AM / FM STEREO RECEIVER

NR-1015



SERVICE MANUAL

TYPE AND VOLTAGE

W-TYPE UL and CSA type	120V
E-TYPE universal type	100/120/220/240V
N-TYPE DEMKO and SEMKO type	220/240V

NIKKO

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SPECIFICATION

		NOMINAL	LIMIT
1. FM TUNER SECTION			
Usable Sensitivity		10.3 dBf (1.8μV)	14.2 dBf (2.8μV)
50 dB Quieting Sensitivity		14.8 dBf (3μV)	19.2 dBf (5μV)
Signal-to-Noise Ratio at 65 dBf		75 dB	62 dB
T. H. Distortion	Mono	0.1% (1 kHz)	0.3% (1 kHz)
	Stereo	0.3% (1 kHz)	0.7% (1 kHz)
Capture Ratio		1 dB	3 dB
Alternate Channel Selectivity		75 dB	58 dB
Sprious Response Ratio		100 dB	95 dB
Image Response Ratio (98 MHz)		90 dB	75 dB
IF Response Ratio (98 MHz)		100 dB	90 dB
AM Suppression Ratio		55 dB	40 dB
Stereo Separation	(100 Hz)	45 dB	35 dB
	(1 kHz)	40 dB	35 dB
	(10 kHz)	40 dB	30 dB
Subcarrier Product Ratio		65 dB	55 dB
Muting Sensitivity		13.2 dBf (2.5μV)	±6 dB
FM Frequency Range		87.4 – 109 MHz	87.9 – 108.5 MHz
Anlenna Impedance		300 ohms balanced & 75 ohms unbalanced	
Output Level		750 mV	750 mV±3 dB
2. AM TUNER SECTION			
Usable Sensitivity	Ferrite antenna	300μV/m	1,000μV/m
	Ext. antenna	15μV	60μV
Signal-to-Noise Ratio		40 dB	35 dB
Image Rejection (1,000 kHz)		45 dB	40 dB
IF Rejection (1,000 kHz)		40 dB	30 dB
Selectivity (±10 kHz)		35 dB	30 dB
AM Frequency Range		520 – 1,650 kHz	525 – 1,635 kHz
Output Level		150 mV	150 mV±3 dB
3. AMPLIFIER SECTION			
Continuous Power Output (0.05% THD, both channels driven)			
20 – 20,000 Hz, 8 OHMS		87W + 87W	85W + 85W
20 – 20,000 Hz, 4 OHMS		100W + 100W	95W + 95W
1,000 Hz, 8 OHMS		95W + 95W	90W + 90W
1,000 Hz, 4 OHMS		105W + 105W	100W + 100W
T.H. Distortion (both channels driven, 8 ohms)			
RATED POWER OUTPUT			Less than 0.05%
1 W OUTPUT			Less than 0.03%

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	NOMINAL	LIMIT
Intermodulation Distortion (both channels driven, 8 ohms)		
RATED POWER OUTPUT		Less than 0.06%
1W OUTPUT		Less than 0.03%
Power Bandwidth (IHF)	5 – 50,000 Hz	10 – 30,000 Hz
Damping Factor (1000 Hz, 8 ohms)	70	50
Frequency Response		
PHONO → SP TER. (RIAA curve)		30 – 15,000 Hz ± 1 dB
AUX, TAPE IN → SP TER.		10 – 50,000 Hz ± 2 dB
Input Sensitivity for 85W Power Output/Impedance		
PHONE	2.5 mV/50,000 ohms	2.5 mV ±2 dB/50,000 ohms
AUX, TAPE IN	150 mV/50,000 ohms	150 mV ±2 dB/50,000 ohms
MIC → SP TER.	2.5 mV/50,000 ohms	2.5 mV ±2 dB/50,000 ohms
4CH (MAIN AMP) IN → SP TER.	1000 mV/50,000 ohms	1000 mV ±2 dB/50,000 ohms
Phono Clipping Point (0.1% THD, 1000 Hz)	250 mV	250 mV ±2 dB
Output Level/Impedance		
PHONO → SP TER.	67 dB	60 dB
AUX, TAPE IN → SP TER.	87 dB	80 dB
MIC → SP TER.	70 dB	60 dB
4CH (MAIN AMP) IN → SP TER.	105 dB	95 dB
Tone Control		
BASS (70 Hz) CUT	10 dB	10 ± 2 dB
BASS (70 Hz) BOOST	10 dB	10 ± 2 dB
TREBLE (10,000 Hz) CUT	10 dB	10 ± 2 dB
TREBLE (10,000 Hz) BOOST	10 dB	10 ± 2 dB
Loudness Control (VOLUME: –30 dB)		
70 Hz	+10 dB	+10 ± 2 dB
10,000 Hz	+6 dB	+6 ± 2 dB
Low Cut Filter (100 Hz)	–3 dB	–3 ± 2 dB
High Cut Filter (7,000 Hz)	–3 dB	–3 ± 2 dB
Audio Muting	–20 dB	–20 ± 2 dB
Idling Current	40 mA	40 ± 20 mA
SP TER. Voltage	0	0 ± 50 mV
Muting Delay Time (RELAY)	5 seconds	5 ± 3 seconds
Protect Circuit Input Sensitivity	DC 3V	DC 3 ± 2 V

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DISASSEMBLY

WOODEN COVER REMOVAL (Photo 1)

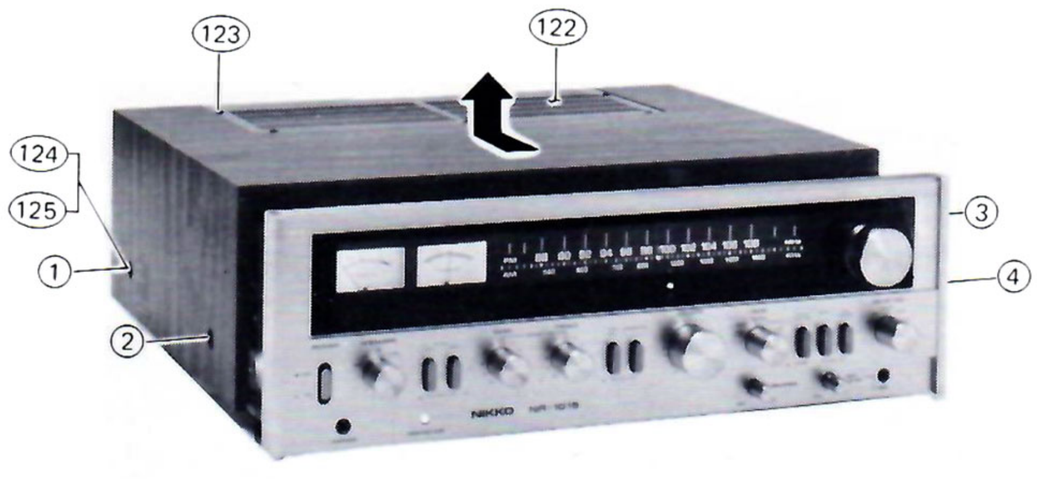


Photo 1

a. Remove four tapping screws (1 thru 4) shown in Photo 1 from both sides of the cover. Do not lose these screws and four washers.
b. Slide the cover back slightly and lift it up

POWER TRANSFORMER REMOVAL (Photo 3)

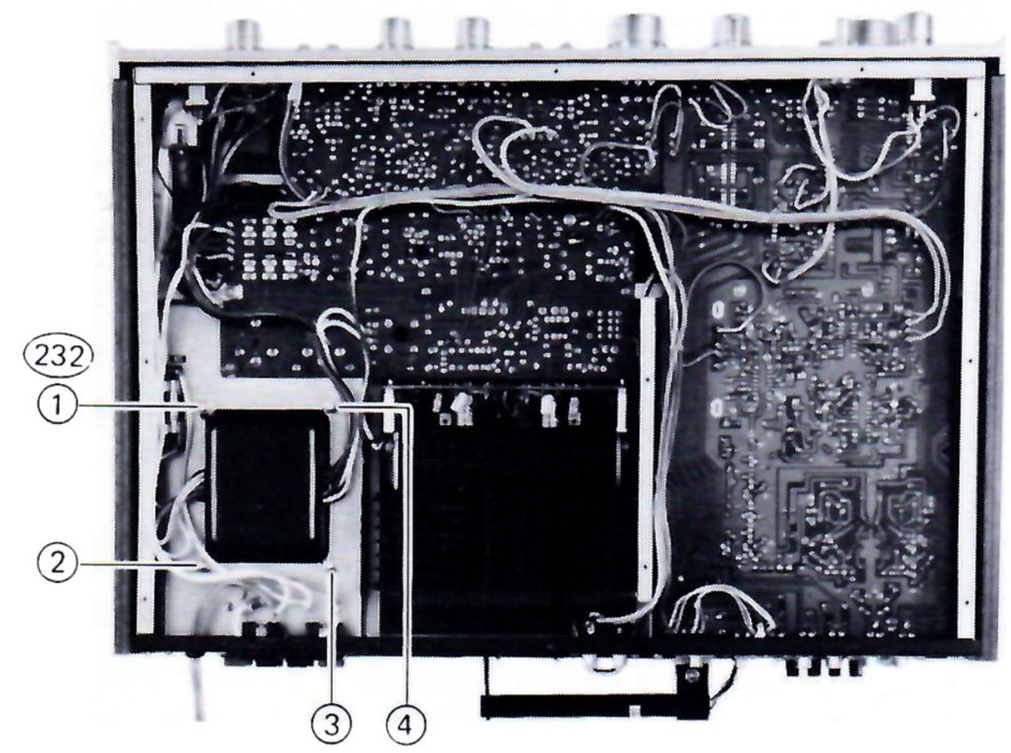


Photo 3

Remove four nuts (1 thru 4) shown in Photo 3 and lift out the transformer.

FRONT PANEL REMOVAL (Photos 5, 6)

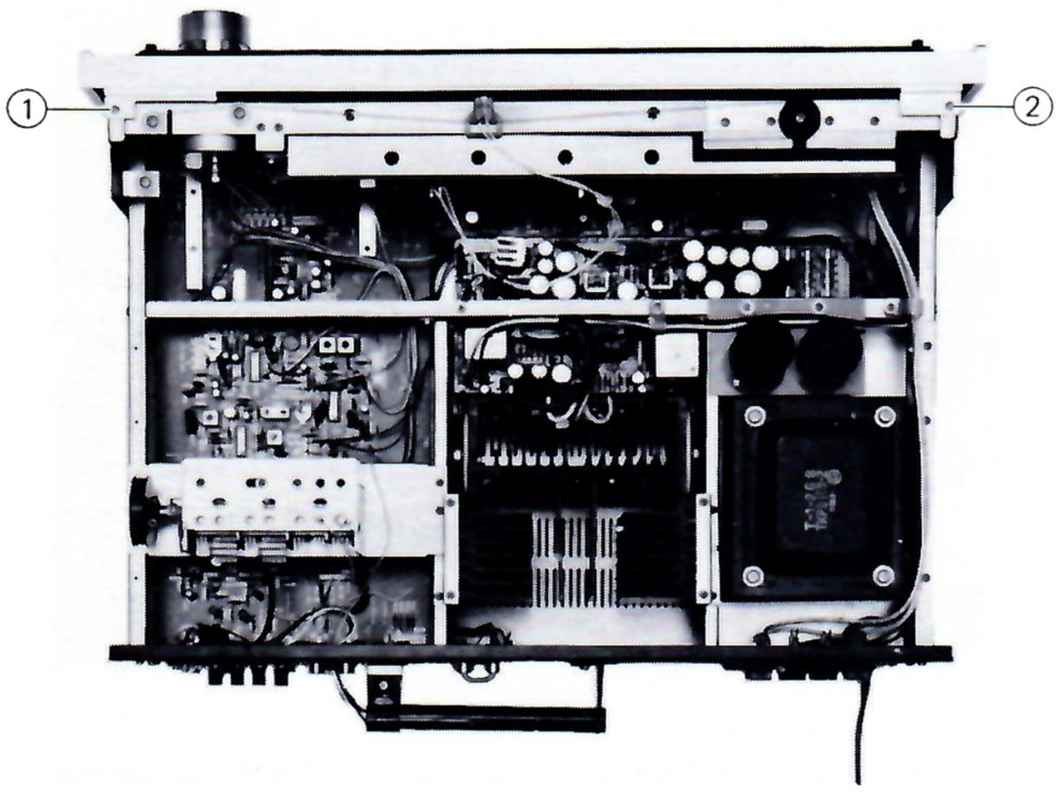


Photo 5

Note: Three figures marked with a (◯) relates to "KEY NO." on parts list.

BOTTOM PLATE REMOVAL (Photo 2)

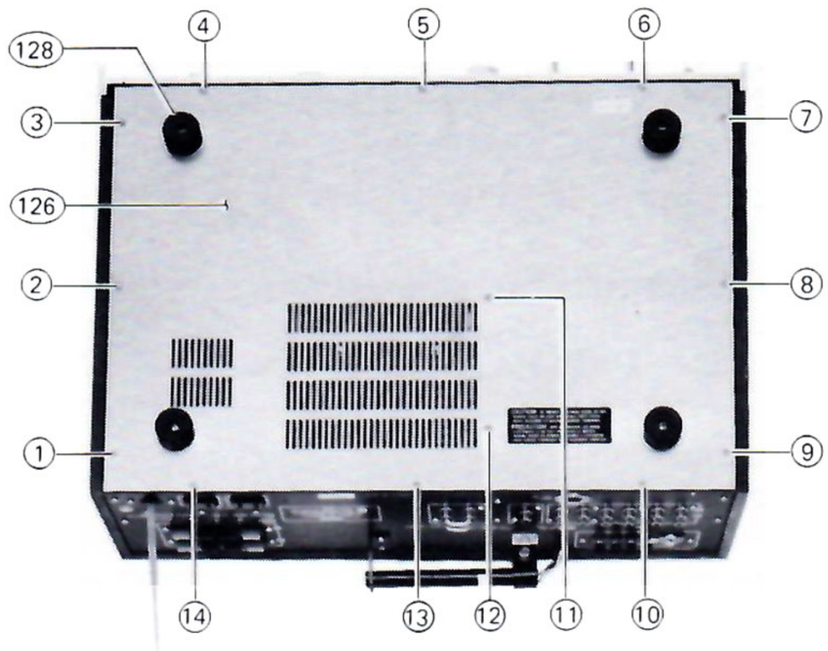


Photo 2

Remove fourteen tapping screws ((127)) (1 thru 14) shown in Photo 2 from bottom plate and lift out the bottom plate.

MAIN AMP ASSEMBLY REMOVAL (Photo 4)

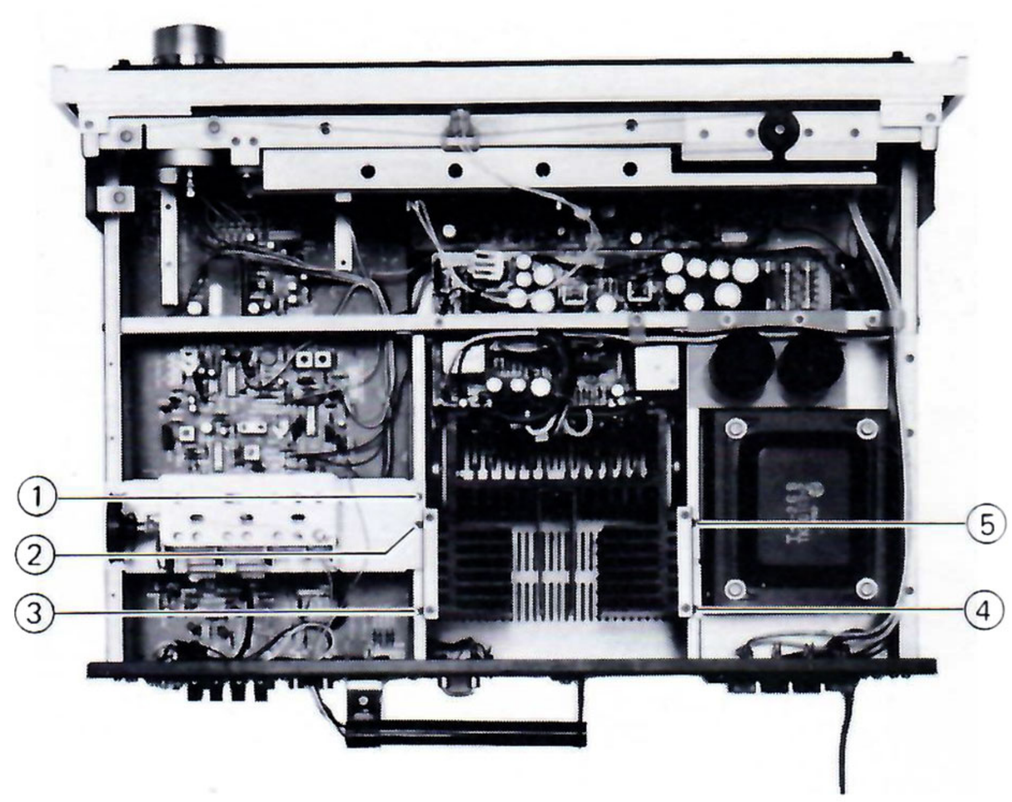


Photo 4

Remove screws (1 thru 5) shown in Photo 4 and lift out the main amp assembly.



Photo 6

a. Remove two tapping screws (1, 2) shown in Photo 5.
b. Remove two nuts ((119) (120)) (1, 2) shown in Photo 6. The front panel is now free to be pulled off.

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TUNER–EQUALIZER CIRCUIT BOARD REMOVAL (Photos 7 thru 9)

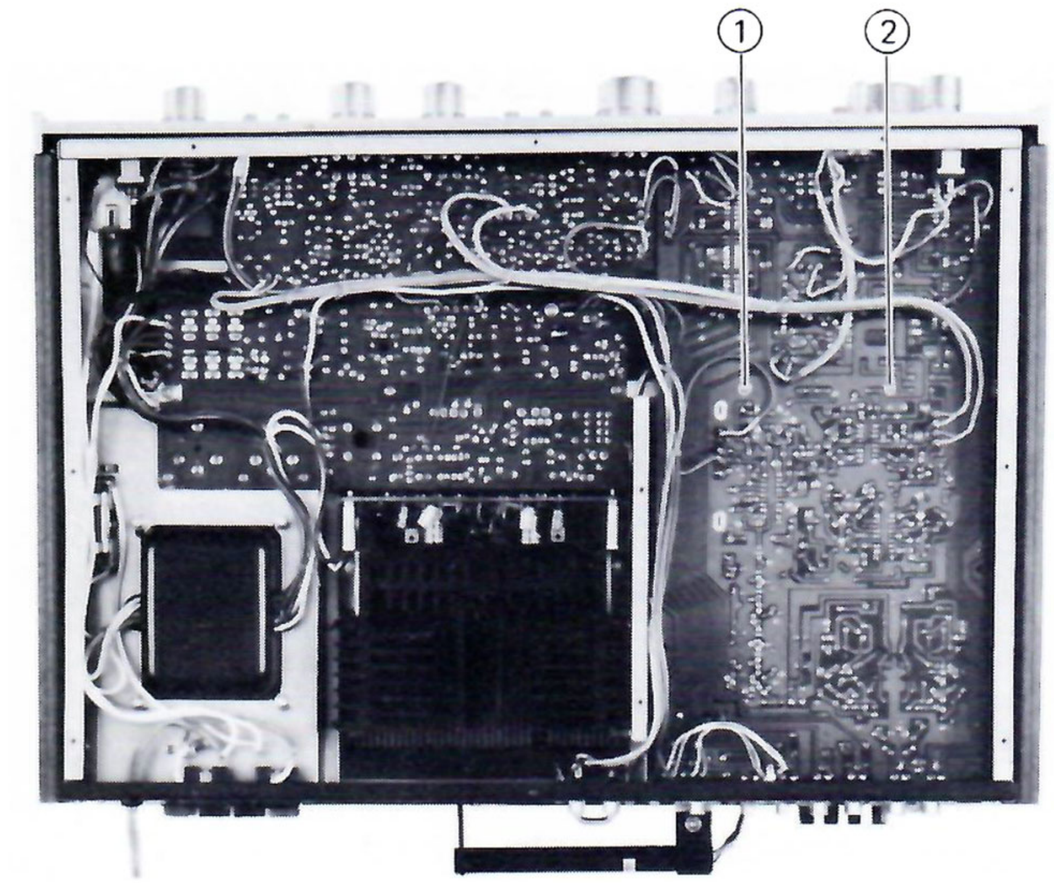


Photo 7

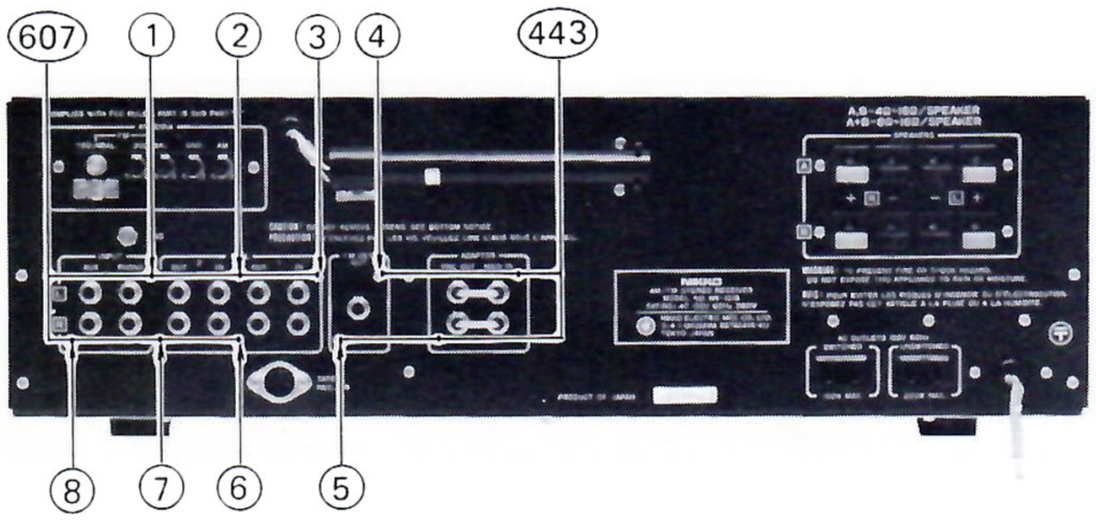


Photo 9

a. Disconnect cables from the circuit board.
b. Remove two tapping screws (1, 2) shown in Photo 7.
c. Remove two tapping screws (1, 2) and two nuts (3, 4) shown in Photo 8.
d. Remove eight tapping screws (1 thru 8) shown in Photo 9.

PROTECTOR-REGURATOR CIRCUIT BOARD REMOVAL (Photo 11)

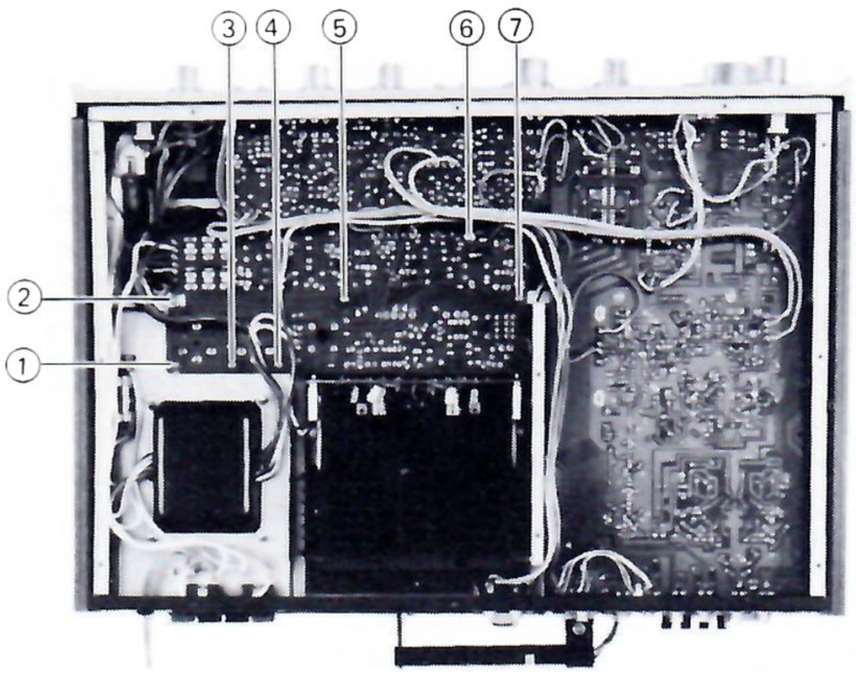


Photo 11

a. Disconnect plugs and cables form the circuit board.
b. Remove four tapping screws (1 thru 7) shown in Photo 11. Lift the circuit BOARD up and out of chassis.

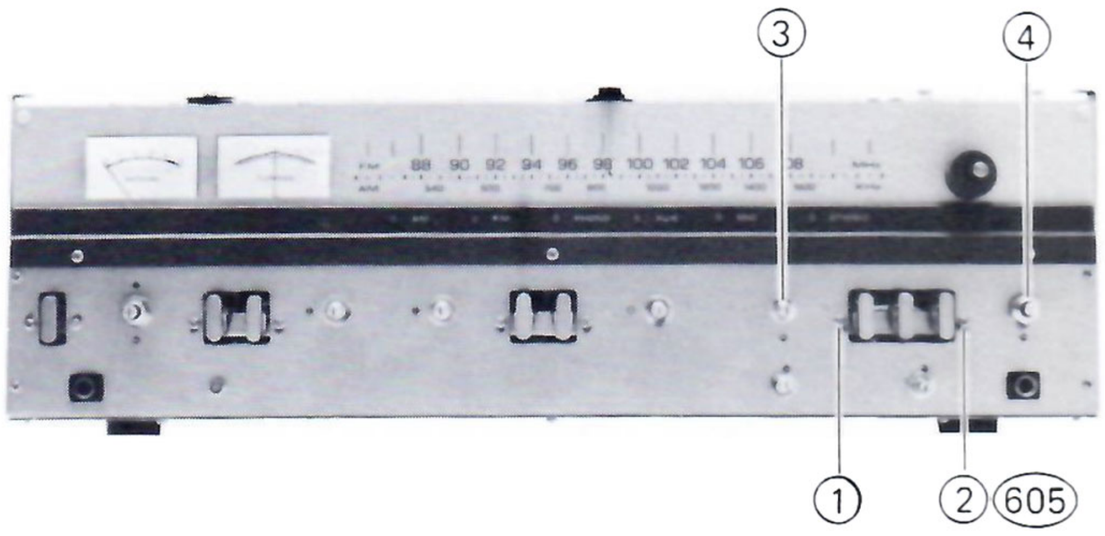


Photo 8

TONE AMP CIRCUIT BOARD REMOVAL (Photo 10)

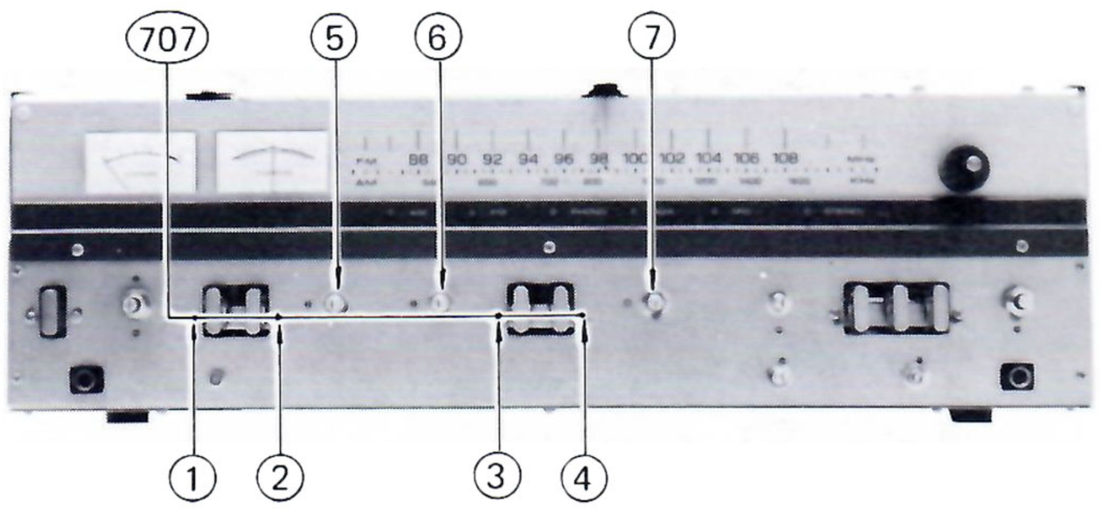


Photo 10

a. Disconnect cables from the circuit board.
b. Remove four tapping screws (1 thru 4) and three nuts (5 thru 7) shown in Photo 9.

