

NIKKO

Stereo receiver **3035**

Service manual



CONTENTS

1.	SPECIFICATION	1-2
2.	EXTERNAL VIEW	3
3.	INTERNAL VIEW	4
4.	PARTIAL DISASSEMBLY	4-6
5.	DIAL MECHANISM	6
6.	MEASUREMENT AND ADJUSTMENT	7-8-9
7.	PRINTED CIRCUIT BOARD	
	EQ AMP PCB ASSY	10
	AMP PCB ASSY	11
	TUNER PCB ASSY	12
8.	BLOCK DIAGRAM	13
9.	OVERALL DIAGRAM	14
10.	PARTIAL CHANGES MADE	
	ACCORDING DESTINATION	15-16
11.	PARTS LIST	17-18-19
12.	SEMICONDUCTOR SPECIFICATION	
	TRANSISTOR COMPLEMENT	20
	FIELD EFFECT TRANSISTOR COMPLEMENT	20
	RECTIFIER, DIODE, ZENER-DIODE COMPLEMENT	20

SPECIFICATION

1. FM TUNER SECTION

		NOMINAL	LIMIT
Sensitivity	(IHF)	2.0 μ V	3.0 μ V
Quieting Slope	(S/N 50dB)	5.0 μ V	10 μ V
Selectivity	(IHF)	60dB	50dB
Image Rejection	(98MHz)	50dB	40dB
IF Rejection	(98MHz)	70dB	60dB
Signal to Noise ratio		65dB	60dB
Capture Ratio	(IHF)	1.0dB	3.0dB
Muting Sensitivity		1.6 μ V	$\pm$ 6dB
Distortion	(MONO)	0.3%	0.5%
Distortion	(STEREO 1KHz)	0.5%	1.0%
Stereo Separation	(1KHz)	40dB	35dB
Output voltage	(TAPE OUT)	750mV	$\pm$ 2dB

2. AM TUNER SECTION

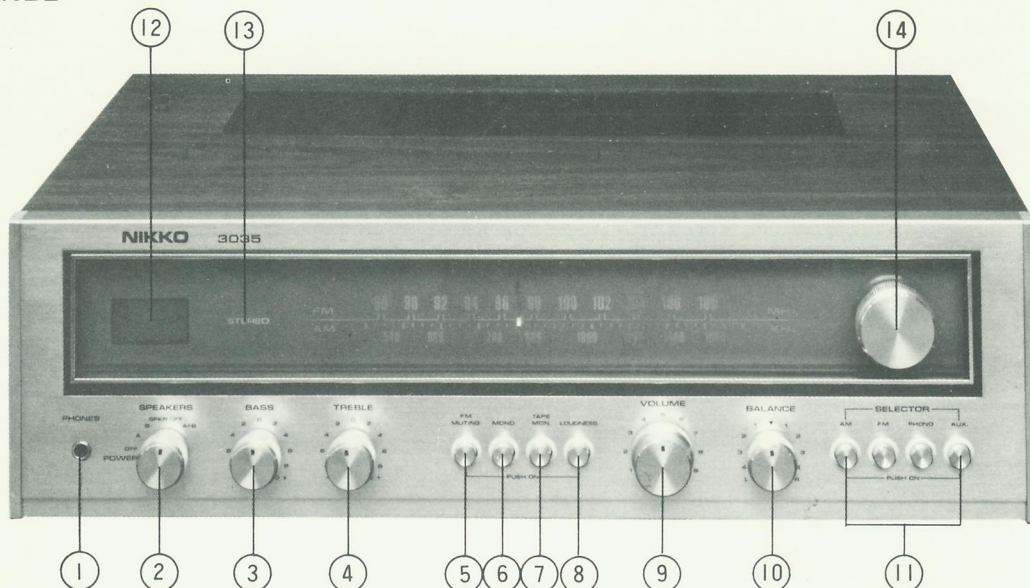
Sensitivity	(IHF)	300 μ V	1000 μ V
Selectivity	(IHF) $\pm$ 10KHz	35dB	30dB
Image Rejection	(1000KHz)	45dB	40dB
IF Rejection	(1000KHz)	35dB	30dB
Distortion		1.0%	3.0%
Signal to Noise ratio		40dB	35dB
Output level	(TAPE OUT)	150mV	$\pm$ 2dB

3. AMPLIFIER SECTION

Input sensitivity	PHONO	2.2mV	$\pm$ 2dB
(at output power of 22W)	AUX.	170mV	$\pm$ 2dB
	TAPE MON.	170mV	$\pm$ 2dB
	TAPE MON. (DIN)	170mV	$\pm$ 2dB
Signal to noise ratio (IN PUT SHORT)			
	PHONO	65dB	60dB
	AUX	80dB	75dB
	TAPE MON.	80dB	75dB
Continuous power output			
2CH DRIVEN (8 Ω) 20Hz ~ 20KHz	17W x 2		15W x 2
2CH DRIVEN (4 Ω) 20Hz ~ 20KHz	19W x 2		17W x 2
2CH DRIVEN (8 Ω) 1KHz	22W x 2		19W x 2
2CH DRIVEN (4 Ω) 1KHz	24W x 2		21W x 2
Power Bandwidth			
2CH DRIVEN (8 Ω) THD 0.8%	10Hz ~ 30KHz		20Hz ~ 20KHz
Frequency response			
PHONO (RIAA EQUALIZATION).	30Hz ~ 15KHz		$\pm$ 2dB
OTHERS	20Hz ~ 20KHz		$\pm$ 2dB

		NOMINAL	LIMIT
Output level			
TAPE OUT		150mV	±2dB
TAPE OUT (DIN)		30mV	±2dB
Tone control			
BASS 70Hz	CUT	-13dB	±2dB
	BOOST	+13dB	±2dB
TREBLE 10KHz	CUT	-10dB	±2dB
	BOOST	+8dB	±2dB
Loudness control			
(VOLUME: -30dB)	70Hz	+10dB	±2dB
	10KHz	+7dB	±2dB
Idling current		20mA	±10mA
Mid. point voltage		0mV	±30mV
Residual Hum & Noise (8Ω)		0.5mV	1.5mV

