

REALISTIC[®]

Service Manual

31-2082

STA-95
AM/FM STEREO RECEIVER
Catalog Number: 31-2082



CUSTOM MANUFACTURED FOR RADIO SHACK  A DIVISION OF TANDY CORPORATION

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SPECIFICATIONS

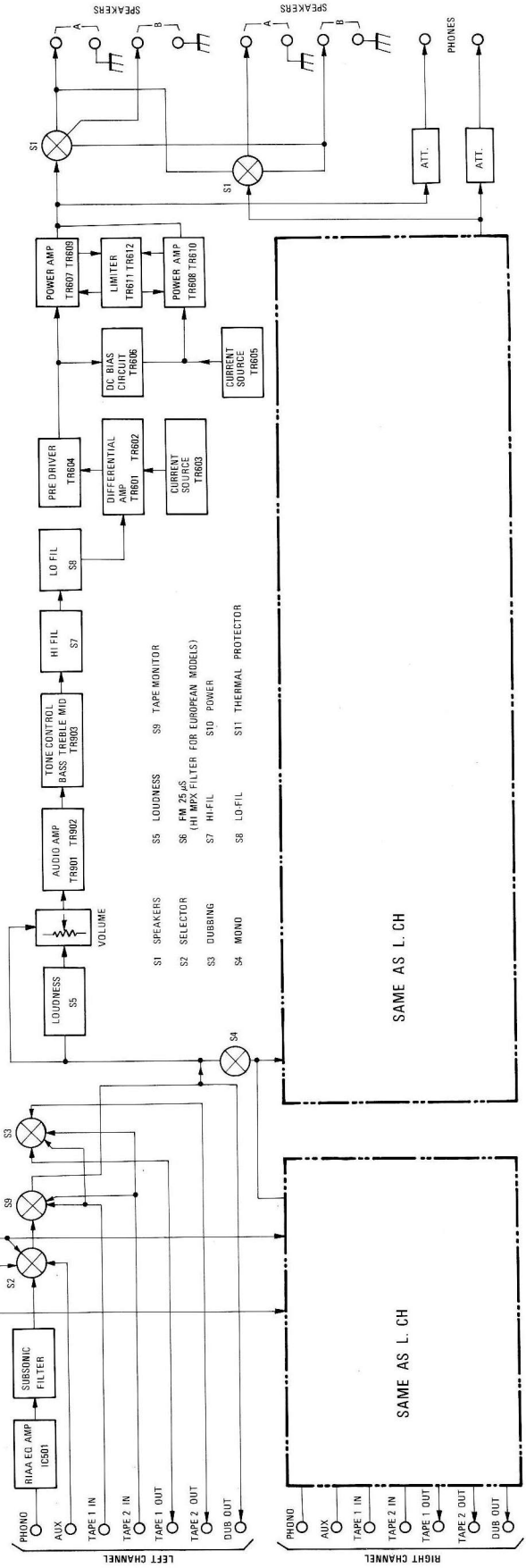
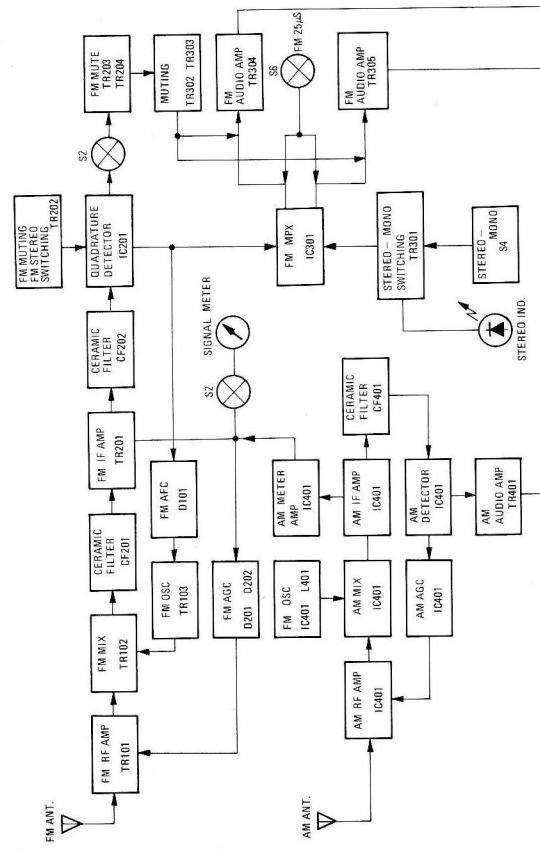
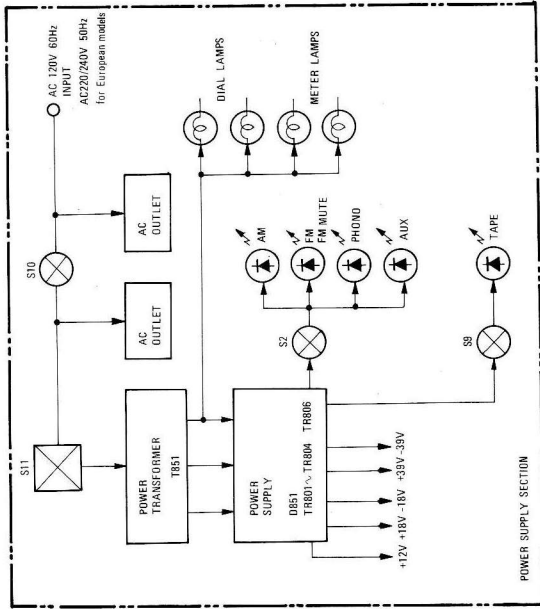
	NOMINAL	LIMIT	UNIT
FM SECTION			
1. TUNING COVERAGE	87.5 – 108.5	88 – 108	MHz
2. DIAL CALIBRATION ACCURACY			
90 MHz		±250	kHz
98 MHz		±250	kHz
106 MHz		±350	kHz
3. USABLE SENSITIVITY	2.0	3.0	μV
(NOISE & DISTORTION –30 dB)	5.0	9.0	dBf
4. IMAGE REJECTION (at 106 MHz)	50	45	dB
5. IF REJECTION (at 90 MHz)	80	70	dB
6. FULL LIMITING (at –3 dB)	2.0	3.0	μV
7. IF BANDWIDTH (6 dB down)		±150	kHz
8. DISTORTION (1 mV INPUT)	0.3	0.8	%
9. SIGNAL-TO-NOISE RATIO (1 mV INPUT)	65	60	dB
10. DE-EMPHASIS 75 μsec. (at 50~10,000 Hz)	±1.5	±2	dB
11. DISCRIMINATOR BANDWIDTH (Peak-to-Peak)	400	300	kHz
12. AFC HOLDING RANGE (with 1 mV signal)	±250	±400	kHz
13. OUTPUT VOLTAGE			
MONO	0.75	0.75 ± 2 dB	V
(at 75 kHz dev., 400 Hz mod., 1 mV input)			
STEREO	0.7	0.65 ± 2 dB	V
14. MUTING THRESHOLD	5	4 – 16	μV
15. OVERLOAD, THD at 98 MHz, 100% mod.			
(100 mV RF input)	1	1.5	%
16. SPURIOUS RESPONSE at 98 MHz			
ANTENNA INPUT 3 μV. 1/2 IF, 103.35 MHz	80	70	dB
17. CAPTURE RATIO (1 mV INPUT)	2	3.5	dB
18. ALTERNATE CHANNEL SELECTIVITY			
(0.1 mV input)	50	40	dB
MPX SECTION			
1. STEREO SEPARATION			
(100% mod., 1 mV input)	100 Hz	38	27
	1 kHz	40	32
	10 kHz	30	20
2. DISTORTION			
1 kHz			
(100% mod., 1 mV input)	0.5	1.2	%
3. STEREO BEACON SENSITIVITY (pilot 7%)	10	3 – 16	μV
4. RESIDUAL 19 kHz & 39 kHz (1 mV input)	50	40	dB
5. SUPPRESSION OF SCA INTERFERENCE			
(1 mV input)		40	dB
AM SECTION			
1. TUNING COVERAGE	510 – 1660	520 – 1620	kHz
2. DIAL CALIBRATION ACCURACY			
600 kHz		±15	kHz
1,000 kHz		±30	kHz
1,400 kHz		±40	kHz
3. USABLE SENSITIVITY 600 kHz, 1000 kHz, 1400 kHz			
(400 Hz, 30% mod.,			
noise & distortion –20 dB)	250	500	μV/m
Radiated			
Direct	25	40	μV
4. IMAGE REJECTION (at 1,400 kHz)	35	30	dB
5. IF REJECTION (at 600 kHz)	30	25	dB
6. AGC FIGURE OF MERIT			
(from 100 mV/m at 1,000 kHz)	45	30	dB
7. DISTORTION			
(400 Hz, 30% mod., 5 mV/m input)	1.5	2.5	%

		NOMINAL	LIMIT	UNIT
8.	IF BANDWIDTH (6 dB down)		6 – 14	kHz
9.	OUTPUT VOLTAGE (400 Hz, 30% mod., 5 mV/m input)	250	200	mV
10.	AUDIO RESPONSE (5 mV/m input from 50 Hz to 2 kHz, 0 dB @ 1,000 kHz)	-4	-6	dB
11.	SELECTIVITY 200 μ V/m	28	20	dB
12.	SIGNAL-TO-NOISE RATIO (1,000 kHz, with antenna input 5 mV/m)	40	32	dB
13.	AM BEAT (input 100 mV/m)		10	%
AUDIO SECTION				
1.	RMS OUTPUT POWER (distortion < 0.3%, 20 Hz ~ 20 kHz)			
	PER CHANNEL DRIVE 8 Ω	50	46	W
	4 Ω	52	49	W
	BOTH CHANNELS DRIVEN 8 Ω	48	45	W
	4 Ω	51	47	W
2.	IM DISTORTION (at 30 W output 70/7,000 Hz 4/1)	0.1	0.3	%
3.	HARMONIC DISTORTION (at 30 W output)			
	100 Hz	0.1	0.15	%
	1,000 Hz	0.1	0.15	%
	10,000 Hz	0.2	0.3	%
4.	FREQUENCY RESPONSE (AUX, 8 Ω load, 1 W output) 30 Hz – 20 kHz	± 1	± 1.5	dB
5.	INPUT SENSITIVITY (for 45 W output)			
	PHONO	2.5	3	mV
	AUX	160	160 \pm 30	mV
	TAPE MONITOR	160	160 \pm 30	mV
6.	INPUT IMPEDANCE			
	PHONO MAG	50		k Ω
	AUX	70		k Ω
	TAPE MONITOR	70		k Ω
7.	TONE CONTROL			
	BASS 100 Hz	± 10	$\pm 10 \pm 2$	dB
	TREBLE 10 kHz	± 10	$\pm 10 \pm 2$	dB
8.	EQUALIZATION RIAA: 30 ~ 15,000 Hz		RIAA ± 2	dB
9.	PHONO AMP OVER LOAD CAPABILITY (at 1% HD)	150	100	mV
10.	HIGH FILTER 10 kHz	-6	-6 \pm 2	dB
11.	LOW FILTER 70 Hz	-6	-6 \pm 2	dB
12.	LOUDNESS COMPENSATION (Volume -30 dB)			
	10 kHz	4	4 \pm 2	dB
	100 Hz	9	9 \pm 2	dB
13.	CHANNEL SEPARATION (AUX input 100 ~ 10,000 Hz)	40	35	dB
14.	SIGNAL-TO-NOISE RATIO (input shorted)			
	PHONO MAG	65	58	dB
	AUX	80	70	dB
15.	RESIDUAL NOISE	1.0	3	mV
16.	LOAD IMPEDANCE 120 Volts, 60 Hz AC*		4 – 16	OHM
	23 WATTS, No Signal			
	190 WATTS, Full Signal			

* 220/240 V AC, 50 Hz for European and Australian Models

NOTE: Nominal Specs represent the design specs; all units should be able to approximate these—some will exceed and some may drop slightly below these specs. Limit Specs represent the absolute worst condition which still might be considered acceptable; in no case should a unit perform to less than within any Limit Spec.

BLOCK DIAGRAM



DISASSEMBLY INSTRUCTIONS

1. Removing chassis from Wooden Cabinet. (Refer to Fig. A)
Remove five screws (#88 & #91) from sides and back.
2. Removing the Front Panel. (Refer to Fig. A)
 - a) Pull off the SPEAKERS, BASS, TREBLE, DUBBING, MONITOR, VOLUME, BALANCE, SELECTOR and Tuning knobs.
 - b) Remove five screws (#90) from top and bottom of Front Panel.

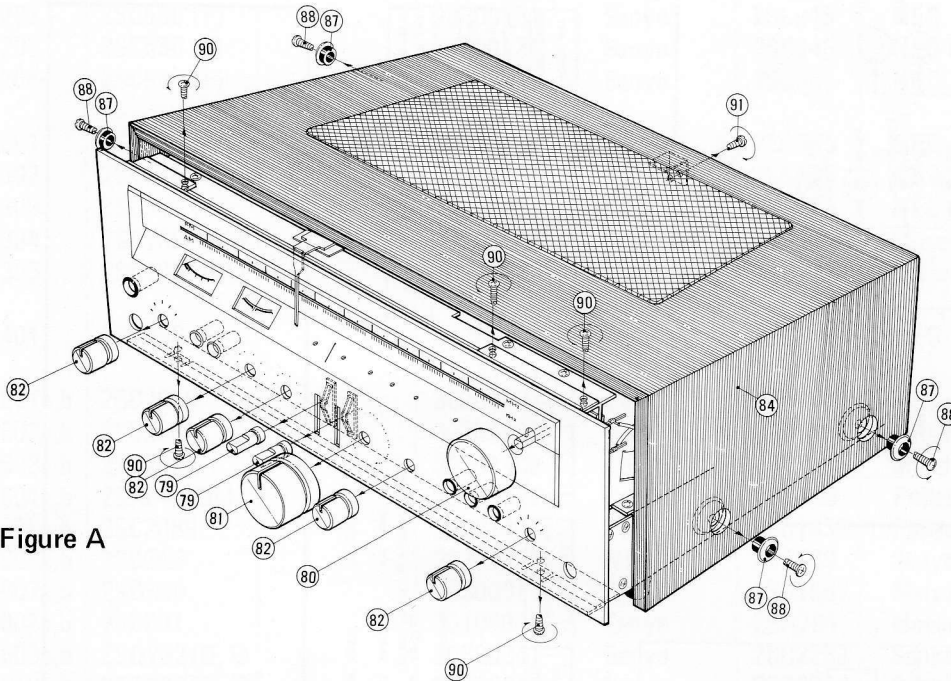
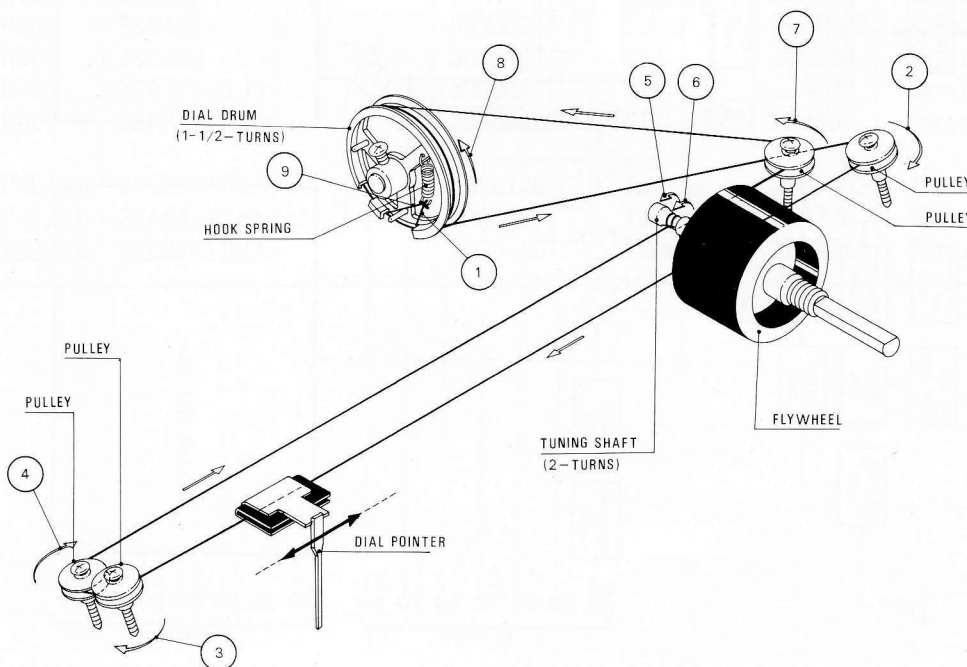


Figure A

DIAL STRINGING DIAGRAM

Note: Tuning capacitor should be in fully closed position.