LAMP REMOVAL (Photo 12)

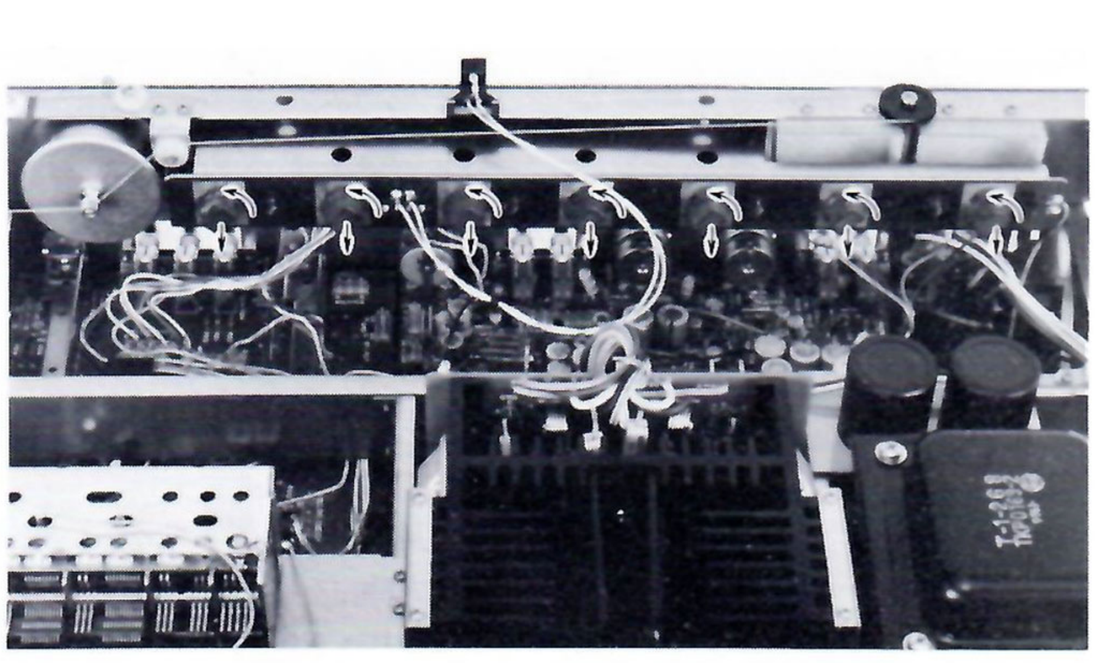


Photo 12

Turn the lamp to the left and pull it out of LAMP PCB as shown in Photo 12.

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METER REMOVAL (Photos 13, 14)

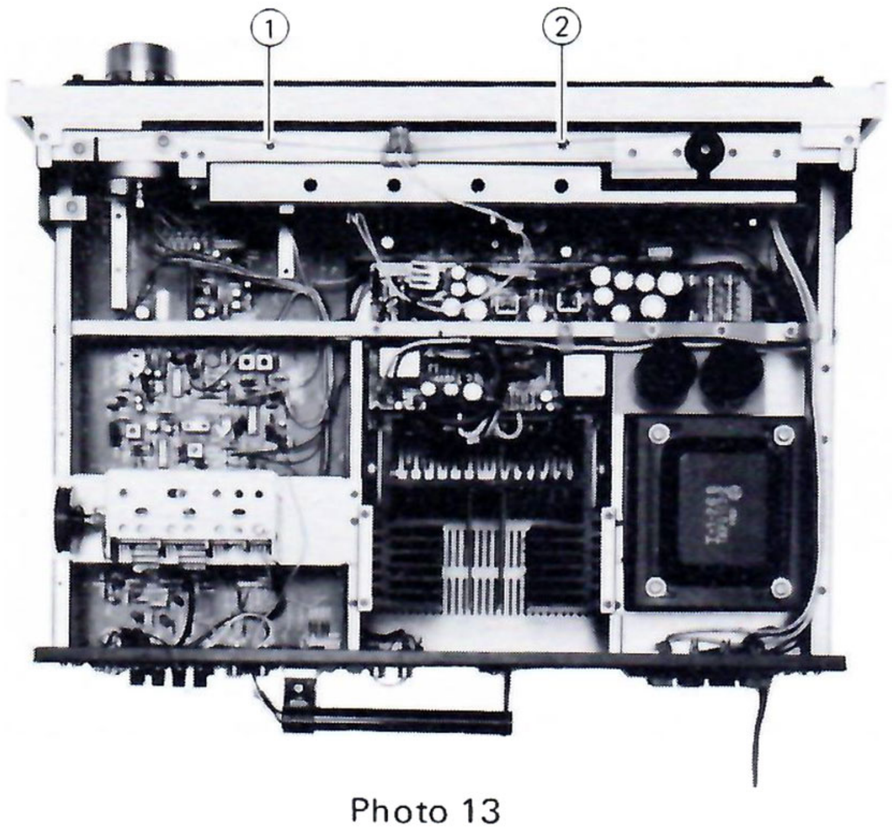


Photo 13

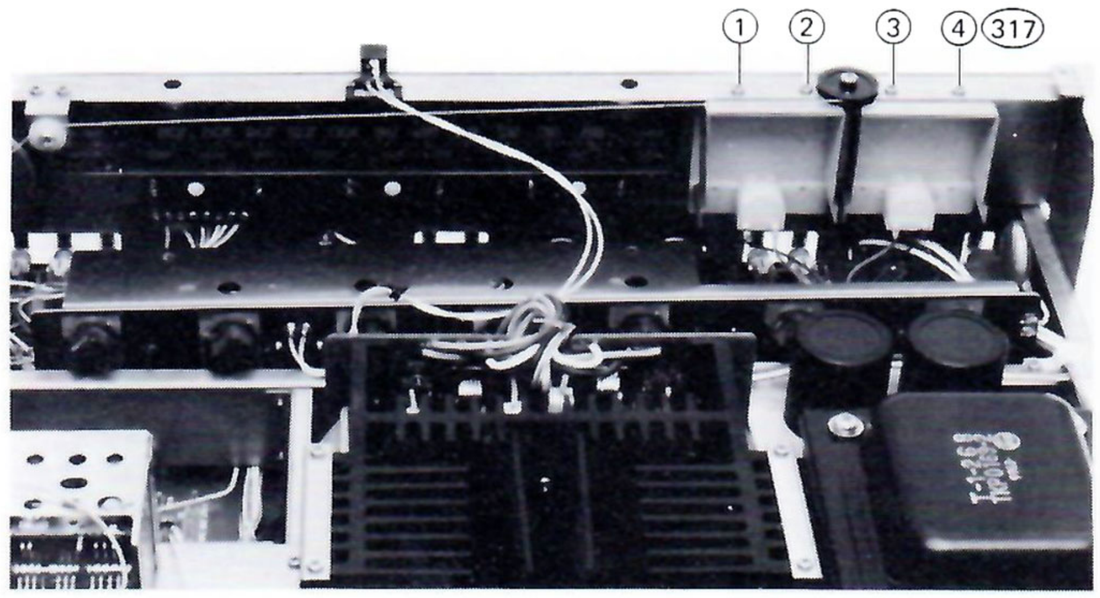


Photo 14

a. Remove two screws (1, 2) ((310)) shown in Photo 13, and lift leflex plate up slightly and pull it back.
b. Remove four tapping screws (1 thru 4) shown in Photo 14. Lift out two meter brackets and lift out the meters.

INDICATOR CIRCUIT BOARD REMOVAL (Photos 15 thru 17, Fig. 1)

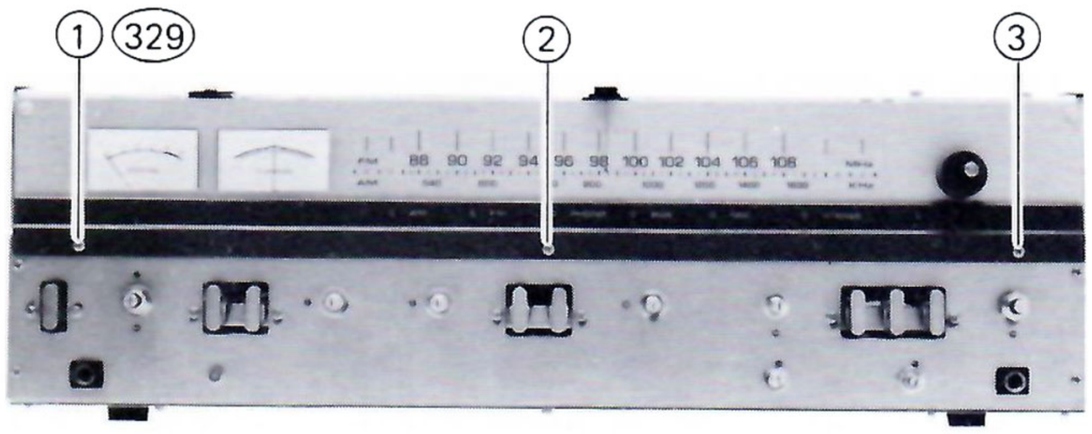


Photo 15

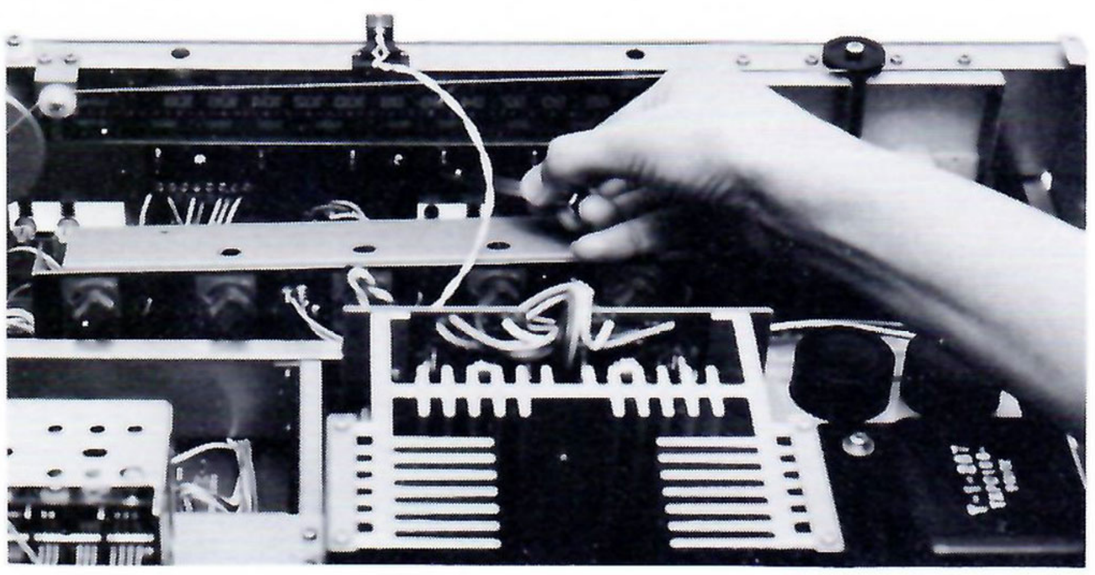


Photo 16

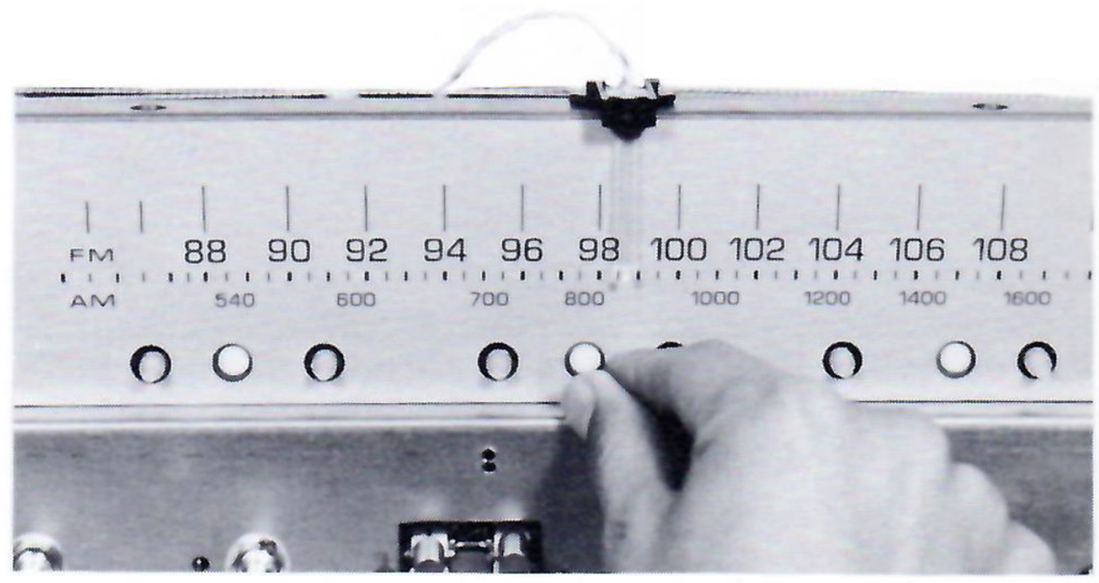


Photo 17

a. Remove three screws (1 thru 3) shown in Photo 15 and lift out scale angle.
b. Push the center of push rivet by small screw driver as shown Photo 16 and Fig. 1.
c. Pull the push rivet forward. The indicator circuit board is now free to be pulled off.

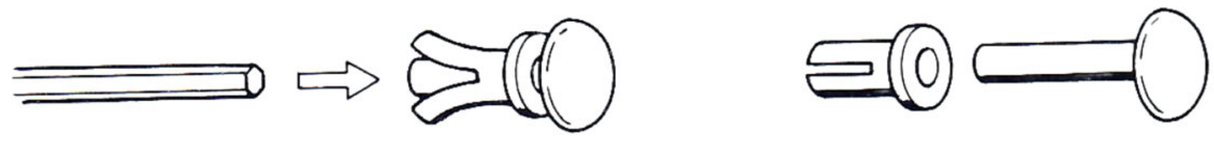
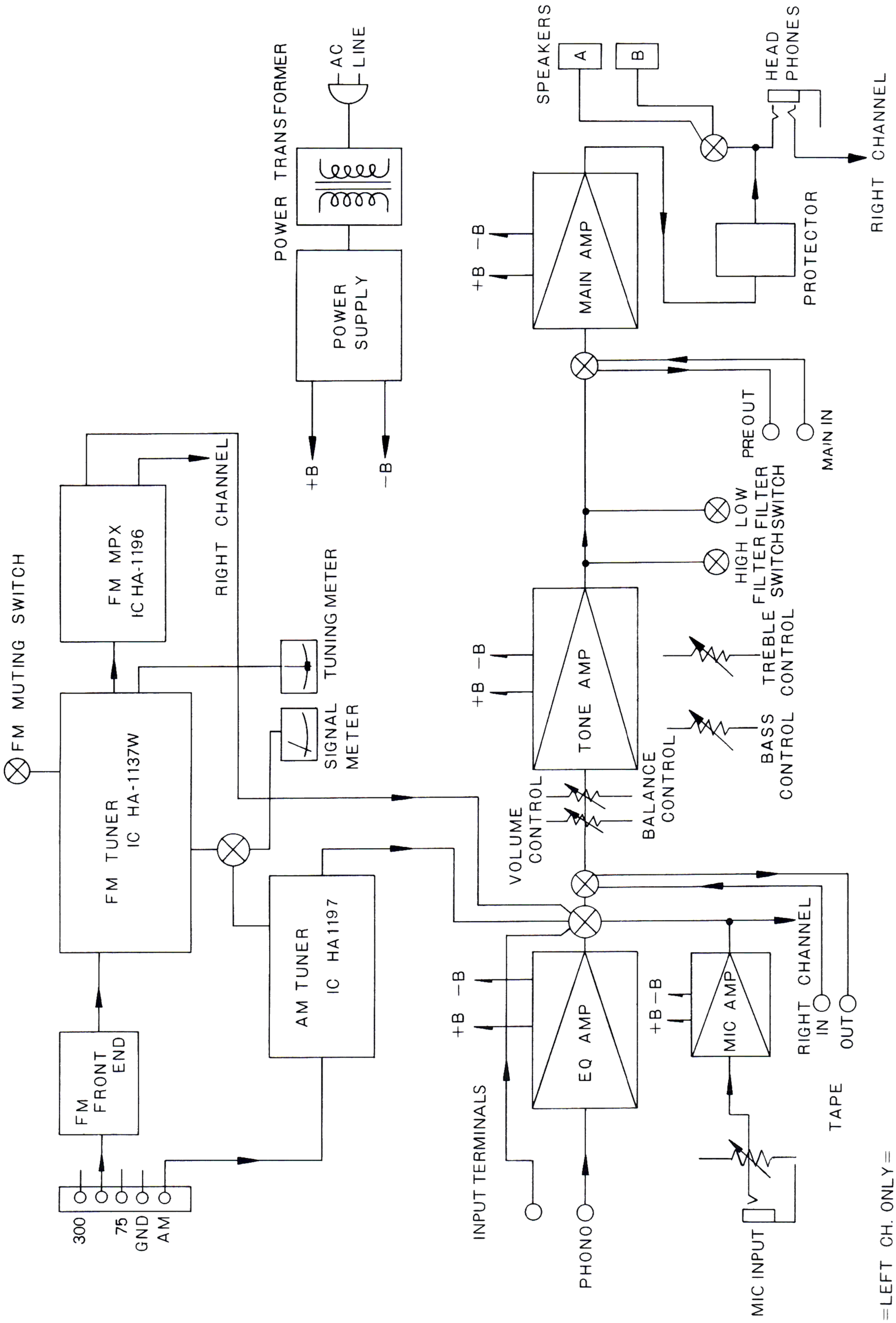


Fig. 1 PUSH RIVET (325)

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BLOCK DIAGRAM



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CHASSIS ALIGNMENT

Test Equipment

Allow minimum of 10 minute warm-up for receiver to be tested and test equipment.
Maintain line voltage at 120V AC.
FM Stereo/Mono Signal Generator
Vacuum Tube Voltmeter
Oscilloscope
Distortion Meter
Frequency Counter
AM Sweep Generator

FM Section Alignment

Connect test equipment as shown in Fig. 2:
Connect FM Stereo/Mono signal generator through standard dummy antenna to FM antenna terminals of the receiver. Connect vacuum tube voltmeter, oscilloscope and distortion meter to TAPE OUT terminals of the receiver with shielded cable.

Note: Adjust FM signal generator output level so that waveform on oscilloscope is not deformed.

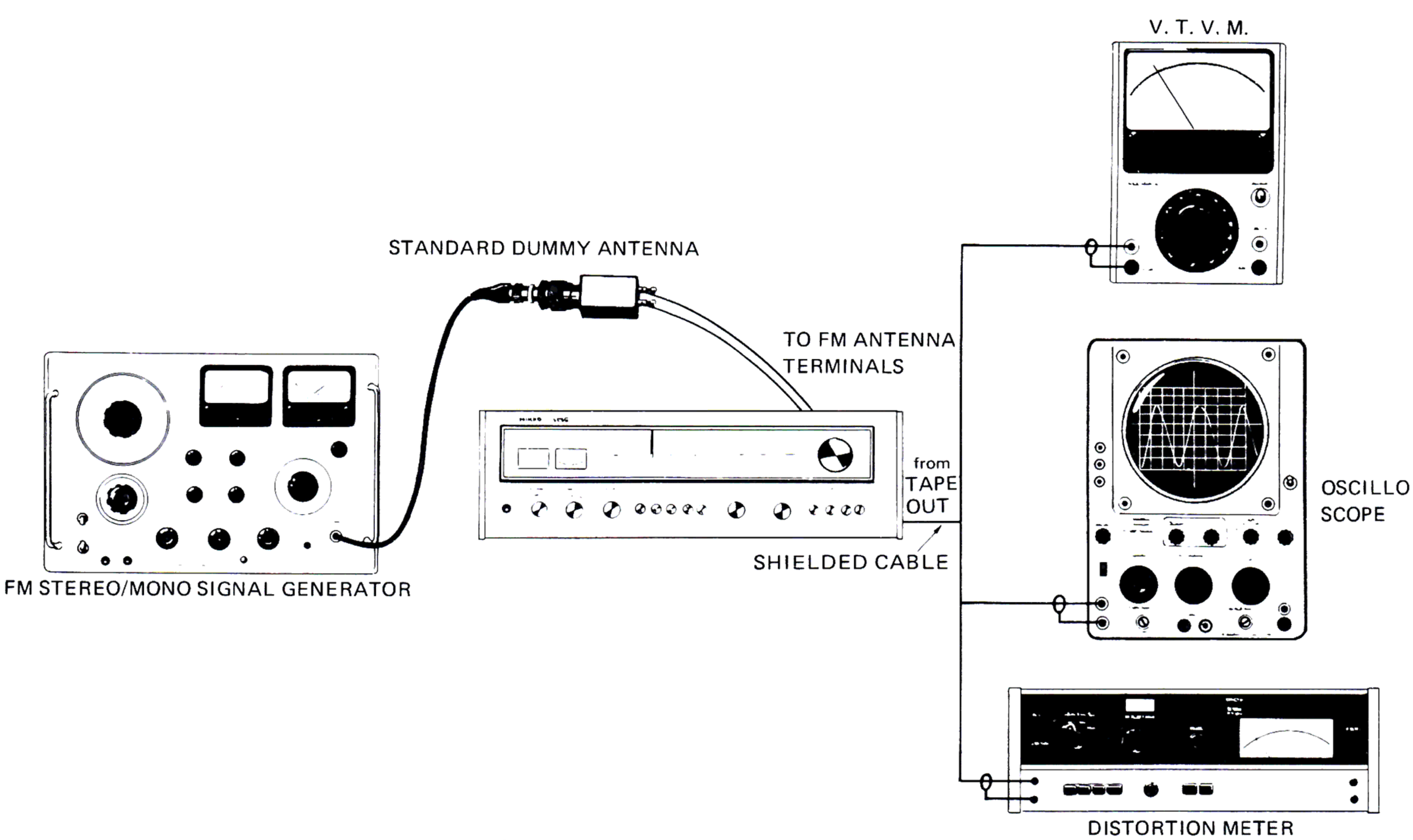


Fig. 2 TEST EQUIPMENT

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FM IF Alignment

1. Set generator's STEREO/MONO switch to the MONO position. Set generator frequency to around 98 MHz.

2. Set tuning needle so that no signals are received (a hiss is heard in the sound). Adjust T101 (Top Core) so that M1 (center-of-channel meter) indicates the central position and vacuum tube voltmeter indicates maximum deflection. (See Fig. 3).