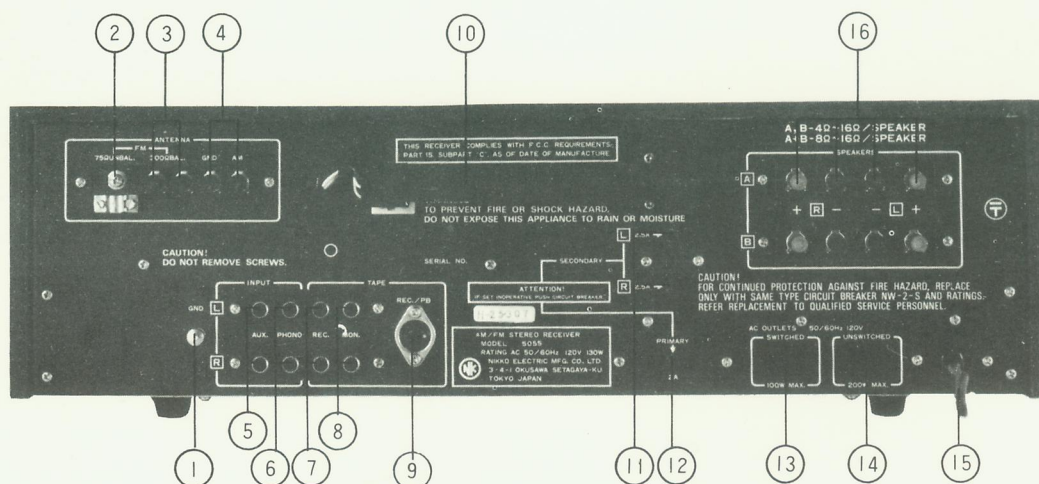
EXTERNAL VIEW FRONT PANEL



- 1 HEADPHONE JACK
- 2 POWER/SPEAKERS SWITCH
- 3 BASS CONTROL
- 4 TREBLE CONTROL
- 5 FM MUTING SWITCH
- 6 MONO SWITCH
- 7 TAPE MONITOR SWITCH

- 8 LOUDNESS SWITCH
- 9 VOLUME CONTROL
- 10 BALANCE CONTROL
- 11 SELECTOR SWITCH
- 12 SIGNAL/TUNING METER
- 13 STEREO INDICATOR
- 14 TUNING KNOB

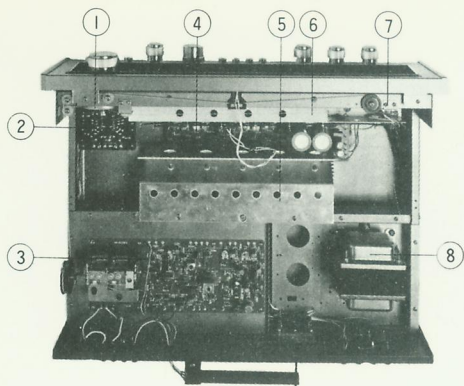
REAR PANEL



- 1 GROUND TERMINAL
- 2 FM ANTENNA TERMINAL (75Ω UNBALANCED)
- 3 FM ANTENNA TERMINAL (300Ω BALANCED)
- 4 AM ANTENNA TERMINAL
- 5 AUX. INPUT TERMINAL
- 6 PHONO INPUT TERMINAL
- 7 TAPE REC. TERMINAL
- 8 TAPE MONITOR TERMINAL

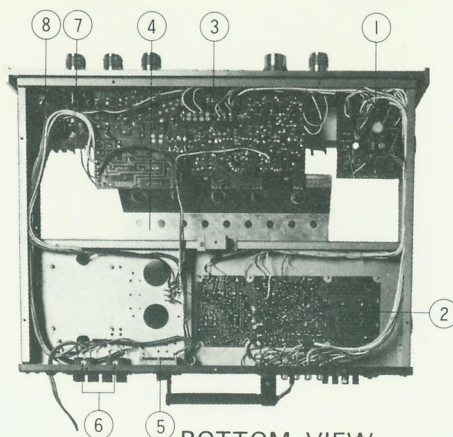
- 9 TAPE REC/PB DIN SOCKET
- 10 AM BAR ANTENNA
- 11 SECONDARY NO FUSE BREAKERS
- 12 PRIMARY NO FUSE BREAKER
- 13 AC OUTLET (SWITCHED)
- 14 AC OUTLET (UNSWITCHED)
- 15 AC CORD
- 16 SPEAKER TERMINALS

INTERNAL VIEW



TOP VIEW

- 1 FLY WHEEL
- 2 EQ AMP PCB ASSY BOARD
- 3 TUNER PCB ASSY BOARD
- 4 AMP PCB ASSY BOARD
- 5 HEAT SINK
- 6 REFLEX PLT
- 7 TUNING METER
- 8 POWER TRANSFORMER



BOTTOM VIEW

- 1 EQ AMP PCB ASSY BOARD
- 2 TUNER PCB ASSY BOARD
- 3 AMP PCB ASSY BOARD
- 4 HEAT SINK
- 5 NW-2S 1.6A BRKER
- 6 AC OUTLETS
- 7 SPEAKERS/POWER SW
- 8 HEAD PHONE JACK

PARTIAL DISASSEMBLY CABINET REMOVAL

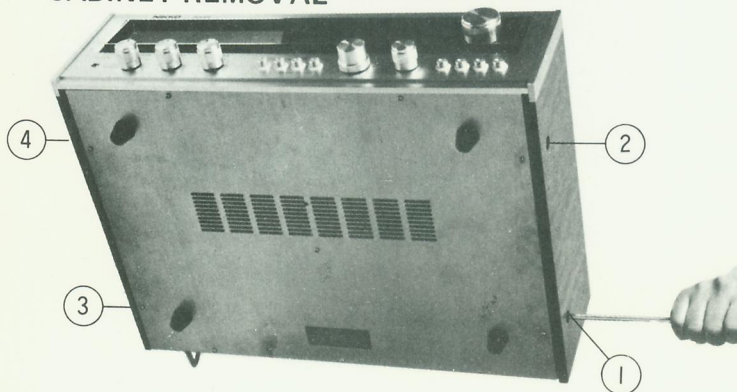


PHOTO 1

a. Stand the cabinet up and remove screws (1 ~ 4) as shown in Photo 1.

