		
C518	08E04348S20	MYL.. 0.056 μ F		
C519	08E07655S03	MF.. 0.33 μ F		
C520	08E07655S03	MF.. 0.33 μ F		
C521	08E04348S21	MYL.. 0.012 μ F		
C522	08E04348S21	MYL.. 0.012 μ F		
C523	08E07655S04	MF.. 0.1 μ F		
C524	08E07655S04	MF.. 0.1 μ F		
Resistors				
VR502	18E08231S01	Rotary. Potentiometer 20K ohm-C		
VR503	18E08231S01	Rotary. Potentiometer 20K ohm-C		
VR504	18E08232S01	Rotary. Potentiometer 100K ohm-MN		
Serial Control P. C. Board				
IC				
IC301	51E08126S01	NJM2903S		
Transistors				
Q301	48S43525F05	2SC1815		
Q302	48T45274F01	2SC2120		
Q303	48S43525F05	2SC1815		
Q304	48S43525F05	2SC1815		
Q305	48S43525F05	2SC1815		

Symble No.	Part No.	Description		
Q306	48S43525F05	2SC1815		
Q307	48S43525F05	2SC1815		
Q308	48S43525F05	2SC1815		
Diodes				
D301	48E08083S01	1N4148		
D302	48E08083S01	1N4148		
D303	48E08083S01	1N4148		
Jacks				
JK301	09E08188S01	2P F Connector		
JK302	09E04290S01	MIC Jack		
JK303	09E08189S01	2.5 MIC Jack		
JK304	09E08190S01	DIN Socket (8P)		
Capacitors				
C302	23E04335S02	ELY.. 100 μ F/16V		
C303	23E04338S04	ELY.. 1 μ F/50V		
C304	23E04338S04	ELY.. 1 μ F/50V		
C305	21E04365S01	CER.. 0.022 μ F		
Back Up P. C. Board				
IC's				
IC801	51E08127S01	NJM78M05FA		
IC802	51E08120S01	NJM78M15FA		
Transistors				
Q801	48E04169S01	2SA1015		
Q802	48S43525F03	2SC1815		
Diodes				
D801	48S40477U02	1N4002		
D802	48S40477U02	1N4002		
D803	48S40477U02	1N4002		
D804	48S40477U02	1N4002		
D805	48S40477U02	1N4002		
D806	48S40477U02	1N4002		
ZD807	48E08088S01	ZEN.. ZD50-033		
ZD808	48E04202S01	ZEN.. ZD50-062		
ZD809	48E08089S01	ZEN.. ZD50-057		
ZD810	48E08112S01	ZEN.. ZD50-215		