3. Tune in to catch around 98 MHz signal. Adjust T102 (Top Core) for minimum distortion. (See Fig. 3)

4. Repeat adjustment of T101 and T102 twice or three times.

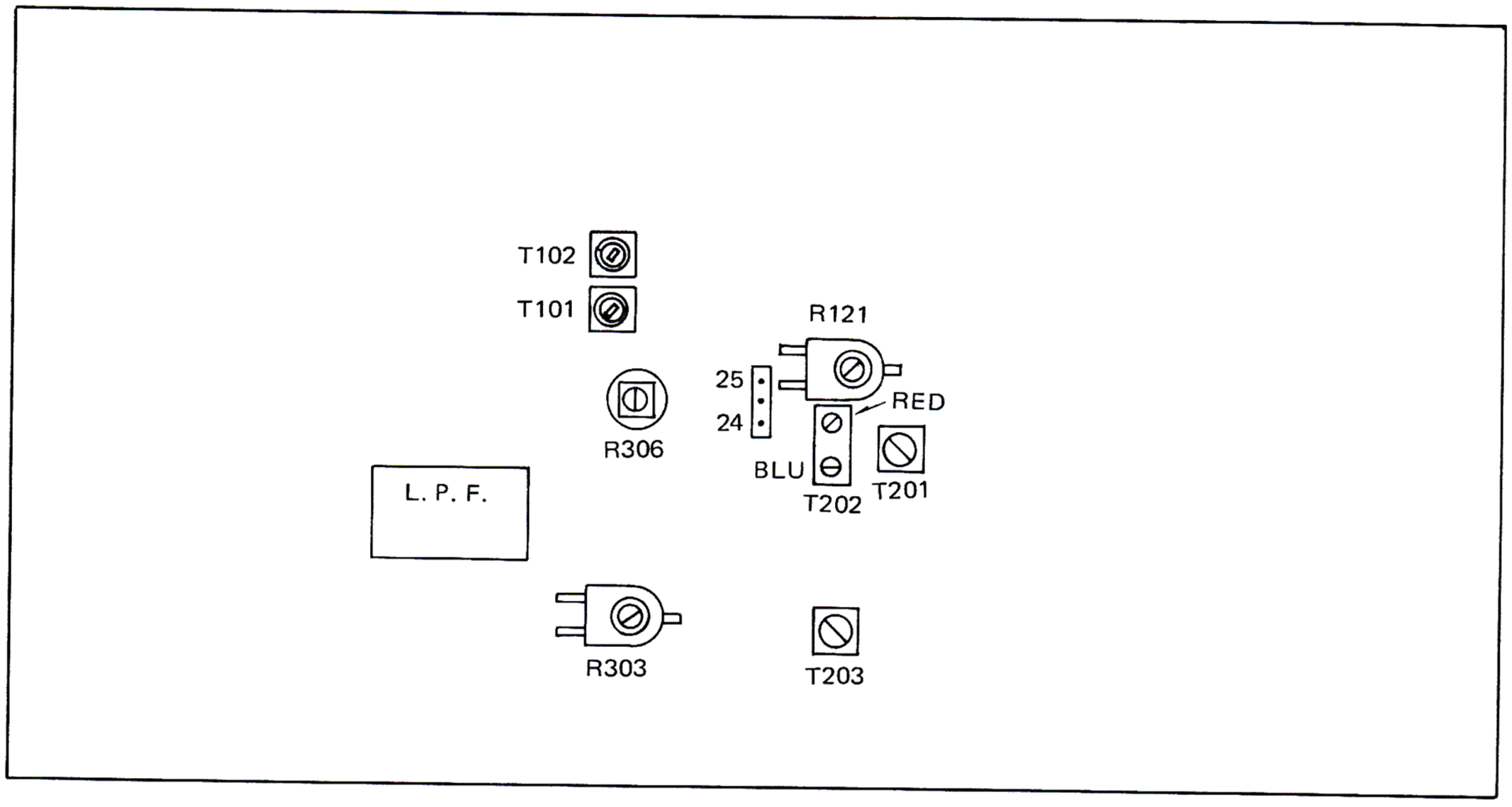


Fig. 3 TUNER/EQUALIZER PCB (TOP VIEW)

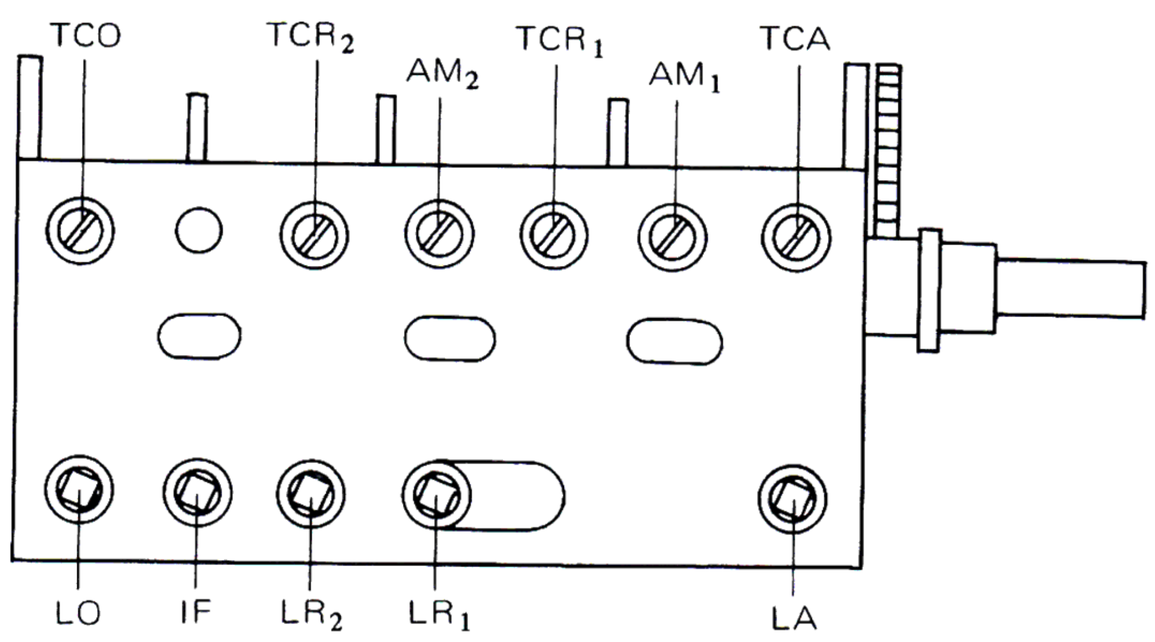


Fig. 4 FRONT END (TOP VIEW)

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FM Frequency Coverage Alignment and FM Tracking Alignment

These adjustments are factory preset and normally needs no further adjustment.
However, if necessary proceed as follows.

1. Set generator's STEREO/MONO switch to MONO position.
2. Turn tuning knob fully counterclockwise until it does not move. If tuning needle is not located on 87 MHz position of dial scale, reset it to this position by making slide on dial string. (See Fig. 1)

STEP	GENERATOR	DIAL	ADJUSTMENT POINT	OSCILLOSCOPE	VTVM
1	88 MHz	88 MHz	LO (See Fig. 4)	Maximum waveform	Maximum deflection
2	108 MHz	108 MHz	TCO (See Fig. 4)	Maximum waveform	Maximum deflection
3	88 MHz	88 MHz	LA (See Fig. 4) LR_1 (See Fig. 4) LR_2 (See Fig. 4)	Maximum waveform	Maximum deflection
4	108 MHz	108 MHz	TCA (See Fig. 4) TCR_1 (See Fig. 4) TCR_2 (See Fig. 4)	Maximum waveform	Maximum deflection

3. Repeat adjustment of steps 1 and 2 two or three times.
4. Repeat adjustment of steps 3 and 4 once or twice.
5. Repeat adjustment of steps 1 and 2 once or twice.

FM Stereo Separation Alignment

1. Connect frequency counter to test point (24) at TUNER/EQUALIZER PCB. Set R303 fully counterclockwise. . (See Fig. 3)
2. Set generator's STEREO/MONO switch to MONO position. Set generator frequency to 108 MHz.
3. Tune in to catch 108 MHz signal. Adjust R319 for 76.2 to 76.5 MHz. (See Fig. 3)
4. Set generator's STEREO/MONO switch to STEREO position.
5. Tuner in to catch stereo modurated signal. Adjust R303 for maximum spearation. (See Fig. 3)

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AM Section Alignment

Connect test equipment as shown in Fig. 5.
Connect BC band sweep generator to loop antenna (or several turns of wire). Put the receiver near the loop antenna for inductive coupling. Connect TAPE OUT terminal (L or R) of the receiver to oscilloscope and vacuum tube voltmeter with shielded cable.

Note: Adjust AM sweep generator output level so that waveform on oscilloscope is not deformed.

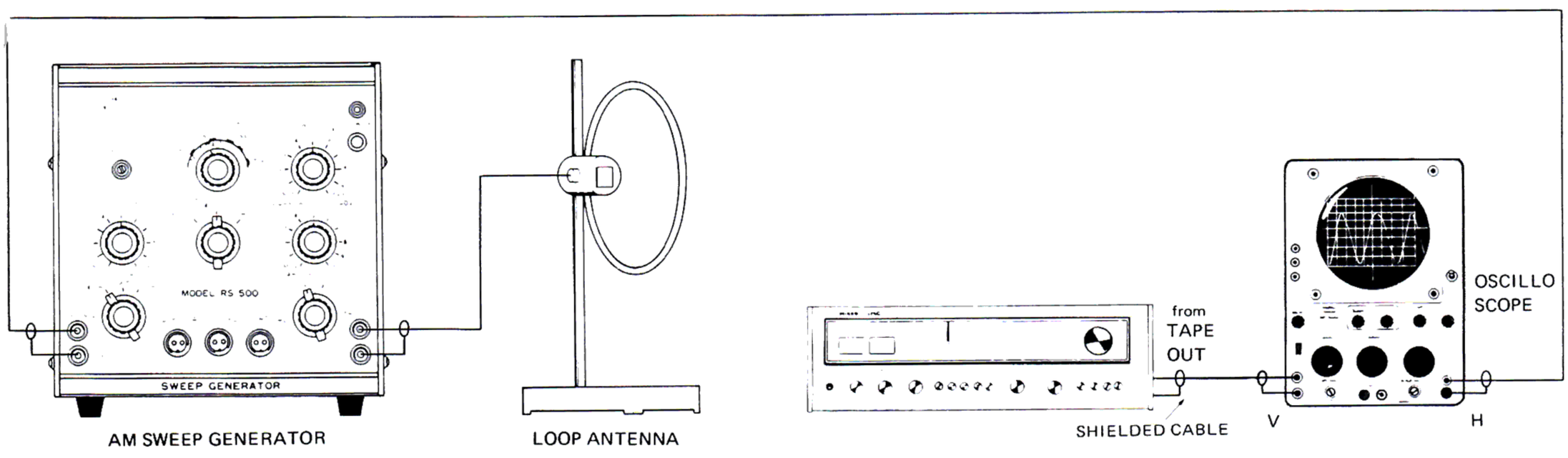


Fig. 5 TEST EQUIPMENT

AM IF Alignment

1. Preset AM sweep generator switch to 455 KHz position.
2. Set tuning needle to around 1,650 KHz (if adjustment is difficult because of interfering signals from outside, move it a little).
3. Adjust T202 (RED) for maximum waveform. (See Fig. 3, 6)
4. Adjust T202 (BLU) for maximum waveform. (See Fig. 3, 6)
5. Adjust T203 for maximum waveform. (See Fig. 3, 6)
6. Repeat adjustment of T202 and T204 two or three times.

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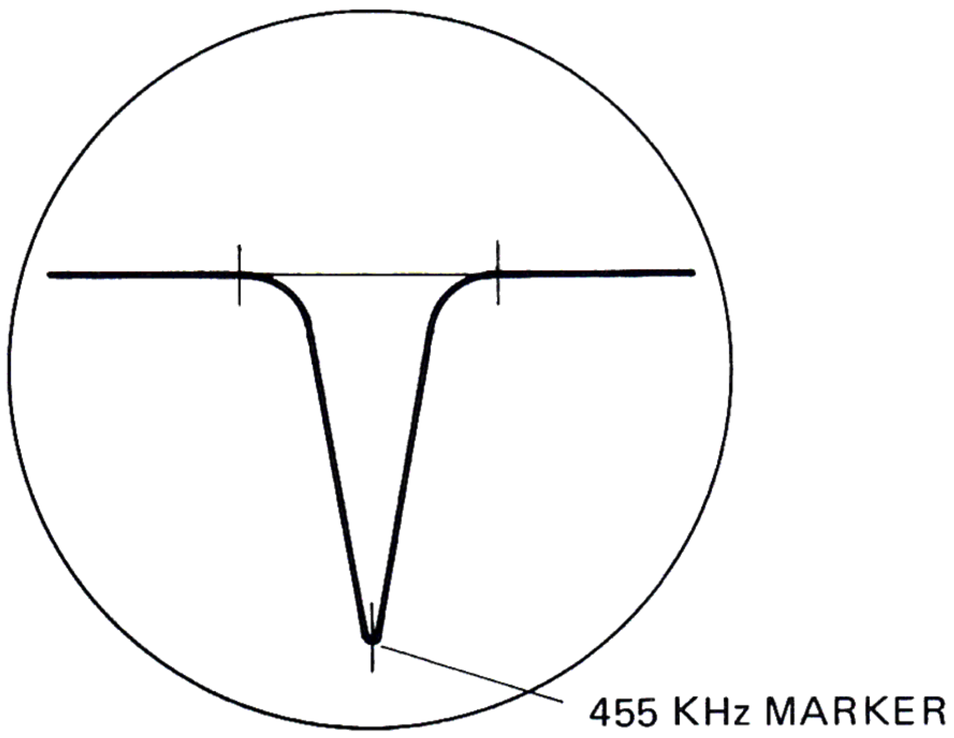


Fig. 6 AM IF

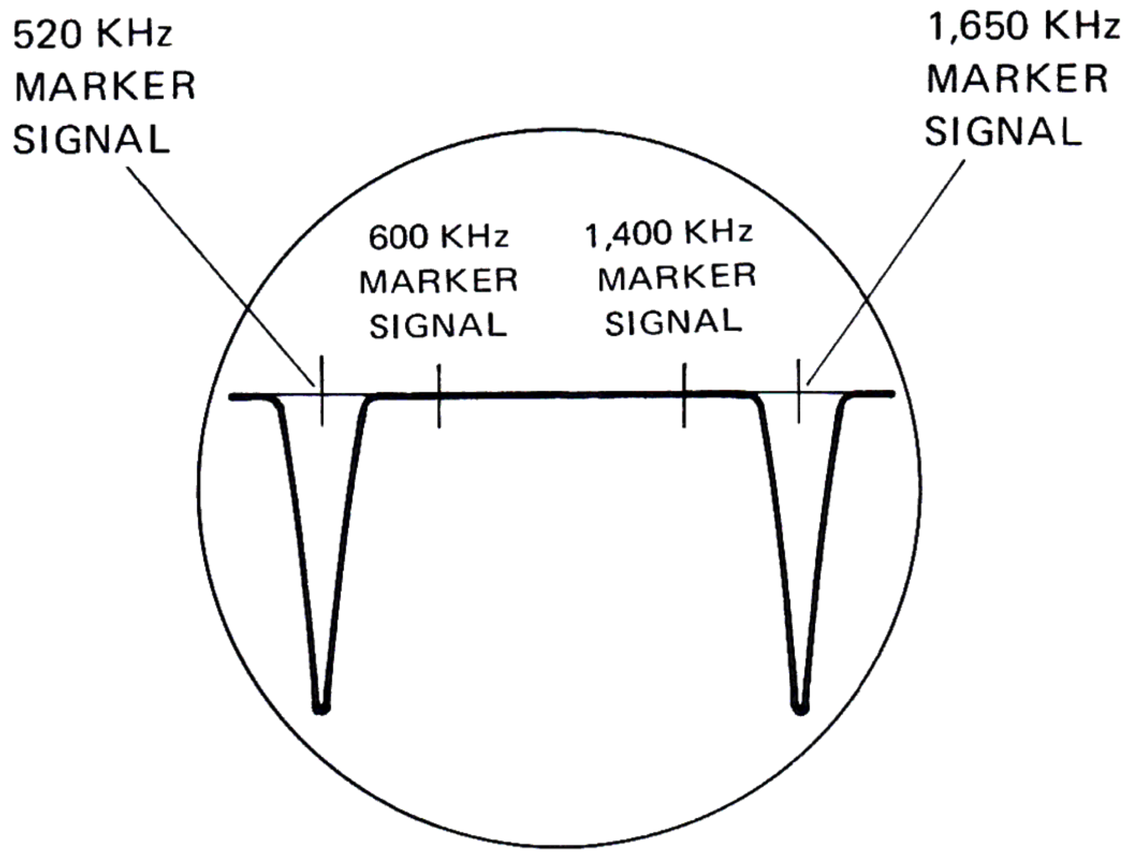


Fig. 7 AM FREQUENCY COVERAGE

AM Frequency Coverage Alignment and AM Tracking Alignment

1. Preset AM sweep generator switch to RF position.

STEP	GENERATOR	DIAL	ADJUSTMENT POINT	OSCILLOSCOPE
1	520 KHz	Set tuning knob fully counterclockwise	T201 (See Fig. 3)	Maximum waveform (See Fig. 7)
2	1,650 KHz	Set tuning knob fully clockwise	AM2 (See Fig. 4)	Maximum waveform (See Fig. 7)
3	600 KHz	600 KHz	T2 (AM bar antenna coil)	Maximum waveform
4	1,400 KHz	1,400 KHz	AM1 (See Fig. 4)	Maximum waveform

2. Repeat adjustment of steps 1 and 2 twice or three times for AM frequency coverage alignment.

3. Repeat adjustment of steps 3 and 4 once or twice for AM tracking alignment.

4. To check tracking errors, use an apparatus made of ferrite rod and copper wire. (See Fig. 8). Move it toward the AM bar antenna coil gradually and check waveform on oscilloscope becoming smaller. If the waveform becomes larger, repeat adjustment of steps 3 and 4. (See Fig. 9)

5. Repeat adjustment of steps 1 and 2 once or twice.

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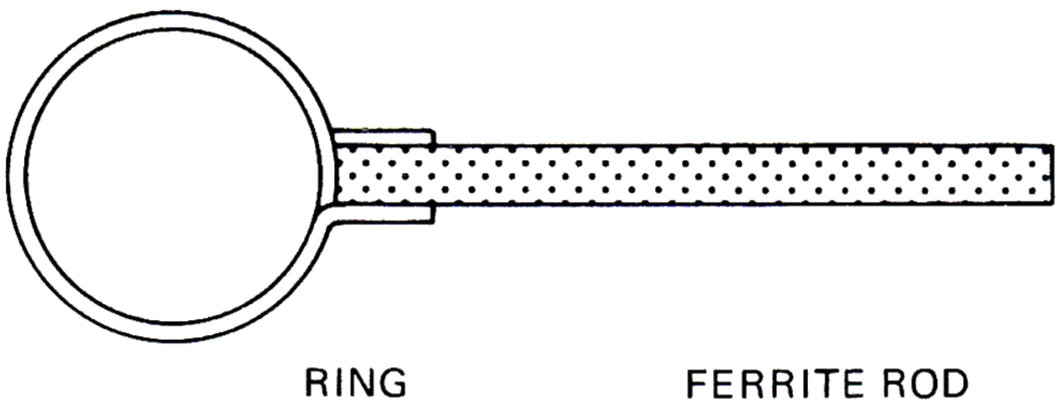
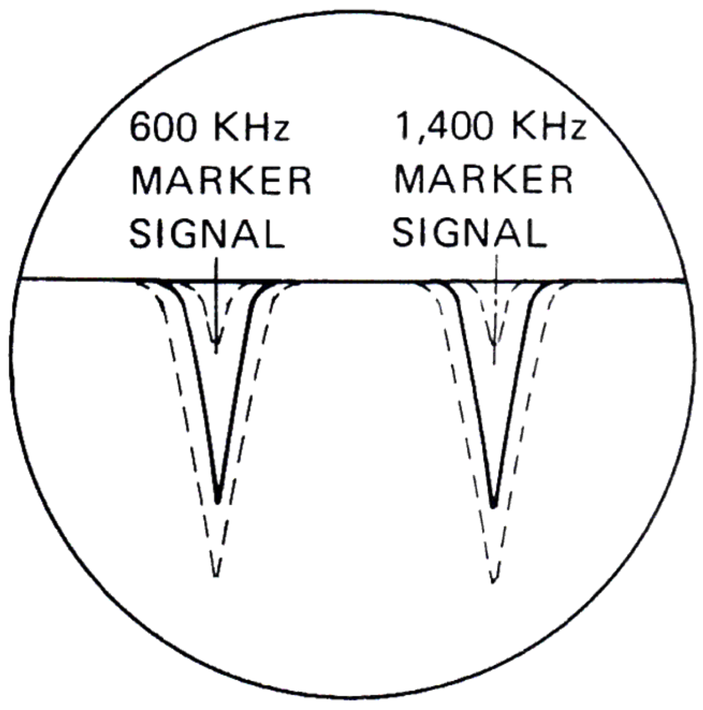


Fig. 8



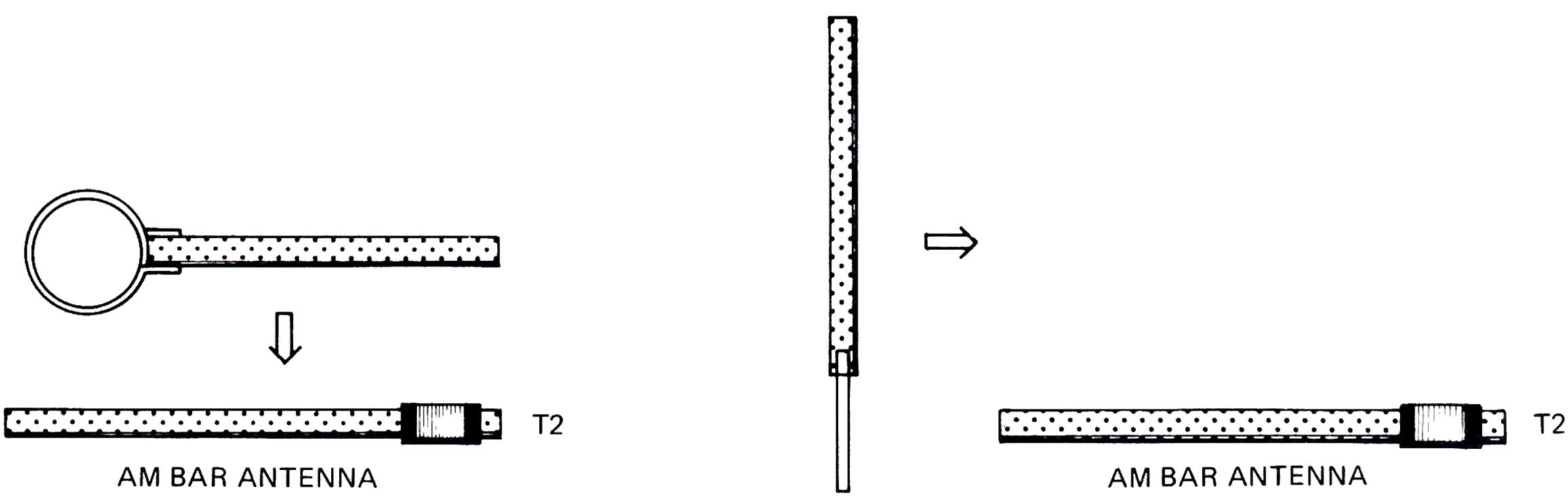


Fig. 9

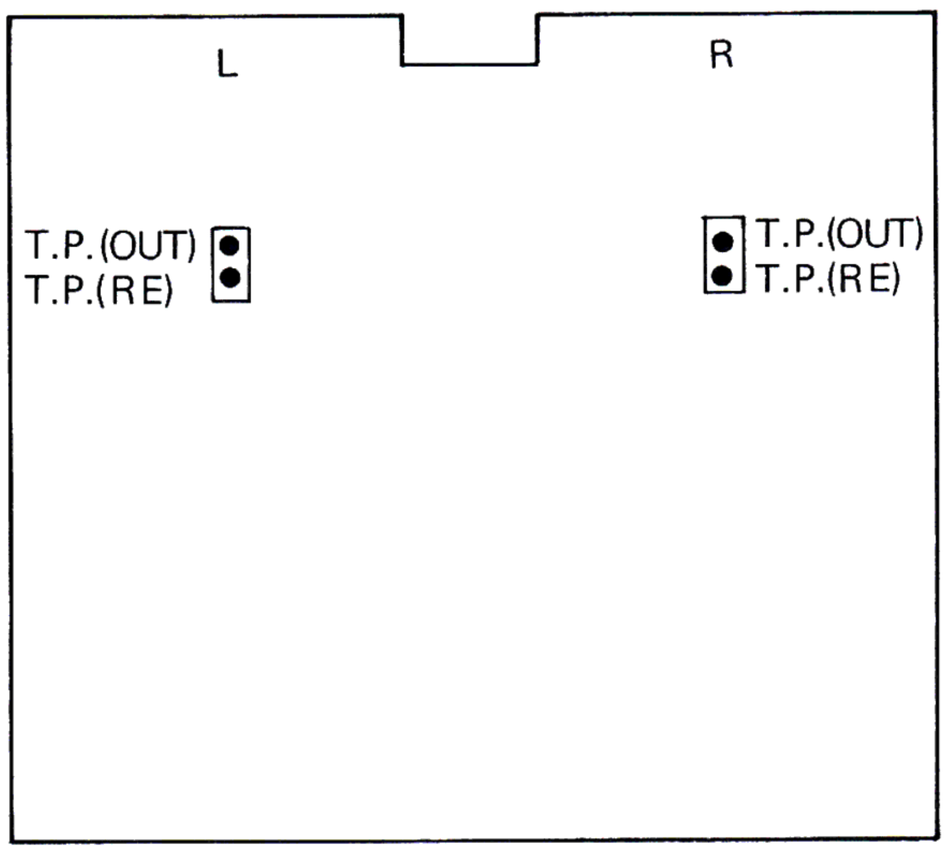


Fig. 10 MAIN AMP PCB (BOTTOM VIEW)

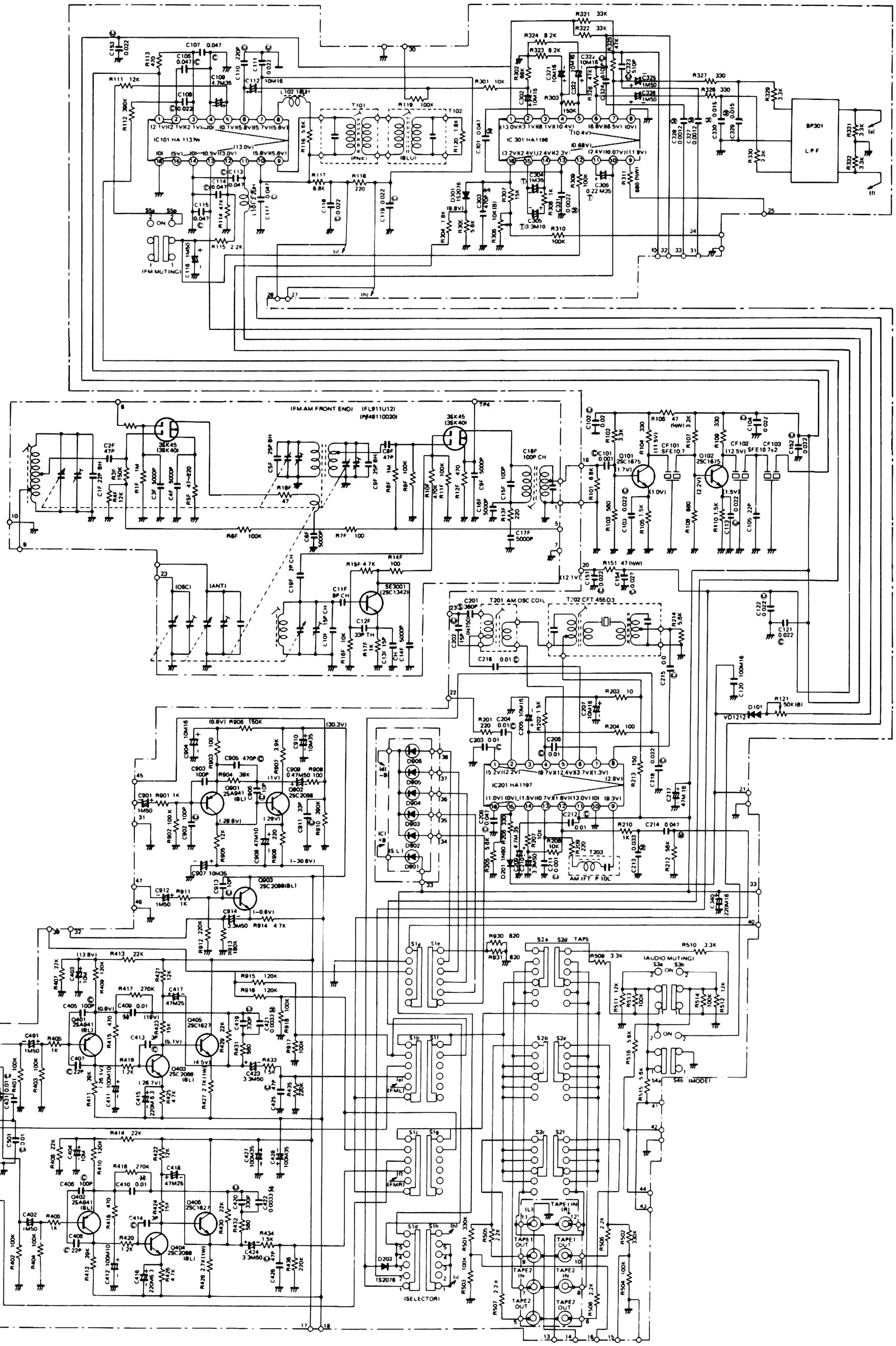
Main Amp Section

Idling Current Adjustment

Connect 8 ohms dummy load to speaker terminals. Set volume controls to minimum (fully counterclockwise). Using high sensitivity DC voltmeter, make certain that the voltage difference between T.P. (OUT) and T.P. (RE) is 6.6 to 25.4 milivolts, or 16 milivolts average. (See Fig. 10)