ALIGNMENT PROCEDURES

Do not attempt alignment unless the following equipment is available.

- | | | |
|------------------------|------------------------|----------------------|
| 1. AM Signal Generator | 4. FM Signal Generator | 7. Distortion meter |
| 2. Oscilloscope | 5. Stereo Modulator | 8. DC Voltmeter |
| 3. AC Voltmeter | 6. Audio Generator | 9. Frequency Counter |

Note: Remove line cord antenna from FM external antenna terminal when aligning.

AM IF & RF ALIGNMENT

Output of signal generator should be no higher than necessary to obtain an output reading. Signal Generator Modulation: 30%. Set SELECTOR switch SW1 to AM.						
STEP	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RECEIVER DIAL SETTING	INDICATOR	ADJUSTMENT Refer Fig. 4.	REMARKS
1	Refer Fig. 1	455 kHz (400 Mz Mod.)	Point of non-interference (on/about 600 kHz)	AC Voltmeter to TAPE OUT jack	T401 (IFT)	Adjust for maximum reading.
2	Same as Step 1	600 kHz (400 Hz Mod.)	600 kHz	Same as Step 1	L401 (OSC Coil) L451 (ANT Coil)	Same as Step 1
3	Same as Step 1	1400 kHz (400 Hz Mod.)	1400 kHz	Same as Step 1	TC105 (OSC Trimmer) TC104 (ANT Trimmer)	Same as Step 1
4	Same as Step 1	1000 kHz (400 Hz Mod.)	1000 kHz	Same as Step 1	VR402	Adjust for 250 mV Audio output.
5	Same as Step 1	1000 kHz (400 Hz Mod.)	1000 kHz	Receiver's SIGNAL Meter	VR401	Adjust for 70% reading of full scale with input of 5 mV/m.

Note: Remove line cord antenna from FM external antenna terminal when aligning.

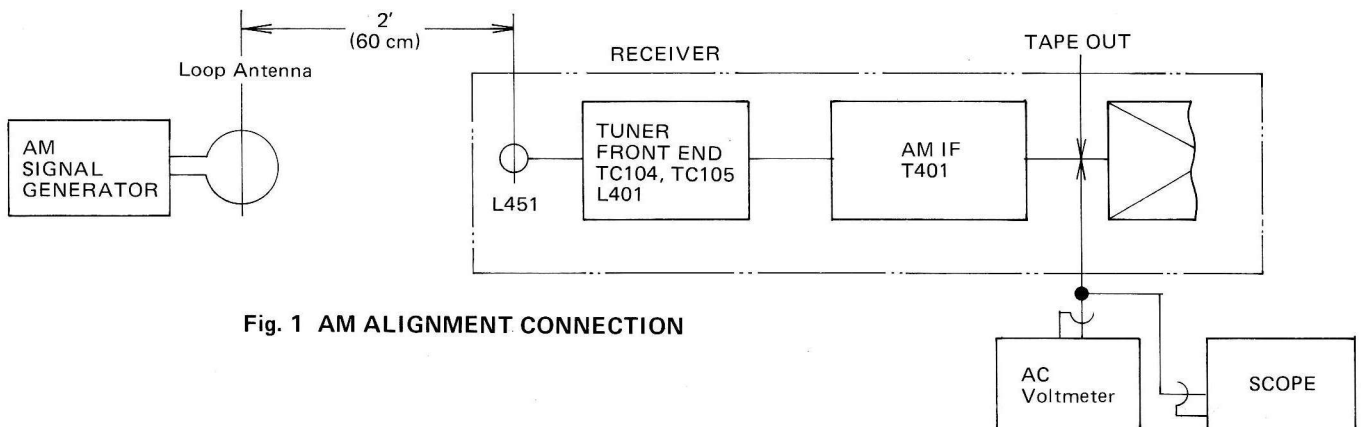


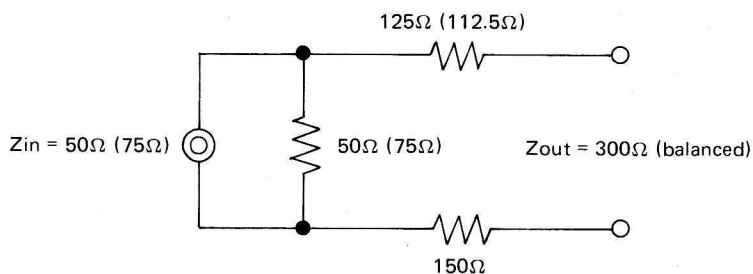
Fig. 1 AM ALIGNMENT CONNECTION

FM RF AND IF ALIGNMENT

Signal generator output should be no higher than necessary to obtain an output reading.
 Set Selector switch to FM.
 Signal Generator deviation: 75 kHz NOTE: Be sure to disconnect FM line cord antenna during alignment.

STEP	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RECEIVER DIAL SETTING	INDICATOR	ADJUSTMENT Refer Fig. 4	REMARKS
1	Connect to FM Antenna Terminal through FM Dummy Antenna (300Ω) Fig. 2	90 MHz (400 Hz, Mod.)	90 MHz	AC Voltmeter connected to TAPE OUT jack	L104 (FM OSC Coil) L101 (FM ANT Coil) L102 (FM RF Coil)	Adjust for maximum reading on AC Voltmeter
2	Same as Step 1	106 MHz (400 Hz, Mod.)	106 MHz	Same as Step 1	TC103 (FM OSC Trimmer) TC101 (FM ANT Trimmer) TC102 (FM RF Trimmer)	Adjust for maximum reading
Repeat steps 1 & 2 until no further improvement is possible.						
3	Same as Step 1	90 MHz (400 Hz, Mod.)	90 MHz	Same as Step 1	T101 (FM IFT)	Adjust for maximum reading
4	Same as Step 1	90 MHz (400 Hz, Mod.)	90 MHz	TUNING Meter	T201 (Bottom) (Discriminator)	Adjust for center point on TUNING meter
5	Same as Step 1	90 MHz (400 Hz, Mod.)	90 MHz	Distortion Meter connected to TAPE OUT jack	T201 (Top)	Adjust for minimum distortion
6	Same as Step 1	98 MHz (400 Hz, Mod.)	98 MHz	Receiver's SIGNAL Meter	VR202	Adjust for 70% reading of full scale with input of 1 mV
7	Same as Step 1	98 MHz (400 Hz Mod.)	98 MHz	Oscilloscope connected to TAPE OUT jack	VR201	Adjust so output just appears with an input signal level of 5 μV.

For European model, the lowest frequency of FM tuning range should not be below 87.5 MHz.



FM Dummy Antenna to 300Ω antenna terminal of Receiver.

Fig. 2 FM DUMMY ANTENNA

MPX ALIGNMENT

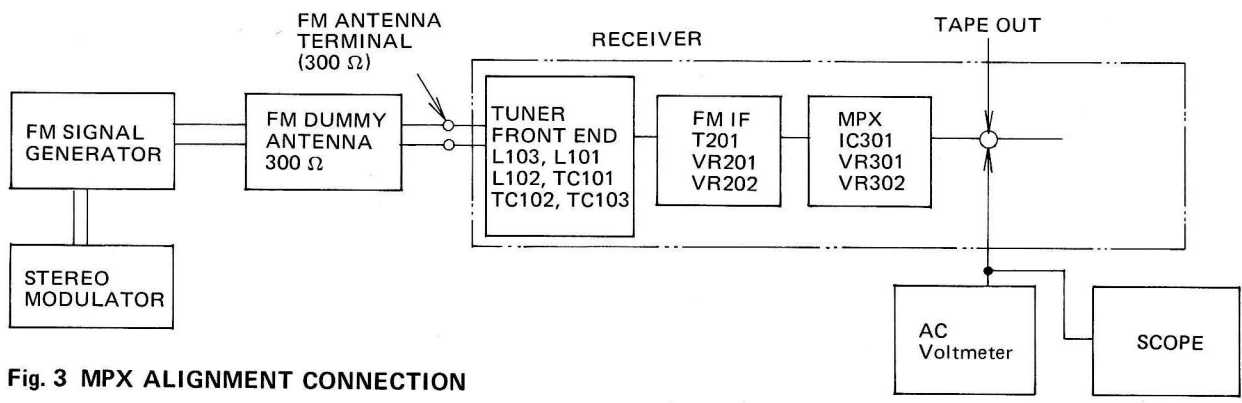


Fig. 3 MPX ALIGNMENT CONNECTION

Set SELECTOR Switch to FM.
Tune for 98 MHz on band.
Signal Generator output level: 1000 μ V. Deviation: 75 kHz, at 100% modulation of composite signal.
Connect Signal Generator to FM Antenna Terminal through FM Dummy Antenna (300 Ω).

STEP	19 kHz (PILOT SIGNAL) MODULATION Level	SIGNAL GENERATOR Freq. Set to	OUTPUT INDICATOR Connected to	ADJUST Refer Fig. 4	ADJUST FOR	NOTE
1	8%	Composite 1 kHz R channel	AC Voltmeter to TAPE OUT jack of R channel			Adjust input for audio output of about 0.65 V
2	8%	Composite 1 kHz L channel	AC Voltmeter to TAPE OUT jack of R channel	VR302	Minimum	AC Voltmeter reading should be at least 32 dB below reading in step 1.
3	8%	Composite 1 kHz R channel	AC Voltmeter to TAPE OUT jack of L channel	VR302	Minimum	Same as Step 2.
4	PILOT OFF	Carrier only	Frequency Counter Connect to TP (#18 pin) of PCB 0062 and ground	VR301	19 kHz	

If you did not obtain -30 dB readings in steps 2 and 3 (compared with step 1), readjust VR302 until you obtain -32 dB reading for both steps 2 and 3.

MAIN AMPLIFIER ALIGNMENT

INDICATOR	ADJUSTMENT	REMARKS
DC Voltmeter	VR601 a, b	Adjust for 0.005 V ~ 0.01 V across R622 a, b (0.33 ohm) with no signal