b. Return the cabinet to its original position and pull forward and then lift up to remove it. (Photo 2)

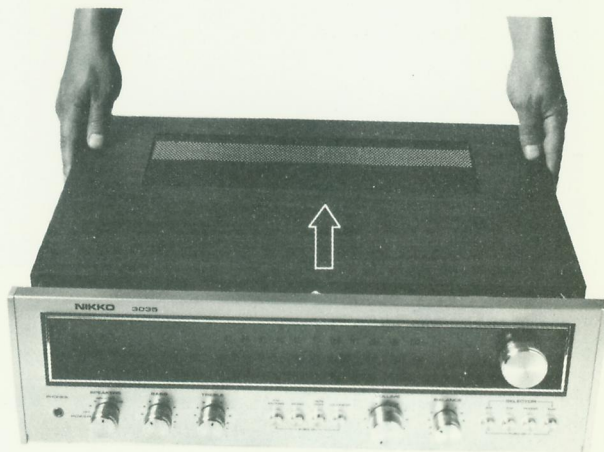


PHOTO 2

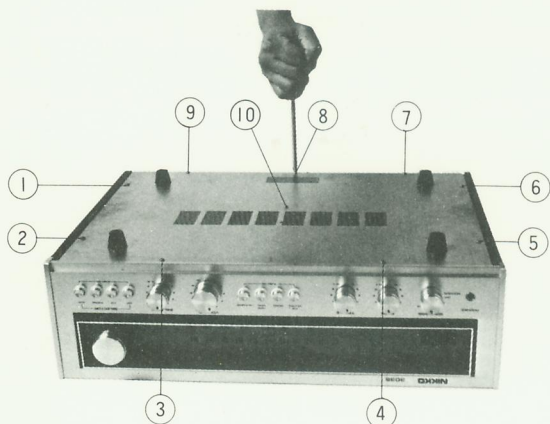


PHOTO 3

BOTTOM PLATE REMOVAL

Turn the cabinet and remove screws (1 ~ 10) as shown in Photo 3.

FRONT PANEL REMOVAL

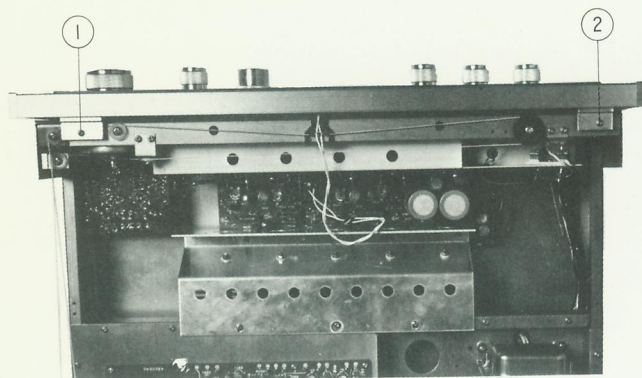


PHOTO 4

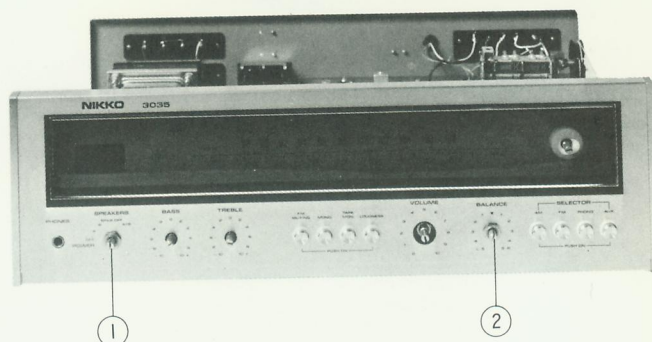


PHOTO 5

Remove screws (1 ~ 2) and nuts (1 ~ 2) as shown in Photo 4 ~ 5.

TUNER PCB ASSY BOARD REMOVAL

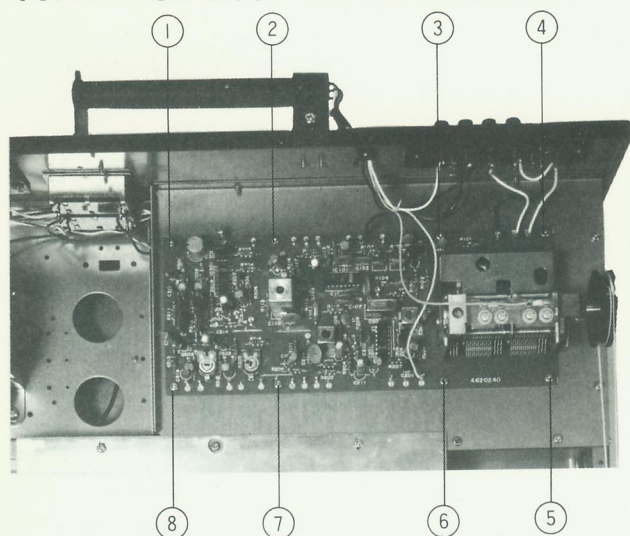


PHOTO 6

Remove screws (1 ~ 8) as shown in Photo 6 then lift the circuit board up to remove it.