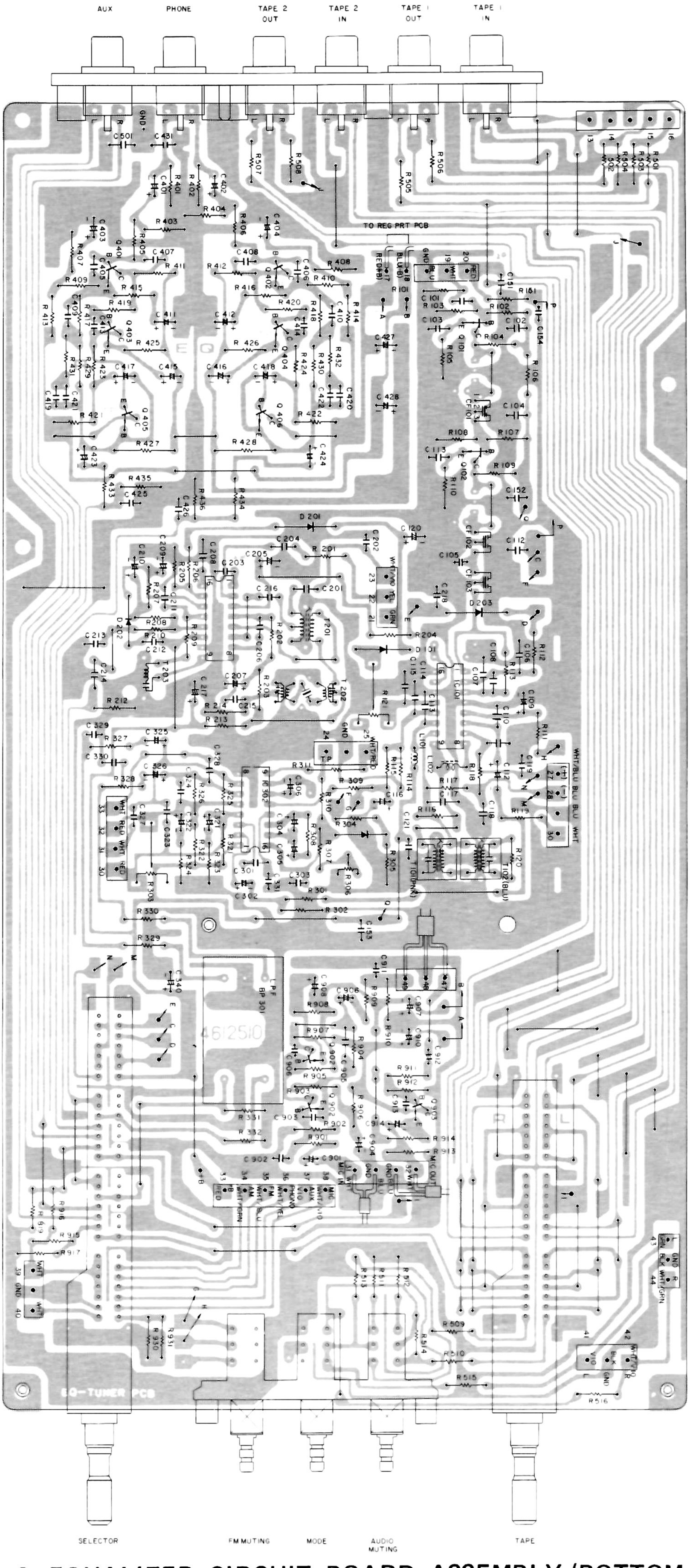
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CIRCUIT SCHEMATIC AND CIRCUIT BOARD ASSEMBLY



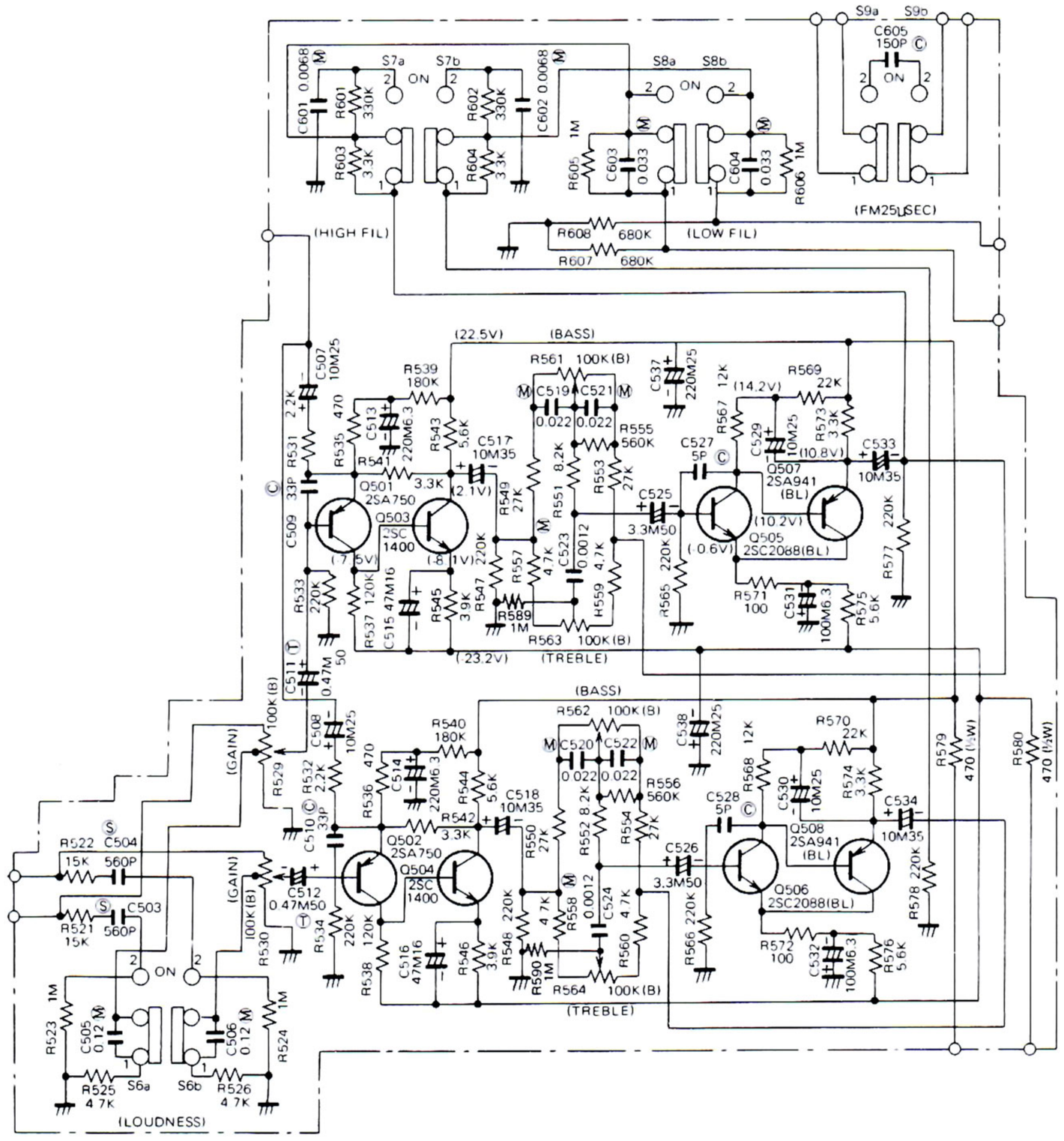
TUNER & EQUALIZER CIRCUIT SCHEMATIC

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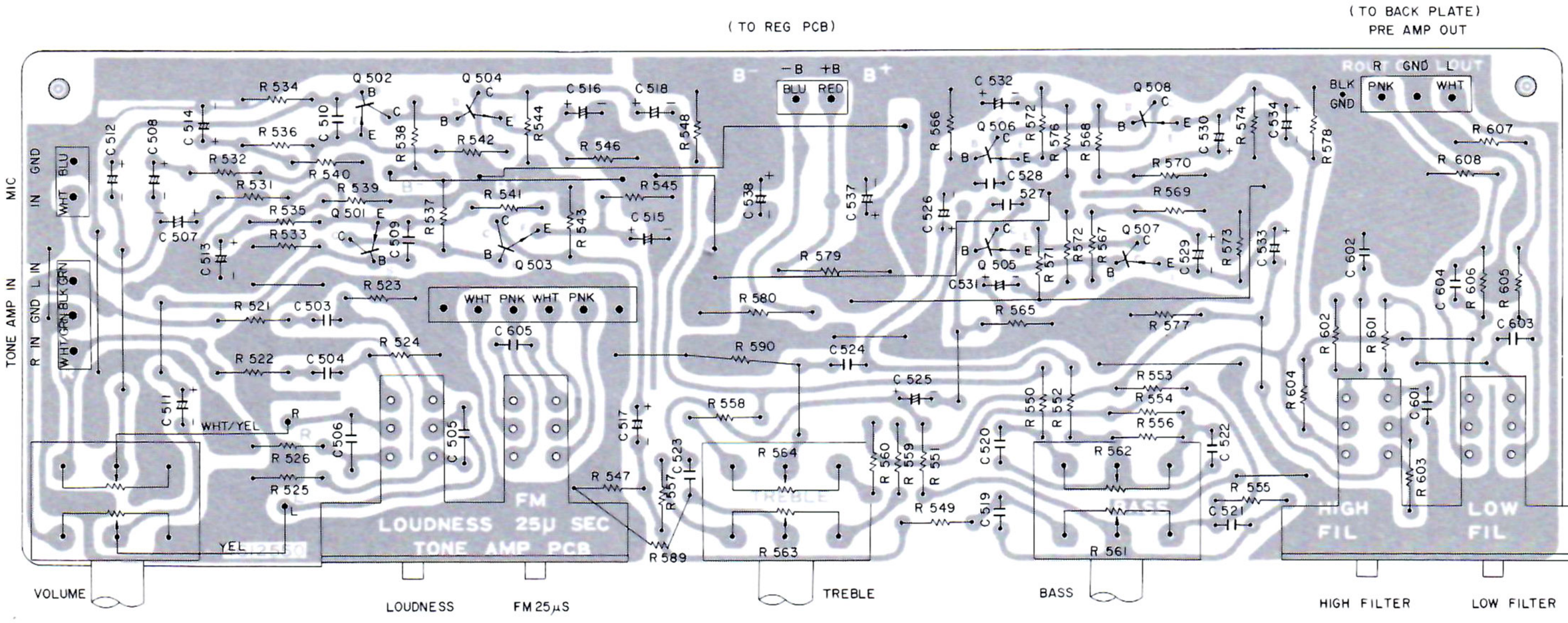


TUNER & EQUALIZER CIRCUIT BOARD ASSEMBLY (BOTTOM VIEW)

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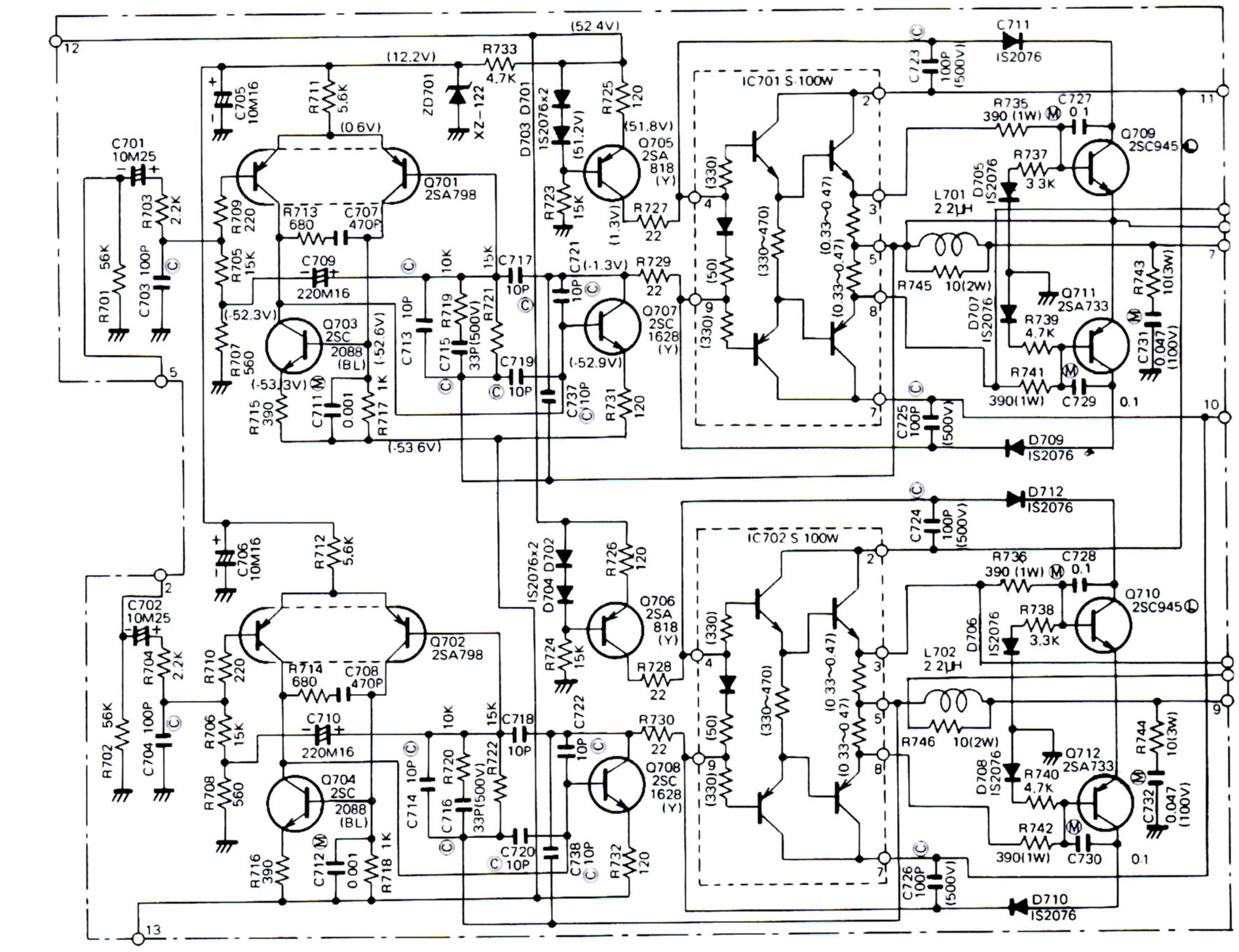


TONE AMP CIRCUIT SCHEMATIC

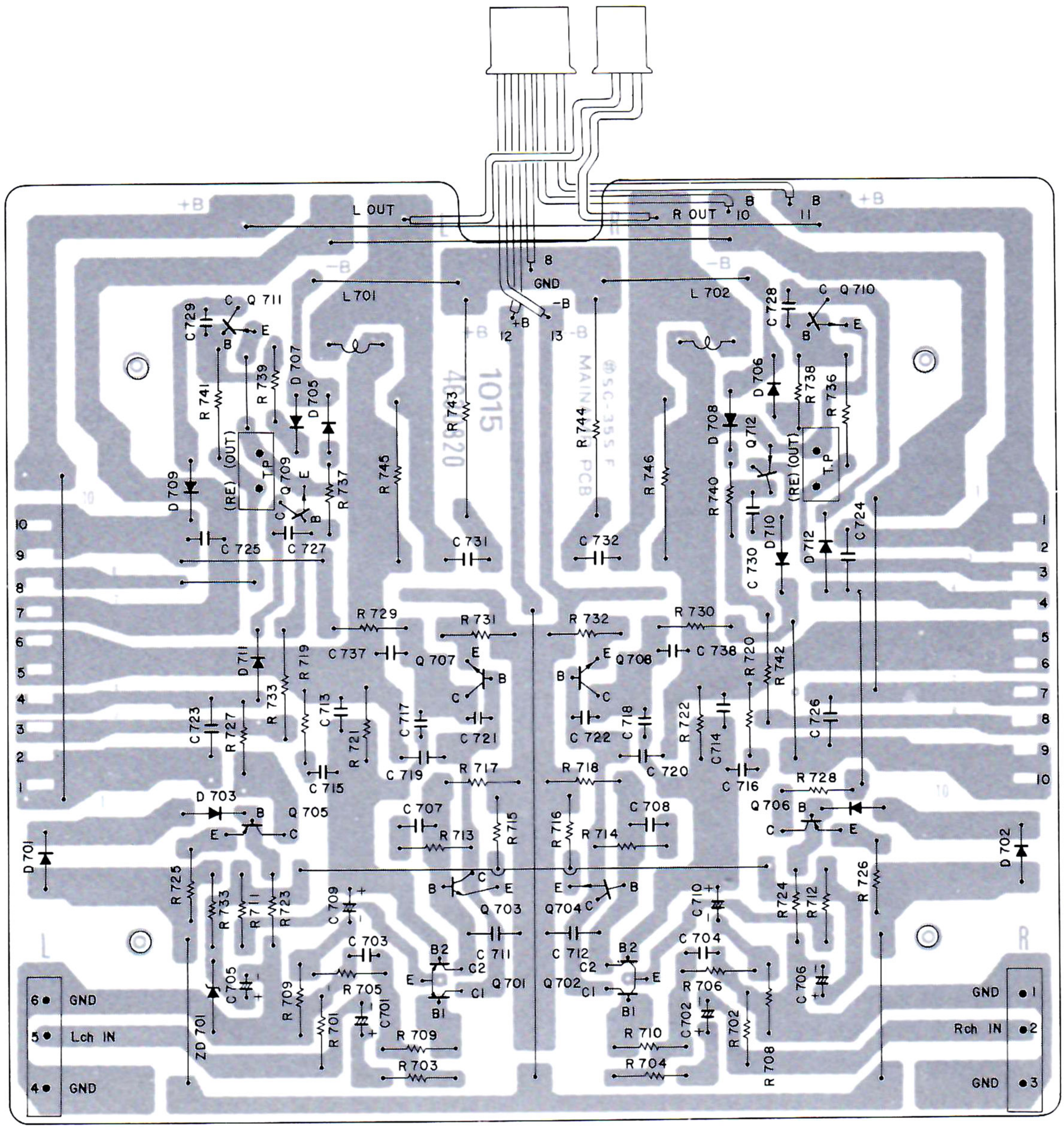


TONE AMP CIRCUIT BOARD ASSEMBLY (BOTTOM VIEW)

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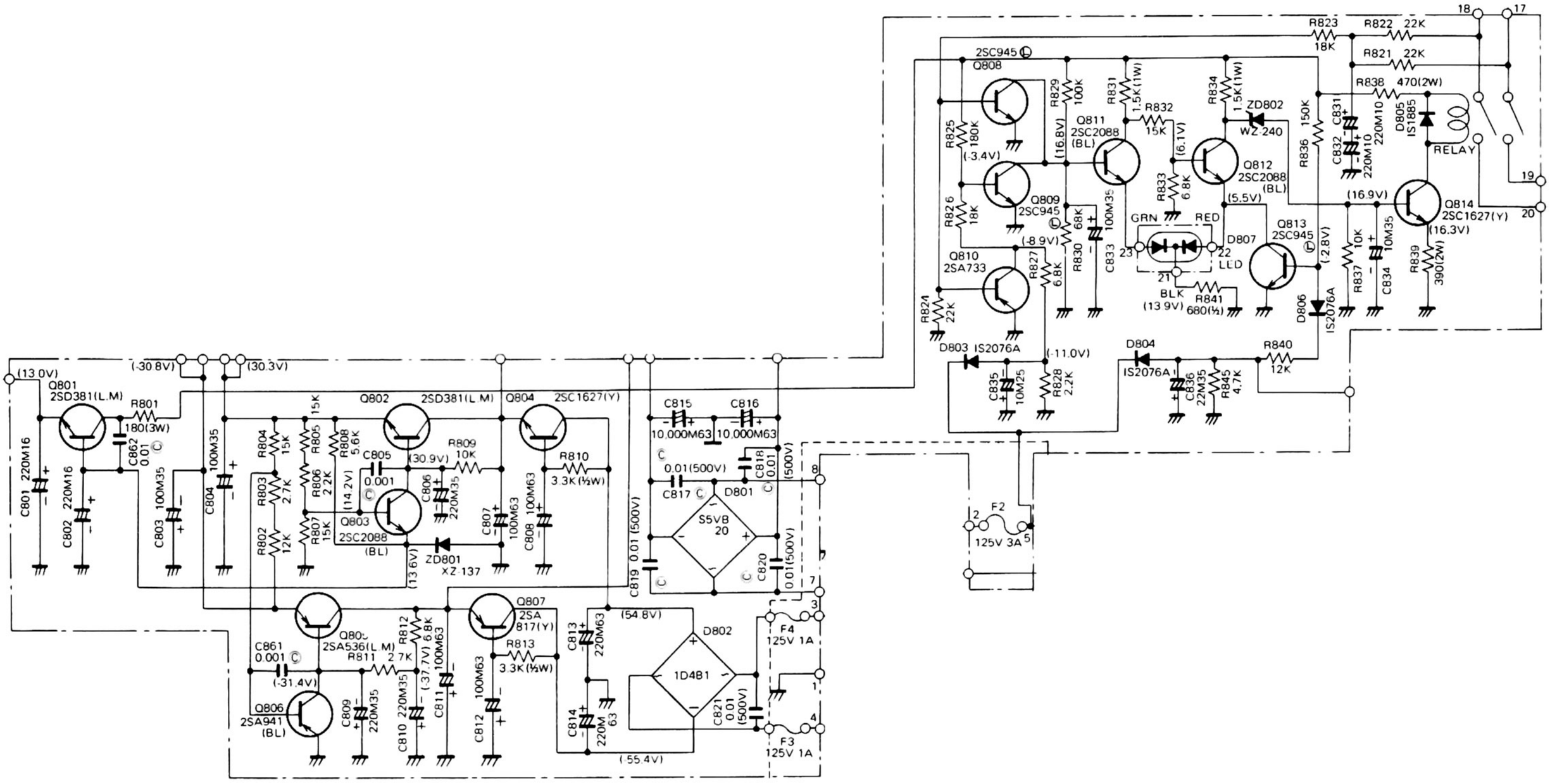


MAIN AMP CIRCUIT SCHEMATIC

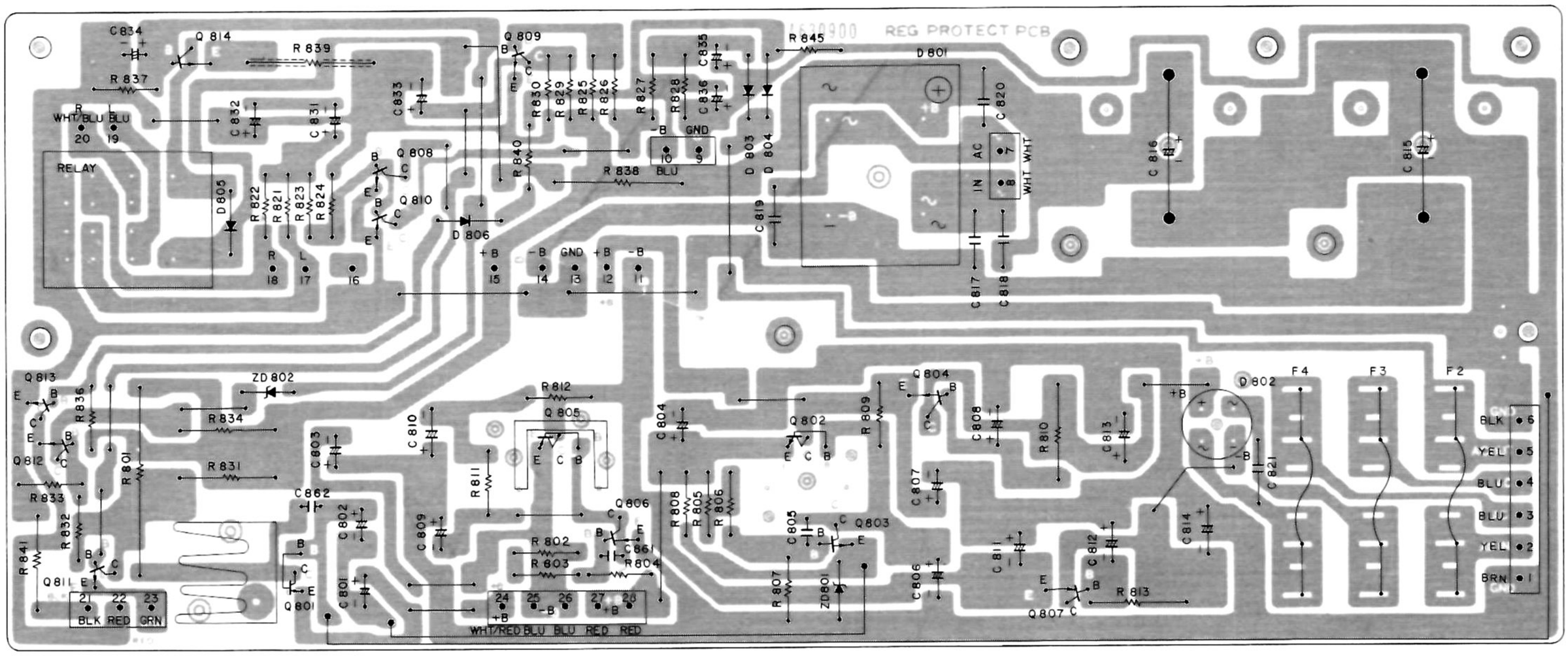


MAIN AMP CIRCUIT BOARD ASSEMBLY (BOTTOM VIEW)

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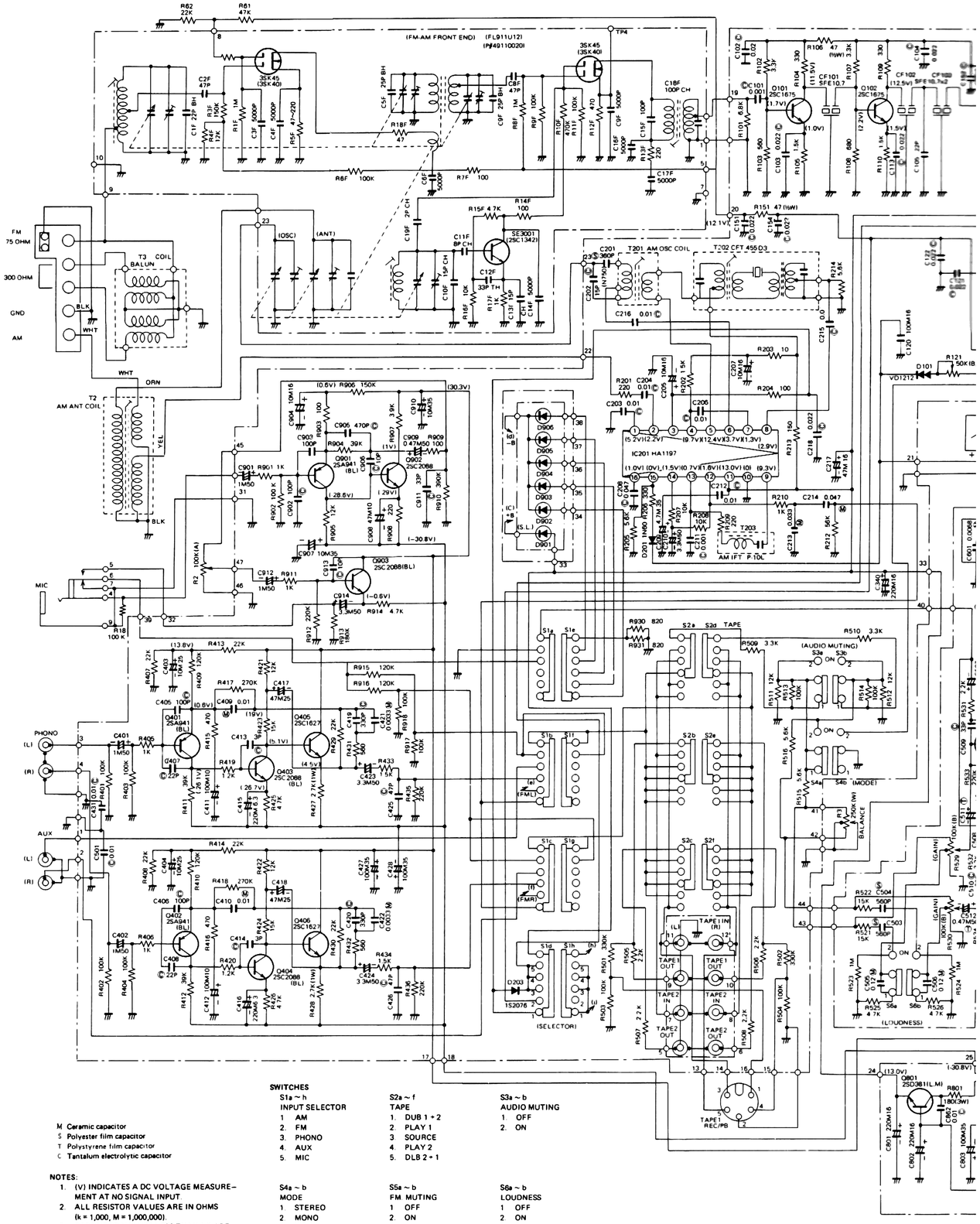
REGURATOR & PROTECTOR CIRCUIT SCHEMATIC



REGURATOR & PROTECTOR CIRCUIT BOARD ASSEMBLY (BOTTOM VIEW)

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SCHEMATIC DIAGRAM



M Ceramic capacitor
S Polyester film capacitor
T Polystyrene film capacitor
C Tantalum electrolytic capacitor

NOTES:

1. (V) INDICATES A DC VOLTAGE MEASUREMENT AT NO SIGNAL INPUT
2. ALL RESISTOR VALUES ARE IN OHMS (k = 1,000, M = 1,000,000).
3. CAPACITOR VALUES LESS THAN 1.0 ARE IN μF
   VALUES OF 1.0 AND ABOVE ARE IN PF or μF (P = PF, M = μF)
   ELECTROLYTIC CAPACITORS ARE IN F/WV.