ALIGNMENT & CHECK POINTS

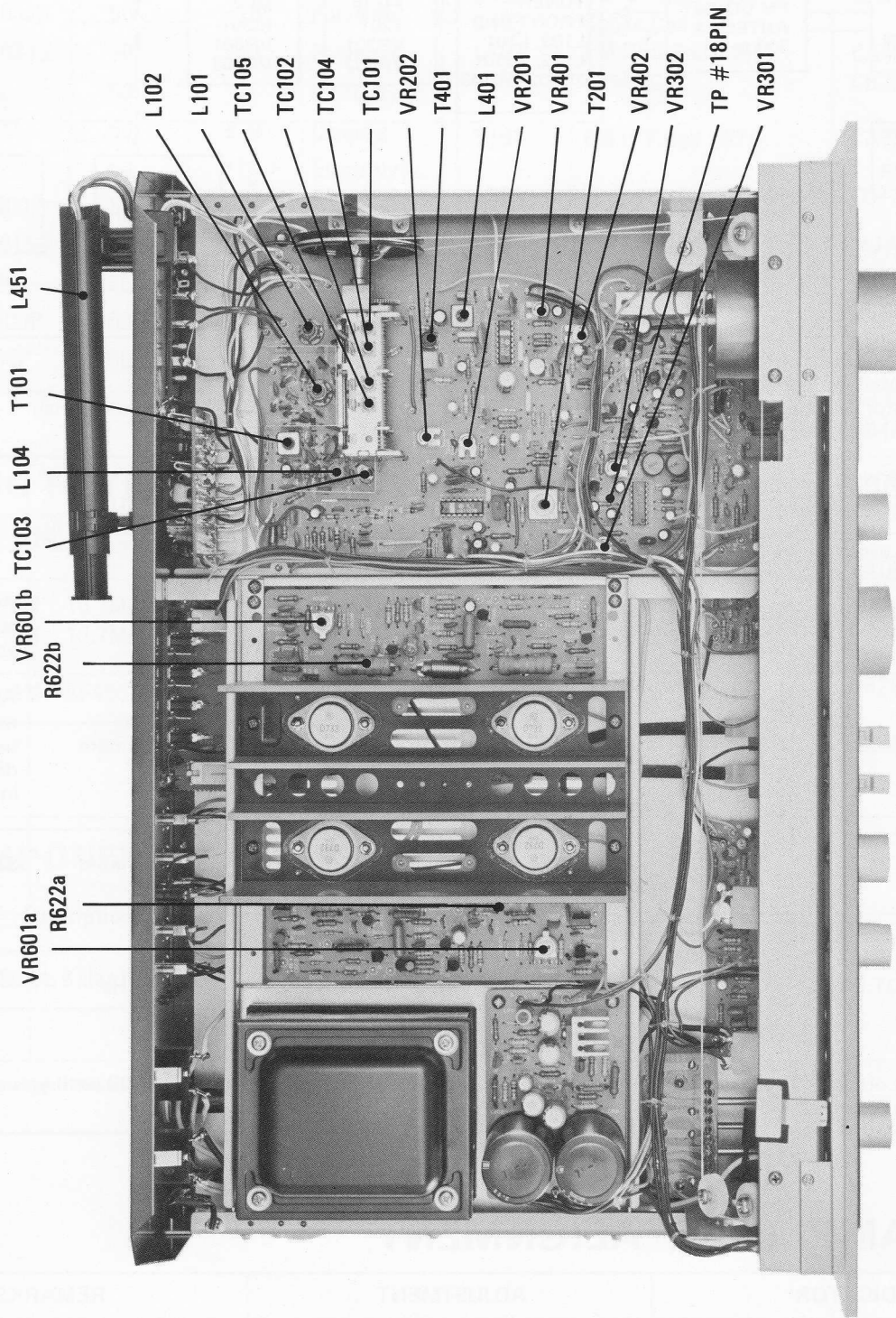
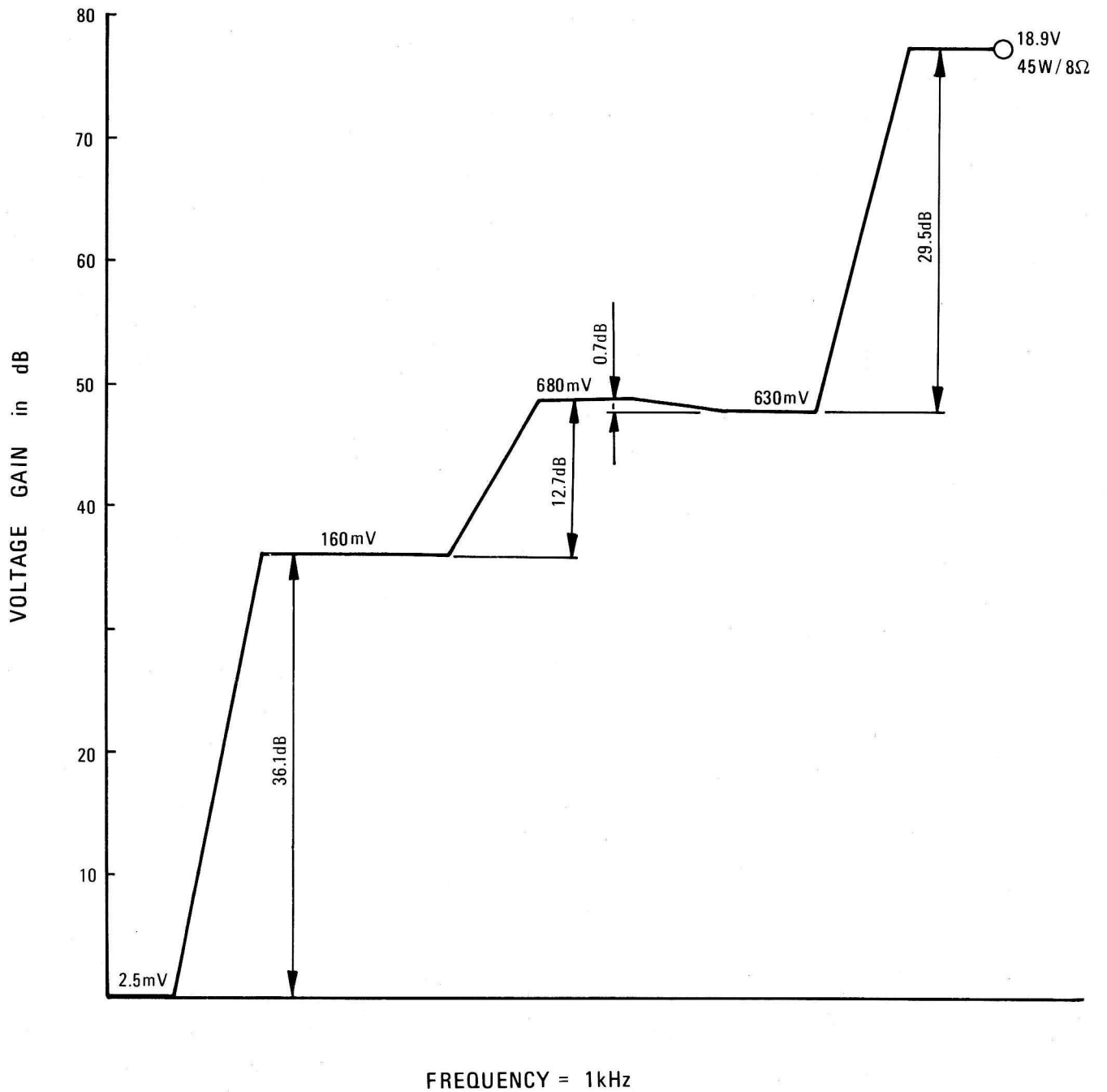
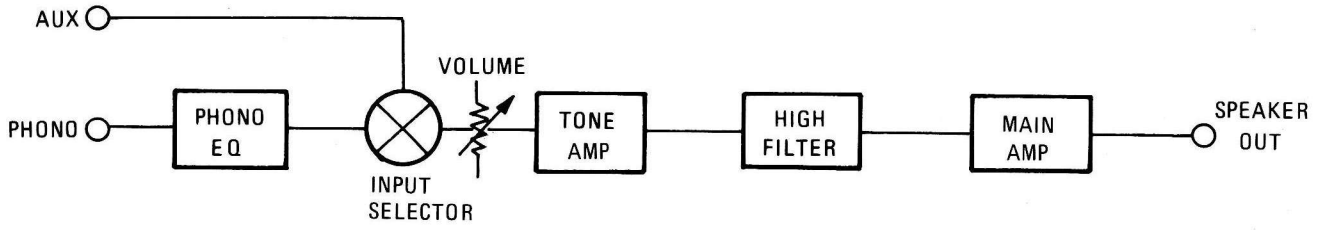


Fig.4

LEVEL DIAGRAM



TROUBLESHOOTING

SYMPTOM	CAUSE AND REMEDY
1) Receiver not operative; pilot lamp does not light.	A) Faulty AC power cord Replace the cord. B) Defect in the power switch Replace the switch. C) Broken wire in the power transformer Replace the transformer. D) Broken power fuse Replace the fuse.
2) Fuse blows when power is turned on.	A) Power transformer T851 defective Replace the transformer. B) Short in the primary or secondary of the transformer circuitry Repair the short. C) Damaged rectifier D851 Replace the rectifier. D) Short-circuit in the rectifier circuit Repair the short. E) Short circuit in power transistor TR609a, b or TR610a, b Replace the defective transistor(s) and check circuit.
3) Pilot lamp does not light.	A) Defective lamp(s) Replace lamp(s). B) Disconnection in the power transformer T851 tertiary winding Replace the transformer.
4) Pilot lamp lights but no sound from either channels.	A) Resistor R801, R804 or R809 open Replace the resistor(s). B) Capacitor C801, C802 or C807 defective Replace the defective capacitor(s). C) Diode D851 damaged Replace the diode. D) Open in secondary winding of the power transformer T851 Replace the transformer. E) Transistor TR803 (open), TR804 (short), TR805 (short) or TR806 (open) damaged Replace the damaged transistor(s). F) Diode D801 (short) damaged Replace the diode.
5) A SPEAKERS do not work.	A) Speaker switch SW9 defective Replace the switch.
6) B SPEAKERS do not work.	A) Speaker switch SW9 defective Replace the switch.

SYMPTOM	CAUSE AND REMEDY
7) One channel does not work with VOLUME at maximum, with a test signal applied to the center terminal of Volume Control VR902 of the dead channel.	<p>A) Defect in transistor TR901, TR902 or TR903 of Tone Amp Board 9035 Locate and correct the defect.</p> <p>B) Defect in transistor TR601, TR602, TR603, TR604, TR605, TR606, TR607, TR608, TR609, TR610, TR611 or TR612 of MAIN AMP Board 6052 Locate and correct the defect.</p> <p>C) Short in speaker output terminal Repair the short.</p> <p>D) Defective resistor R902, R903, R905, R906, R907, R908, R909, R917, R921, or R922 of TONE AMP Board 9035 Replace the defective resistor(s).</p> <p>E) Defective resistor R602, R603, R604, R605, R606, R607, R608, R609, R610, R613 or R615 of Main Amp Board 6052 Replace the defective resistor(s).</p>
8) Same as 7 above but channel operates when test signal is applied as 7.	<p>A) Defective IC (IC501 NJM 4558D-D) Replace the IC.</p> <p>B) Faulty resistor R502, R503, R504, R510 or R511 of Pre-Amp Board 5042 Replace the faulty resistor(s).</p> <p>C) Faulty capacitor C501 or C506 Replace the faulty capacitor(s).</p> <p>D) Defective SELECTOR switch SW1 Repair or replace the switch.</p>
9) Speaker works normally but headphones do not work.	<p>A) Headphone plug does not mate with jack Replace the plug.</p> <p>B) Defective resistor R651 Replace the resistor.</p>
10) All the inputs work normally except AUX input.	<p>A) Poor contact in AUX input jack Repair or replace the jack.</p> <p>B) Poor contact in SELECTOR switch SW1 Repair or replace the switch.</p>
11) PHONO input not operative.	<p>A) Poor contact in PHONO input jack Repair or replace the jack.</p> <p>B) Faulty SELECTOR switch SW1 Repair or replace the switch.</p>
12) TAPE MONITOR 1 (or 2) OUT not operative.	<p>A) Defective contact in TAPE MONITOR 1 (or 2) OUT jack Repair or replace the jack.</p> <p>B) Defective contact in TAPE MONITOR switch SW3 Repair or replace the switch.</p>
13) FM does not operate.	<p>A) Transistor TR801 or TR802 damaged Replace the damaged transistor(s).</p>

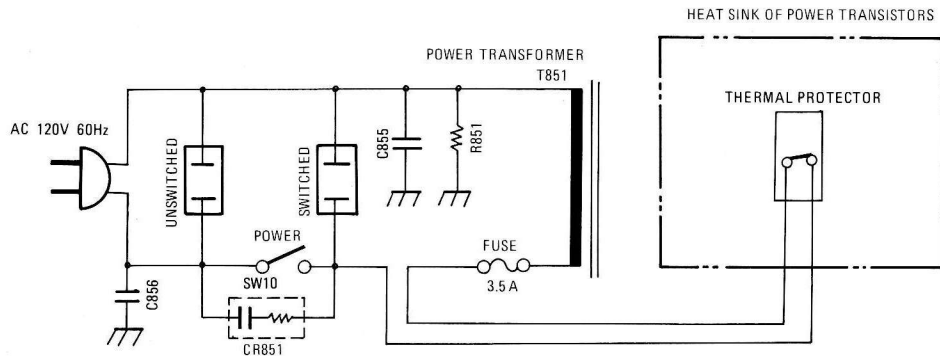
SYMPTOM	CAUSE AND REMEDY
13) FM does not operate.	<p>A) Transistor TR801 or TR802 damaged Replace the damaged transistor(s).</p> <p>B) Resistor R801 defective Replace the resistor.</p> <p>C) Short circuit in Tuner B+ circuit Repair the short.</p> <p>D) Poor contact in SELECTOR switch SW1 Replace the switch.</p> <p>E) Resistor R304 defective Replace the resistor.</p> <p>F) Capacitor C302 defective Replace the capacitor.</p> <p>G) Defective transistor TR201 or IC IC201, IC203 Replace the defective transistor or IC(s).</p> <p>H) Defective IFT T201 Replace the IFT.</p> <p>I) Defective resistor R203 or R208 Replace the resistor(s).</p> <p>J) Defective transistor TR101, TR102, TR103 or coil L101, L102, L103, L104 of Tuner Board 0062 Replace the defective component(s).</p> <p>K) Faulty lead-in Repair or replace the lead in.</p>
14) Poor multiplex separation	<p>A) Improper adjustment Readjust T201, VR301 and VR302. (Refer to MPX ALIGNMENT on page 9)</p> <p>B) Transistor TR202, TR203, TR204, TR301, TR302, TR303, TR304, TR305 or IC IC301 defective. Replace the defective component(s).</p> <p>C) Variable resistor VR302 defective Replace the variable resistor.</p>
15) Stereo indicator LED does not light.	<p>A) Defective indicator LED D755 Replace the LED.</p> <p>B) Improper adjustment of VR201 of Tuner Board 0062 Make readjustment. (Refer to MPX ALIGNMENT on page 9)</p> <p>C) Defective IC IC301 or resistor R307 Replace the defective component(s).</p>
16) FM volume not sufficient	<p>A) If volume of both L and R channels not enough: Front End defective, or faulty IC IC201, IFT T201 or faulty capacitor C224, C301 of Tuner Board 0062 Locate and replace the defective component.</p> <p>B) If sound of one channel not enough: Defective L301 (Board 0062) in case of R channel, or defective L302 (Board 0062) in case of L channel Replace the defective coil(s).</p>

SYMPTOM	CAUSE AND REMEDY
17) AM does not operate.	A) Damaged IC401 of Tuner Board 0062 Replace the IC. B) Defective L401, T401, CF401 or T402 of Tuner Board 0062 Replace the defective component(s). C) Defective transistor TR401 Replace the transistor. D) Resistor R402, R409 or R411 defective Replace the defective resistor(s). E) Capacitor C416 or C419 defective Replace the defective capacitor(s). F) Selector switch SW1 defective Replace the switch. G) Defective tuning gang Replace tuning gang. H) Damaged AM bar antenna Repair or replace bar antenna.
18) LOUDNESS has no effect	A) Defective LOUDNESS switch SW5 Replace the switch. B) Defective capacitor C901, C902 or resistor R904 Replace the defective component(s). C) Defective VOLUME control VR902 Replace the VOLUME control.
19) Stereo-Mono not effective	A) Defective MONO switch SW4 Replace the switch.
20) TAPE MONITOR not effective	A) Defective TAPE MONITOR switch Replace the switch. B) Poor contact in TAPE MONITOR input jacks Repair or replace jack(s).
21) BASS control has no effect	A) Variable resistor VR904 defective Replace. B) Defective C908, C909 or R912, R913, R914, R915 Replace the defective component(s).
22) TREBLE control has no effect	A) Variable resistor VR903 defective Replace. B) Defective C907, R910, R911, R916 Replace the defective component(s).
23) Excessive noise with PHONO input	A) Faulty IC IC501 Replace the IC. B) Defective capacitor C501, C506 or resistor R501, R503, R505, R506 Replace the defective component(s).