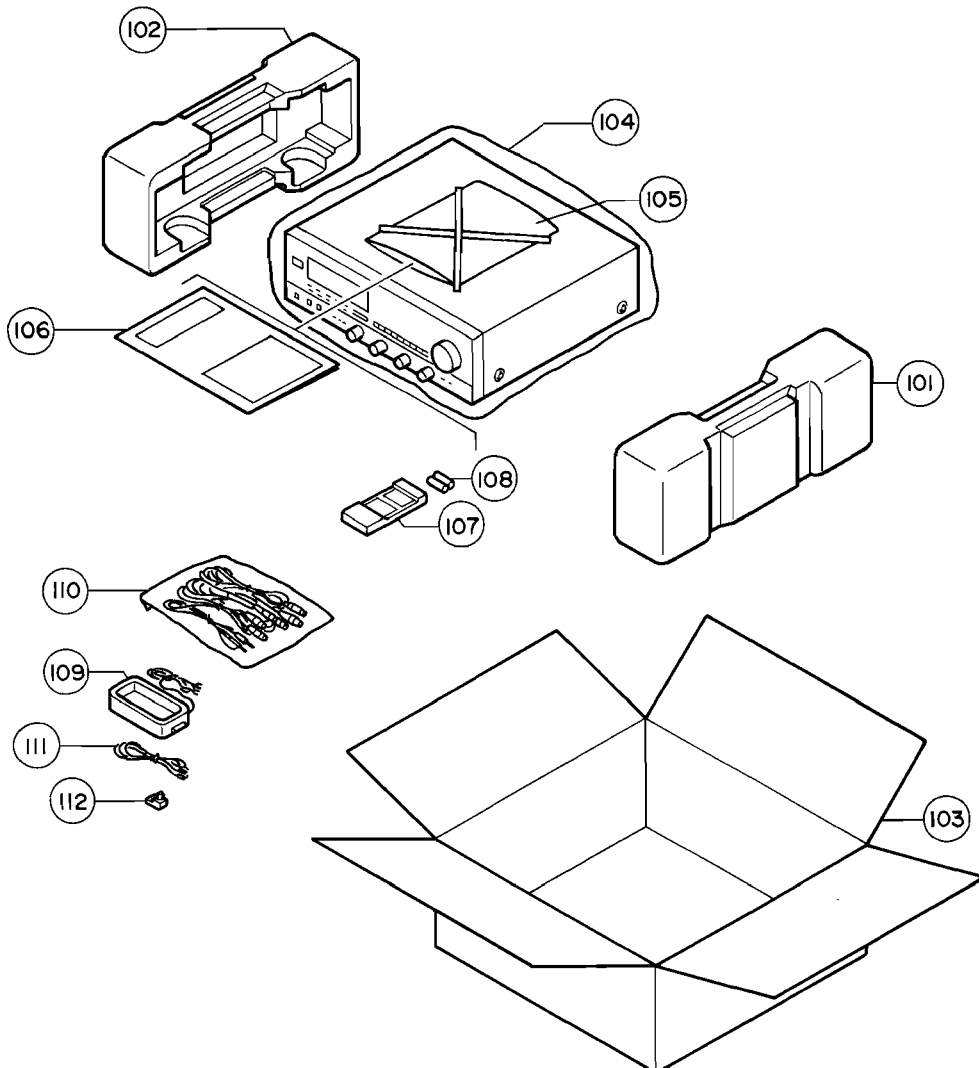
Symble No.	Part No.	Description		
Relay				
RL801	80E08219S01	OMIT-SS-112LM		
Capacitors				
C801	08E08224S01	MF., 0.01 μ F		
C802	23E04335S03	ELY., 220 μ F/16V		
C803	23E04338S05	ELY., 10 μ F/50V		
C804	23E04337S03	ELY., 100 μ F/35V		
C805	23E04338S05	ELY., 10 μ F/50V		
C806	21E04362S01	CER., 0.01 μ F		
C807	23E04336S06	ELY., 47 μ F/25V		
C808	21E04365S01	CER., 0.022 μ F		
Resistor				
R802	06E04319S06	MO., 270ohm 1W		
Switch P. C. Board				
Switch				
S501	40E08203S01	Push SW-1201296 (LOUDNESS, SUBSONIC)		
Capacitors				
C501	08E07655S02	MF., 0.18 μ F		
C502	08E07655S02	MF., 0.18 μ F		
C503	21E04361S03	CER., 270pF		
C504	21E04361S03	CER., 270pF		
C505	08E04348S15	MYL., 0.047 μ F		
C506	08E04348S15	MYL., 0.047 μ F		
Speaker Switch P. C. Board				
Switch				
S701	40E08205S01	Push SW-1201297 (SPEAKER)		
Jack				
JK701	09E04372S01	Head Phone		

Symble No.	Part No.	Description		
Capacitor				
C761	21E04365S01	CER., 0.022 μ F		
Resistors				
R703	06E04320S04	MO., 270ohm 2W		
R704	06E04320S04	MO., 270ohm 2W		
Volume Control P. C. Board				
Resistor				
VR501	18E08230S01	Rotary, Potentiometer (Included M501)		
Miscellaneous				
ET1	09E08182S01	Socket, Coaxial		
ET701	09E08183S01	Speakers, A and B Terminals		
F801	65E08177S01	Fuse (4A)		
FL171	65E08176S01	Display PG710F1		
JK901	09E08181S01	AC Outlets		
LD501	48E04216S01	LED., SLR-34VC5F (RED)		
P801	30E08180S01	AC, Power Cord		
Q611	48E08113S01	Transistor, 2SC1846		
Q612	48E08113S01	Transistor, 2SC1846		
Q617	48E08114S01	Transistor, 2SC3182N		
Q618	48E08114S01	Transistor, 2SC3182N		
Q619	48E08115S01	Transistor, 2SA1265N		
Q620	48E08115S01	Transistor, 2SA1265N		
T801	25E08178S01	Power Transformer		
T901	25E08179S01	Power Transformer		
TH651	48E08116S01	Thermistor		

Packing Assembly Parts List

Symbol No.	Part No.	Description		
101	56E08191S01	Pad, Packing (R)		
102	56E08191S02	Pad, Packing (L)		
103	56E08192S01	Carton, Packing		
104	56E08193S01	Poly., Bag (Unit)		
105	56E08194S01	Poly., Bag (Accessories)		
106	68P96552P82	Owners, Manual		
107	01E08150S01	Remote Control (RR-114)		
108	60E08195S01	Battery		
109	01E08151S01	DIN, Plug Cord Assy.		
109-1	01E04309S01	DIN, Plug Cord (8P)		
109-2	09E08184S01	3.5 MIC, Jack Cord		
110	85E08196S01	Loop, ANT		
111	85E04305S01	FM Antenna (Cord)		
112	45E08197S01	Matching Adaptor		