POWER TRANSFORMER REMOVAL

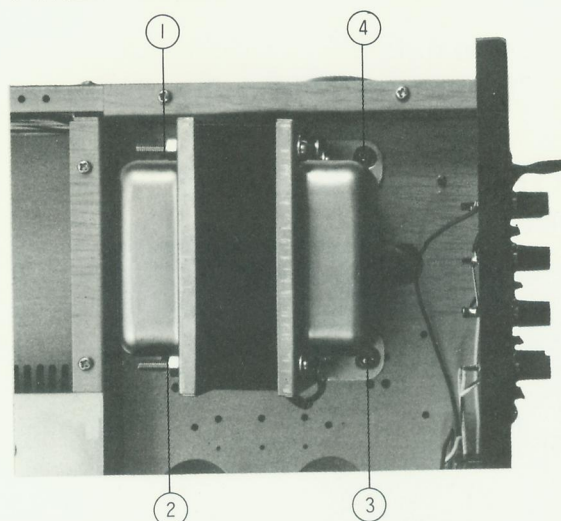


PHOTO 7

Remove screws (1 ~ 4) as shown in Photo 7 then lift the transformer up to remove it.

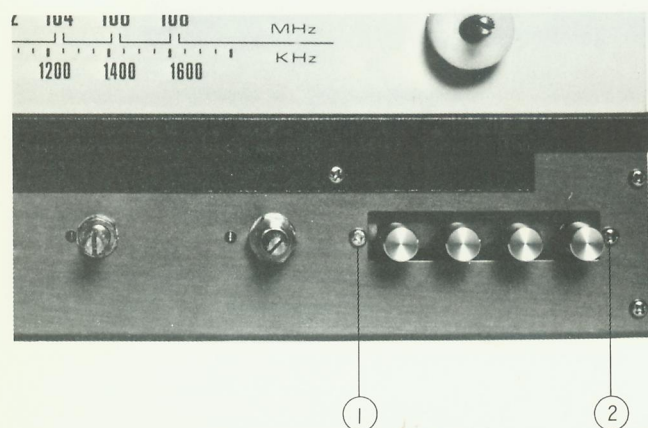


PHOTO 8

EQ AMP PCB ASSY BOARD REMOVAL

Remove screws (1 ~ 2) as shown in Photo 8 and pull forward to remove it.

AMP PCB ASSY BOARD REMOVAL

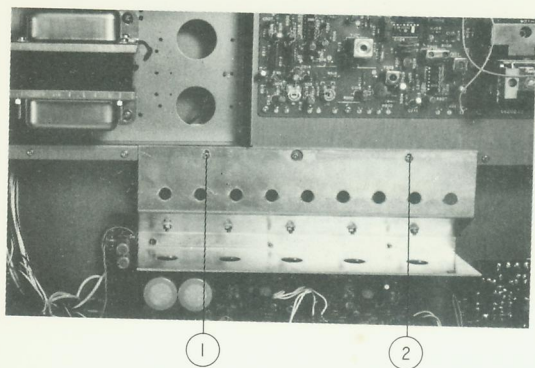


PHOTO 9

a. Remove screws (1 ~ 2) as shown Photo 9.

b. Remove screws (3 ~ 4) and nuts (1, 2, 5) as shown Photo 10, then pull forward to remove it.

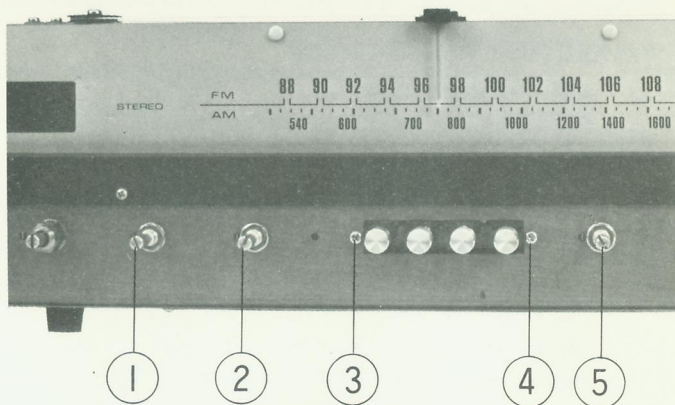


PHOTO 10

METER REMOVAL

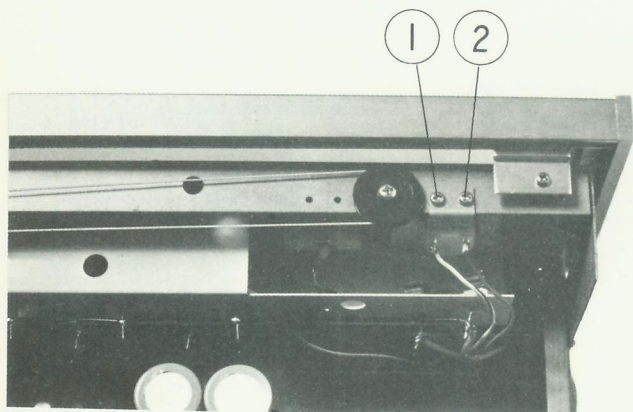


PHOTO 11

Remove screws (1 ~ 2) as shown Photo 11 and pull forward to remove it.