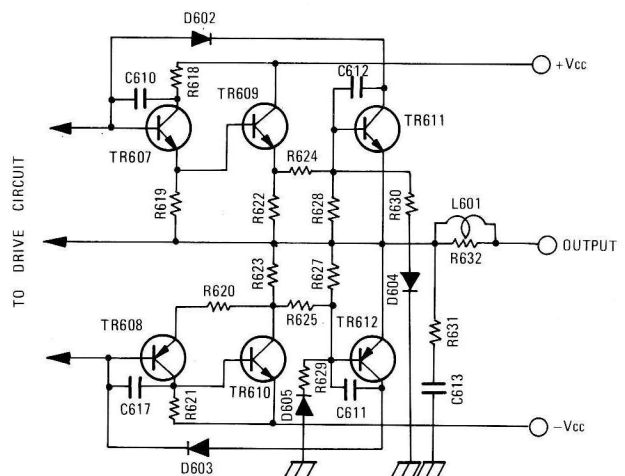
SYMPTOM	CAUSE AND REMEDY
24) Noisy VOLUME control	A) Defective VR902 Replace. B) Defective capacitor C506 or C903 Replace the defective capacitor(s).
25) SIGNAL meter not functioning	A) Defective meter Replace meter. B) Defective capacitor C402 Replace the capacitor. C) In case of FM reception, IC201, TH201 or VR202 defective. Replace the defective component(s). D) In case of AM reception, VR401 defective Replace.
26) TUNING meter not functioning	A) Defective meter Replace the meter. B) Resistor R226 defective Replace the resistor.
27) LO FILter has no effect	A) Defective switch SW8 Replace the switch. B) Defective capacitor C914 Replace the capacitor.
28) HI FILter has no effect	A) Defective switch SW7 Replace the switch. B) Defective resistor R919 or capacitor C913 Replace the defective component(s).

NOTE:

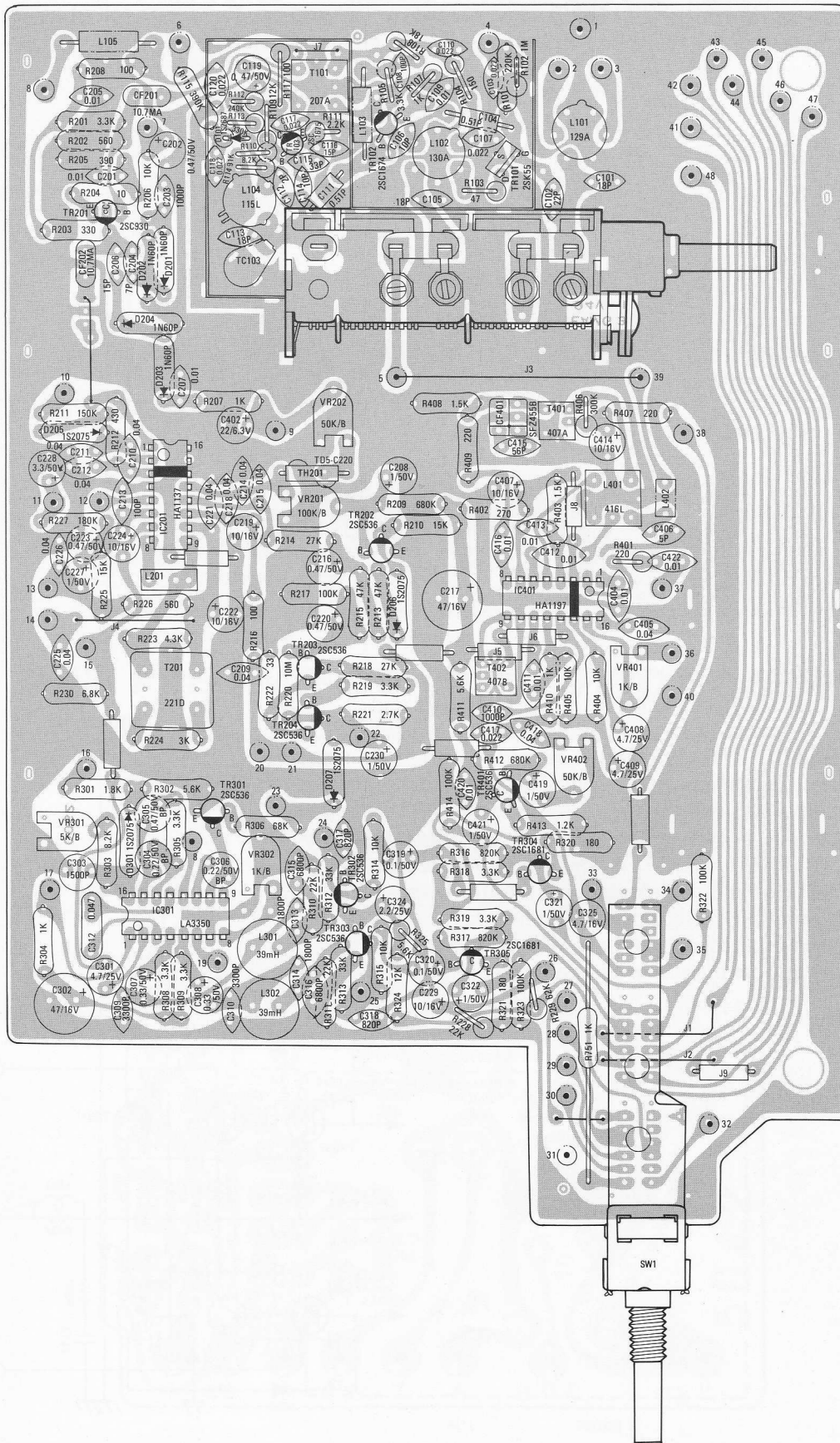
1. This Receiver has built-in over load thermal protection for abnormal operation. When the temperature of thermal protector (installed with heat sink) does rise abnormally ($90\pm 5^{\circ}\text{C}$), the thermal protector will automatically cut out, and as soon as the temperature goes down sufficiently ($35\pm 15^{\circ}\text{C}$), the thermal protector turns back on automatically. If the Receiver does turn itself off, check ventilation and speaker connections.



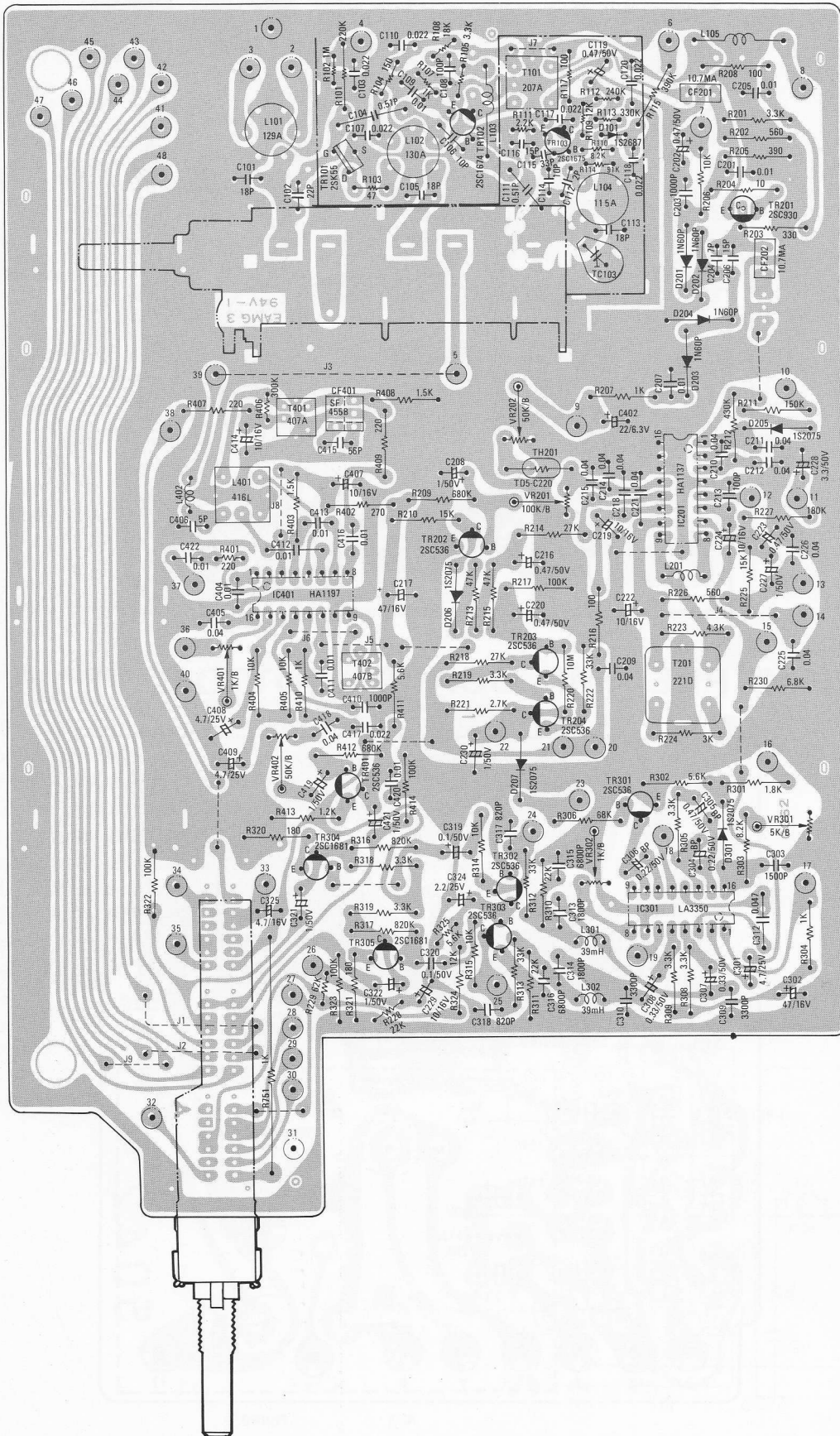
2. Transistors TR611 and TR612 protect audio output stage when abnormally high current flows in TR609 and TR610 caused by excessive input drive, or too low impedance load is connected at output. If increase of the current is excessive, the voltage across R622 and R623 will turn on TR611 and TR612 which are not normally biased on and collectors of these transistors (through D602 and D603 diodes) reduce biases on TR607 and TR608 which decreases drive to output transistors TR609 and TR610 to reduce the current. This occurs to protect not only the circuit but also the speakers against high level switching clicks and pop noises.



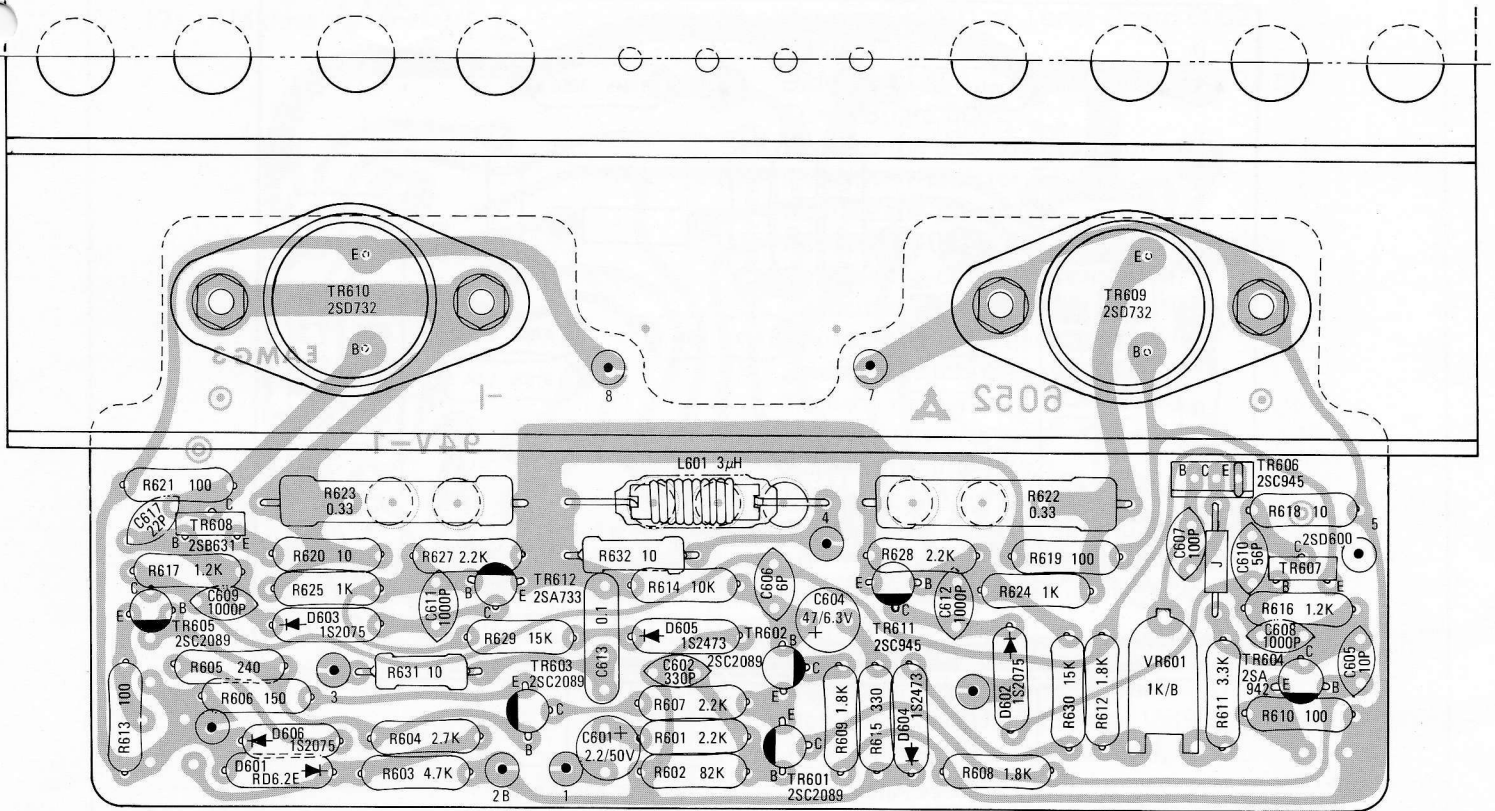
0062 TUNER BOARD (TOP VIEW)