Packing Method View

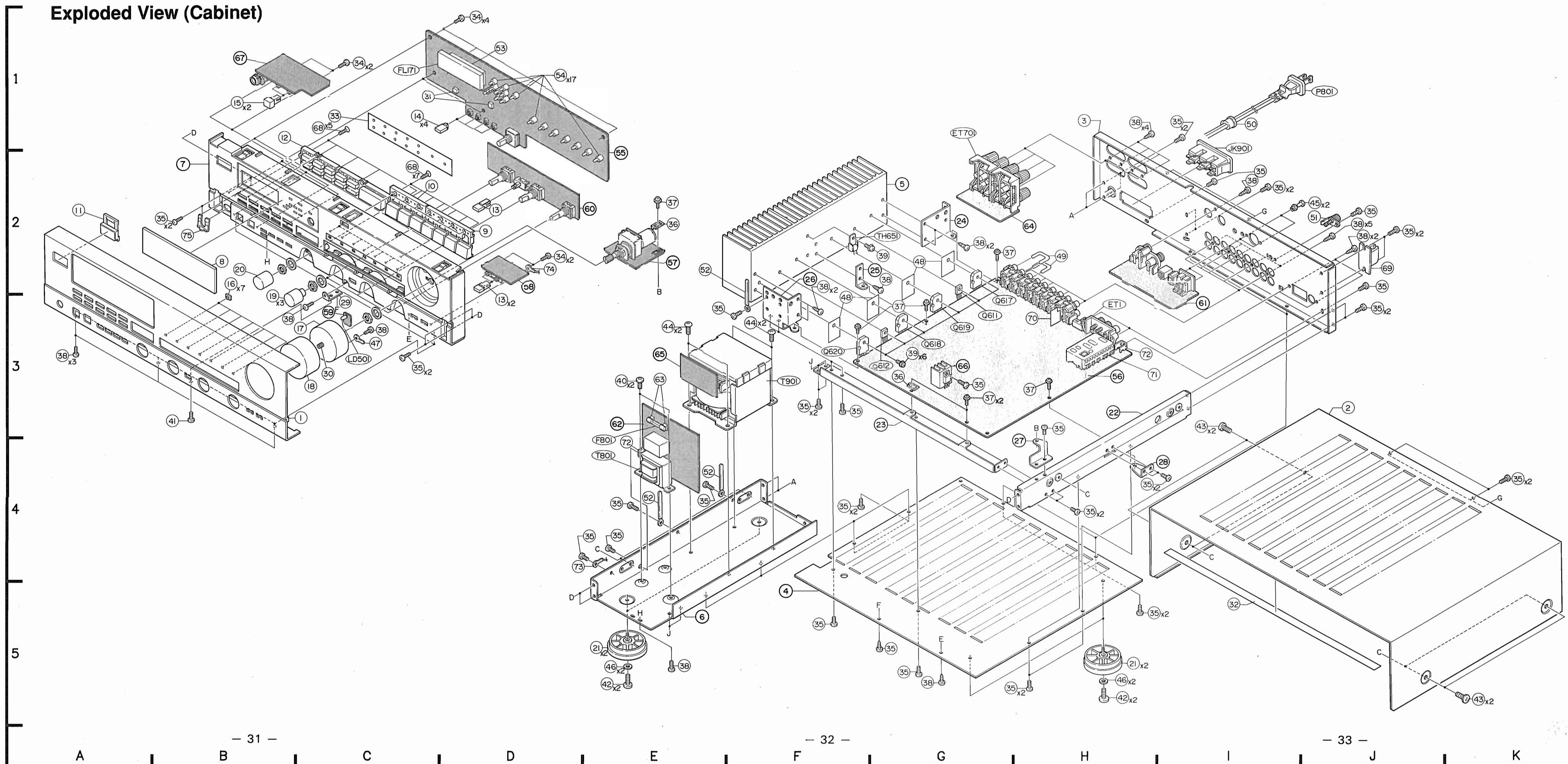


Cabinet Assembly Parts List

Note : The parts without part numbers are not supplied.