SWITCHES

S1a ~ h — INPUT SELECTOR
1. AM
2. FM
3. PHONO
4. AUX
5. MIC

S2a ~ f — TAPE
1. DUB 1 → 2
2. PLAY 1
3. SOURCE
4. PLAY 2
5. DLB 2 → 1

S3a ~ b — AUDIO MUTING
1. OFF
2. ON

S4a ~ b — MODE
1. STEREO
2. MONO

S5a ~ b — FM MUTING
1. OFF
2. ON

S6a ~ b — LOUDNESS
1. OFF
2. ON

S7a ~ b — HIGH FILTER
1. OFF
2. ON

S8a ~ b — LOW FILTER
1. OFF
2. ON

S9a ~ b — FM 25 μSEC
1. OFF
2. ON

S10a ~ b — SPEAKERS SELECTOR
1. OFF
2. A
3. B
4. A + B

S11 — POWER
1. OFF
2. ON

PARTS LOCATION

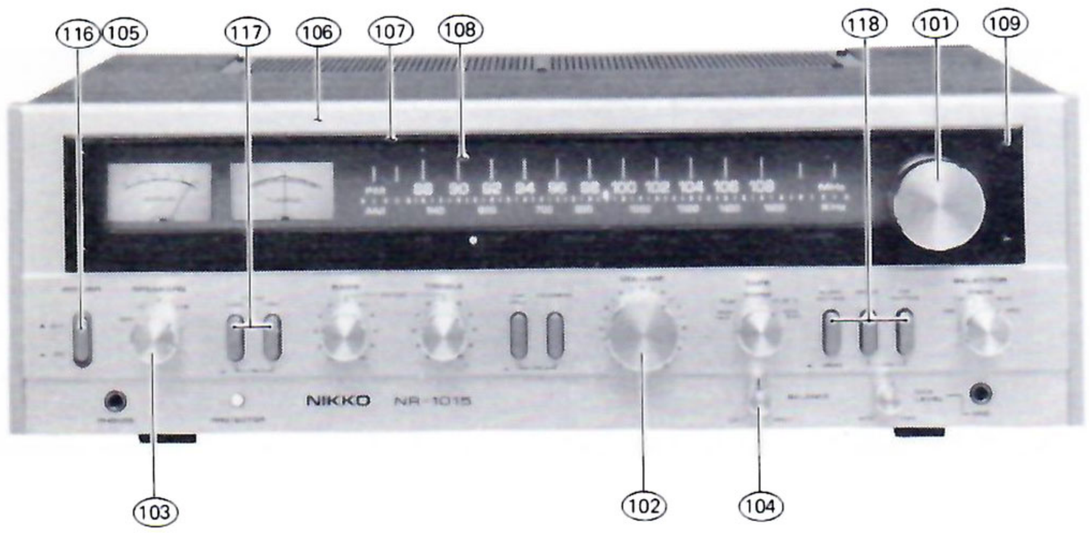


Photo 18

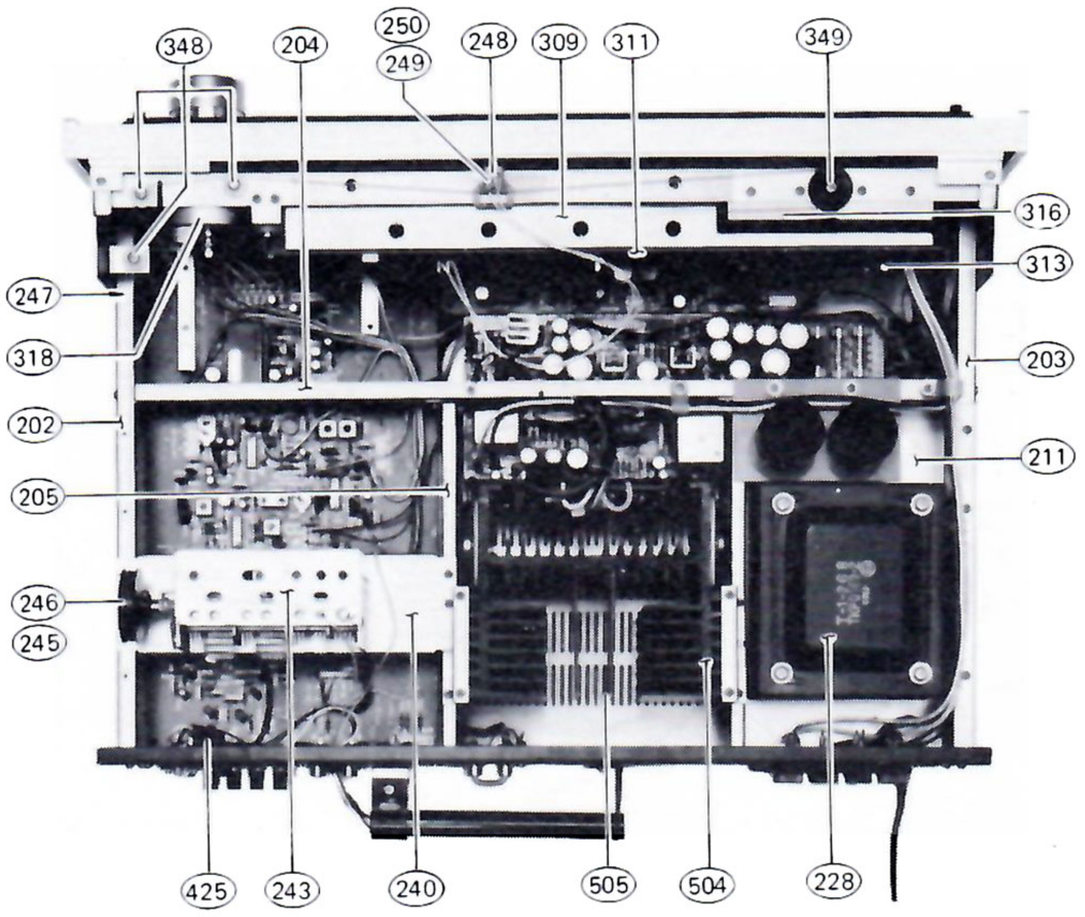


Photo 21

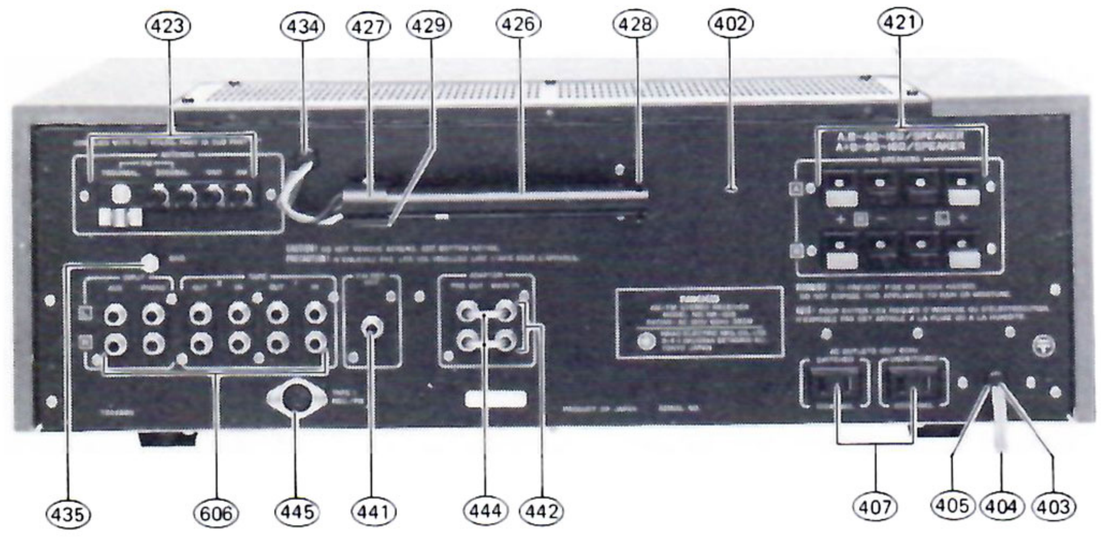


Photo 19

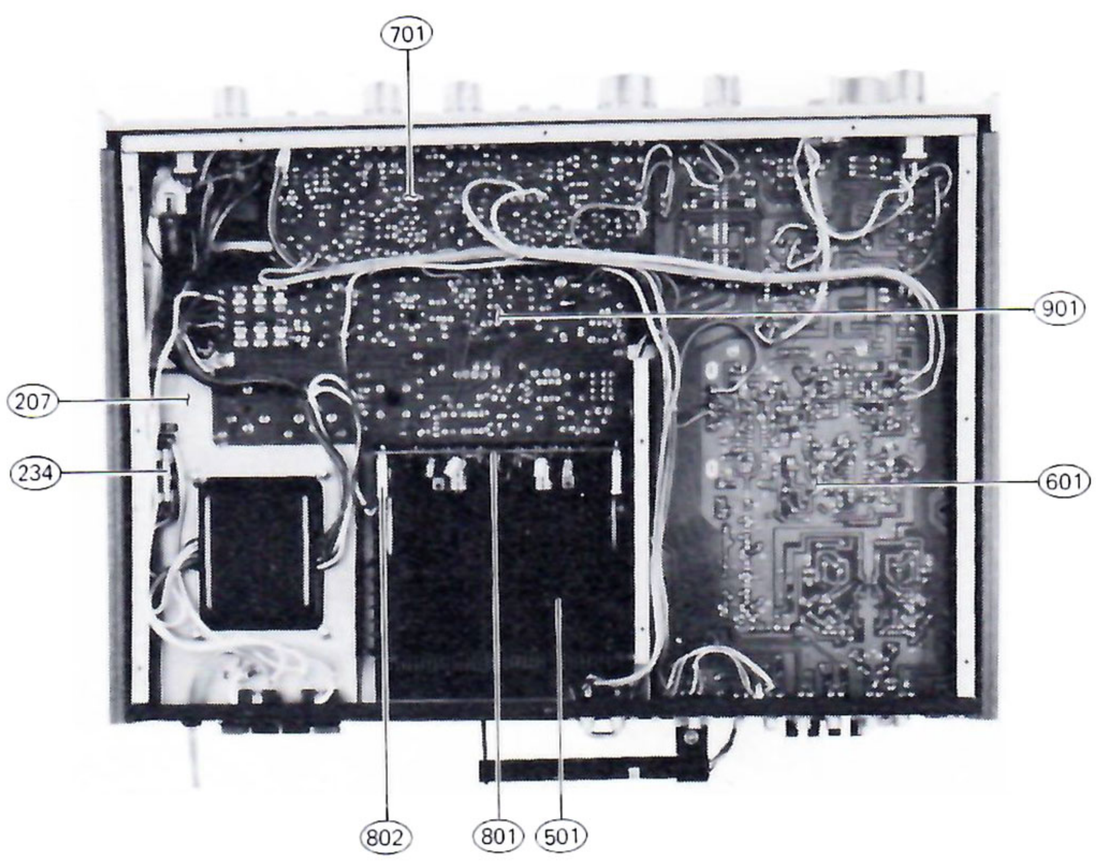


Photo 22

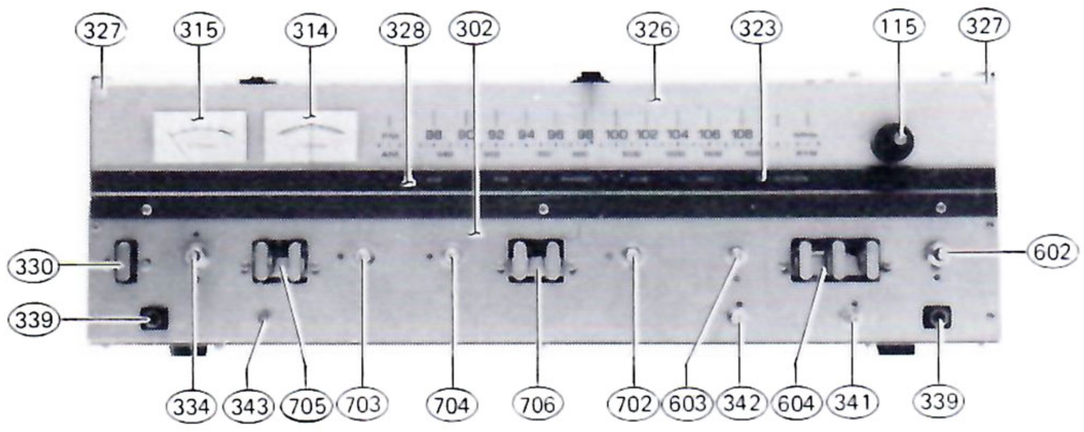


Photo 20

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PARTS LIST

NOTE:

1. * "KEY NO" marked with a (*) on parts list relate to three figures put a (◯) around of Photo 1 thru 22.
2. + Numerals in file indicate the quantity of a part used in one type.
3. ++ TR : Transistor
   FET : Field effect transistor
   IC : Integrated circuit
   VR : Volume control (Variable resistor)
   POT : Potentiometer (Semi-fixed variable resistor)
   RES : Carbon film fixed resistor
   MORES : Metal oxide film fixed resistor
   CEMRES : Cemented wirewound fixed resistor
   UF : Uninflammable

   C-CAP : Ceramic capacitor
   E-CAP : Aluminium electrolytic capacitor
   M-CAP : Polyester film capacitor
   S-CAP : Polystyrene film capacitor
   T-CAP : Tantalum electrolytic capacitor
   BP-CAP : Bipolar electrolytic capacitor
4. Assemblies and parts is subject to change without notice.
5. Parts ordering procedure :
   Include in any order
   a. Part number.
   b. Part description.
   c. Model number.

   (Any of the above lacking from an order may delay shipment of that order.)

E–CAP and T–CAP values (1X10μF) are in (1) μF (10 V).

KEY NO.	SYMBOL NO.	TYPE+ (W-type-u E-type-g N-type-d)	DESCRIPTION	PART NO.
			PACKING MATERIALS & ACCESSORIES	
001		111	CARTON BOX NR-1015	9825260
002		222	STYROL PAD	9840650
003		111	VINYL CLOTH BAG <POLY SACK>	9640600
004		111	VINYL CLOTH BAG <POLY SACK #13>	9640320
005a		1- -	INSTRUCTION MANUAL NR-1015 (USA)	960182E
005b			INSTRUCTION MANUAL NR-1015 (Canada)	960210F
005c		- 11	INSTRUCTION MANUAL NR-1015	960195K
006		1- -	WARRANTY CARD (N)	9670030
007		111	SILICA GEL	9690010
008		111	FM ANTENNA <Q-MATCH ANTENNA>	4581360
			CABINET ASSEMBLY	
*101		111	KNOB R15GL-42 (TUNING)	7841060
*102		111	KNOB R15GL-34D (VOLUME)	7851600
*103		555	KNOB R15GL-22D (SELECTOR, TA-PE, BASS, TREBLE, SPEAKERS)	7851610
*104		222	KNOB R15GL-12D (BALANCE, MIC)	7851620
*105		888	PUSHBUTTON (POWER, LOW FILTER, HIGH FILTER, FM 25μS, LOUDNESS, MONO, FM MUTING, AUDIO,MUTING)	7851560
*106		111	FRONT PANEL <PNL S ASS 1015>	7883540
*107		111	DIAL FLAME	7870300
*108		111	DIAL GLASS	7802200
*109		444	CAP SCREW 4 x 14	7121040
110	↑	444	GLASS WASHER	7401250
110	↑	444	WASHER <TW (I) 4ϕ>	893404U
112	↑	444	NUT <IN 4ϕ>	892014S
113	↑	444	WASHER <W 4ϕ>	893204W
114	↑	222	SCREW <PTS 3 x 6>	814306S
*115		111	DUST RING (G)	7001820
*116		111	BUTTON GUIDE (1)	7401200
*117		222	BUTTON GUIDE (2)	7401210
*118		111	BUTTON GUIDE (3)	7401220
*119		111	NUT <SN 9ϕ> for 4050990	892249S
*120		111	NUT <SN 9ϕ>	892249S
121	↑	222	WASHER <W 9ϕ>	893109S
122		111	RADIATION GRILL	7225950
*123a		111	WOODEN COVER WALNUT	7831440
123b			WOODEN COVER TEAK	
123c			WOODEN COVER VANDA TEAK	
123d			WOODEN COVER BLACK	
*124	↑	444	SCREW <TFTS 4 x 16>	887416W
*125	↑	444	WASHER <W 5ϕ>	893105W
*126		111	BOTTOM PLATE <BTM PLT>	7324600
*127	↑	999	SCREW <PTS 3 x 6>	814306S
*127	↑	555	SCREW <PTS 3 x 6>	814306S
*128		444	FOOT 30 x 14	7400780
129	↑	444	SCREW <PMS 5 x 16>	810516S
			CHASSIS ASSEMBLY	
	201a	1- -	CHASSIS ASSEMBLY	9534240
	201b	- 1-	CHASSIS ASSEMBLY	9534250
	201c	- - 1	CHASSIS ASSEMBLY	9534260
*202		111	SIDE ANGLE (R)	7226100
*203		111	SIDE ANGLE (L)	7226110
*204		111	CENTER ANGLE	7226120
*205		111	CENTER BRACKET	7226070
206	↑	666	SCREW <PTS 3 x 6>	814306S
207		111	P.T. CHASSIS	7226130
208	↑	444	SCREW <PTS 3 x 6>	814306S
209		111	ANGLE	7031470
210		444	SCREW <PTS 3 x 6>	814306S
*211		111	E-CAP HOLDER	7001840
212	↑	222	SCREW <PTS 3 x 8>	814308S
301			(FRONT PLATE ASSEMBLY)	
213	↑	888	SCREW <PTS 3 x 6>	814306S
*401			(BACK PLATE ASSEMBLY)	
214	↑	999	SCREW <PTS 3 x 6>	814306S
*601			(EQ-TUNER PCB ASSEMBLY)	
215	↑	222	SCREW <STUD SCREW (8)>	7121030
216	↑	444	SCREW <PMS 3 x 5>	810305S
217		111	SPACER 7ϕ	7152300
218		111	WASHER <TW (I) 3ϕ>	893403U
*501			(MAIN AMP ASSEMBLY)	
219	↑	444	SCREW <PTS 3 x 6>	814306S
*901			(PROTECT-REG PCB ASSEMBLY)	
220	↑	444	SCREW <PTS 3 x 6>	814306S
221		111	EARTH LUG 4P	4400080
222	↑	111	SCREW <PTS 3 x 8>	814308S
223	↑	111	WASHER <TW (I) 3ϕ>	893403U
224		111	NYLON CLIP HP-6N	7400290

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Parts ordering procedure:

Include in any order

a. Part number.
b. Part description.
c. Model number.

(Any of the above lacking from an order may delay shipment of that order.)

KEY NO.	SYMBOL NO.	TYPE+ W-type-u E-type-g N-type-d	DESCRIPTION	PART NO.
225		111	NYLON CLIP HP-3N	7400270
226	↑	222	SCREW <PTS 3 x 8>	814308S
227	↑	222	WASHER <W 3φ>	893203S
*228a		1- -	POWER TRANSFORMER T-1-268 120V	1102680
228b		- 1-	POWER TRANSFORMER T-1-100/120/220/240V	1102820
228c		- - 1	POWER TRANSFORMER T-1-220/240V	1103000
229	↑	444	NUT <IN 5φ>	892072S
230		444	WASHER <TW (I) 5φ>	893404U
*231	F1	11-	FUSE 5A 250V MGC	4700540
232a	↑	11-	FUSE HOLDER 1P	4581840
233a	↑	11-	SCREW <PTS 3 x 10>	814310S
231c	F1	- - 1	MIDGET FUSE (S) 3.15A 250V	4720390
232b	↑	- - 1	MIDGET FUSE HOLDER 1P	4581430
233b	↑	- - 1	SCREW <PTS 3 x 8>	814308S
234		- - 1	T-LUG 2L5P	442251W
235	↑	- - 2	SCREW <PTS 3 x 6>	814306S
236	F5~F6	- - 2	MIDGET FUSE (S) 5A 250V	4721410
237	↑	- - 2	MIDGET FUSE HOLDER 1P	4581430
238	↑	- - 2	SCREW <PTS 3 x 8>	814308S
*239		111	FM FRONT END FL911U12	4910020
*240		111	F.E. HOLDER (FL)	7226080
241	↑	444	SCREW <PMS 3 x 6>	810306S
242	↑	333	SCREW <PTS 3 x 6>	814306S
243	R61	111	RES 47Kohm 5% ¼W	328473J
244	R62	111	RES 22Kohm 5% ¼W	328223J
*245		111	DIAL DRUM 40φ	7401160
*246		111	SPRING (J)	7440290
*247		111	DIAL CORD SUPER 404	4581870
*248		111	DIAL POINTER <NEEDLE S ASS>	7860520
*249		111	LAMP PL-5 5V 75MA	5805050
*250		111	BLIND LABEL	7001780
251		333	EARTH LUG	440000D
252	↑	333	SCREW <PTS 3 x 6>	814306S
253	↑	333	WASHER <TW (I) 3φ>	893403U
254	L1,L2	222	PEAKING COIL 2.2μH	1210700

FRONT PLATE ASSEMBLY

301a		1- -	FRONT PLATE ASSEMBLY W	9521700
301b		- 1-	FRONT PLATE ASSEMBLY E	9521710
301c		- - 1	FRONT PLATE ASSEMBLY N	9521720
*302		111	FRONT PLATE (FL)	7324610
303		111	PULLEY BRACKET	7030130
304	↑	222	SCREW <PTS 3 x 6>	814306S
305		111	PULLEY BRACKET	7031210
306	↑	222	SCREW <PTS 3 x 6>	814306S
*701			(TONE AMP PCB ASS)	
*308	↑	444	SCREW <PMS 3 x 5>	810305S
*309		111	REFLEX PLATE	7226150
*310	↑	222	SCREW <PTS 3 x 6>	814306S
*311		111	LAMP CIRCUIT BOARD	4630840
312	R11	111	MO-RES 120 ohm 1W	361121B

KEY NO.	SYMBOL NO.	TYPE+ W-type-u E-type-g N-type-d	DESCRIPTION	PART NO.
*313	Z1 ~ Z7	777	LAMP PL-12 0.21A	5801080
*314		111	METER (TUNING)	4581850
*315		111	METER (SIGNAL)	4581860
*316		222	METER BRACKET	7031200
*317	↑	444	SCREW <PTS 3 x 6>	814306S
*318		111	DIAL SHAFT & FLY WHEEL	7152310
319	↑	111	NUT <SN 9φ>	892249S
320	↑	111	WASHER <TW (I) 9φ)	893409U
321	↑	111	WASHER <W 9φ>	893109S
322		111	INDICATOR CIRCUIT BOARD (LED)	461249A
*323	D901 ~D906	666	LED GD-4	5060060
324		666	LED SPACER	
*325		333	PUSH RIVET FNRP 3 x 4,5	7401240
*326		111	DIAL SCALE (FL)	7802080
*327		222	PUSH RIVET FNRP 3 x 5,5	7400840
*328		111	SCALE ANGLE	7226160
*329		333	SCREW <PTS 3 x 6>	814306S
*330a	S11	11-	PUSHBUTTON SWITCH (POWER) <SDG-1P902 TV-5 (UL)>	4040820
330b	S11	- - 1	PUSHBUTTON SWITCH (POWER) <SDG-5P>	4040830
331	↑	222	SCREW <STUD SCW (6,5)>	7121000
332	↑	222	SCREW <PMS 3 x 5>	810305S
333a	C1	1- -	C-CAP 0.0047μF AC125V	239472C
333b	C1	- 1-	C-CAP 0.0047μF AC250V	239472E
334	S10	111	ROTARY SWITCH (SPEAKERS) <SR32N 1-2-4 25KC>	4050990
335		111	SPACER 9φ	7152110
*336		111	HEADPHONE JACK <HL J0279-01-020>	4550210
337		111	MO-RES 330Ω 2W	362331B
338		111	MO-RES 330Ω 2W	362331B
*339		111	MIC JACK <LJ253-1-2>	4550200
340	R18	111	RES 100Kohm 5% ¼W	328104J
*341a	R1, R2		VR B100Kohm X2 (MIC) <V16L4 (7x6.5)(G3-IN20KC>	4320690
341b	R2	111	VR B100Kohm (MIC)	4310520
342	R3	111	VR W250Kohm (BALANCE) <V16L4 (7x6.5) N20KC-3BM250K (CC)>	4310490
343	D807	111	LED BV188-RG	5060040
344	↑	111	SPACER 4H	7121050
*345		444	PULLEY 9φ	7400790
*346		111	PULLEY 20φ	7400830
348	↑	555	PULLEY SHAFT 4L	7120780

BACK PLATE ASSEMBLY

401a		1- -	BACK PLATE ASSEMBLY W.U	9512730
401b		- 1-	BACK PLATE ASSEMBLY E	9512740
401c		- - 1	BACK PLATE ASSEMBLY N.D	9512750
*402a		1- -	BACK PLATE 1015 W	7324580
402b		- 1-	BACK PLATE 815·1015EN	7324810

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Parts ordering procedure:

Include in any order

a. Part number.
b. Part description.
c. Model number.