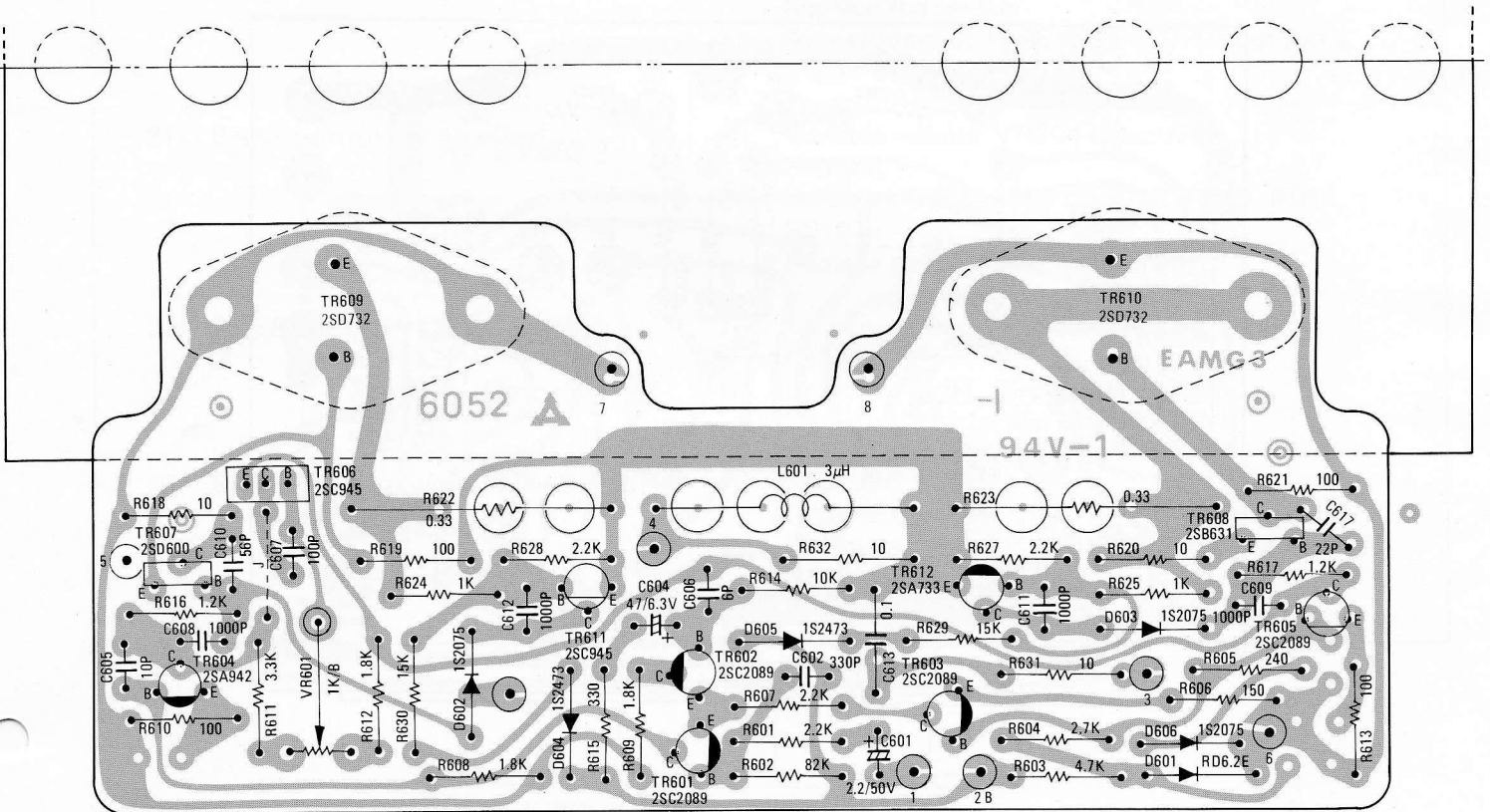
0062 TUNER BOARD (BOTTOM VIEW)



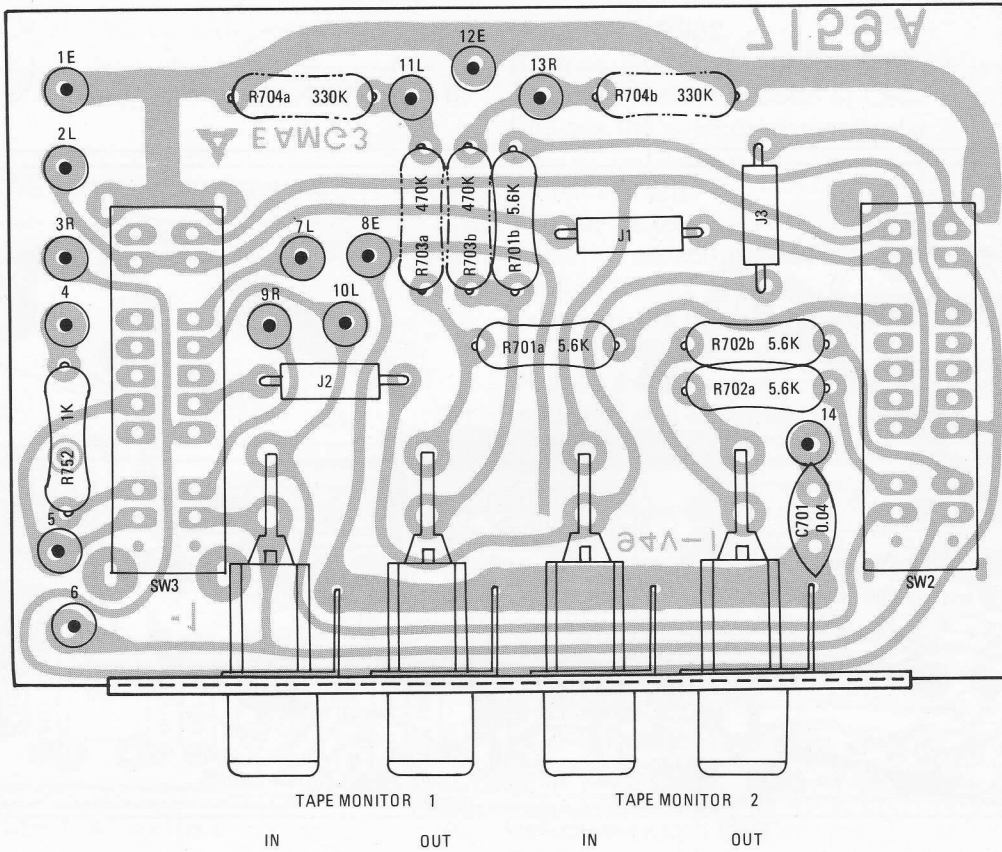
6052 MAIN-AMP BOARD (TOP VIEW)



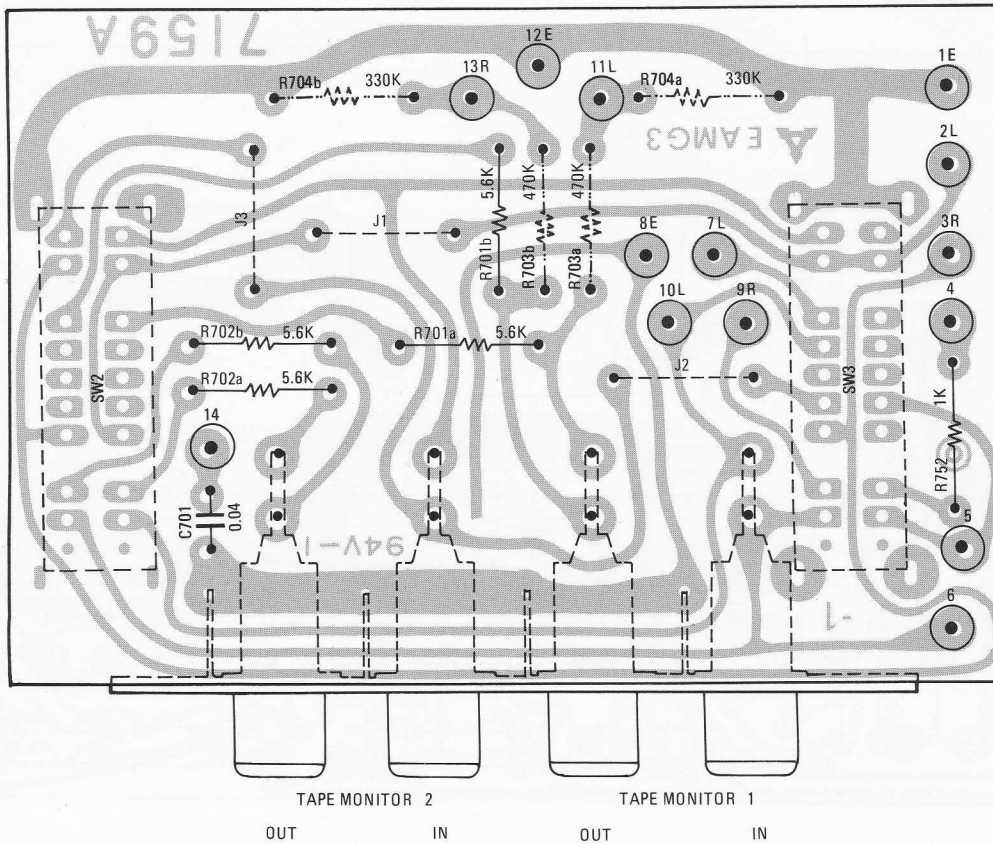
6052 MAIN-AMP BOARD (BOTTOM VIEW)