Symble No.	IN-dex	Part No.	Description			Symble No.	IN-dex	Part No.	Description		
1	3-C	64E08137S01	Front Panel			69	2-J	07E08155S01	ANT. Holder		
2	3-J	15E08145S01	Cabinet			70	3-H	14E08172S01	Shield Plate		
3	1-H	15E08146S01	Rear Panel			71	3-H	77E08175S01	FM Front End (FE1)		
8	2-B	64E08138S01	Display Glass			72		29E08168S01	GND Lug		
9	2-D	36E08139S01	Tact Button. 3			73	4-D	01E08148S01	Assy.. Cable		
10	2-C	36E08140S01	Tact Button. 4			74	2-D	01E08149S01	Assy.. Cable		
11	2-A	36E04389S01	Tact Button			75	2-B	07E08156S01	Snap Plate		
12	1-B	36E04393S01	Button. Preset								
13		36A67333F01	Knob. Push (3x10)								
14	1-C	36E08141S01	Tact Button								
15	1-B	36A80694F01	Knob. Push Rec-out								
16	2-B	61E04452S01	Lens. LED								
17	3-C	36E04386S01	Knob Base. VR								
18	3-C	36E08142S01	Knob Cap. VR								
19	3-B	36E08143S01	VR Knob 17								
20	2-B	36E08144S01	VR Knob 17								
21		01E08147S01	Assy.. Foot								
29	3-C	07E08152S01	Fittings. Earth								
30	3-C	41E08157S01	Spring								
31	1-C	43E08158S01	Specer								
32	5-1	75E04473S01	Cabinet Mat								
33	1-C	75E04456S01	Cloth (Knob)								
34		03E07923S01	Screw. Bind (M2.6x8)								
35		03E04479S03	Screw. Bind (M3x8)								
36		29E08164S01	GND Lug								
37		03E08160S01	Screw. W/Washer (M3x8)								
38		03E04477S04	Screw. Bind (M3x8)								
39		03E08161S01	Screw. W/Washer (M3x12)								
40	3-E	36E04480S01	Screw. Bind (M3x6)								
41	3-B	03E08162S01	Screw. Bind (M3x6)								
42		03E04480S04	Screw. Bind (M4x10)								
43		03E04479S05	Screw. Bind (M4x8)								
44		03E08170S01	Screw. Truss (M4x6)								
45	2-J	07E08153S01	Nylon Push Rivet (Black)								
46		04E08169S01	Washer, Flat (M4.6)								
47	3-C	29E08165S01	Snake Lug								
48		14E08171S01	Insulator (TR)								
49	2-H	29E08166S01	Short Pin								
50	1-1	43E04374S01	Cord Stopper								
51	2-J	09E04499S01	Ground Terminal								
52		29E07915S01	Snake Lug								
53	1-D	75E08173S01	Cushion Tape								
54	1-D	43E08174S01	LED Spacer								
63	3-E	07E08154S01	Fuse Holder								
68		03E08163S01	Screw. Flat (M2.6x8)								

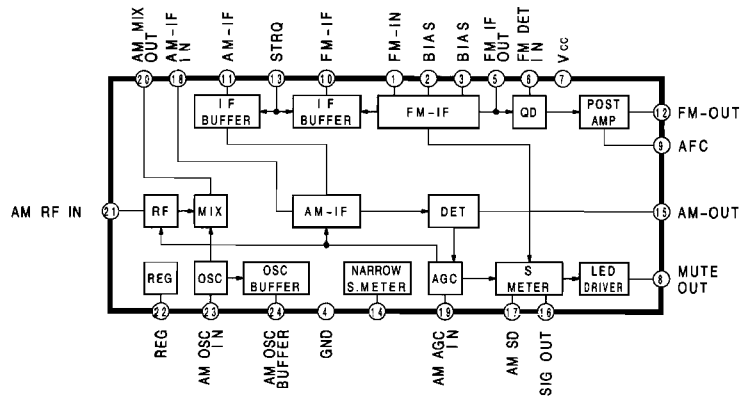
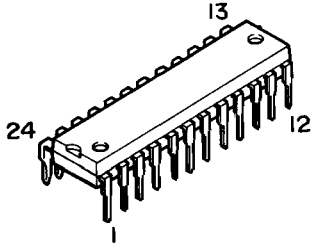
Exploded View (Cabinet)