(Any of the above lacking from an order may delay shipment of that order.)

KEY NO.	SYMBOL NO.	TYPE+ W-type-u E-type-g N-type-d	DESCRIPTION	PART NO.
*403a		1- -	POWER SUPPLY CORD KP-2	606002J
403b		- 11	POWER SUPPLY CORD CEE-2T	600507J
403c			POWER SUPPLY CORD CEE-3T	601808J
*404a		1- -	CORD STOPPER SR-3P-4	7400620
404b		- 11	CORD STOPPER SR-4N-4	7400690
404c		- - -	CORD STOPPER	7400740
*405a		1- -	CORD BRACKET (UL)	7029350
405b		- 11	CORD BRACKET (EH)	7029800
406	↑	- 22	SCREW <PTS 3 x 6>	814306S
*407		22-	AC OUTLET	4500150
408		- - 1	BLIND PLATE	7031760
409		1- -	RES 2.2MΩ 10% ½W	325225K
410		1- -	EARTH LUG	440000D
411		1- -	SCREW <PTS 3 x 6>	814306S
412	↑	1- -	WASHER <TW (I) 3φ>	893403U
413		- 1-	VOLTAGE CHANGE SOCKET	4530490
414		- 1-	VOLTAGE CHANGE PLUG	4530480
415	↑	- 2-	SCREW <PMS 3 x 10>	810310W
416	↑	- 2-	NUT <IN 3φ>	892013S
417	↑	- 2-	WASHER <TW (I) 3φ>	893403U
418		- 1-	VOLTAGE CHANGE COVER	7400990
419	↑	- 1-	RATING PLATE 1015E	963565A
420	↑	222	SCREW <PTS 3 x 14>	814314S
*421		222	4P PUSH SPEAKER TERMINAL	4460480
422	↑	444	SCREW <PTS 3 x 10>	814310S
*423		111	ANTENNA TERMINAL	4450520
424	↑	222	SCREW <PMS 3 x 6>	810306S
*425		111	BALUN COIL	1210420
*426		111	AM LOOPSTICK ANTENNA	1200320
*427	↑	111	ANTENNA SUPPORTER	7400870
*428	↑	111	ANTENNA STOPPER	7400880
*429	↑	111	ANTENNA BRACKET (L)	7080940
430		111	SCREW <PMS 4 x 20>	810420S
431		111	NUT <IN 4φ>	892014S
432		111	WASHER <TW (I) 4φ>	893404U
433		444	SCREW <PTS 3 x 8>	814308S
*434		111	CORD STOPPER SR-3P-4 ANT	7400620
*435		111	GROUND TERMINAL NUT MK2	7152060
436	↑	111	GROUND TERMINAL SHAFT	7152050
437	↑	111	WASHER <W 3φ>	893203D
438	↑	111	NUT <IN 3φ>	892013S
439	↑	111	WASHER <TW (I) 3φ>	893403U
440		111	EARTH LUG	440000D
*441		111	WP PIN TERMINAL 1P	4440190
*442		111	WP PIN TERMINAL 2P x 2 SE	4444020
*443	↑	444	SCREW <PTS 3 x 10>	814310S
*444		222	CONNECTIVE PIN	4581660
*445		111	DIN CONNECTOR 5P	4530220
446	↑	111	SCREW <PTS 3 x 6>	814306S
447		111	MINI CONNECTOR ASSEMBLY (L)	4570160
448		111	MINI CONNECTOR ASSEMBLY (R)	4570170

MAIN AMP ASSEMBLY

501		111	MAIN AMP ASSEMBLY	9590580
801			(COMPLETE CIRCUIT BOARD <MAIN AMP PCB ASS>)	

KEY NO.	SYMBOL NO.	TYPE+ W-type-u E-type-g N-type-d	DESCRIPTION	PART NO.
502	↑	444	SCREW <PTS 3 x 8>	814308S
509	↑	444	WASHER	893303S
504		111	HEATSINK	7480300
505		111	SUB HEATSINK	7481940
506	↑	222	SCREW <PTS 3 x 8>	814308S
507	IC70	111	IC <POWER PACK S-100W>L	518049S
508	IC702	111	IC <POWER PACK S-100W>R	518049S
509	↑	444	SCREW <PMS 3 x 10>	810310S
510		111	HEATSINK HOLDER (L)	7031120
511		111	HEATSINK HOLDER (R)	7031120
512	↑	444	SCREW <PTS 3 x 10>	814310S

TUNER & EQUALIZER CIRCUIT BOARD

*601a		1- -	COMPLETE CIRCUIT BOARD <EQ-TUNER PCB ASS (75μs)>	9460030
*601b		- 11	COMPLETE CIRCUIT BOARD <EQ-TUNER PCB ASS (50μs)>	9460040
*602	S1	111	ROTARY SLIDE SWITCH <SRZ-V085S> (SELECTOR)	4055030
*603	S2	111	ROTARY SLIDE SWITCH <SRZ-V065N> (TAPE)	4055020
*604	S3 ~ S5	111	TRIPLE PUSHBUTTON SWITCH <SUE-33> (AUDIO MUTING, MONO, FM MUTING>	4040800
*605	↑	222	STUD SCREW (6.5)	7121000
*606		333	CB PIN TERMINAL 2P x 2 (SE)	4444030
*607	↑	666	SCREW <PTS 3 x 10>	814310S

(FM I-F BLOCK)

C101	111	C-CAP 0.001μF 80, –20% 50V YG	231102Z
C102	111	C-CAP 0.022μF 80, –20% 50V YG	231223Z
C103	111	C-CAP 0.022μF 80, –20% 50V YG	231223Z
C104	111	C-CAP 0.022μF 80, –20% 50V YG	231223Z
C105	111	C-CAP 22pF 10% 50V SL	232220K
C106	111	C-CAP 0.047μF 80, –20% 50V YG	231473Z
C107	111	C-CAP 0.047μF 80, –20% 50V YG	231473Z
C108	111	C-CAP 0.022μF 80, –20% 50V YG	231223Z
C109	111	E-CAP 35R 4.7μF	211415Q
C110	111	C-CAP 220pF 10% 50V SL	232221K
C111	111	C-CAP 0.022μF 80, –20% 50V YG	231223Z
C112	111	E-CAP 16R 10μF	211220Q
C113	111	C-CAP 0.047μF 80, –20% 50V YG	231473Z
C114	111	C-CAP 0.047μF 80, –20% 50V YG	231473Z
C115	111	C-CAP 0.047μF 80, –20% 50V YG	231473Z
C116	111	E-CAP 50R1μF	211510Q
C117	111	C-CAP 0.047μF 80, –20% 50V YG	231473Z
C118	111	C-CAP 0.022μF 80, –20% 50V YG	231223Z
C119	111	C-CAP 0.022μF 80, –20% 50V YG	231223Z
C120	111	E-CAP 16R 100μF	211230Q

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KEY NO.	SYMBOL NO.	TYPE+ (W-type-u E-type-g N-type-d)	DESCRIPTION	PART NO.
	C121	111	C-CAP 0.022μF 80, −20% 50V YG	231223Z
	C122	111	C-CAP 0.022μF 80, −20% 50V YG	231223Z
	CF101	111	CERAMIC FILTER SFE10.7MA8	128023A
	CF102	111	CERAMIC FILTER SFE10.7MA8	128023A
	CF103	111	CERAMIC FILTER SFE10.7MA8	128023A
	D101	111	DIODE VD1212	505016S
	IC101	111	IC HA1137W	518038S
	L101	111	INDUCTOR 2.2μH 20% RC855	1210840
	L102	111	INDUCTOR 18μH 5% RC157	1210850
	Q101	111	TR 2SC1627 (L or M)	515082S
	Q102	111	TR 2SC1627 (L or M)	515082S
	R101	111	RES 6.8 Kohm 5% ¼W	328682J
	R102	111	RES 3.3 Kohm 5% ¼W	328332J
	R103	111	RES 560 ohm 5% ¼W	328561J
	R104	111	RES 330 ohm 5% ¼W	328331J
	R105	111	RES 1.5 Kohm 5% ¼W	328152J
	R106	111	UF-RES 47 ohm 5% ½W	329470N
	R107	111	RES 3.3 Kohm 5% ¼W	328332J
	R108	111	RES 680 ohm 5% ¼W	328681J
	R109	111	RES 330 ohm 5% ¼W	328331J
	R110	111	RES 1.5 Kohm 5% ¼W	328152J
	R111	111	RES 12 Kohm 5% ¼W	328123J
	R112	111	RES 390Kohm 5% ¼W	328394J
	R113	111	RES 470 ohm 5% ¼W	328471J
	R114	111	RES 47 Kohm 5% ¼W	328473J
	R115	111	RES 2.2 Kohm 5% ¼W	328222J
	R116	111	RES 5.6 Kohm 5% ¼W	328562J
	R117	111	RES 6.8 Kohm 5% ¼W	328682J
	R118	111	RES 220 ohm 5% ¼W	328221J
	R119	111	RES 100 Kohm 5% ¼W	328104J
	R120	111	RES 1.8 Kohm 5% ¼W	328182J
	R121	111	POT HVR KVSF10-7SNF B50Kohm	4300480
	R151	111	UF-RES 47 ohm 5% ½W	329470N
	T101	111	FM DISCRIMINATOR TRANSFORMER <FM DET (1) SNY 1719 S-10G>	1240280
	T102	111	FM DISCRIMINATOR TRANSFORMER <FM DET (2) SNY1720 S-10G>	1240290
	C151 ~C155	555	C-CAP 0.022μF 80, −20% 50V YG	231223Z
			(AM BLOCK)	
	C201	111	S-CAP 360pF 5%	223361V
	C202	111	C-CAP 15pF 10% 50V N750	232150U
	C203	111	C-CAP 0.01μF 80, −20% 50V YG	232203Z
	C204	111	C-CAP 0.01μF 80, −20% 50V YG	231103Z
	C205	111	E-CAP 16R 10μF	211220Q
	C206	111	C-CAP 0.01μF 80, −20% 50V YG	231103Z
	C207	111	E-CAP 16R 10μF	211220Q
	C208	111	C-CAP 0.047μF 80, −20% 50V YG	231473Z
	C209	111	E-CAP 35R 4.7μF	211415Q
	C210	111	E-CAP 50R 3.3μF	211513Q
	C211	111	C-CAP 0.001μF 80, −20% 50V YG	231102Z
	C212	111	C-CAP 0.01μF 80, −20% 50V YG	231103Z
	C213	111	M-CAP 0.033μF 10% 50V	222333Z
	C214	111	M-CAP 0.047μF 10% 50V	222473Z
	C215	111	C-CAP 0.01μF 80, −20% 50V YG	231103Z
	C216	111	C-CAP 0.01μF 80, −20% 50V YG	231103Z
	C217	111	E-CAP 16R47μF	211225Q
	C218	111	C-CAP 0.022μF 80, −20% 50V YG	231223Z
	D201	111	DIODE 1N60	500001G
	D202		Out of use	
	D203	111	DIODE 1S2076	501019S
	IC201	111	IC HA1197	518044S
	R201	111	RES 220 ohm 5% ¼W	328221J
	R202	111	RES 1.5 Kohm 5% ¼W	328152J
	R203	111	RES 10 ohm 5% ¼W	328100J
	R204	111	RES 100 ohm 5% ¼W	328101J
	R205	111	RES 5.6 Kohm 5% ¼W	328562J
	R206	111	RES 330 ohm 5% ¼W	328331J
	R207	111	RES 10 Kohm 5% ¼W	328103J
	R208	111	RES 10 Kohm 5% ¼W	328103J
	R209	111	RES 220 ohm 5% ¼W	328221J
	R210	111	RES 1 Kohm 5% ¼W	328102J
	R211		Out of use	
	R212	111	RES 56 Kohm 5% ¼W	328563J
	R213	111	RES 150 ohm 5% ¼W	328151J
	R214	111	RES 5.6 Kohm 5% ¼W	328562J
	T201	111	AM OSCILLATOR COIL	1220060
	T202	111	AM I-F TRANSFORMER CFT455D-3	1280210
	T203	111	AM I-F TRANSFORMER P10L	1230140
			(FM MPX BLOCK)	
	BP301	111	MPX FILTER FB-3603	518043F
	C301	111	M-CAP 0.047μF 10% 50V	222473K
	C302	111	E-CAP 10μF 16V	211220Q
	C303	111	S-CAP 470pF 5%	223471V
	C304	111	T-CAP 35D1μF	252410M
	C305	111	T-CAP 10D3.3μF	252113M
	C306	111	T-CAP 35D0.22μF	252402M
	C321	111	E-CAP 16R10μF	211220Q
	C322	111	E-CAP 16R10μF	211220Q
	C323	111	C-CAP 510pF 5% DD109SL	232511J
	C324	111	C-CAP 510pF 5% DD109SL	232511J
	C325	111	E-CAP 50R1μF	211510Q
	C326	111	E-CAP 50R1μF	211510Q
	C325	111	M-CAP 0.0012μF 10% 50V	222122K
	C328	111	M-CAP 0.0012μF 10% 50V	222122K
	C329	1- -	M-CAP 0.015μF 10% 50V	222153K
	C329	- 11	M-CAP 0.01μF 10% 50V	222103K
	C330	1- -	M-CAP 0.015μF 10% 50V	222153K
	C330	- 11	M-CAP 0.01μF 10% 50V	222103K
	C331	111	M-CAP 0.0022μF 10% 50V	222222K
	C340	111	E-CAP 16R220μF	211230Q

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KEY NO.	SYMBOL NO.	TYPE+ W-type-u E-type-g N-type-d	DESCRIPTION	PART NO.
	D301	111	DIODE 1S2076	501019S
	IC301	111	IC HA1196	518043S
	R301	111	RES 10 Kohm 5% ¼W	328103J
	R302	111	RES 68 Kohm 5% ¼W	328683J
	R303		Out of use	
	R304	111	RES 1.8 Kohm 5% ¼W	328182J
	R305	111	RES 5.6 Kohm 5% ¼W	328562J
	R306		Out of use	
	R307	111	RES 15 Kohm 5% ¼W	328153J
	R308	111	RES 1 Kohm 5% ¼W	328102J
	R309	111	RES 100 Kohm 5% ¼W	328104J
	R310	111	RES 100 Kohm 5% ¼W	328104J
	R311	111	UF-RES 680 ohm 5% ½W	329681N
	R312		Out of use	
	R321	111	RES 33 Kohm 5% ¼W	328333J
	R322	111	RES 33 Kohm 5% ¼W	328333J
	R323	111	RES 8.2 Kohm 5% ¼W	328822J
	R324	111	RES 8.2 Kohm 5% ¼W	328822J
	R325	111	RES 47 Kohm 5% ¼W	328473J
	R326	111	RES 47 Kohm 5% ¼W	328473J
	R327	1--	RES 330 ohm 5% ¼W	328331J
	R328	1--	RES 330 ohm 5% ¼W	328331J
	R329	111	RES 3.3 Kohm 5% ¼W	328332J
	R330	111	RES 3.3 Kohm 5% ¼W	328332J
	R331	111	RES 3.3 Kohm 5% ¼W	328332J
	R332	111	RES 3.3 Kohm 5% ¼W	328332J
	R327	-11	RES 270 ohm 5% ¼W	328271J
	R328	-11	RES 270 ohm 5% ¼W	328271J
			(EQUALIZER BLOCK)	
	C401	111	E-CAP 50R1μF	211510Q
	C402	111	E-CAP 50R1μF	211510Q
	C403	111	E-CAP 25R10μF	211320Q
	C404	111	E-CAP 25R10μF	211320Q
	C405	111	C-CAP 100pF 10% 50V SL	232101K
	C406	111	C-CAP 100pF 10% 50V SL	232101K
	C407	111	C-CAP 22pF 10% 50V SL	232220K
	C408	111	C-CAP 22pF 10% 50V SL	232220K
	C409	111	M-CAP 0.01μF 5% 50V	222103J
	C410	111	M-CAP 0.01μF 5% 50V	222103J
	C411	111	E-CAP 16R100μF	211230Q
	C412	111	E-CAP 16R100μF	211230Q
	C413	111	C-CAP 3pF ±0.5pF 50V SL	232309D
	C414	111	C-CAP 3pF ±0.05pF 50V SL	232309D
	C415	111	E-CAP 10R220μF	211132Q
	C416	111	E-CAP 10R220μF	211132Q
	C417	111	E-CAP 25R47μF	211325Q
	C418	111	E-CAP 25R47μF	211325Q
	C419	111	M-CAP 0.0033μF 5% 50V	222332J
	C420	111	M-CAP 0.0033μF 5% 50V	222332J
	C421	111	C-CAP 330pF 10% 50V SL	232331K
	C422	111	C-CAP 330pF 10% 50V SL	232331K
	C423	111	E-CAP 50R3.3μF	211513L
	C424	111	E-CAP 50R3.3μF	211513L
	C425	111	C-CAP 47pF 10% 50V SL	232470K
	C426	111	C-CAP 47pF 10% 50V SL	232470K
	C427	111	E-CAP 35R100μF	211430Q
	C428	111	E-CAP 35R100μF	211430Q
	C429	111	Out of use	
	C430	111	Out of use	
	C431	111	C-CAP 0.01μF 80, −20% 50V YG	231103Z
	Q401	111	TR 2SA941 (BL)	510048S
	Q402	111	TR 2SA941 (BL)	510048S
	Q403	111	TR 2SC2088 (BL)	511023S
	Q404	111	TR 2SC2088 (BL)	511023S
	Q405	111	TR 2SC1627 (Y)	511017S
	Q406	111	TR 2SC1627 (Y)	511017S
	R401	111	RES 100 Kohm 5% ¼W	328104J
	R402	111	RES 100 Kohm 5% ¼W	328104J
	R403	111	RES 100 Kohm 5% ¼W	328104J
	R404	111	RES 100 Kohm 5% ¼W	328104J
	R405	111	RES 1 Kohm 5% ¼W	328102J
	R406	111	RES 1 Kohm 5% ¼W	328102J
	R407	111	RES 22 Kohm 5% ¼W	328223J
	R408	111	RES 22 Kohm 5% ¼W	328223J
	R409	111	RES 120 Kohm 5% ¼W	328124J
	R410	111	RES 120 Kohm 5% ¼W	328124J
	R411	111	RES 39 Kohm 5% ¼W	328393J
	R412	111	RES 39 Kohm 5% ¼W	328393J
	R413	111	RES 22 Kohm 5% ¼W	328223J
	R414	111	RES 22 Kohm 5% ¼W	328223J
	R415	111	RES 470 ohm 5% ¼W	328471J
	R416	111	RES 470 ohm 5% ¼W	328471J
	R417	111	RES 270 Kohm 5% ¼W	328274J
	R418	111	RES 270 Kohm 5% ¼W	328274J
	R419	111	RES 1.2 Kohm 5% ¼W	328122J
	R420	111	RES 1.2 Kohm 5% ¼W	328122J
	R421	111	RES 12 Kohm 5% ¼W	328123J
	R422	111	RES 12 Kohm 5% ¼W	328123J
	R423	111	RES 15 Kohm 5% ¼W	328153J
	R424	111	RES 15 Kohm 5% ¼W	328153J
	R425	111	RES 4.7 Kohm 5% ¼W	328472J
	R426	111	RES 4.7 Kohm 5% ¼W	328472J
	R427	111	UF-MO-RES 2.7 Kohm 5% 1W	361272L
	R428	111	UF-MO-RES 2.7 Kohm 5% 1W	361272L
	R429	111	RES 22 Kohm 5% ¼W	328223J
	R430	111	RES 22 Kohm 5% ¼W	328223J
	R431	111	RES 560 ohm 5% ¼W	328561J
	R432	111	RES 560 ohm 5% ¼W	328561J
	R433	111	RES 1.5 Kohm 5% ¼W	328152J
	R434	111	RES 1.5 Kohm 5% ¼W	328152J
	R435	111	RES 220 Kohm 5% ¼W	328224J
	R436	111	RES 220 Kohm 5% ¼W	328224J
			(SWITCH BLOCK)	
	C501	111	C-CAP 0.01μF 80, −20% 50V YG	231103Z
	C502		Out of use	
	R501	111	RES 330 Kohm 5% ¼W	328334J
	R502	111	RES 330 Kohm 5% ¼W	328334J
	R503	111	RES 100 Kohm 5% ¼W	328104J
	R504	111	RES 100 Kohm 5% ¼W	328104J
	R505	111	RES 2.2 Kohm 5% ¼W	328222J
	R506	111	RES 2.2 Kohm 5% ¼W	328222J

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KEY NO.	SYMBOL NO.	TYPE+ W-type-u E-type-g N-type-d	DESCRIPTION	PART NO.
	R507	111	RES 2.2 Kohm 5% ¼W	328222J
	R508	111	RES 2.2 Kohm 5% ¼W	328222J
	R509	111	RES 3.3 Kohm 5% ¼W	328332J
	R510	111	RES 3.3 Kohm 5% ¼W	328332J
	R511	111	RES 12 Kohm 5% ¼W	328123J
	R512	111	RES 12 Kohm 5% ¼W	328123J
	R513	111	RES 100 Kohm 5% ¼W	328104J
	R514	111	RES 100 Kohm 5% ¼W	328104J
	R515	111	RES 5.6 Kohm 5% ¼W	328562J
	R516	111	RES 5.6 Kohm 5% ¼W	328562J
			(MIC AMP BLOCK)	
	C901	111	E-CAP 50R 1μF	211510Q
	C902	111	C-CAP 100pF 10% 50V SL	232101K
	C903	111	C-CAP 100pF 10% 50V SL	232101K
	C904	111	E-CAP 16R 10μF	211220Q
	C905	111	C-CAP 470pF 10% 50V SL	232331K
	C906	111	C-CAP 10pF 10% 50V SL	232100K
	C907	111	E-CAP 35R 10μF	211420Q
	C908	111	E-CAP 16R 47μF	211225Q
	C909	111	E-CAP 50R 0.47μF	211515Q
	C910	111	E-CAP 35R 10μF	211420Q
	C911	111	C-CAP 33pF 10% 50V	232330K
	C912	111	E-CAP 50R 1μF	211510Q
	C913	111	C-CAP 10pF 10% 50V SL	232100K
	C914	111	E-CAP 50R 3.3μF	211513Q
	Q901	111	TR 2SA941 (BL)	510048S
	Q902	111	TR 2SC2088 (BL)	511023S
	Q903	111	TR 2SC2088 (BL)	511023S
	R901	111	RES 1 Kohm 5% ¼W	328102J
	R902	111	RES 100 Kohm 5% ¼W	328104J
	R903	111	RES 100 ohm 5% ¼W	328104J
	R904	111	RES 39 Kohm 5% ¼W	328393J
	R905	111	RES 12 Kohm 5% ¼W	328123J
	R906	111	RES 150 Kohm 5% ¼W	328154J
	R907	111	RES 3.9 Kohm 5% ¼W	328392J
	R908	111	RES 220 ohm 5% ¼W	328221J
	R909	111	RES 100 ohm 5% ¼W	328101J
	R910	111	RES 390 Kohm 5% ¼W	328394J
	R911	111	RES 1 Kohm 5% ¼W	328102J
	R912	111	RES 220 Kohm 5% ¼W	328224J
	R913	111	RES 180 Kohm 5% ¼W	328184J
	R914	111	UF-RES 4.7Kohm 5% ½W	329472N
	R915	111	RES 120 Kohm 5% ¼W	328124J
	R916	111	RES 120 Kohm 5% ¼W	328124J
	R917	111	RES 100 Kohm 5% ¼W	328104J
	R918	111	RES 100 Kohm 5% ¼W	328104J

KEY NO.	SYMBOL NO.	TYPE+ W-type-u E-type-g N-type-d	DESCRIPTION	PART NO.
			TONE AMP CIRCUIT BOARD	
*701			COMPLETE CIRCUIT BOARD <TONE AMP PCB ASS>	944120
	C503	111	S-CAP 560pF 5%	223561V
	C504	111	S-CAP 560pF 5%	223561V
	C505	111	M-CAP 0.12μF 10% 50V	222124K
	C506	111	M-CAP 0.12μF 10% 50V	222124K
	C507	111	E-CAP 25R 10μF	211320Q
	C508	111	E-CAP 25R 10μF	211320Q
	C509	111	C-CAP 33pF 10% 50V SL	232330K
	C510	111	C-CAP 33pF 10% 50V SL	232330K
	C511	111	T-CAP 35D 0.47μF	252405M
	C512	111	T-CAP 35D 0.47μF	252405M
	C513	111	E-CAP 10R 220μF	211132Q
	C514	111	E-CAP 10R 220μF	211132Q
	C515	111	E-CAP 16R 47μF	211225Q
	C516	111	E-CAP 16R 47μF	211225Q
	C517	111	E-CAP 35R 10μF	211420L
	C518	111	E-CAP 35R 10μF	217420L
	C519	111	M-CAP 0.022μF 10% 50V	222223K
	C520	111	M-CAP 0.022μF 10% 50V	222223K
	C521	111	M-CAP 0.022μF 10% 50V	222223K
	C522	111	M-CAP 0.022μF 10% 50V	222223K
	C523	111	M-CAP 0.0012μF 10% 50V	222122K
	C524	111	M-CAP 0.0012μF 10% 50V	222122K
	C525	111	E-CAP 50R 3.3μF	211513Q
	C526	111	E-CAP 50R 3.3μF	211513Q
	C527	111	C-CAP 5pF ±0.5pF 50V SL	232509D
	C528	111	C-CAP 5pF ±0.5pF 50V SL	232509D
	C529	111	E-CAP 25R10μF	211320Q
	C530	111	E-CAP 25R10μF	211320Q
	C531	111	E-CAP 6.3R 100μF	211030Q
	C532	111	E-CAP 6.3R 100μF	211030Q
	C533	111	E-CAP 35R 10μF	211420L
	C534	111	E-CAP 35R 10μF	211420L
	C601	111	M-CAP 0.0068μF 10% 50V	222682K
	C602	111	M-CAP 0.0068μF 10% 50V	222682K
	C603	111	M-CAP 0.033μF 10% 50V	222333K
	C604	111	M-CAP 0.033μF 10% 50V	222333K
	C605	111	C-CAP 150pF 5% 50V UDS08SL	232151J
	Q501	111	TR 2SA750 (I) (E)	514088S
	Q502	111	TR 2SA750 (I) (E)	514088S
	Q503	111	TR 2SC1400 (E)	511013S
	Q504	111	TR 2SC1400 (E)	511013S
	Q505	111	TR 2SC2088 (BL)	511023S
	Q506	111	TR 2SC2088 (BL)	511023S
	Q507	111	TR 2SA941 (BL)	510048S
	Q508	111	TR 2SA941 (BL)	510048S
	R521	111	RES 15 Kohm 5% ¼W	328153J
	R522	111	RES 15 Kohm 5% ¼W	328153J
	R523	111	RES 1Mohm 5% ¼W	328105J
	R524	111	RES 1Mohm 5% ¼W	328105J
	R525	111	RES 4.7 Kohm 5% ¼W	328472J
	R526	111	RES 4.7 Kohm 5% ¼W	328472J
	R527		Out of use	
	R528		Out of use	
*702a *702b	R529, R530	111 111	VR B 100 Kohm x 2 <GJ70E684> (VOLUME)	4320710