REFLEX PLT REMOVAL

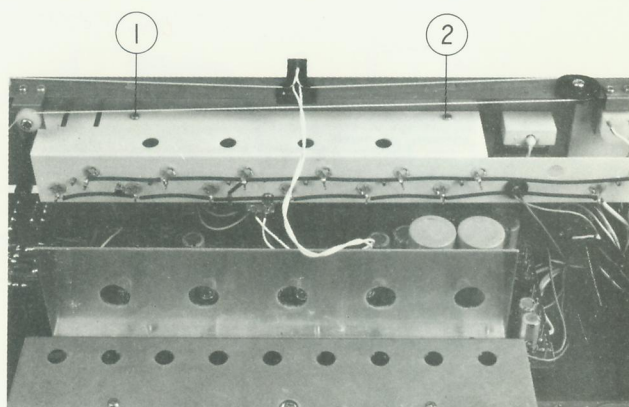
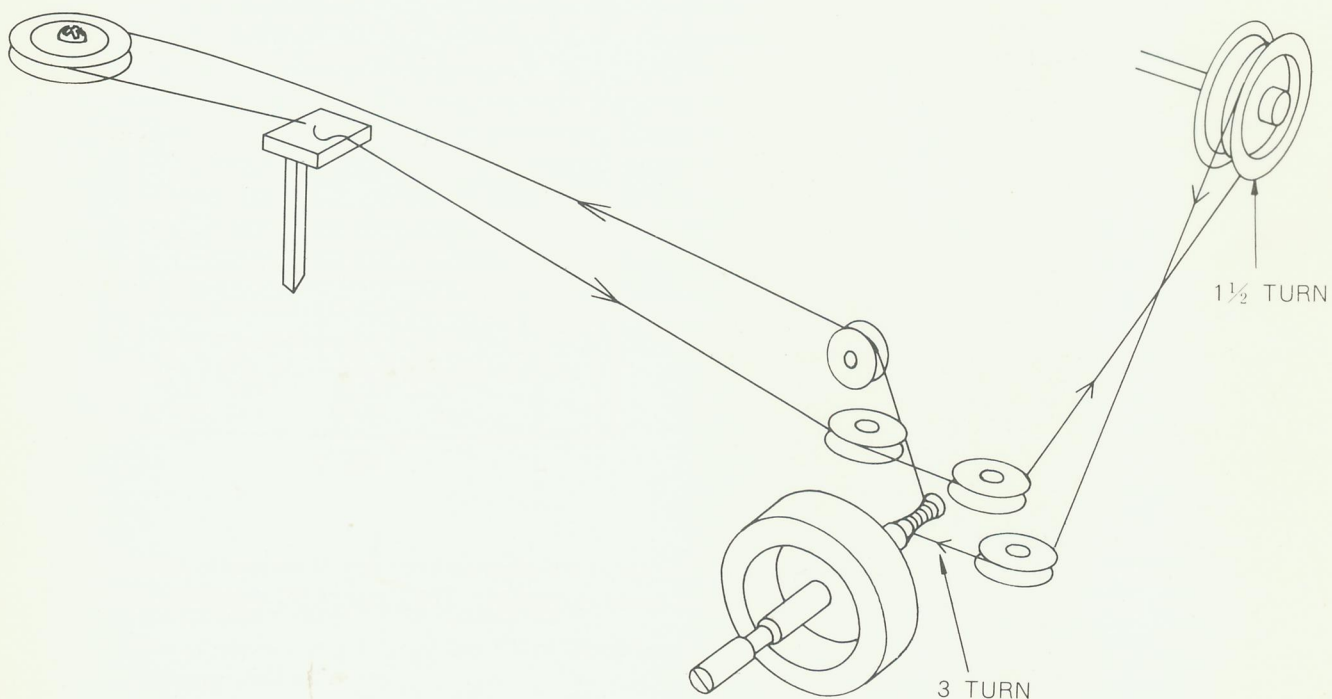


PHOTO 12

Remove screws (1 ~ 2) as shown in Photo 12 then pull forward to remove it.

DIAL MECHANISM



MEASUREMENT AND ADJUSTMENT

FM SECTION ADJUSTMENT

1. FM-IF ADJUSTMENT

For adjustment of the discriminator coil T101, connect the testing instruments as shown in Fig. 1 and then proceed as follows:

- (1) With no RF signal applied to the receiver, adjust the lower core of T101 until the pointer of the tuning meter (M1) on the receiver indicates the center position of the meter scale.
 - (2) Apply RF signal to the receiver and adjust the tuning knob so that the tuning meter (M1) indicates the center position and the signal meter (M2) causes maximum deflection.
 - (3) Under this condition, adjust the upper core of T101 for minimum distortion.
 - (4) Repeat the above steps (1) through (3) two or three times so that the distortion factor is most improved.
- Note: For adjusting point, refer to Fig. 3.