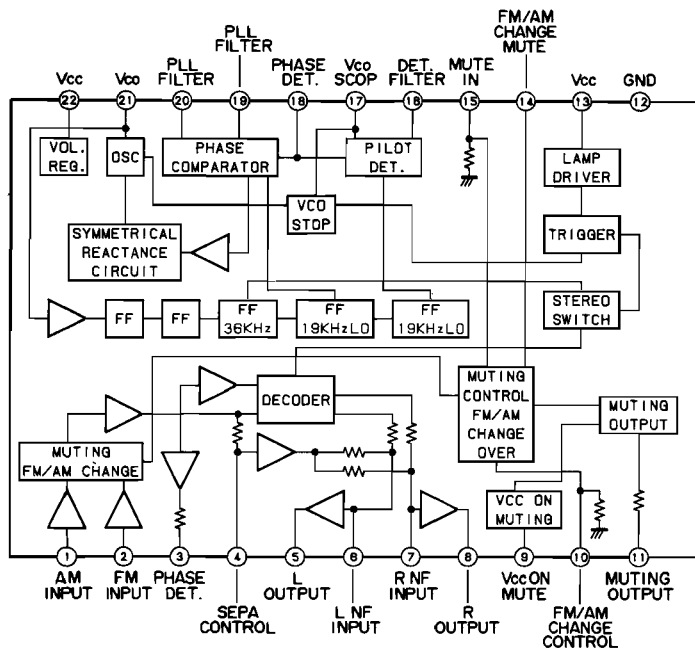
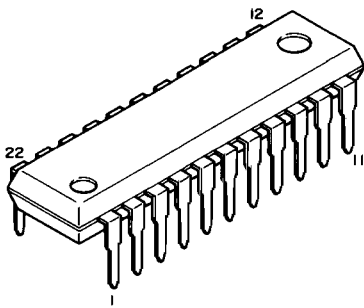
A B C D E F G H I J K

Semi-Conductor Lead Identifications

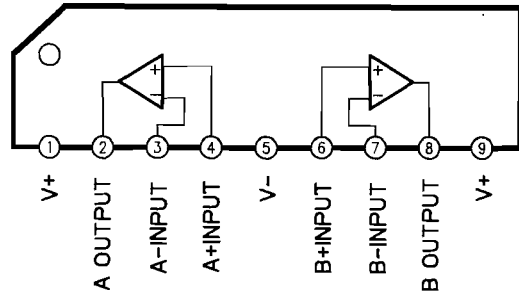
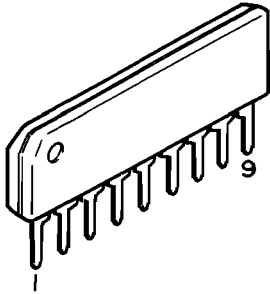
LA1266: IC41



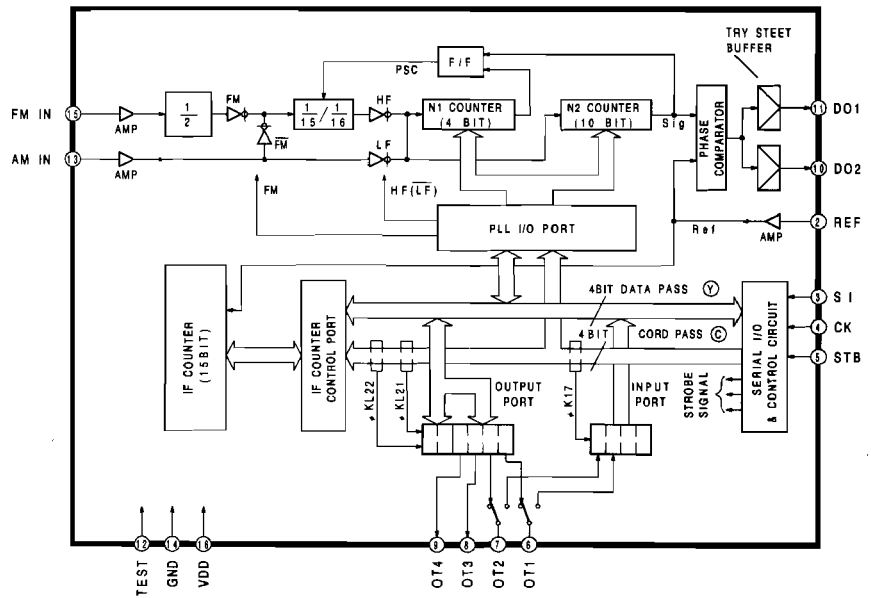
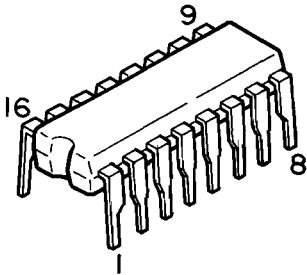
LA3401: IC71