7159 INPUT BOARD (TOP VIEW)

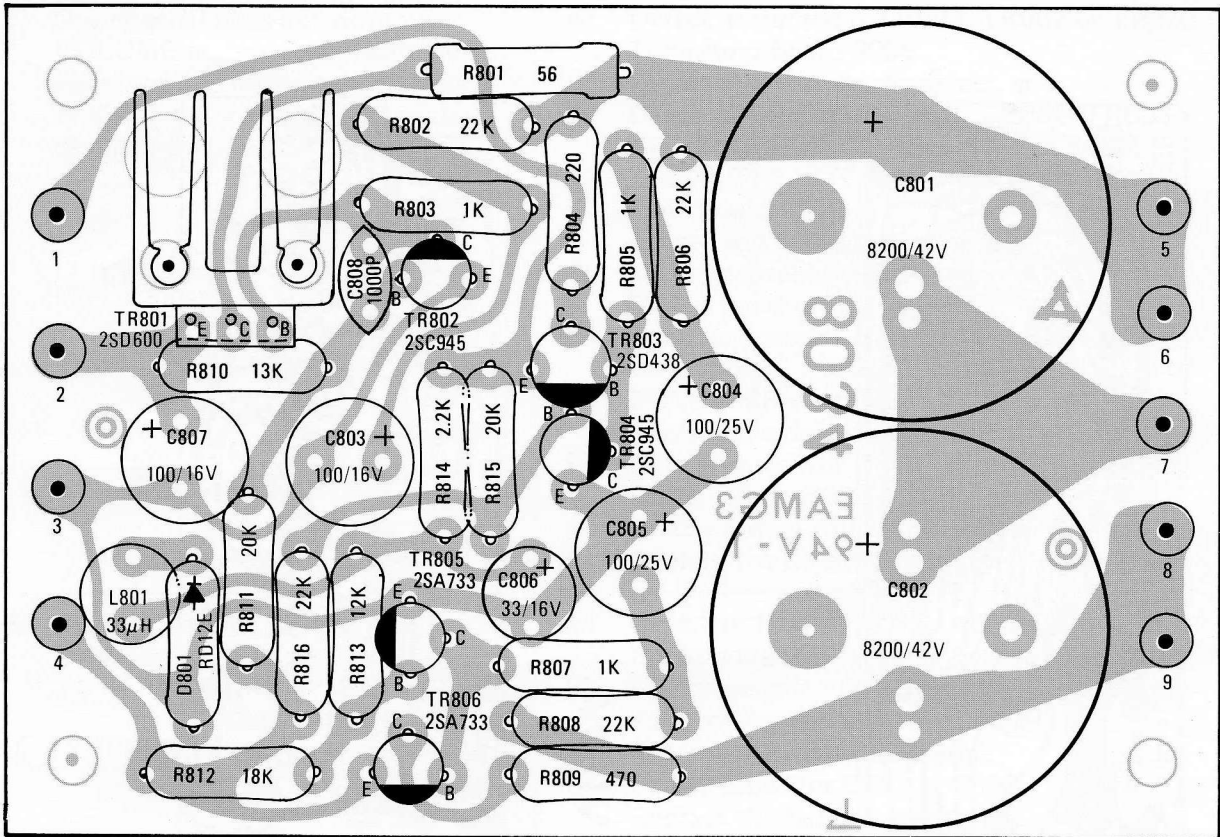


7159 INPUT BOARD (BOTTOM VIEW)

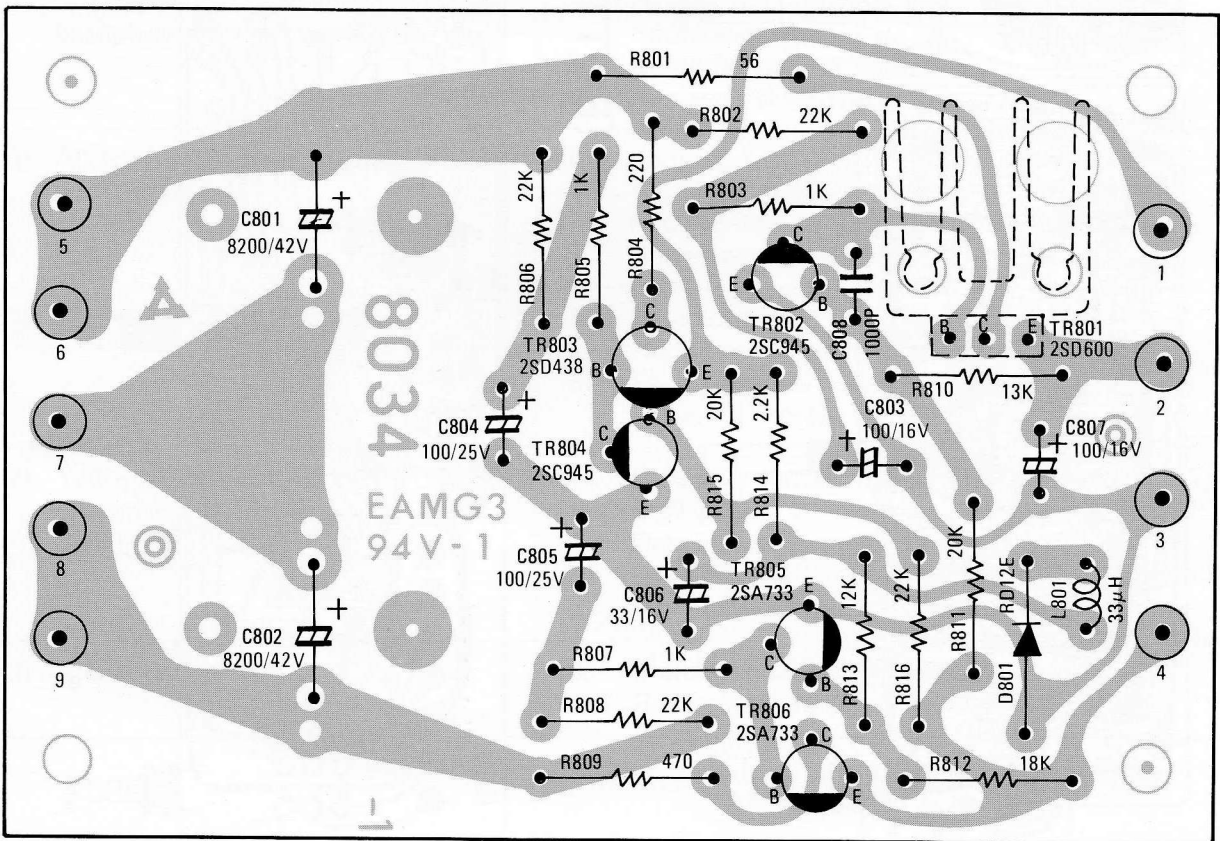


R703a b & R704a b: for European models only

8034 POWER SUPPLY BOARD (TOP VIEW)

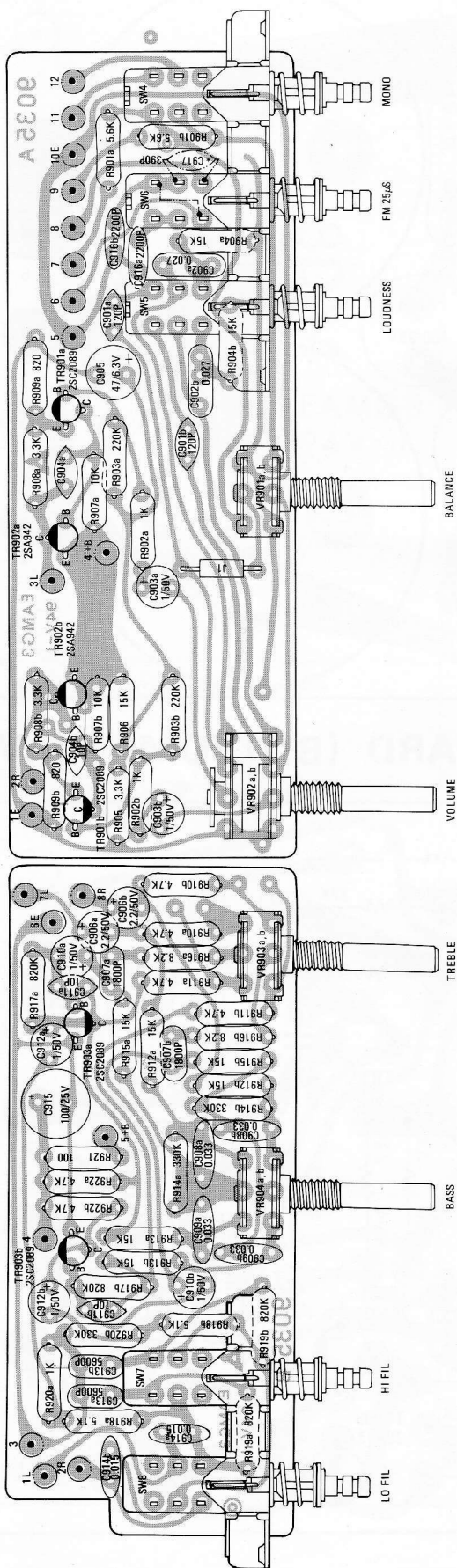


8034 POWER SUPPLY BOARD (BOTTOM VIEW)

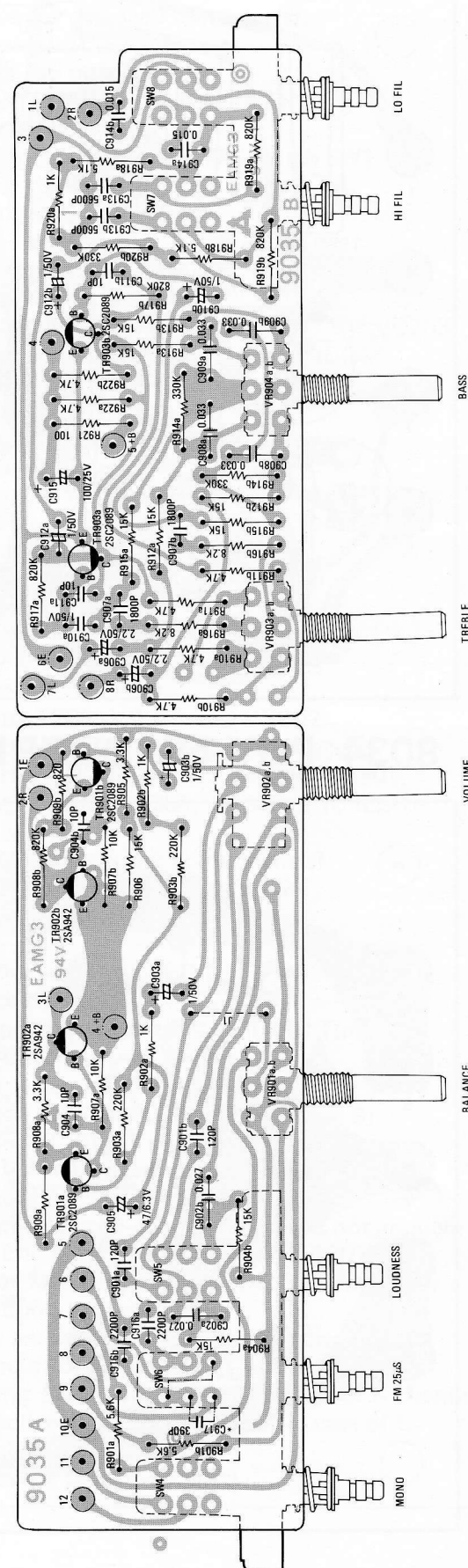


9035 TONE CONTROL BOARD

(TOP VIEW)

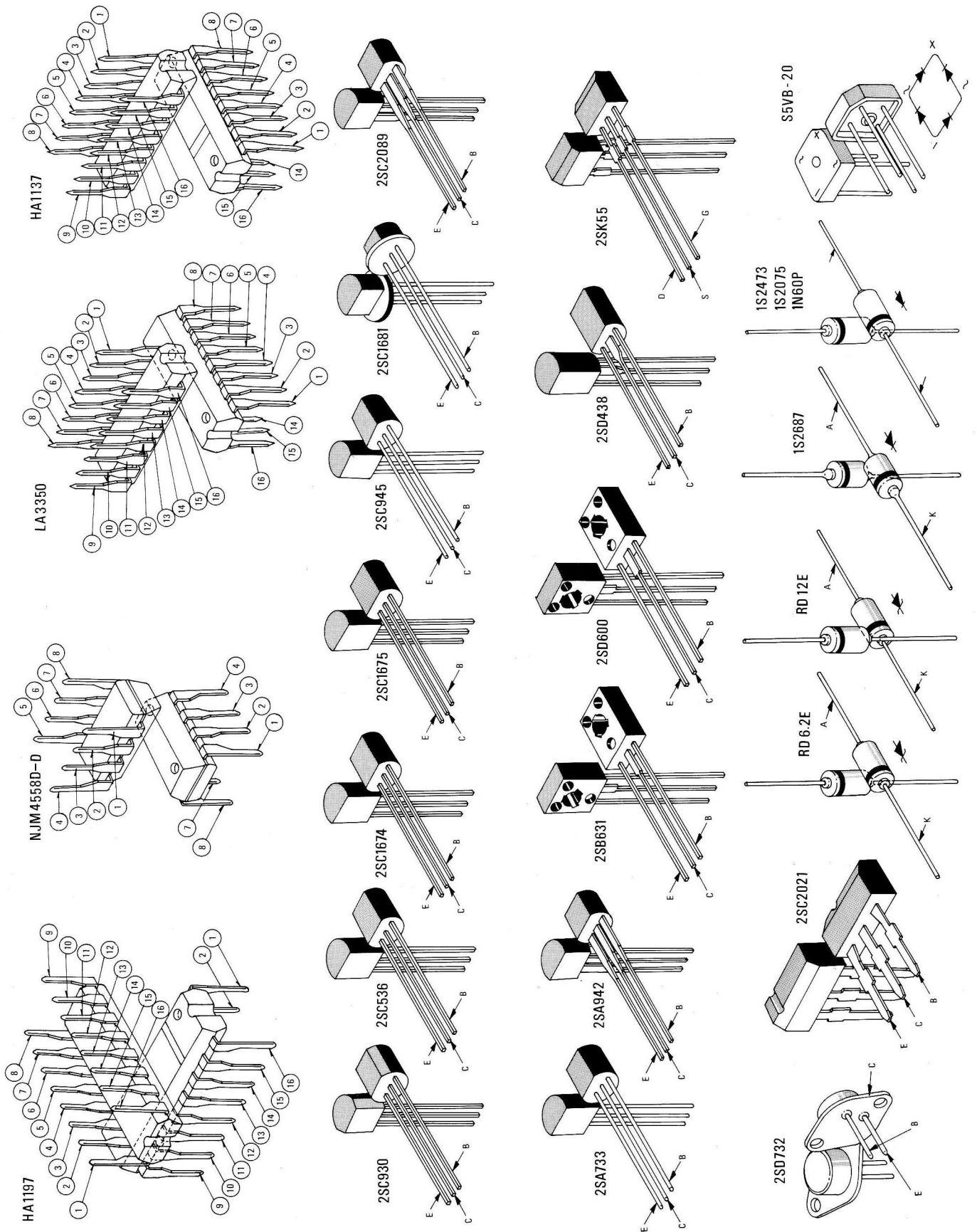


(BOTTOM VIEW)



* C917: for European models only

SEMICONDUCTOR LEAD IDENTIFICATION



ELECTRICAL PARTS LIST

CAPACITORS

Ref. No.	Value (F)	Voltage (V)	Tolerance (%)	Material
C101	18P	50	±10	Ceramic
C102	22P	50	±10	Ceramic
C103	0.022μ	25	+80 -20	Ceramic
C104	0.51P	50	±10	Ceramic
C105	18P	50	±10	Ceramic
C106	10P	50	±10	Ceramic
C107	0.022μ	25	+80 -20	Ceramic
C108	100P	50	±10	Ceramic
C109	0.01μ	25	+80 -20	Ceramic
C110	0.022μ	25	+80 -20	Ceramic
C111	0.51P	50	±10	Ceramic
C112	2P	50	±0.5PF	Ceramic
C113	18P	50	±5	Ceramic
C114	10P	50	±10	Ceramic
C115	33P	50	±5	Ceramic
C116	15P	50	±10	Ceramic
C117	0.022μ	25	+80 -20	Ceramic
C118	0.022μ	25	+80 -20	Ceramic
C119	0.47μ	50	+75 -10	Electrolytic
C120	0.022μ	25	+80 -20	Ceramic
C201	0.01μ	25	+80 -20	Ceramic
C202	0.47μ	50	+75 -10	Electrolytic
C203	1000P	50	±10	Ceramic
C204	7P	50	±0.25PF	Ceramic
C205	0.01μ	25	+80 -20	Ceramic
C206	15P	50	±1P	Ceramic
C207	0.01μ	25	+80 -20	Ceramic
C208	1μ	50	+75 -10	Electrolytic
C209	0.04μ	25	+80 -20	Ceramic
C210	0.04μ	25	+80 -20	Ceramic
C211	0.04μ	25	+80 -20	Ceramic
C212	0.04μ	25	+80 -20	Ceramic
C213	100P	50	±10	Ceramic
C214	0.04μ	25	+80 -20	Ceramic
C215	0.04μ	25	+80 -20	Ceramic

Ref. No.	Value (F)	Voltage (V)	Tolerance (%)	Material
C216	0.47μ	50	+75 -10	Electrolytic
C217	47μ	16	+50 -10	Electrolytic
C218	0.04μ	25	+80 -20	Ceramic
C219	10μ	16	+50 -10	Electrolytic
C220	0.47μ	50	+75 -10	Electrolytic
C221	0.04μ	25	+80 -20	Ceramic
C222	10μ	16	+50 -10	Electrolytic
C223	0.47μ	50	+75 -10	Electrolytic
C224	10μ	16	+50 -10	Electrolytic
C225	0.04μ	25	+80 -20	Ceramic
C226	0.04μ	25	+80 -20	Ceramic
C227	1μ	50	+75 -10	Electrolytic
C228	3.3μ	25	+75 -10	Electrolytic
C229	10μ	16	+50 -10	Electrolytic
C230	1μ	50	+75 -10	Electrolytic
C301	4.7μ	25	+75 -10	Electrolytic
C302	47μ	16	+75 -10	Electrolytic
C303	1500P	50	±5	Polystyrene
C304	0.22μ	50	+75 -10	Electrolytic
C305	0.47μ	50	+75 -10	Electrolytic
C306	0.22μ	50	+75 -10	Electrolytic
C307	0.33μ	50	±20	Electrolytic
C308	0.33μ	50	+75 -10	Electrolytic
C309	3300P	50	±10	Ceramic
C310	3300P	50	±10	Ceramic
C311	Not Used			
C312	0.047μ	50	±10	Polyester
C313	1800P	50	±10	Ceramic
C314	1800P	50	±10	Ceramic
C315	6800P	50	±10	Ceramic
C316	6800P	50	±10	Ceramic
C317	*820P	50	±10	Ceramic
C318	*820P	50	±10	Ceramic
C319	0.1μ	50	+75 -10	Electrolytic
C320	0.1μ	50	+75 -10	Electrolytic
C321	1μ	50	+75 -10	Electrolytic
C322	1μ	50	+75 -10	Electrolytic
C323	Not Used			
C324	2.2μ	25	+75 -10	Electrolytic
C325	4.7μ	16	+75 -10	Electrolytic

*: 1800P for European and Australian models.