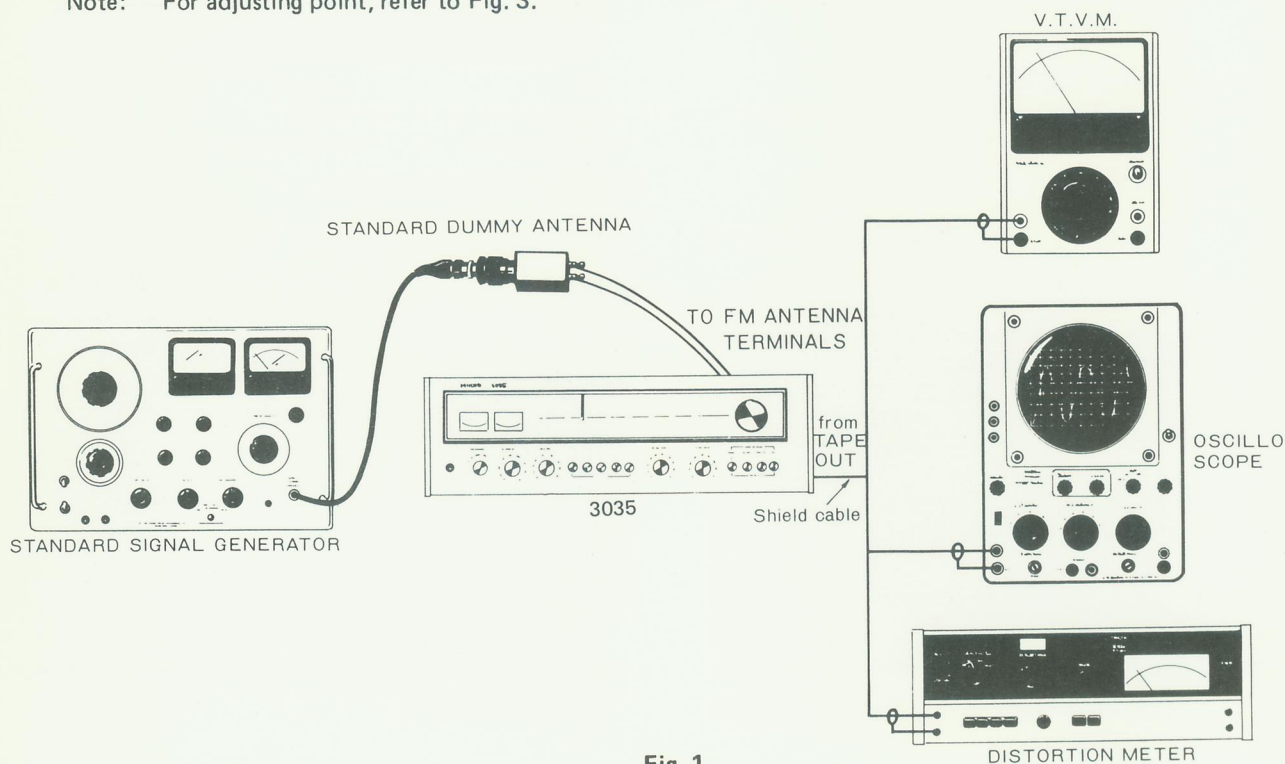


Fig. 1

2. FREQUENCY COVERAGE ADJUSTMENT

The tuner section is provided with the pre-adjusted front end, eliminating the need for frequency coverage adjustment; however, the dial scale may be checked by adjusting OSC-C as necessary (see Fig. 2).

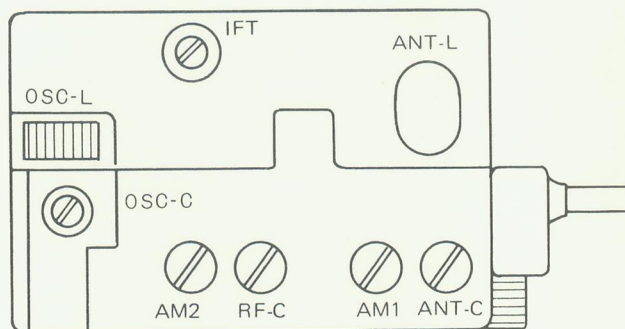


Fig. 2

3. TRACKING ADJUSTMENT

The tracking adjustment is not required because of the use of pre-adjusted front end. If necessary, adjust ANT-C and RF-C for maximum sensitivity, with the receiver tuned in 104MHz. The input of SG should be controlled with ATT.

Note: For adjusting points, refer to Fig. 2.

4. FM SEPARATION ADJUSTMENT

With stereo-modulated RF signal applied to the receiver, make adjustment as follows:

- (1) Turn the semi-fixed resistor R319 (HVR 20K-B) fully clockwise.
- (2) Connect a frequency counter to the point #27 on the Tuner PCB Ass'y Board. Adjust the semi-fixed resistor R305 (HVR 5K-B) for the frequency of $19\text{KHz} \pm 19\text{Hz}$.
- (3) Adjust the semi-fixed resistor R319 (20K-B) for maximum stereo separation.

Note: For adjusting points, refer to Fig. 3

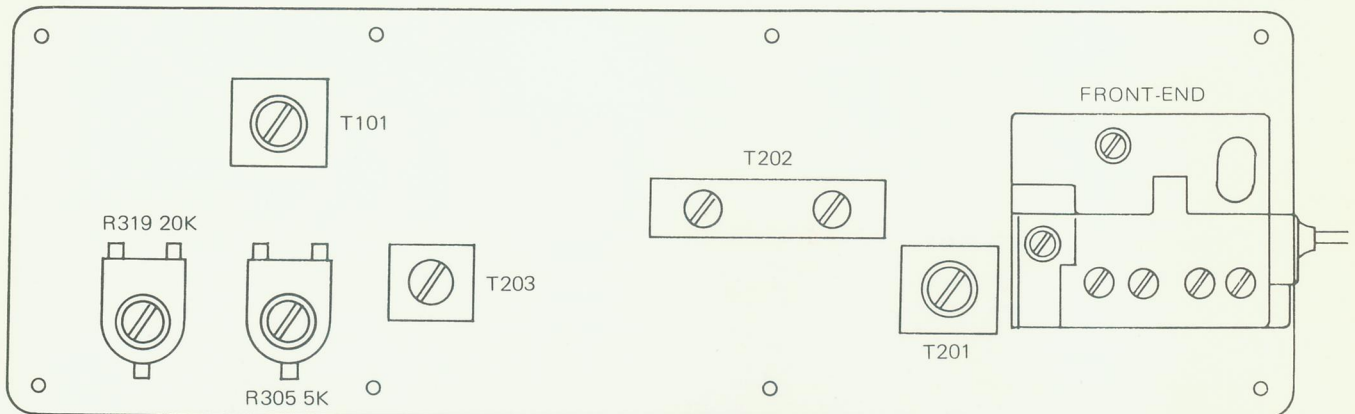


Fig. 3 TUNER PCB ASS'Y BOARD

AM SECTION ADJUSTMENT

The following is intended to describe the procedure of adjusting the AM section of the receiver using a sweep generator. In the adjustment, the output voltage is applied through inductive coupling.

1. AM-IF ADJUSTMENT

For adjustment, place a loop antenna near the receiver under test and observe the waveform of detector output (at the point #18 on the Tuner PCB Ass'y Board) displayed on the alignment oscilloscope.

The adjusting procedure is as follows:

- (1) With the receiver set to a high receiving frequency (variable capacitor in full open position), adjust T202 and T203 until the IF waveform becomes maximum.
- (2) If, in this case, the adjustment is difficult because of disturbing signals, the variable capacitor may be turned to facilitate the adjustment.
- (3) The waveform displayed on the alignment oscilloscope is as shown in Fig. 4.

Note: For adjusting points, refer to Fig. 3.