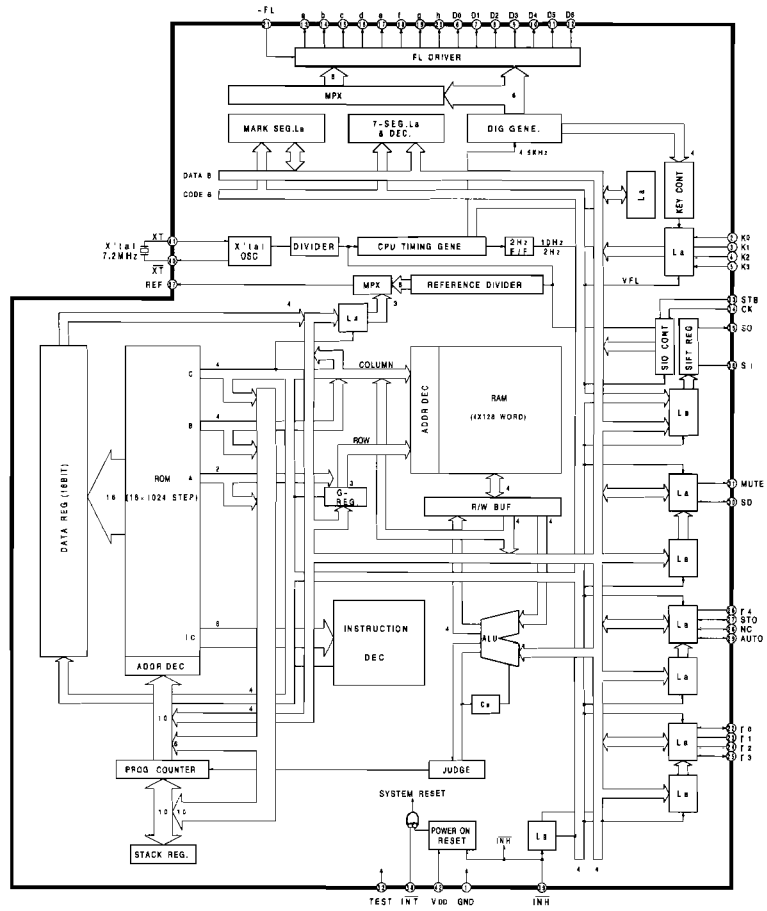
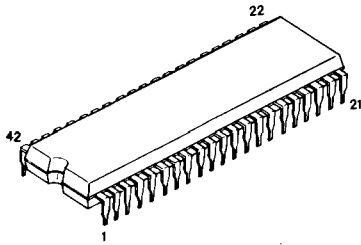
NJM4565B: IC72, 401, 501
 NJM2904S: IC102
 NJM2903S: IC301



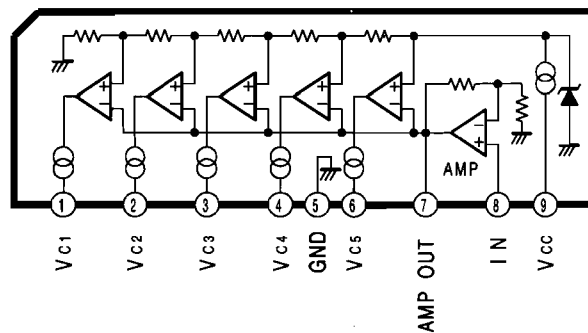
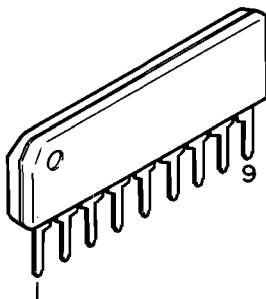
TC9172AP: IC101



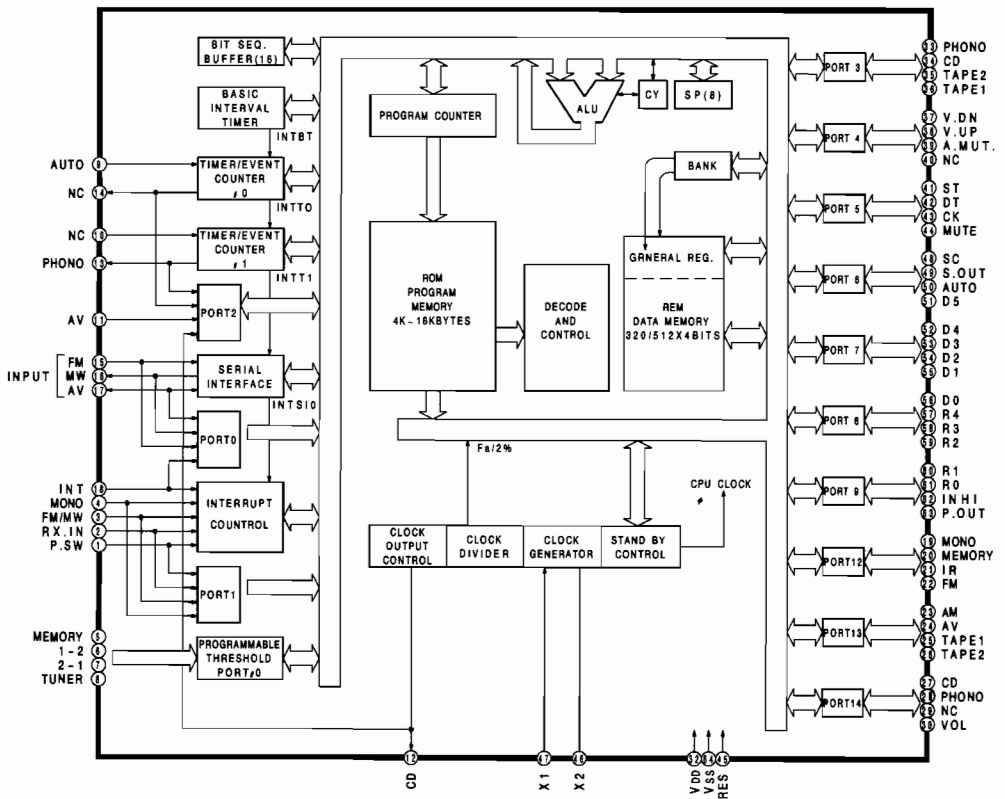
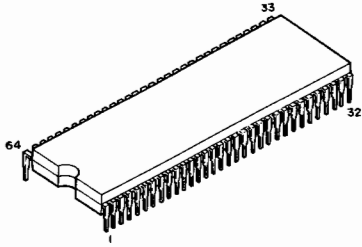
TC9303AN: IC171