Ref. No.	Value (F)	Voltage (V)	Tolerance (%)	Material	Ref. No.	Value (F)	Voltage (V)	Tolerance (%)	Material
C401	Not Used				C604a,b	47 μ	6.3	+50 -10	Electrolytic
C402	22 μ	6.3	+50 -10	Electrolytic	C605a,b	10P	500	\pm 10	Ceramic
C403	Not Used				C606a,b	6P	50	\pm 0.5P	Ceramic
C404	0.01 μ	25	+80 -20	Ceramic	C607a,b	100P	500	\pm 10	Ceramic
C405	0.04 μ	25	+80 -20	Ceramic	C608a,b	1000P	50	\pm 10	Ceramic
C406	5P	50	\pm 10	Ceramic	C609a,b	1000P	50	\pm 10	Ceramic
C407	10 μ	16	+50 -10	Electrolytic	C610a,b	56P	500	\pm 10	Ceramic
C408	4.7 μ	25	+75 -10	Electrolytic	C611a,b	1000P	50	\pm 10	Ceramic
C409	4.7 μ	25	+75 -10	Electrolytic	C612a,b	1000P	50	\pm 10	Ceramic
C410	1000P	50	\pm 10	Ceramic	C613a,b	0.1 μ	50	\pm 10	Polyester
C411	0.01 μ	25	+80 -20	Ceramic	C614a,b	Not Used			
C412	0.01 μ	50	\pm 10	Ceramic	C615a,b	Not Used			
C413	0.01 μ	25	+80 -20	Ceramic	C616a,b	Not Used			
C414	10 μ	16	+50 -10	Electrolytic	C617a,b	22P	500	\pm 10	Ceramic
C415	56P	50	\pm 10	Ceramic					
C416	0.01 μ	25	+80 -20	Ceramic	C701	0.04 μ	25	+80 -20	Ceramic
C417	0.022 μ	25	+80 -20	Ceramic					
C418	0.04 μ	25	+80 -20	Ceramic	C801	8200 μ	42	+50 -10	Electrolytic
C419	1 μ	50	+75 -10	Electrolytic	C802	8200 μ	42	+50 -10	Electrolytic
C420	0.01 μ	25	\pm 10	Ceramic	C803	100 μ	16	+50 -10	Electrolytic
C421	1 μ	50	+75 -10	Electrolytic	C804	100 μ	25	+50 -10	Electrolytic
C422	0.01 μ	50	\pm 10	Ceramic	C805	100 μ	25	+50 -10	Electrolytic
C501a,b	4.7 μ	25	+75 -10	Electrolytic	C806	33 μ	16	+50 -10	Electrolytic
C502a,b	100P	50	\pm 10	Ceramic	C807	100 μ	16	+50 -10	Electrolytic
C503a,b	100 μ	6.3	+50 -10	Electrolytic	C808	1000P	50	\pm 10	Ceramic
C504a,b	6800P	50	\pm 5	Polyester					
C505a,b	1800P	50	\pm 5	Polyester	C851	0.01 μ	500	\pm 10	Ceramic
C506a,b	2.2 μ	50	+75 -10	Electrolytic	C852	0.01 μ	500	\pm 10	Ceramic
C507	100 μ	16	+50 -10	Electrolytic	C853	0.01 μ	500	\pm 10	Ceramic
C508	100 μ	16	+50 -10	Electrolytic	C854	0.01 μ	500	\pm 10	Ceramic
C509a,b	3.3 μ	50	+75 -10	Electrolytic	C855	4700P	125	\pm 20	Polyester
C510a,b	3.3 μ	50	+75 -10	Electrolytic	(CSA Only) C856	4700P	125	\pm 20	Polyester
C511a,b	4.7 μ	25	+75 -10	Electrolytic	(CSA Only) *C857	0.022 μ	125	\pm 20	Polyester
					(CSA only)				
C551	0.04 μ	25	+80 -20	Ceramic	C901a,b	120P	50	\pm 10	Ceramic
C601a,b	2.2 μ	50	+75 -10	Electrolytic	C902a,b	0.027 μ	50	\pm 10	Polyester
C602a,b	330P	50	\pm 10	Ceramic	C903a,b	1 μ	50	+75 -10	Electrolytic
C603a,b	Not Used				C904a,b	10P	50	\pm 10	Ceramic
					C905	47 μ	6.3	+50 -10	Electrolytic

*C857: Use in place of CR851 Spark Killer for CSA models only.

Ref. No.	Value (F)	Voltage (V)	Tolerance (%)	Material
C906a,b	2.2 μ	50	+75 -10	Electrolytic
C907a,b	1800P	50	± 10	Polyester
C908a,b	0.033 μ	50	± 10	Polyester
C909a,b	0.033 μ	50	± 10	Polyester
C910a,b	1 μ	50	+75 -10	Electrolytic
C911a,b	10P	50	± 10	Ceramic
C912a,b	1 μ	50	+75 -10	Electrolytic
C913a,b	5600P	50	± 10	Polyester
C914a,b	0.015 μ	50	± 10	Polyester
C915	100 μ	25	+50 -10	Electrolytic
C916a,b	2200P	50	± 10	Polyester
*C917	390P	50	± 10	Ceramic

CERAMIC FILTERS			
Ref. No.	Description	R/S Part No.	Mfr's Part No.
CF201	FM 10.7MA	C0546	35300012
CF202	FM 10.7MA	C0546	35300012
CF401	AM SF455B	C0869	35300023

CR COMPONENT			
Ref. No.	Description	R/S Part No.	Mfr's Part No.
CR851	Spark Killer (UL)	C0639	4300019

COILS & TRANSFORMERS			
Ref. No.	Description	R/S Part No.	Mfr's Part No.
L101	FM Ant. Coil 129A	CA3865	35501291
L102	FM RF Coil 130B	CA4909	35501302
L103	Choke Coil		35500380
L104	FM OSC Coil 115L	CA4674	35501156
L105	Choke Coil	CB2376	35500380
T101	FM IFT Coil 207A	CA7830	35702071
L201	Choke Coil 144LZ-180J	C0713	35500310
T201	FM IFT 221D	CA7831	35702214
L301	Choke Coil 39 mH	CB2375	35500370
L302	Choke Coil 39 mH	CB2375	35500370
L401	AM OSC Coil 4 16L	CA4910	35504166
L402	Choke Coil	CB2121	35500070
T401	AM IFT 407A	CA7834	35704071
T402	AM IFT 407B	CA7835	35704072
L451	AM Bar Ant. Coil	CA0668	35400541
L601a,b	Choke Coil 3 μ H	CB2396	35199005
L801	Choke Coil 33 μ H	CB2397	35105330
T851	Power Transformer (UL)	TA0672	35900267
T851	Power Transformer (CSA)		35900268
T851	Power Transformer (Europe/Australia)		35900286

*C917: For European and Australian models only.

DIODES				
Ref. No.	Type No.	R/S Part No.	Mfr's Part No.	Manufacturer
D101	1S2687		30600560	JRC
D201	1N60P	DX0162	30600011	UNIZON
D202	1N60P	DX0162	30600011	UNIZON
D203	1N60P	DX0162	30600011	UNIZON
D204	1N60P	DX0162	30600011	UNIZON
D205	1S2075K		30601001	Hitachi
D206	1S2075K		30601001	Hitachi
D207	1S2075K		30601001	Hitachi
D301	1S2075K		30601001	Hitachi
D401	1S2075K		30601001	Hitachi
D402	1S2075K		30601001	Hitachi
D601a,b	RD6.2E	DX0408	30600691	NEC
D602a,b	1S2075K		30601001	Hitachi
D603a,b	1S2075K		30601001	Hitachi
D604a,b	1S2473	DX0299	30600410	Toyo
D605a,b	1S2473	DX0299	30600410	Toyo
D606a,b	1S2075K		30601001	Hitachi
D751	GD-4-211RD	L0905	30601181	Stanley
D752	GD-4-211RD	L0905	30601181	Stanley
D753	GD-4-211RD	L0905	30601181	Stanley
D754	GD-4-211RD	L0905	30601181	Stanley
D755	GD-4-211RD	L0905	30601181	Stanley
D756	GD-4-211GD	L0906	30601191	Stanley
D801	RD12E	DX0403	30600650	NEC
D851	S5VB-20	DX0447	30600981	Shindengen

LAMPS			
Ref. No.	Description	R/S Part No.	Mfr's Part No.
PL1, PL2 PL3, PL4	Meter Lamp 8V, 0.25A Dial Lamp 8V, 0.25A	L0351	37008019 37008006

METERS			
Ref. No.	Description	R/S Part No.	Mfr's Part No.
M1 M2	SIGNAL Meter TUNING Meter	M0380 M0379	60250014 60125004

P.C. BOARD ASSEMBLIES			
Ref. No.	Description	R/S Part No.	Mfr's Part No.
0062	Tuner Board	X7722	97006210
5042	PRE-AMP Board	X7723	97504210
6052	Main Amp. Board	X7724	97605210
7159	Tape Monitor Board	X7725	97715910
8034	Power Supply Board	X7726	97803410
7153	LED Indicator Board		97715310
9035	Tone Control Board	X7727	97903510

INTEGRATED CIRCUITS						
Ref. No.	Type No.	R/S Part No.	Mfr's Part No.	Manufacturer	Substitute	
					Type No.	Manufacturer
IC201	HA1137	MX3546	30900450	Hitachi	LA1230	Sanyo
IC301	LA3350	MX3215	30900310	Sanyo		
IC401	HA1197	MX3467	30900400	Hitachi		
IC501	NJM4558D-D	MX3449	30900363	JRC		

RESISTORS					
Ref. No.	Value (Ω)	R/S Part No.	Wattage (W)	Tolerance (%)	Material
R101	220K	NEE0396	1/4	±5	Carbon
R102	1M	NEE0445	1/4	±5	Carbon
R103	47	NEE0099	1/4	±5	Carbon
R104	150	NEE0142	1/4	±5	Carbon
R105	3.3K	NEE0230	1/4	±5	Carbon
R106	Not Used				
R107	1K	NEE0196	1/4	±5	Carbon
R108	18K	NEE0303	1/4	±5	Carbon
R109	12K	NEE0288	1/4	±5	Carbon
R110	8.2K	NEE0271	1/4	±5	Carbon
R111	2.2K	NEE0216	1/4	±5	Carbon
R112	240K	NEE0398	1/4	±5	Carbon
R113	330K	NEE0410	1/4	±5	Carbon
R114	91K	NEE0366	1/4	±5	Carbon
R115	390K	NEE0414	1/4	±5	Carbon
R116	Not Used				
R117	100	NEE0132	1/4	±5	Carbon
R201	3.3K	NEE0230	1/4	±5	Carbon
R202	560	NEE0176	1/4	±5	Carbon
R203	330	NEE0159	1/4	±5	Carbon
R204	10	NEE0063	1/4	±5	Carbon
R205	390	NEE0162	1/4	±5	Carbon
R206	10K	NEE0281	1/4	±5	Carbon
R207	1K	NEE0196	1/4	±5	Carbon
R208	100	NEE0132	1/4	±5	Carbon
R209	680K	NEE0433	1/4	±5	Carbon
R210	15K	NEE0297	1/4	±5	Carbon
R211	150K	NEE0384	1/4	±5	Carbon
R212	430	NEE0165	1/4	±5	Carbon
R213	47K	NEE0340	1/4	±5	Carbon
R214	27K	NEE0316	1/4	±5	Carbon
R215	47K	NEE0340	1/4	±5	Carbon
R216	100	NEE0132	1/4	±5	Carbon
R217	100K	NEE0371	1/4	±5	Carbon
R218	27K		1/4	±5	Carbon
R219	3.3K	NEE0230	1/4	±5	Carbon
R220	10M	NEE0482	1/4	±10	Solid
R221	2.7K	NEE0224	1/4	±5	Carbon
R222	33	NEE0087	1/4	±5	Carbon
R223	4.3K	NEE0243	1/4	±5	Carbon
R224	3K	NEE0226	1/4	±5	Carbon
R225	15K	NEE0297	1/4	±5	Carbon
R226	560	NEE0176	1/4	±5	Carbon
R227	180K	NEE0387	1/4	±5	Carbon
R228	22K	NEE1311	1/4	±5	Carbon
R229	62K		1/4	±5	Carbon
R230	6.8K		1/4	±5	Carbon
R301	1.8K	NEE0210	1/4	±5	Carbon
R302	5.6K	NEE0257	1/4	±5	Carbon

Ref. No.	Value (Ω)	R/S Part No.		Tolerance (%)	Material
R303	8.2K	NEE0271	1/4	±5	Carbon
R304	1K	NEE0196	1/4	±5	Carbon
R305	3.3K	NEE0230	1/4	±5	Carbon
R306	68K	NEE0354	1/4	±5	Carbon
R307	1K	NEE0196	1/4	±5	Carbon
R308	3.3K	NEE0230	1/4	±5	Carbon
R309	3.3K	NEE0230	1/4	±5	Carbon
R310	22K	NEE1311	1/4	±5	Carbon
R311	22K	NEE1311	1/4	±5	Carbon
R312	33K	NEE0324	1/4	±5	Carbon
R313	33K	NEE0324	1/4	±5	Carbon
R314	10K	NEE0281	1/4	±5	Carbon
R315	10K	NEE0281	1/4	±5	Carbon
R316	820K	NEE0440	1/4	±5	Carbon
R317	820K	NEE0440	1/4	±5	Carbon
R318	3.3K	NEE0230	1/4	±5	Carbon
R319	3.3K	NEE0230	1/4	±5	Carbon
R320	180		1/4	±5	Carbon
R321	180		1/4	±5	Carbon
R322	100K	NEE0371	1/4	±5	Carbon
R323	100K	NEE0371	1/4	±5	Carbon
R324	12K		1/4	±5	Carbon
R325	5.6K		1/4	±5	Carbon
R401	220	NEE0149	1/4	±5	Carbon
R402	270	NEE0155	1/4	±5	Carbon
R403	1.5K	NEE0204	1/4	±5	Carbon
R404	10K	NEE0281	1/4	±5	Carbon
R405	10K	NEE0281	1/4	±5	Carbon
R406	300K	NEE0405	1/4	±5	Carbon
R407	220	NEE0149	1/4	±5	Carbon
R408	1.5K	NEE0204	1/4	±5	Carbon
R409	220	NEE0149	1/4	±5	Carbon
R410	1K	NEE0196	1/4	±5	Carbon
R411	5.6K	NEE0257	1/4	±5	Carbon
R412	680K	NEE0433	1/4	±5	Carbon
R413	1.2K	NEE0199	1/4	±5	Carbon
R414	100K		1/4	±5	Carbon
R501a,b	100K	NEE0371	1/4	±5	Carbon
R502a,b	470	NEE0169	1/4	±5	Carbon
R503a,b	100K		1/4	±5	Carbon
R504a,b	620	NEE0181	1/4	±5	Carbon
R505a,b	430K		1/4	±5	Carbon
R506a,b	36K	NEE0328	1/4	±5	Carbon
R507a,b	100K	NEE0371	1/4	±5	Carbon
R508a,b	1K	NEE0196	1/4	±5	Carbon
R509a,b	Not Used				
R510	1.2K	NEE0199	1/4	±5	Carbon
R511	1.2K	NEE0199	1/4	±5	Carbon
R512a,b	20K	NEE0306	1/4	±5	Carbon
R513a,b	39K	NEE0330	1/4	±5	Carbon
R514a,b	39K	NEE0330	1/4	±5	Carbon