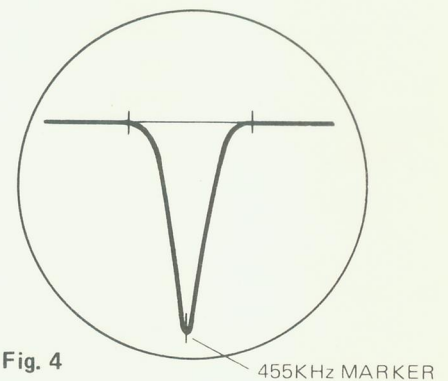


Fig. 4

2. FREQUENCY COVERAGE ADJUSTMENT

This adjustment is similar to the AM-IF adjustment. Switch the sweep generator from IF to RF and follow the procedure below.

- (1) With the variable capacitor fully closed, adjust T201 for 520kHz. Then, fully open the variable capacitor and turn AM2 for 1,650kHz. Repeat the above adjustments two or three times so that the receiving range of 520kHz to 1,650kHz can be obtained.

- (2) The waveform displayed on the alignment oscilloscope is as shown in Fig. 5.

Note: For adjusting points, refer to Fig. 2. and Fig. 3.

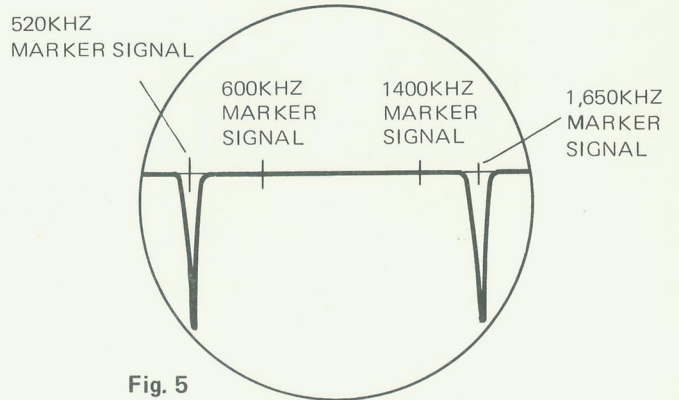


Fig. 5

3. TRACKING ADJUSTMENT

- (1) Use the sweep generator in the same manner as described in Item 2 "Frequency Coverage Adjustment". First set the sweep waveform to the 600kHz marker and adjust AM ANT Coil (L1) for maximum waveform. Then set the receiver to 1400kHz and adjust AM1 for maximum waveform. Repeat the above adjustments two or three times so that tracking error can be fully eliminated.

Note: To obtain maximum sensitivity, the input signal level should be adjusted with an attenuator.

- (2) To check tracking errors, use a jig made up of a copper wire ring and ferrite rod (see Fig. 6). Bring the ring and the ferrite rod alternately close to the ANT Coil and confirm that the sweep waveform is minimized.

Note: For adjusting points, refer to Fig. 2.