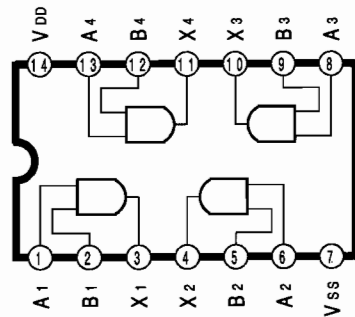
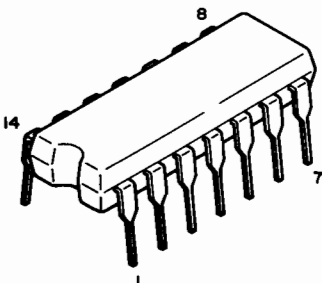
LB1433N: IC172



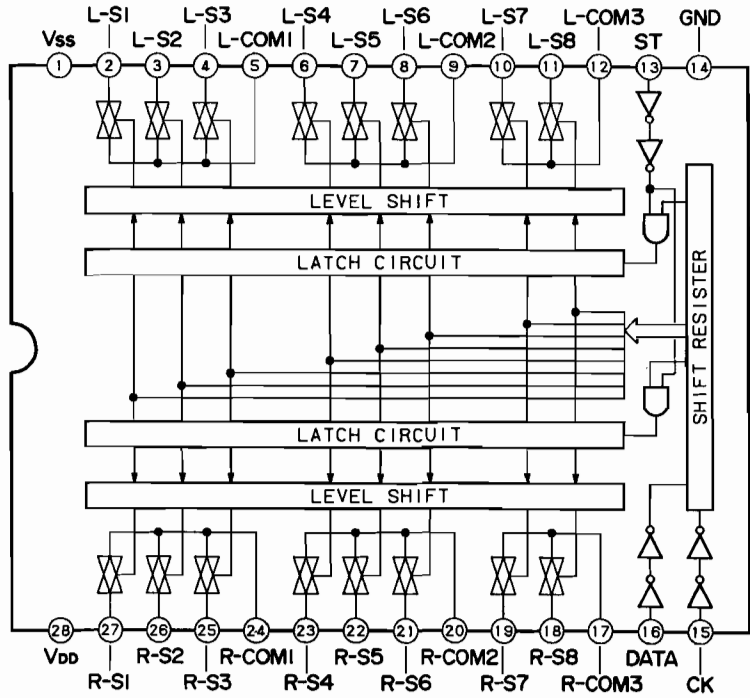
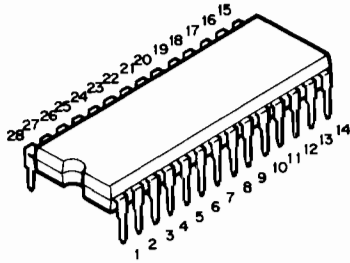
μPD75104CW: IC201