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KEY NO.	SYMBOL NO.	TYPE+ W-type-u E-type-g N-type-d	DESCRIPTION**	PART NO.
	R531	111	RES 2.2 Kohm 5% ¼W	328222J
	R532	111	RES 2.2 Kohm 5% ¼W	328222J
	R533	111	RES 220 Kohm 5% ¼W	328224J
	R534	111	RES 220 Kohm 5% ¼W	328224J
	R535	111	RES 470 ohm 5% ¼W	328471J
	R536	111	RES 470 ohm 5% ¼W	328471J
	R537	111	RES 120 Kohm 5% ¼W	328124J
	R538	111	RES 120 Kohm 5% ¼W	328124J
	R539	111	RES 180 Kohm 5% ¼W	328184J
	R540	111	RES 180 Kohm 5% ¼W	328184J
	R541	111	RES 3.3 Kohm 5% ¼W	328332J
	R542	111	RES 3.3 Kohm 5% ¼W	328332J
	R543	111	RES 5.6 Kohm 5% ¼W	328562J
	R544	111	RES 5.6 Kohm 5% ¼W	328562J
	R545	111	RES 3.9 Kohm 5% ¼W	328392J
	R546	111	RES 3.9 Kohm 5% ¼W	328392J
	R547	111	RES 220 Kohm 5% ¼W	328224J
	R548	111	RES 220 Kohm 5% ¼W	328224J
	R549	111	RES 27 Kohm 5% ¼W	328273J
	R550	111	RES 27 Kohm 5% ¼W	328273J
	R551	111	RES 8.2 Kohm 5% ¼W	328822J
	R552	111	RES 8.2 Kohm 5% ¼W	328822J
	R553	111	RES 27 Kohm 5% ¼W	328273J
	R554	111	RES 27 Kohm 5% ¼W	328273J
	R555	111	RES 560 Kohm 5% ¼W	328564J
	R556	111	RES 560 Kohm 5% ¼W	328564J
	R557	111	RES 4.7 Kohm 5% ¼W	328472J
	R558	111	RES 4.7 Kohm 5% ¼W	328472J
	R559	111	RES 4.7 Kohm 5% ¼W	328472J
	R560	111	RES 4.7 Kohm 5% ¼W	328472J
*703a	R561	111	] VR B 100 Kohm x 2 (IIC) <V24L5-	
*703b	R562	111	G_4 PHN 2.5 KC> (BASS)	4320630
*704a	R563	111	] VR B 100 Kohm x 2 (IIC) <V24-	
*704b	R564	111	$L_5 G_4$ PHN 25 KC> (TREBLE)	4320640
	R565	111	RES 220 Kohm 5% ¼W	328224J
	R566	111	RES 220 Kohm 5% ¼W	328224J
	R567	111	RES 12 Kohm 5% ¼W	328123J
	R568	111	RES 12 Kohm 5% ¼W	328123J
	R569	111	RES 22 Kohm 5% ¼W	328223J
	R570	111	RES 22 Kohm 5% ¼W	328223J
	R571	111	RES 100 ohm 5% ¼W	328101J
	R572	111	RES 100 ohm 5% ¼W	328101J
	R573	111	RES 3.3 Kohm 5% ¼W	328332J
	R574	111	RES 3.3 Kohm 5% ¼W	328332J
	R575	111	RES 5.6 Kohm 5% ¼W	328562J
	R576	111	RES 5.6 Kohm 5% ¼W	328562J
	R577	111	RES 220 Kohm 5% ¼w	328224J
	R578	111	RES 220 Kohm 5% ¼W	328224J
	R579	111	UF-RES 470 ohm 5% ½W	329471N
	R580	111	UF-RES 470 ohm 5% ½W	329471N
	R589	111	RES 1M ohm 5% ¼W	328105J
	R590	111	RES 1M ohm 5% ¼W	328105J
	R601	111	RES 330 Kohm 5% ¼W	328334J
	R602	111	RES 330 Kohm 5% ¼W	328334J
	R603	111	RES 3.3 Kohm 5% ¼W	328332J
	R604	111	RES 3.3 Kohm 5% ¼W	328332J
	R605	111	RES 1 Mohm 5% ¼W	328105J
	R606	111	RES 1 Mohm 5% ¼W	328105J
	R607	111	RES 680 Kohm 5% ¼W	328684J
	R608	111	RES 680 Kohm 5% ¼W	328684J

KEY NO.	SYMBOL NO.	TYPE+ W-type-u E-type-g N-type-d	DESCRIPTION**	PART NO.
705	S6,S9	111	DOUBLE PUSHBUTTON SWITCH <TWIN PUSH SW SUE-23> (LOW (LOW FILTER, HIGH FILTER)	4040790
706	S7,S8	111	DOUBLE PUSHBUTTON SWITCH <TWIN PUSH SW SUE-23> (25μs, LOUDNESS)	4040790
*707	↑	444	SCREW <STUD SCW (6.5)>	7121000
	C537	111	E-CAP 25R 220μF	211332Q
	C538	111	E-CAP 25R 220μF	211332Q

MAIN AMP CIRCUIT BOARD

*801		111	COMPLETE CIRCUIT BOARD <MAIN AMP PCB ASS>	9430570
	C701	111	E-CAP 25R 10μF	211320V
	C702	111	E-CAP 25R 10μF	211320V
	C703	111	C-CAP 100pF 10% 50V SL	232101K
	C704	111	C-CAP 100pF 10% 50V SL	232101K
	C705	111	E-CAP 16R 10μF	211220Q
	C706	111	E-CAP 16R 10μF	211220Q
	C707	111	C-CAP 470pF 10% 50V SL	232471K
	C708	111	C-CAP 470pF 10% 50V SL	232471K
	C709	111	E-CAP 16R 220μF	211232Q
	C710	111	E-CAP 16R 220μF	211232Q
	C711	111	M-CAP 0.001μF 10% 50V	222102K
	C712	111	M-CAP 0.001μF 10% 50V	222102K
	C713	111	C-CAP 10pF 10% 50V SL	232100K
	C714	111	C-CAP 10pF 10% 50V SL	232100K
	C715	111	C-CAP 33pF 10% 500V SL	234330K
	C716	111	C-CAP 33pF 10% 500V SL	234330K
	C717	111	C-CAP 10pF 10% 50V SL	232100K
	C718	111	C-CAP 10pF 10% 50V SL	232100K
	C719	111	C-CAP 10pF 10% 50V SL	232100K
	C720	111	C-CAP 10pF 10% 50V SL	232100K
	C721	111	C-CAP 10pF 10% 50V SL	232100K
	C722	111	C-CAP 10pF 10% 50V SL	232100K
	C723	111	C-CAP 100pF 10% 500V SL	234101K
	C724	111	C-CAP 100pF 10% 500V SL	234104K
	C725	111	C-CAP 100pF 10% 500V SL	234104K
	C726	111	C-CAP 100pF 10% 500V SL	234104K
	C727	111	M-CAP 0.1μF 10% 50V	222104K
	C728	111	M-CAP 0.1μF 10% 50V	222104K
	C729	111	M-CAP 0.1μF 10% 50V	222104K
	C730	111	M-CAP 0.1μF 10% 50V	222104K
	C731	111	M-CAP 0.047μF 10% 100V	222473K
	C732	111	M-CAP 0.047μF 10% 100V	222473K
	C737	111	C-CAP 10pF 10% 50V SL	232100K
	C738	111	C-CAP 10pF 10% 50V SL	232100K
	D701			
	~D706	666	DIODE 1S2076	501019S
	D707			
	~D712	666	DIODE 1S2076	501019S

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Parts ordering procedure:

Include in any order

a. Part number.
b. Part description.
c. Model number.

(Any of the above lacking from an order may delay shipment of that order.)

KEY NO.	SYMBOL NO.	TYPE+ W-type-u E-type-g N-type-d	DESCRIPTION**	PART NO.
	L701	111	CHOKE COIL	1210830
	L702	111	CHOKE COIL	1210830
	Q701	111	TR 2SA798 (F or G)	514086S
	Q702	111	TR 2SA798 (F or G)	514086S
	Q703	111	TR 2SC2088 (BL)	511023S
	Q704	111	TR 2SC2088 (BL)	511023S
	Q705	111	TR 2SA818 (Y or O)	514089S
	Q706	111	TR 2SA818 (Y or O)	514089S
	Q707	111	TR 2SC1628 (Y)	515078S
	Q708	111	TR 2SC1628 (Y)	515078S
	Q709	111	TR 2SC945 L (P or Q)	515077S
	Q710	111	TR 2SC945 L (P or Q)	515077S
	Q711	111	TR 2SA733 (Q or R)	514074S
	Q712	111	TR 2SA733 (Q or R)	514074S
	R701	111	RES 56 Kohm 5% ¼W	328563J
	R702	111	RES 56 Kohm 5% ¼W	328563J
	R703	111	RES 2.2 Kohm 5% ¼W	328222J
	R704	111	RES 2.2 Kohm 5% ¼W	328222J
	R705	111	RES 15 Kohm 5% ¼W	328153J
	R706	111	RES 15 Kohm 5% ¼W	328153J
	R707	111	RES 560 ohm 5% ¼W	328561J
	R708	111	RES 560 ohm 5% ¼W	328561J
	R709	111	RES 220 ohm 5% ¼W	328221J
	R710	111	RES 220 ohm 5% ¼W	328221J
	R711	111	RES 5.6 Kohm 5% ¼W	328562J
	R712	111	RES 5.6 Kohm 5% ¼W	328562J
	R713	111	RES 680 ohm 5% ¼W	328681J
	R714	111	RES 680 ohm 5% ¼W	328681J
	R715	111	RES 390 ohm 5% ¼W	328391J
	R716	111	RES 390 ohm 5% ¼W	328391J
	R717	111	RES 1 Kohm 5% ¼W	328102J
	R718	111	RES 1 Kohm 5% ¼W	328102J
	R719	111	RES 10 Kohm 5% ¼W	328103J
	R720	111	RES 10 Kohm 5% ¼W	328103J
	R721	111	RES 15 Kohm 5% ¼W	328153J
	R722	111	RES 15 Kohm 5% ¼W	328153J
	R723	111	RES 15 Kohm 5% ¼W	328153J
	R724	111	RES 15 Kohm 5% ¼W	328153J
	R725	111	RES 120 ohm 5% ¼W	328121J
	R726	111	RES 120 ohm 5% ¼W	328121J
	R727	111	RES 22 ohm 5% ¼W	328220J
	R728	111	RES 22 ohm 5% ¼W	328220J
	R729	111	RES 22 ohm 5% ¼W	328220J
	R730	111	RES 22 ohm 5% ¼W	328220J
	R731	111	RES 120 ohm 5% ¼W	328121J
	R732	111	RES 120 ohm 5% ¼W	328121J
	R733	111	UF-RES 10Kohm 5% ½W	329103N
	R734		Out of use	
	R735	111	UF-RES 390 ohm 5% ¼W	329391N
	R736	111	UF-RES 390 ohm 5% ¼W	329391N
	R737	111	RES 3.3 Kohm 5% ¼W	328332J
	R738	111	RES 3.3 Kohm 5% ¼W	328332J
	R739	111	RES 4.7 Kohm 5% ¼W	328472J
	R740	111	RES 4.7 Kohm 5% ¼W	328472J
	R741	111	UF-RES 390 ohm 5% ½W	329391N
	R742	111	UF-RES 390 ohm 5% ½W	329391N
	R743	111	CEM-RES 10 ohm 3W	383100K
	R744	111	CEM-RES 10 ohm 3W	383100K
	R745	111	MO-RES 10 ohm 2W	362100B
	R746	111	MO-RES 10 ohm 2W	362100B
	ZD701	111	ZENER DIODE XZ122	502020S

KEY NO.	SYMBOL NO.	TYPE+ W-type-u E-type-g N-type-d	DESCRIPTION**	PART NO.
*802		222	MAIL PLUG <MINI CONCT PLUG 3P> INPUT	4570120
803		111	FEMAIL SOCKET <MINI CONCT ASS 5P>	4570180
804		111	FEMAIL SOCKET <MINI CONCT ASS 3P>	4570190

REGURATOR & PROTECTOR CIRCUIT BOARD

*901a		11-	COMPLETE CIRCUIT BOARD <PROTECT-REG PCB ASS>	9450600
901b		--1	COMPLETE CIRCUIT BOARD <PROTECT-REG PCB ASS>	9450610
	C801	111	E-CAP 16R 220μF	211232Q
	C802	111	E-CAP 16R 220μF	211232Q
	C803	111	E-CAP 35R 100μF	211430Q
	C804	111	E-CAP 35R 100μF	211430Q
	C805	111	C-CAP 0.001μF 80, −20% 50V YG	231102Z
	C806	111	E-CAP 35R 220μF	211432Q
	C807	111	E-CAP 63R 100μF	211630V
	C808	111	E-CAP 63R 100μF	211630V
	C809	111	E-CAP 35R 220μF	211432Q
	C810	111	E-CAP 50R 220μF	211532Q
	C811	111	E-CAP 63R 100μF	211630V
	C812	111	E-CAP 63R 100μF	211630V
	C813	111	E-CAP 63R 220μF	211632V
	C814	111	E-CAP 63R 220μF	211632V
	C815	111	E-CAP 63R 10000μF	212650P
	C816	111	E-CAP 63R 10000μF	212650P
	C817	111	C-CAP 0.01μF 100, −0% 500V	238103P
	C818	111	C-CAP 0.01μF 100, −0% 500V	238103P
	C819	111	C-CAP 0.01μF 100, −0% 500V	238103P
	C820	111	C-CAP 0.01μF 100, −0% 500V	238103P
	C821	111	C-CAP 0.01μF 100, −0% 500V	238103P
	C831	111	E-CAP 16R 220μF	211232Q
	C832	111	E-CAP 16R 220μF	211232Q
	C833	111	E-CAP 35R 100μF	211430Q
	C834	111	E-CAP 35R 10μF	211420Q
	C835	111	E-CAP 25R 22μF	211322V
	C836	111	E-CAP 25R 22μF	211322V
	C861	111	C-CAP 0.001μF 80, −20% 50V YG	231102Z
	C862	111	C-CAP 0.001μF 80, −20% 50V YG	231102Z
	D801	111	DIODE S5VB20	560042S
	↑	111	HEATSINK (D)	7081950
	↑	111	SCREW <PTS 3 x 12>	814312S
	D802	111	DIODE 1D4B1	560031S
	D803	111	DIODE 1S2076A	501020S
	D804	111	DIODE 1S2076A	501020S
	D805	111	DIODE 1S1885	560032S
	D806	111	DIODE 1S2076A	501020S
902a	F2	11-	FUSE 3A	4700010

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Parts ordering procedure:

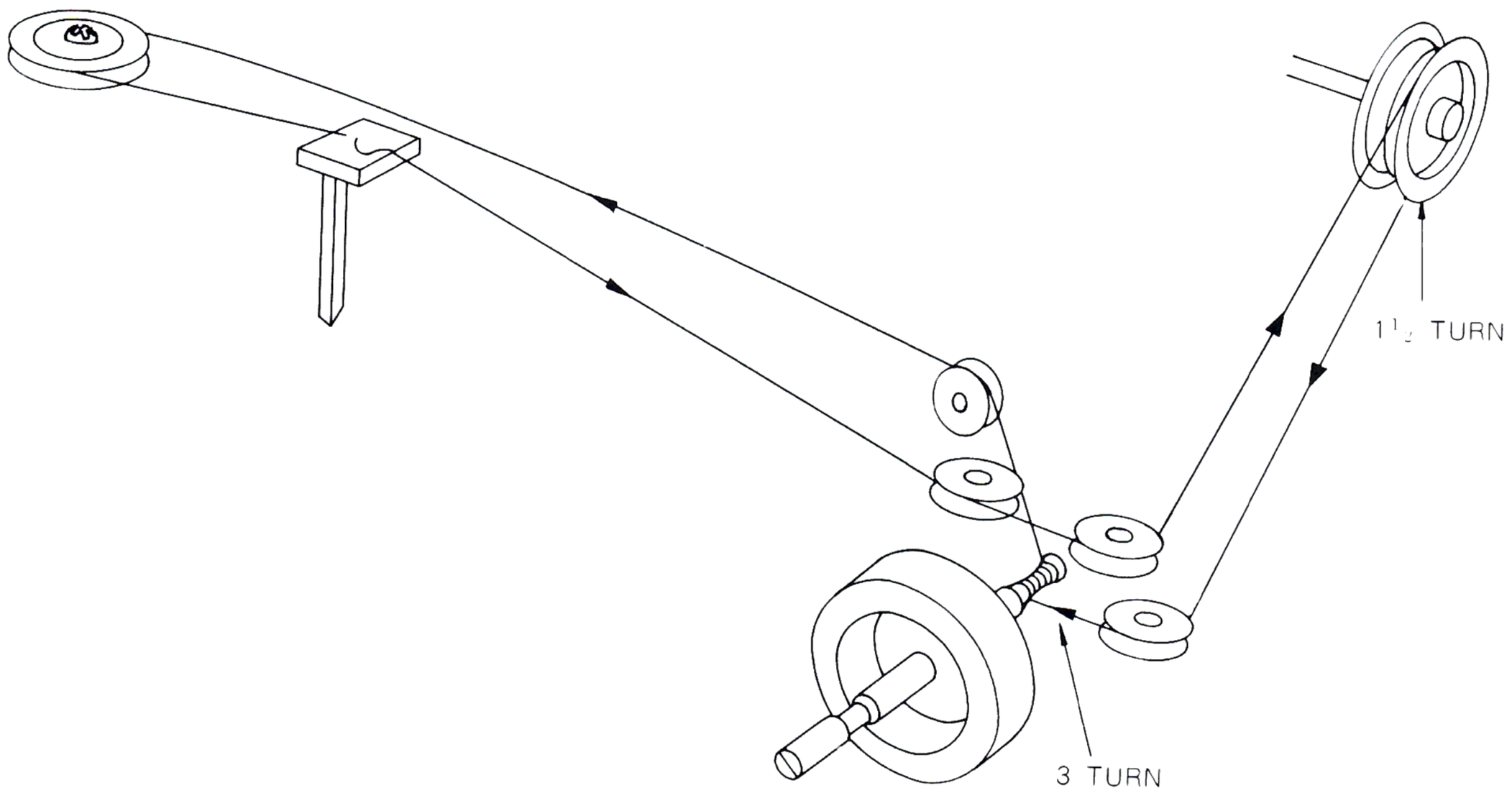
Include in any order

a. Part number.
b. Part description.
c. Model number.

(Any of the above lacking from an order may delay shipment of that order.)

KEY NO.	SYMBOL NO.	TYPE+ W-type-u E-type-g N-type-d	DESCRIPTION**	PART NO.
902b	F2	- - 1	MIDGET FUSE(S) 3.15A 250V	4720390
903a	F3,F4	22-	FUSE 1A	4700020
903b	F3,F4	- - 2	MIDGET FUSE(S) 1A 250V	4720330
904a		66-	FUSE HOLDER	7050420
904b		- - 6	MIDGET FUSE HOLDER	
	Q801	111	TR 2SD 381 (L or M)	510038S
	↑	111	HEATSINK 1625NT	7480270
	↑	111	SCREW <PMS 3 x 5>	810305S
	↑	111	SCREW <PMS 3 x 6>	810306S
Q802	111		TR 2SD 381 <L or M)	510038S
	↑	111	HEATSINK S10	7081820
	↑	111	SCREW <PMS 3 x 5>	810305S
Q803	111		TR 2SC2088 (BL)	511023S
Q804	111		TR 2SC1627 (Y)	511017S
Q805	111		TR 2SB536 (L or M)	510039S
	↑	111	HEATSINK S10	7081820
	↑	111	SCREW <PMS 3 x 5>	810305S
Q806	111		TR 2SA941 (BL)	514074S
Q807	111		TR 2SA817 (Y)	510047S
Q808	111		TR 2SC945 L (P or Q)	515077S
Q809	111		TR 2SC945 L (P or Q)	515077S
Q810	111		TR 2SC2088 (BL)	511023S
Q811	111		TR 2SC2088 (BL)	511023S
Q812	111		TR 2SC2088 (BL)	511023S
Q813	111		TR 2SC945 L (P or Q)	515077S
Q814	111		TR 2SC1627 (Y)	511017S
R801	111		UF-MO-RES 180 ohm 3W	363181L
R802	111		RES 12 Kohm 5% ¼W	328123J
R803	111		RES 2.7 Kohm 5% ¼W	328272J
R804	111		RES 15 Kohm 5% ¼W	328153J
R805	111		RES 15 Kohm 5% ¼W	328153J
R806	111		RES 2.2 Kohm 5% ¼W	328222J
R807	111		RES 15 Kohm 5% ¼W	328153J
R808	111		RES 5.6 Kohm 5% ¼W	328562J
R809	111		RES 10 Kohm 5% ¼W	328103J
R810	111		UF-RES 3.3 Kohm ½W	329332N
R811	111		RES 2.7 Kohm 5% ¼W	328272J
R812	111		RES 6.8 Kohm 5% ¼W	328682J
R813	111		UF-RES 3.3 Kohm ½W	329332N
R821	111		RES 22 Kohm 5% ¼W	328223J
R822	111		RES 22 Kohm 5% ¼W	328223J
R823	111		RES 18 Kohm 5% ¼W	328183J
R824	111		RES 22 Kohm 5% ¼W	328223J
R825	111		RES 180 Kohm 5% ¼W	328184J
R826	111		RES 18 Kohm 5% ¼W	328183J
R827	111		RES 6.8 Kohm 5% ¼W	328682J
R828	111		RES 2.2 Kohm 5% ¼W	328222J
R829	111		RES 100 Kohm 5% ¼W	328104J
R830	111		RES 68 Kohm 5% ¼W	328683J
R831	111		UF-MO-RES 1.5 Kohm 1W	361152L
R832	111		RES 15 Kohm 5% ¼W	328153J
R833	111		RES 6.8 Kohm 5% ¼W	328682J
R834	111		UF-MO-RES 1.5 Kohm 1W	361152J
R835			Out of use	
R836	111		RES 150 Kohm 5% ¼W	328154J
R837	111		RES 10 Kohm 5% ¼W	328103J
R838	111		MO-RES 470 ohm 2W	362471B
R839	111		MO-RES 390 ohm 2W	362391B
R840	111		RES 12 Kohm 5% ½W	328123J
R841	111		UF-RES 680 ohm 5% ½W	329681N
R842			Out of use	
R843			Out of use	
R844			Out of use	
R845	111		RES 4.7 Kohm 5% ¼W	328472J
ZD801	111		ZENER DIODE XZ137	502037S
ZD802	111		ZENER DIODE WZ240	502021S

DIAL MECHANISM



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SEMICONDUCTOR SPECIFICATION

TRANSISTOR COMPLIMENT

NOTES † Ge : Germanium, Si : Silicon; A : Alloy, B : Base, D : Diffused, Dd : Double-diffused; Df : Drift-field, E : Epitaxial, G : Grown, J : Junction; M : Mesa, P : Planer, Pc : Point-contact, Td : Triple-diffused

DEVICE TYPE	APPLICATIONS	STRUCTURE†	MAXIMUM RATINGS Absolute-Maximum Values (T_A = 25°C unless otherwise specified)					ELECTRICAL CHARACTERISTICS Tipical Values (T_A = 25°C unless otherwise specified)														MANUFUCTURE
			Collector-to-Bace Voltage V_{CBO} (V)	Emitter-to-Bace Voltage V_{EBO} (V)	Collector Current I_C (mA)	Collector Dissipation P_C (mW)	Junction Temperature T_J (°C)	Collector Cutoff Current I_{CBO} (μA)	V_{CB} (V)	Static Forward-Current Transfer Ratio h_{FE}	V_{CE} (V)	I_C (mA)	Collector-Emitter Saturation Voltage $V_{CE(sat)}$ (V)	I_C (mA)	I_B (mA)	Gain-Bandwidth Product f_T $f_{\alpha b}$ (MHz)	V_{CB}* (V)	I_E I_C* (mA)	Base Spreading Resistance $r_{bb'}$ $h_{ie(real)}$* (Ω)	V_{CB}* (V)	I_E (mA)	Output Capacitance C_{ob} (pF)	
2SA733	AF	Si–E	−50	−5	−100	250	125	−0.1	−40	60 ~600	−6	−1	−0.1	−30	−3	180	−6	10				12	NEC
2SA750	Low-noise AF	"	−80	"	−50	250	"	−0.05	−50	225 ~1000	−3	−0.5	−0.82	−30	−3	100	−6	1				10	"
2SA798	AF	Si–EP	−70	"	−100	200	"	0.1	−35	250 ~800	−6	−1	−0.6 max.	−10	−1	100	−6	−1				3	MITSUBISHI
2SA817 (Y)	Driver	Si–E	−80	"	−300	600	150	0.1	50	70 ~240	−2	−50	−0.4 max.	−200	−20	100	−10	−10				14	TOSHIBA
2SA818 (Y)	High voltage driver	"	−100	"	−50	1W	"	1	100	70 ~240	−5	−10	−0.2 max.	−30	−3	120	−10	10				5	"
2SA941 (BL)		"	−120	"	−50	300	125	0.1	120	350 ~700	−6	−2	−0.4 max.	−10	−1							5	"
2SB536 (L or M)	AF Power, low speed switching	"	−130	"	−1.5A	20W	150	−1	−130	25 ~100	5	5	−0.9	1A	100	40	5	100				35	NEC
2SC945 L	AF	"	60	5	100	250	125	0.1	120	135 ~400	6	1	0.15	100	10	250	6	−10				3.5	"
(2SC1342)	Mixer	Si–P	30	4	30	100	"	0.5	10	100	6	1				250	6	−1	Cc rbb' = 20pF			1.1	HITACHI
2SC1400	Low-noise AF	Si–E	100	5	50	250	"	0.05	100	350 ~1000	3	0.5	0.09	50	5	100	6	−1				3	NEC
2SC1627 (Y)	Driver	"	80	"	300	600	150	0.1	50	70 ~240	12	2	0.4 max.	10	1	250	10	−1	20	10	−1	2	TOSHIBA
2SC1628 (Y)	High voltage driver	"	180	"	50	1W	"	1.0	100	70 ~240	5	10	1.0 max.	30	3	120	10	−10				5	"
2SC1675	RF, mixer, osc (in FM/AM radio)	"	50	"	30	250	125	0.1	50	40 ~180	6	1	0.08	10	1	250	6	−1	Cc rbb' = 10pS	6*	−10	2	NEC
2SC2088(BL)	Low-noise AF	"	120	"	50	300	"	0.1	120	350 ~700	6	2	0.3 max.	10	1	150	6	1				3	TOSHIBA
2SD381 (L or M)	AF power, low speed switching	"	130	"	1.5A	20W	150	1	130	25 ~65	5	5	0.9	1A	100	45	5	100				25	NEC
SE3001	Mixer	Si–																					