Ref. No.	Value (Ω)	R/S Part No.	Wattage (W)	Tolerance (%)	Material
R601a,b	2.2K	NEE0216	1/4	±5	Carbon
R602a,b	82K	NEE0360	1/4	±5	Carbon
R603a,b	4.7K	NEE0247	1/4	±5	Carbon
R604a,b	2.7K		1/4	±5	Carbon
R605a,b	240		1/4	±5	Carbon
R606a,b	150	NEE0142	1/4	±5	Carbon
R607a,b	2.2K		1/4	±5	Carbon
R608a,b	1.8K	NEE0210	1/4	±5	Carbon
R609a,b	1.8K	NEE0210	1/4	±5	Carbon
R610a,b	100	NEE0132	1/4	±5	Carbon
R611a,b	3.3K	NEE0230	1/4	±5	Carbon
R612a,b	1.8K		1/4	±5	Carbon
R613a,b	100	NEE0132	1/4	±5	Carbon
R614a,b	10K	NEE0281	1/4	±5	Carbon
R615a,b	330	NEE0159	1/4	±5	Carbon
R616a,b	1.2K	NEE0199	1/4	±5	Carbon
R617a,b	1.2K	NEE0199	1/4	±5	Carbon
R618a,b	10		1/4	±5	Carbon
R619a,b	100	NEE0132	1/4	±5	Carbon
R620a,b	10		1/4	±5	Carbon
R621a,b	100		1/4	±5	Carbon
R622a,b	0.33	NEJ0522	3	±5	Metal Oxide
R623a,b	0.33	NEJ0522	3	±5	Metal Oxide
R624a,b	1K	NEE0196	1/4	±5	Carbon
R625a,b	1K	NEE0196	1/4	±5	Carbon
R626a,b	Not Used				
R627a,b	2.2K	NEE0216	1/4	±5	Carbon
R628a,b	2.2K	NEE0216	1/4	±5	Carbon
R629a,b	15K	NEE0297	1/4	±5	Carbon
R630a,b	15K	NEE0297	1/4	±5	Carbon
R631a,b	10	NEG0063	1	±5	Metal Oxide
R632a,b	10	NEG0063	1	±5	Metal Oxide
R651a,b	470	NEH0169	2	±5	Metal Oxide
R701a,b	5.6K	NEE0257	1/4	±5	Carbon
R702a,b	5.6K	NEE0257	1/4	±5	Carbon
*R703a,b	470K		1/4	±5	Carbon
*R704a,b	330K		1/4	±5	Carbon
R751	1K	NEE0196	1/4	±5	Carbon
R752	1K	NEE0196	1/4	±5	Carbon
R801	56	NEG0107	1	±5	Metal Oxide
R802	22K	NEE0311	1/4	±5	Carbon
R803	1K	NEE0196	1/4	±5	Carbon
R804	220		1/4	±5	Carbon
R805	1K	NEE0196	1/4	±5	Carbon
R806	22K	NEE0311	1/4	±5	Carbon
R807	1K	NEE0196	1/4	±5	Carbon
R808	22K	NEE0311	1/4	±5	Carbon
R809	470		1/4	±5	Carbon
R810	13K	NEE0289	1/4	±5	Carbon
R811	20K	NEE0306	1/4	±5	Carbon
R812	18K	NEE0303	1/4	±5	Carbon
R813	12K	NEE0288	1/4	±5	Carbon

Ref. No.	Value (Ω)	R/S Part No.	Wattage (W)	Tolerance (%)	Material
R814	2.2K	NEE0216	1/4	±5	Carbon
R815	20K		1/4	±5	Carbon
R816	22K	NEE0311	1/4	±5	Carbon
R851	2.2M	NFF0454	1/2	±10	Solid
R901a,b	5.6K	NEE0257	1/4	±5	Carbon
R902a,b	1K	NEE0196	1/4	±5	Carbon
R903a,b	220K	NEE0396	1/4	±5	Carbon
R904a,b	15K	NEE0297	1/4	±5	Carbon
R905	3.3K	NEE0230	1/4	±5	Carbon
R906	15K	NEE0297	1/4	±5	Carbon
R907a,b	10K	NEE0281	1/4	±5	Carbon
R908a,b	3.3K	NEE0230	1/4	±5	Carbon
R909a,b	820	NEE0187	1/4	±5	Carbon
R910a,b	4.7K	NEE0247	1/4	±5	Carbon
R911a,b	4.7K	NEE0247	1/4	±5	Carbon
R912a,b	15K	NEE0297	1/4	±5	Carbon
R913a,b	15K	NEE0297	1/4	±5	Carbon
R914a,b	330K	NEE0410	1/4	±5	Carbon
R915a,b	15K	NEE0297	1/4	±5	Carbon
R916a,b	8.2K		1/4	±5	Carbon
R917a,b	820K	NEE0440	1/4	±5	Carbon
R918a,b	5.1K	NEE0252	1/4	±5	Carbon
R919a,b	820K	NEE0440	1/4	±5	Carbon
R920a,b	330K	NEE0410	1/4	±5	Carbon
R921	100	NEE0132	1/4	±5	Carbon
R922a,b	4.7K	NEE0247	1/4	±5	Carbon

SWITCHES

Ref. No.	Description	R/S Part No.	Mfr's Part No.
SW1	SELECTOR	S1308	27100153
SW2	TAPE DUBBING	S0849	27300015
SW3	TAPE MONITOR	S0849	27300015
SW4	MONO	S1310	27200098
SW5	LOUDNESS	S1310	27200098
SW6	FM 25μS	S1310	27200098
SW7	HI FIL	S7368	27200099
SW8	LO FIL	S7368	27200099
SW9	SPEAKERS SRE1045	S1309	27100154
SW10	POWER	S7296	27200082

THERMISTOR

Ref. No.	Type No.	R/S Part No.	Mfr's Part No.	Mfr.
TH201	TD5-C220	T1201	30700120	UNIZON

*: For European and Australian models only.

TRANSISTORS

Ref. No.	Type No.	R/S Part No.	Mfr's Part No.	Manufacturer	Substitute	
					Type No.	Manufacturer
TR101	2SK55 (D,E)		30400131	Hitachi	2SK19	Toshiba
TR102	2SC1674 (L)		30201111	NEC		
TR103	2SC1675 (L)		30201121	NEC		
TR201	2SC930 (D)		30200271	Sanyo	2SC945	NEC
TR202	2SC536 (F)		30200131	Sanyo		
TR203	2SC536 (F)		30200131	Sanyo		
TR204	2SC536 (F)		30200131	Sanyo		
TR301	2SC536 (F)		30200131	Sanyo	2SC945	NEC
TR302	2SC536 (F)		30200131	Sanyo		
TR303	2SC536 (F)		30200131	Sanyo	2SC945	NEC
TR304	2SC1681 (BL)		30201132	Toshiba		
TR305	2SC1681 (BL)		30201132	Toshiba	2SC1313	Mitsubishi
TR401	2SC536 (F)		30200131	Sanyo	2SC1313	Mitsubishi
TR601a,b	2SC2089		30201403	Toshiba	2SC945	NEC
TR602a,b	2SC2089		30201403	Toshiba	2SC945	NEC
TR603a,b	2SC2089		30201403	Toshiba	2SC945	NEC
TR604a,b	2SA942 (BL)		30000622	Toshiba	2SC1313	Mitsubishi
TR605a,b	2SC2089		30201403	Toshiba	2SA858	Fujitsu
TR606a,b	2SC945		30201031	NEC	2SC1439	Fujitsu
TR607a,b	2SD600		30300311	Sanyo	2SC536	Sanyo
TR608a,b	2SB631		30100081	Sanyo	2SC1567	Matsushita
TR609a,b	2SD732 (D, E)		30300341	Sanyo	2SA794	Matsushita
TR610a,b	2SD732 (D, E)		30300341	Sanyo	2SC2262	Sanken
TR611a,b	2SC945 (L-P)		30201031	NEC	2SC2262	Sanken
TR612a,b	2SA733		30000425	NEC	2SC536	Sanyo
TR801	2SD600		30300311	Sanyo	2SA608	Sanyo
TR802	2SC945		30201031	NEC	2SC1567	Matsushita
TR803	2SD438		30300250	Sanyo	2SC536	Sanyo
TR804	2SC945		30201031	NEC	2SC1509	Matsushita
TR805	2SA733 (Q, P)		30000425	NEC	2SC536	Sanyo
TR806	2SA733 (Q, P)		30000425	NEC	2SA608	Sanyo
TR901a,b	2SC2089 (BL)		30201401	Toshiba	2SC1567	Matsushita
TR902a,b	2SA942 (GR)		30000621	Toshiba	2SC536	Sanyo
TR903a,b	2SC2089 (BL)		30201401	Toshiba	2SA608	Sanyo
					2SA608	Sanyo
					2SC1313	Mitsubishi
					2SA726	Mitsubishi
					2SC1313	Mitsubishi

VARIABLE CAPACITORS			
Ref. No.	Description	R/S Part No.	Mfr's Part No.
VC101/TC101-2 /TC104-5	Tuning Gang	C4547	26250101
TC103	Trimmer ECV-1ZW 10P32	C0424	26010023

VARIABLE RESISTORS			
Ref. No.	Description	R/S Part No.	Mfr's Part No.
VR201	Auto Stereo & Muting Sensitivity 100 K/B	P6368	28100063
VR202	FM Signal Meter Sensitivity 50 K/B	P6369	28100096
VR301	19 kHz Frequency Adjust 5 K/B	P1604	28100060
VR302	MPX Separation 1 K/B	P1609	28100059
VR401	AM Signal Meter Sensitivity Adjust 1 K/B	P1609	28100059
VR402	AM Output Level Adjust 50 K/B	P6369	28100096
VR601a,b	Bias Control 1 K/B	P6248	28100047
VR901a,b	BALANCE Control 250 K/MN	P3088	28000145
VR902a,b	VOLUME Control 250 K/B	P1871	28000146
VR903a,b	TREBLE Control 100 K/B	P4020	28000147
VR904a,b	BASS Control 100 K/B	P4020	28000147

MISCELLANEOUS PARTS LIST

Ref. No.	Description	R/S Part No.	Mfr's Part No.	Ref. No.	Description	R/S Part No.	Mfr's Part No.
1	Front-End Shield Plate	BT1223	09077001	49	Dial Scale Holder (Right)	HB7605	84296001
2	FM OSC Shield Plate	HB4092	09044001	50	Dial Scale Holder (Left)	HB7606	84297001
3	Jumper Wire		92000001	51	Aluminum Dial Plate	D5313	12010001
4	Wire Wrap Pin 13 mm	HB0955	19044001	52	Meter Holder	HB7600	63383001
	Irrax tube 0.7 x 15 mm		31140003	53	Cushon Rubber for Meter Holder		74160001
6	4P RCA Jack	J0958	33041040	54	Tuning Shaft Escutcheon	HB7604	84295001
7	Heat Sink	HH0276	15098001	55	UL Tube 1.6x15 mm		31501182
8	Thermal Protector	HB4796	30700180	56	Metal Bracket for LED Board	HB7602	63385001
9	Wire Wrap Pin 19 mm	HB0945	19043001	57	Plastic Rivet M3		84254001
10	Metal Bracket for Thermal Protector	HB7611	63359002	58	Side Chassis (Right)	Z4043	04024001
	Pan Head Screw M3x12		40330123	59	Side Chassis (Left)	Z4044	04025001
	Spring Washer M3.5		42253543	60	Center Chassis	Z4042	01100001
13	Nut M3	HD7003	41113070	61	Metal Bracket for Heat Sink	Z4041	01099001
14	8P RCA Jack	J0959	33081900	62	Dial Pointer Assembly	D1240	25039001
15	Switch Remote Cable (DUBBING)	S0850	19080001	63	Plastic Dial Drum	D0199	21014001
16	Switch Remote Cable (MONITOR)		19087001	64	Nut M9 for Tuning Shaft		41000008
17	Pan Head Screw M3x6	HD2055	40330061	65	Flat Washer for Tuning Shaft		42500003
18	Heat Sink for TR801	HH0176	15095001	66	Spring Coil for Dial Drum	RB5314	19045001
19	Pan Head Screw M3x8		40330081	67	Ground Lug		63408001
20	Pan Head Screw TITE B M3x8		40130081	68	Ferrite Bead	HB4474	32000001
	Flat Washer M3		42120321	69	Mylar Sheet for Dial Pointer	HB7610	84298001
22	Rear Panel Assembly	Z4040	11759A02	70	Binding Head Screw Tite B M3x15		40630151
23	AC Outlet IR02	J6376	34048001	71	Binding Head Screw Tite B M3x8	HD3028	40630081
24	SPEAKERS Terminal	J4430	53100240		Binding Head Screw Tite C		40000120
25	Fuseholder FH002 (UL)	F1017	34032001		Binding Head Screw Tite B M3x12		40630121
26	Fuseholder N3 (CSA)		34069001		Spring Washer M3	HD8017	42250341
27	AC Cord with Plug	W1998	62110038	75	Mounting Plate for Power Transformer	HB7607	63384001
28	Cord Strain Relief SR4P4	HB0954	74089001	76	Polyetyrene Spacer	HB1540	55023001
29	PHONO GND Terminal	HB0953	53012300	77	Front Panel Assembly	Z4046	10759A01
30	Line Cord Antenna	H3533	63101001	78	Push Switch Button	K2895	29277001
31	Line Cord Antenna Fiber	H1901	75017002	79	Lever Switch Knob	K2896	29278001
32	Fuse ST-6 3.5A 125 V (UL)	HF0088	38337135	80	Tuning Knob	K2897	29279001
33	Flat Washer for PHONO GND	HD8003	42100008	81	VOLUME Knob	K2898	29280001
34	Plastic Rivet M3	HB4802	84246001	82	SPEAKERS, BASS, TREBLE, BALANCE & SELECTOR Knob	K2899	29281001
35	Antenna Terminal Board	J4533	53032500	83	POWER Switch Button	K2900	29283002
36	Ground Lug M3	H3532	51036001	84	Wooden Cabinet	Z4047	85082001
37	Lock Washer M3	HD8041	42380331	85	Bottom Plate	Z4045	05054001
	UL Tube 1.6x20 mm		31501183	86	Plastic Foot	F0183	74074001
	UL Tube 5.2x35 mm		31501486	87	Plastic Washer for Cabinet	HD8217	84092001
40	AM Bar Ant. Clamper		84290001	88	Pan Head Tapping Screw M4x15	HD3049	40640155
41	Front Chassis		03077001	89	Pan Head Screw M5x15	HD2119	40350151
42	Headphones & DUB OUT Jack	J0928	33031700	90	Binding Head Screw Tite B M3x8		40630081
43	Plastic Pulley	D0250	84085001	91	Brazier Head Screw Tite C M3x8		40000120
44	Pulley Shaft		24006001				
45	Tuning Shaft Assembly	D3248	23055001				
46	Dial Lamp Socket	J6576	34072001				
47	TAPE Switch Lever	S5053	27600037				
48	Dial Scale	G0338	20107001				

Ref. No.	Description	R/S Part No.	Mfr's Part No.
93	Pan Head Screw Tite B		40130061
	M3x6		
	Fuse 3.5A (for CSA)		38104130
	Wired-in Fuse 4A 12V (for CSA)		38354140
	5-Pin DIN Jack		34035001
	AC Cord with Plug (Europe/Australia)		62110039

RADIO SHACK  **A DIVISION OF TANDY CORPORATION**

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TANDY CORPORATION

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