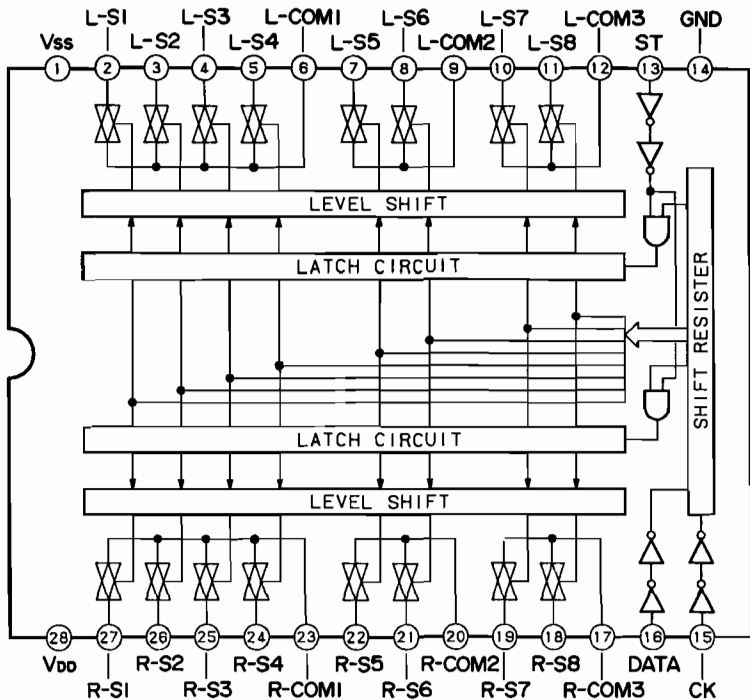
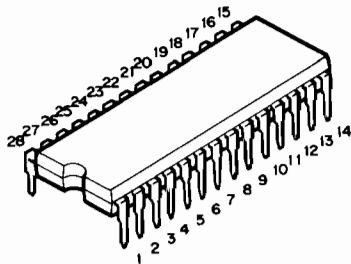
TC4081BP: IC202



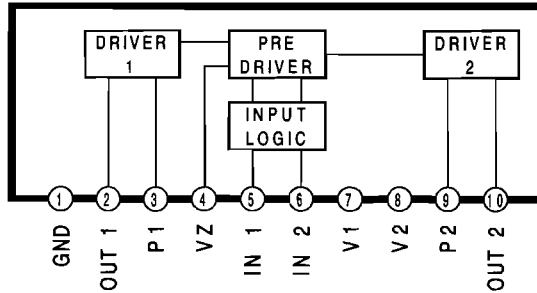
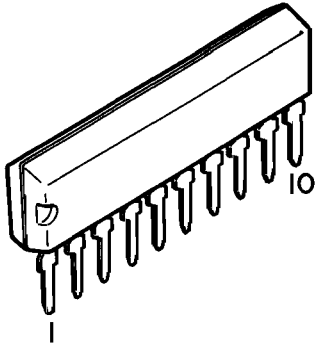
TC9163N: IC451



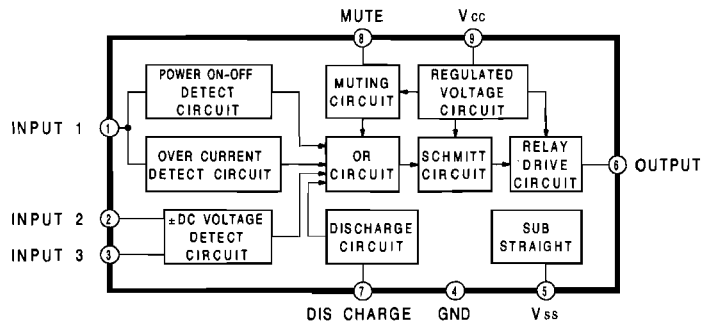
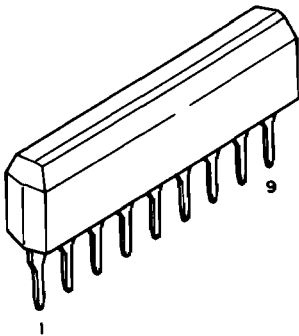
TC9164N: IC452



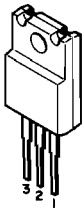
LB1641: IC581



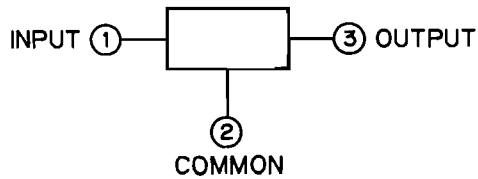
TA7317P: IC651



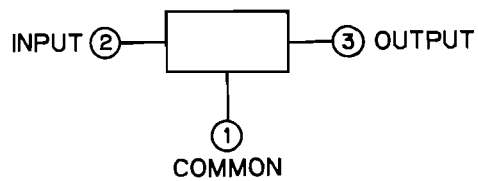
- NJM78M05FA: IC801
- NJM78M12FA: IC753
- NJM78M15FA: IC751, 802
- NJM79M15FA: IC752



NJM78M



NJM79M





LUX CORPORATION, JAPAN

1-1-8 Nishi Gotanda, Shinagawa-ku, Tokyo, 141 JAPAN
Phone:03-493-4381 Facsimile:03-494-8426

3/90-Y
68P30503W02
Printed in Japan