FIELD EFFECT TRANSISTOR COMPLEMENT

DEVICE TYPE	APPLICATIONS	STRUCTURE†	MAXIMUM RATINGS Absolute-Maximum Values (T_A = 25°C unless otherwise specified)						ELECTRICAL CHARACTERISTICS Tipical Values (T_A = 25°C unless otherwise specified)																MANUFUCTURE
			Gate-to-Drain Voltage V_{GDO} (V)	Gate-to-Source Voltage V_{GSO} (V)	Gate Current I_G (mA)	Drain Current I_D (mA)	Total Power Dissipation P_D (mW)	Junction Temperature T_J (°C)	Date Leak Current Test Conditions	I_{GSS} (nA)	Gate to Drain Breakdown Voltage Test Conditions	$V_{(BR)GDO}$ (V)	Drain Current Test Conditions	I_{DSS} (mA)	Gate to Source Cutoff Voltage Test Conditions	$V_{GS(off)}$ (V)	Forward Transfer Transfer Admittance Test Conditions	M_{fsl} (mts)	Feed Back Capacitance Test Conditions	C_{rss} (pF)	Power Gain (Common source) Test Conditions	GPS (dB)	Noise Figure Test Conditions	NF (dB)	
3SK45	RF	Si N-CHANNEL DUAL GATE MOS-FET		−7 ~+7		35	330	175	VG1S =±7V VDS =0V VG2S =0V VG2S =±7V VDS =0V VG1S =0V	IG1SS = 20 IG2SS = 20			VDS =15V VG1S =0V VG2S =4V	4~32	VDS =15V VG2S =4V ID= 100μA VDS =15V VG1S =0V ID= 100μA	VG1S =−3.0 MAX. VG2S =−0.3 MIN	VDS =15V VG2S =4V ID= 10mA f=1kHz GATE 7 TO DRAIN	14		0.02	VDD =15V VG2S =4V ID= 20mA f=200 MHz	MIN 17	VDD =15V VG2S =4V ID= 10mA f=200 MHz	MAX 3.3	HITACHI
(3SK40)	RF	Si N-CHANNEL DUAL GATE MOS-FET		−7 ~+7		25	250	150	VG1S =±5V VDS =0V VG2S =0V VG2S =±5V VDS =0V VG1S =0V	IG1SS = 100 IG2SS = 100			VDS =10V VD1S =0V VG2S =4V	4~25	VDS =15V VG2S =0V ID= 100μA VDS =15V VGIS =0V ID= 100μA	VG1S =−4V MAX VG2S =−4V MAX					VDS =15V ID= 5mA f=200 MHz	MIN 18	VDS =15V ID= 5mA f=200 MHz	MAX 4.5	NEC

ZENER DIODE CONPLEMENT

DEVICE TYPE	APPLICATIONS	STRUCTURE†	MAXIMUM RATINGS Absolute – Maximum Values (T_A = 25°C unless otherwise specified)			ELECTRICAL CHARACTERISTICS Tipical Values (T_A = 25°C unless otherwise specified)														MANUFACTURE
			Total Power Dissipation P_D (mW)	Zener Current I_Z (A)	Junction Temperature T_J (°C)	Zener Voltage V_Z MIN (V)	TYP (V)	MAX (V)	Test Condition I_Z (mA)	Defferential Resistance r_d TYP (Ω)	MAX (Ω)	Test Condition I_Z (mA)	Temperature Coefficient γ_Z TYP (%/°C)	MAX (%/°C)	Test Condition I_Z (mA)	Reverse Current I_R MAX (μA)	Test Condition V_R (V)		
WZ-240		Si–D	500		175	22.8	24.0	25.2	5		30	5	0.086			1	21		JRC
XZ-122		"	500		175	11.8	12.2	12.6	5		15	5	0.069			1	10		"
XZ-137		"	500		175	13.3	13.7	14.1	5		15	5	0.073			1	11		"

DIODE, LED COMPLEMENT

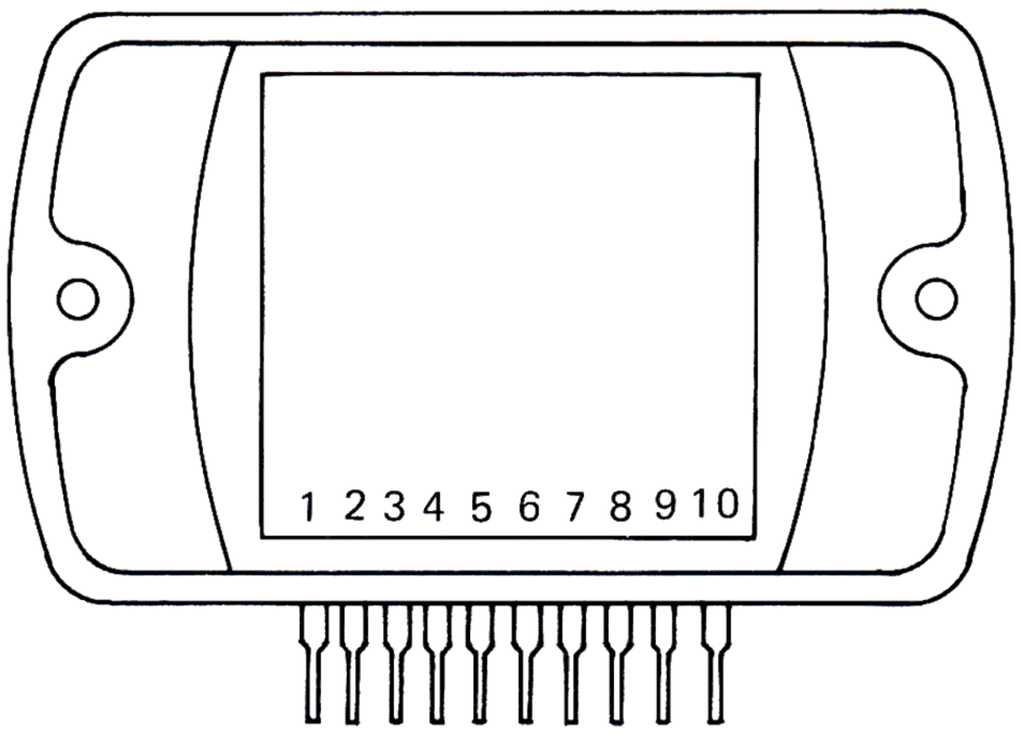
DEVICE TYPE	APPLICATIONS	STURCTURE†	MAXIMUM RATINGS Absolute – Maximum Values (T_A = 25°C unless otherwise specified)								ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)						MANUFACTURE
			Reverse Surge Voltage $V_{R\,surge}$ (V)	Peak Reverse Voltage V_{RM} (V)	Reverse Voltage V_R (V)	Peak Inverse Voltage V_I (V)	Peak Forward Current I_{FM} (mA)	Average Rectified Current I_O (mA)	Forward Surge Current i_{surge} (A)	Junction Temperature T_J (°C)	Total Power Power Dissipation P_D (mW)	Forward Voltage V_F MIN (V)	MAX (V)	Test Condition I_F (A)	Reverse Current I_R MAX (μA)	Test Condition V_R (V)		
1N60	FM DETECTION	Si–P		35	25		150	5	0.5				1	4 mA	75	10	C=0.8pF, η>55% (VR=1V) (f=40MHz, ZL=5KΩ//20pF, VI=2V)	HITACHI
1S2076	DETECTION MODULATION	Si–P		35	30	35	450	150	1	175	250		0.8	10 mA	1	30		"
1S2076A	"	"		70	60	70	450	150	1	175	250		0.8	10 mA	1	30		"
1S1885	RECTIFICATION	Si–A		100		70		1A (T_A=65°C)	60				1.2	1.5	10	100		TOSHIBA
VD1212		Si–D					30				50	1.24	1.34*	1.5 mA			γF=−3.6 mV/°C (IF=1.5 mA)	NEC
1D4B1	RECTIFICATION	Si–D BRIDGE		200				1.3A (T_A=60°C)	60	150			1.2	1.5	400	200		TOSHIBA
S5VB20	"	Si–D BRIDGE		200		70		3.5A (T_A=40°C)	200A	150			1.05	2.5	10	200		SHINDENGEN
GD4-207CD	LED						IF= 50mA			100	100	1.5	2.0	20 mA	100	3		STANLEY
BU188-RG	"						IF= 30mA			100	75		2.4 (RED) 2.8 (GRN)	10 mA 20 mA	10	4	TYP 500μcd (RED) (IF=10 mA) TYP 1000μcd (GRN)(IF=20 mA)	"

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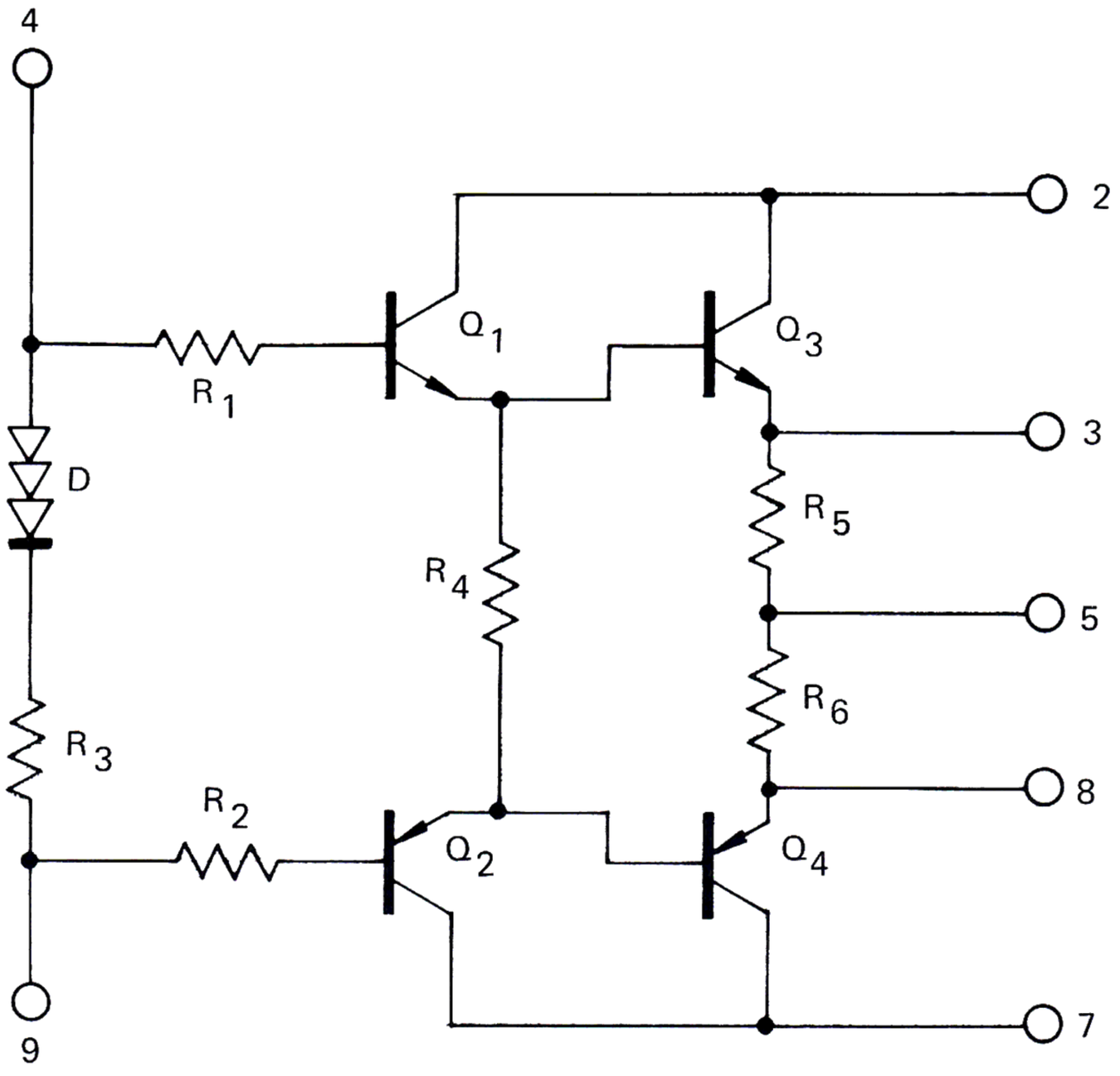
INTEGRATED CIRCUIT COMPLEMENT

DEVICE TYPE	APPLICATION	ABSOLUTE MAXIMUM RATINGS (T_A=25°C)			ELECTRICAL CHARACTERISTICS (T_A=25°C) Tipical Values						Manufacture
		Supply Voltage (V)	Operating Temperature Range (°C)	Storage Temperature Range (°C)	Idling Current (mA)	HFE (Q_1 x Q_2, Q_2 x Q_4)	R_1, R_2 (Ω)	R_3 (Ω)	R_4 (Ω)	R_5, R_6 (Ω)	
S–100W	Power Amp	180	–20 ~ +80	–30~+100	40±10 (Vcc= ±50V)	2500 min	330 ± 30%	about 50	330 ~ 470	0.33 ~ 0.47	SANKEN

CONNECTION DIAGRAM



SCHEMATIC DIAGRAM

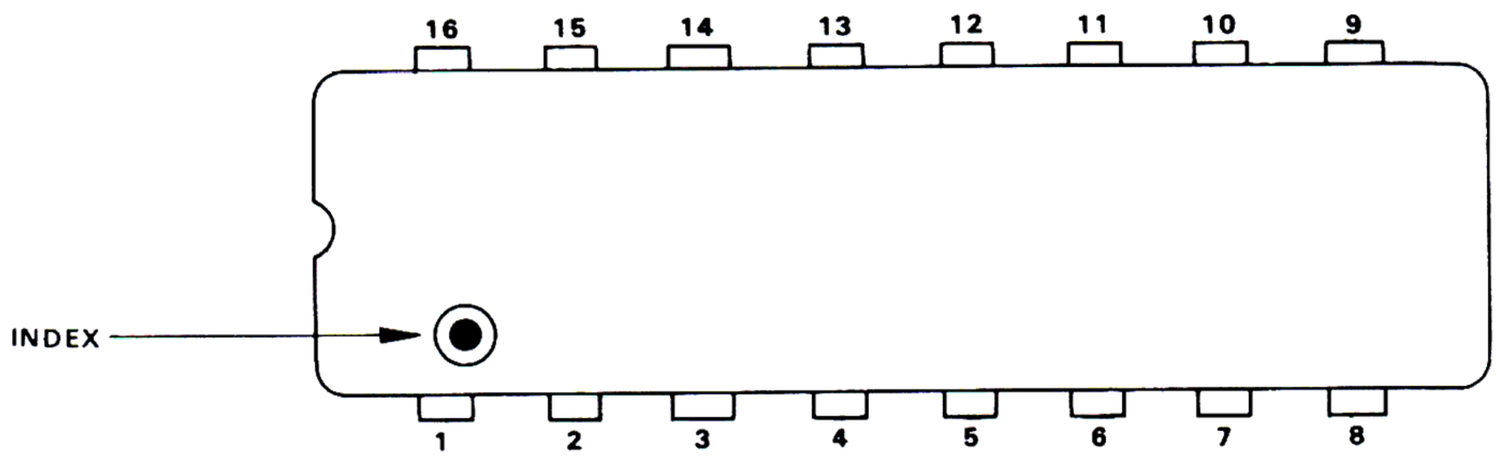


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INTEGRATED CIRCUIT COMPLEMENT

DEVICE TYPE	APPLICATION	ABSOLUTE MAXIMUM RATINGS (T_A=25°C)				ELECTRICAL CHARACTERISTICS (T_A=25°C) Typical Values							Manufacture
		Supply Voltage Vcc (V)	Power Dissipation P_T (mW)	Operating Temperature Range Topr (°C)	Storage Temperature Range Tstg (°C)	Supply Current (mA)	Input Limiting Sensitivity Vin (lim) (μV)	AF Voltage (mVrms)	Total Harmonic Distortion (%)	Signal to Noise Ratio (dB)	AM Rejection (dB)	Muting Sensivity (μV)	
HA1137W	FMIF Amplifier, Quadrature Detector	14	550 (Ta 60 C)	-20~+60	-55~+125	32	35 (-3dB point)	92	0.1	60	45	56	HITACHI

CONNECTION DIAGRAM (TOP VIEW)



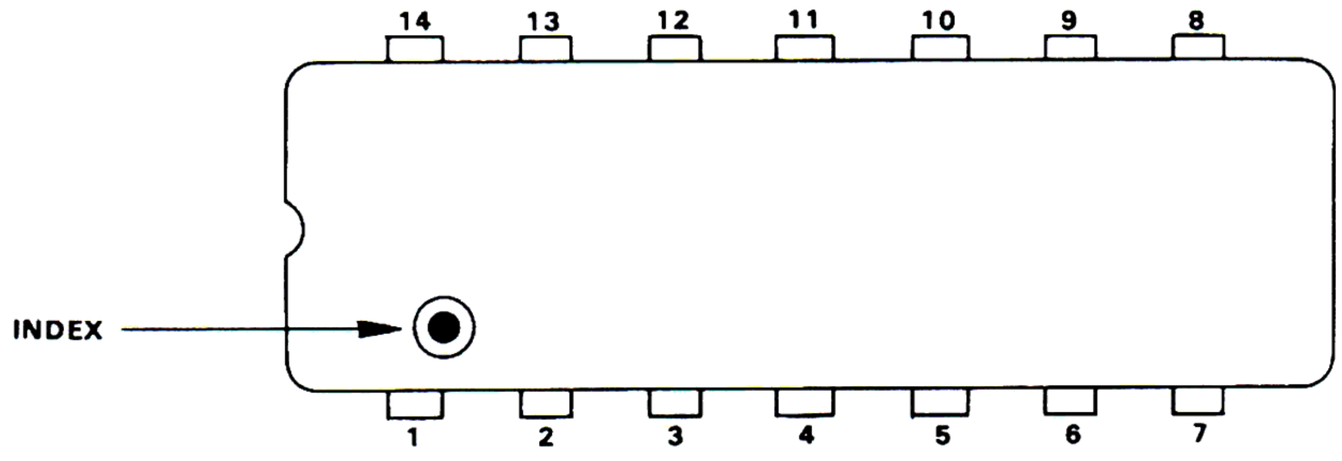
SCHEMATIC DIAGRAM

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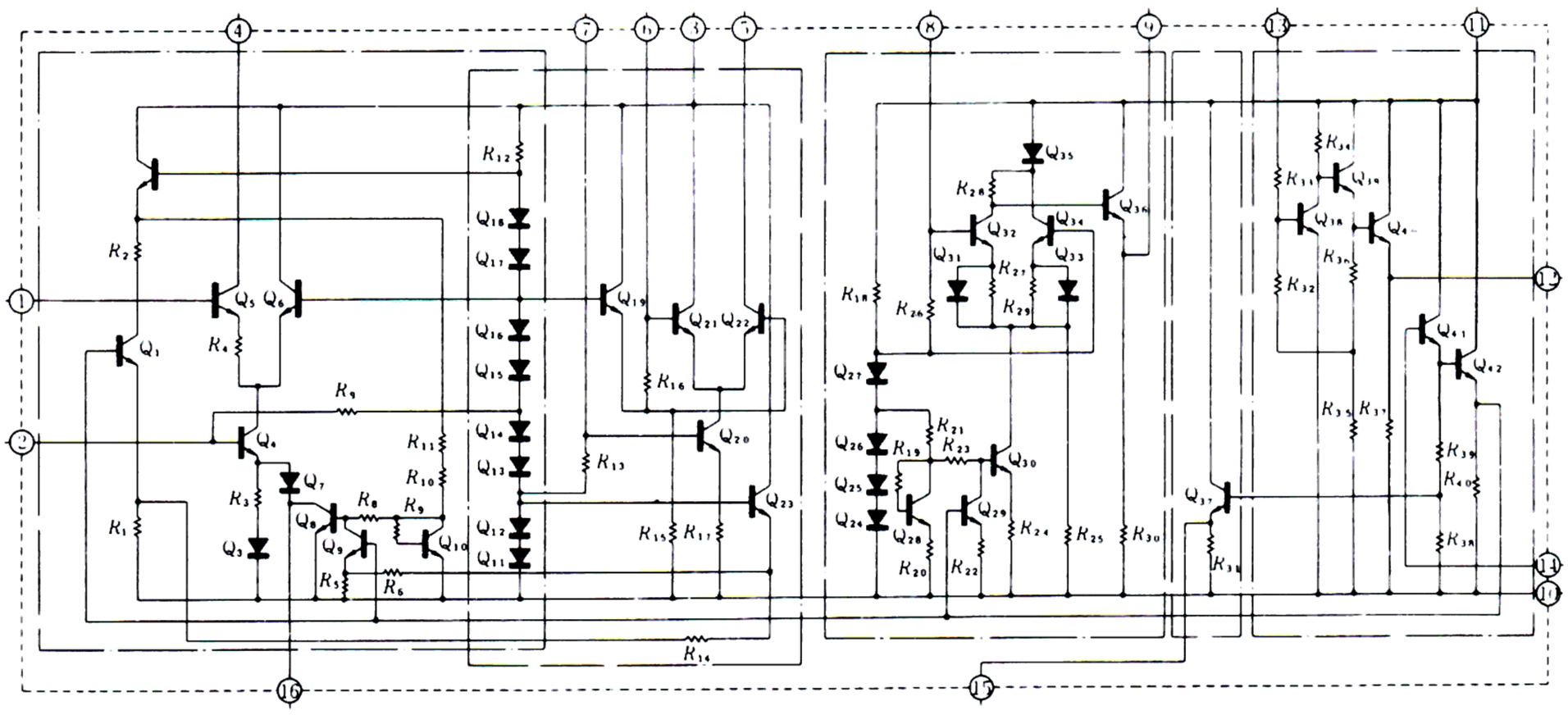
INTEGRATED CIRCUIT COMPLEMENT

Type	APPLICATION	ABSOLUTE MAXIMUM RATING (T_A=25°C)				ELECTRICAL CHARACTERISTICS (TYPICAL VALUES) T_A=25°C				Manufacture
		Voltage Supply Vcc (V)	Power Dissipation Pd (mW)	Operating Temp Range Topt (°C)	Storage Temp Range Tstg (°C)	Signal to Noise Ratio Input=74dBμ Mod.=30% (dB)	Distortion Input=100dBμ Mod=30% (%)	Output Voltage Input=74dBμ Mod.=30% (mV)	Quiescent Current (mA)	
HA1197	AM Radio	15	450	−20~+70	−55~+125	53	0.4	212	14.5	HITACHI

CONNECTION DIAGRAM (TOP VIEW)



SCHEMATIC DIAGRAM

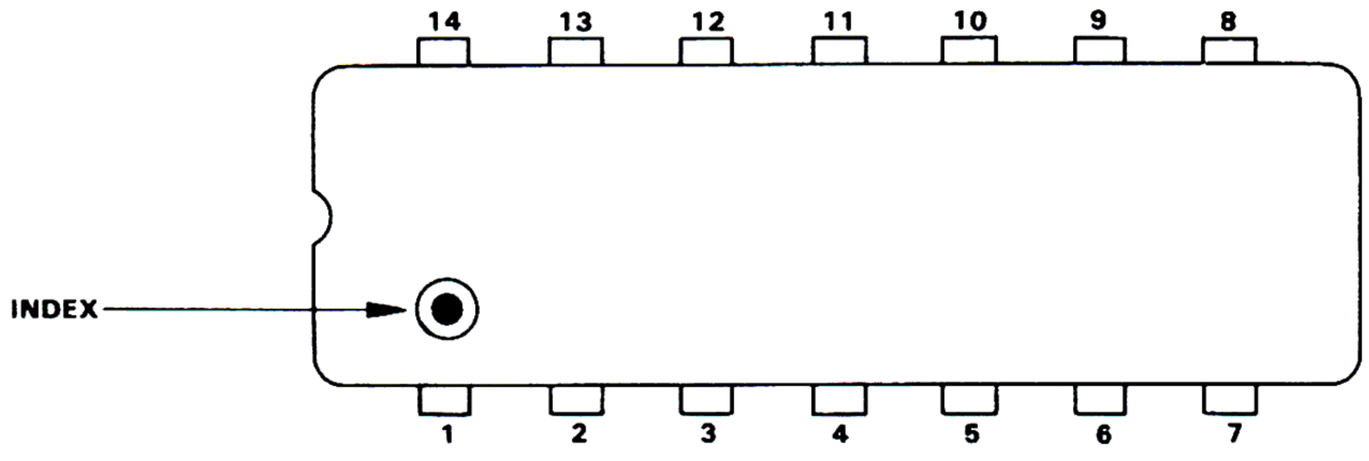


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INTEGRATED CIRCUIT COMPLEMENT

DEVICE TYPE	APPLICATION	SBSOLUTE MAXIMUM RATINGS (T_A=25°C)					ELECTRICAL CHARACTERISTICS (T_A=15°C) Typical Valves						Manufacture
		Supply Voltage (V)	Power Dissipation (mW)	Operating Temperature Range (°C)	Storage Temperature Range (°C)	Lamp Current (mA)	Input Impedance (KΩ)	Stereo Separation (dB)	Stereo Total Harmonic Distortion (%)	Output Voltage (V)	SCA Rejection (dB)	Signal to Noise ratio (dB)	
HA1196	AM Stereo Demodulator	15	490	−20~+70	−55~+70	75	75	55	0.1 (f=1kHz)	1.2	75 (f_{SCA}=67kHz)	80	HITACHI

CONNECTION DIAGRAM (TOP VIEW)



SCHEMATIC DIAGRAM

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