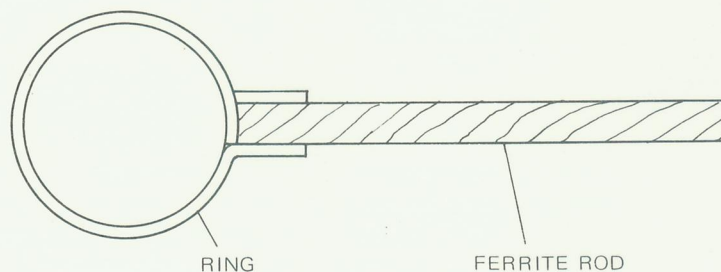


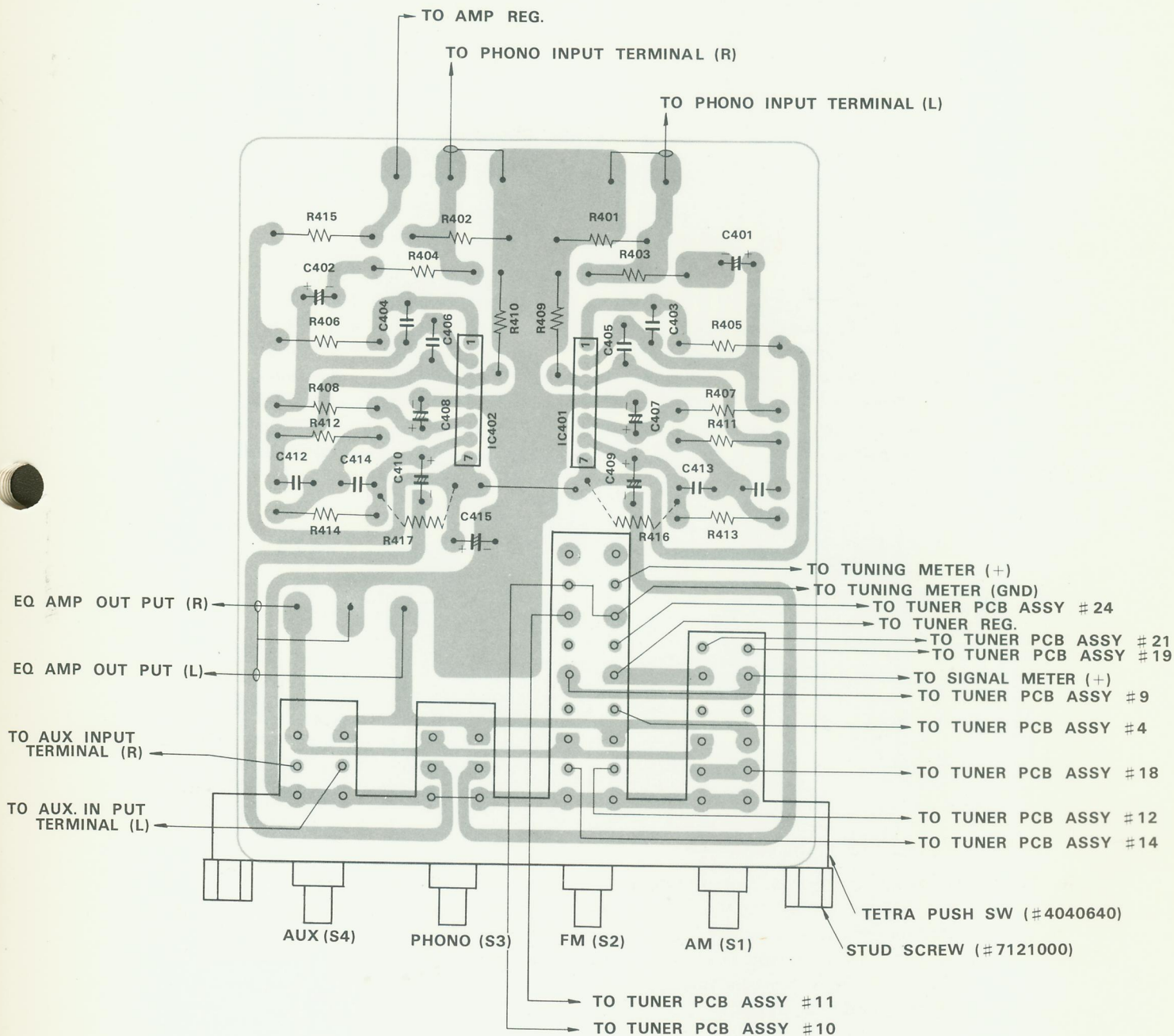
Fig. 6

AMPLIFIER SECTION ADJUSTMENT

- (1) To adjust the center voltage, connect an 8-ohm dummy load resistor across the speaker terminals and set the Volume Control to the minimum position (fully counter-clockwise). Using a high sensitivity DC voltmeter, adjust R709 and R710 so that the voltage between GND (chassis) and TP1 on the Amplifier PCB Ass'y Board becomes $0 \pm 30\text{mV}$ (TP1 is located on the left and right sides of the PCB Ass'y Board).
- (2) Similarly, adjust R721 and R722 so that the voltage between TP1 and TP2 becomes 10mV, with the Volume Control set to the minimum position.

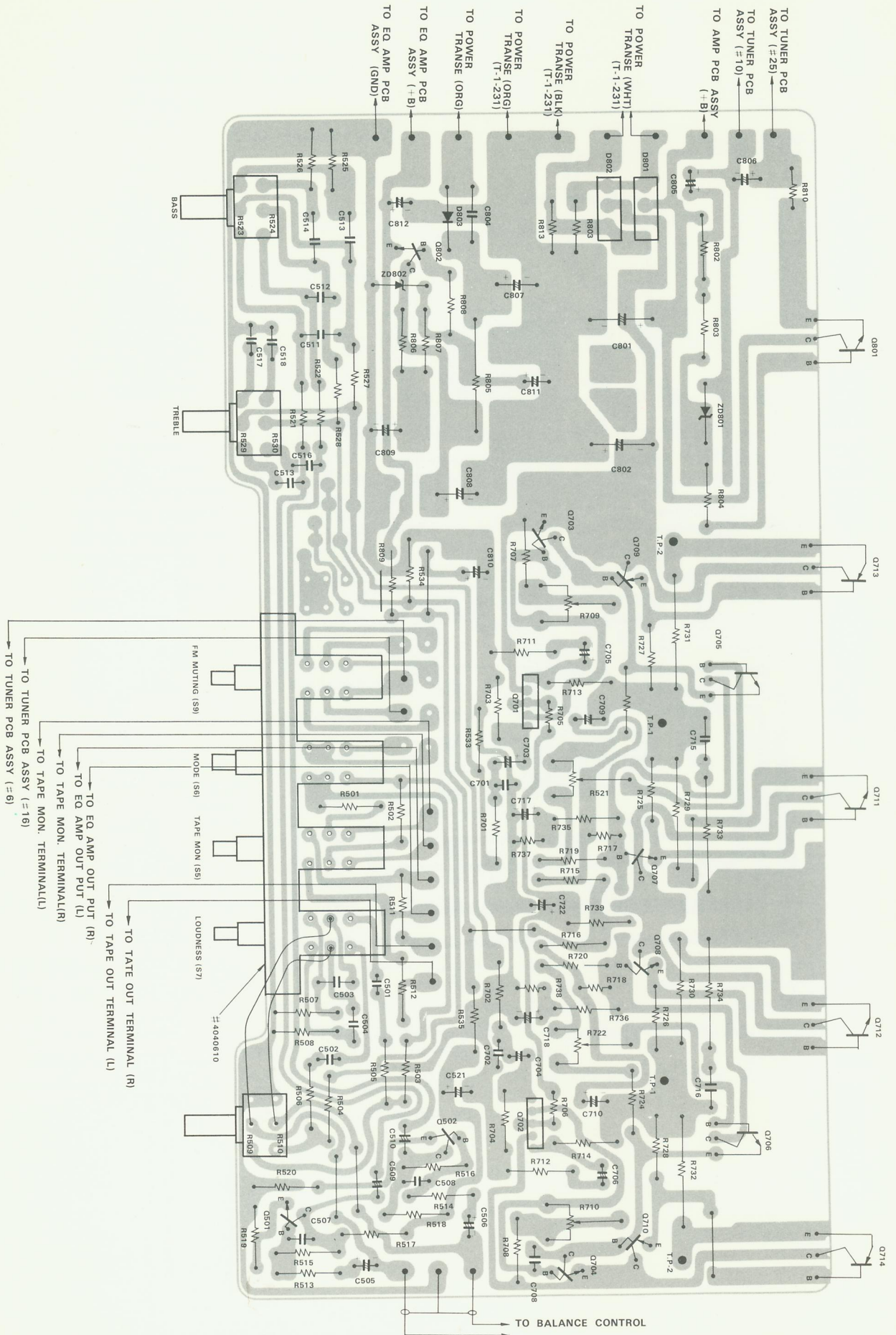
PRINTED CIRCUIT BOARD

EQ AMP PCB ASSY



AMP PCB ASSY

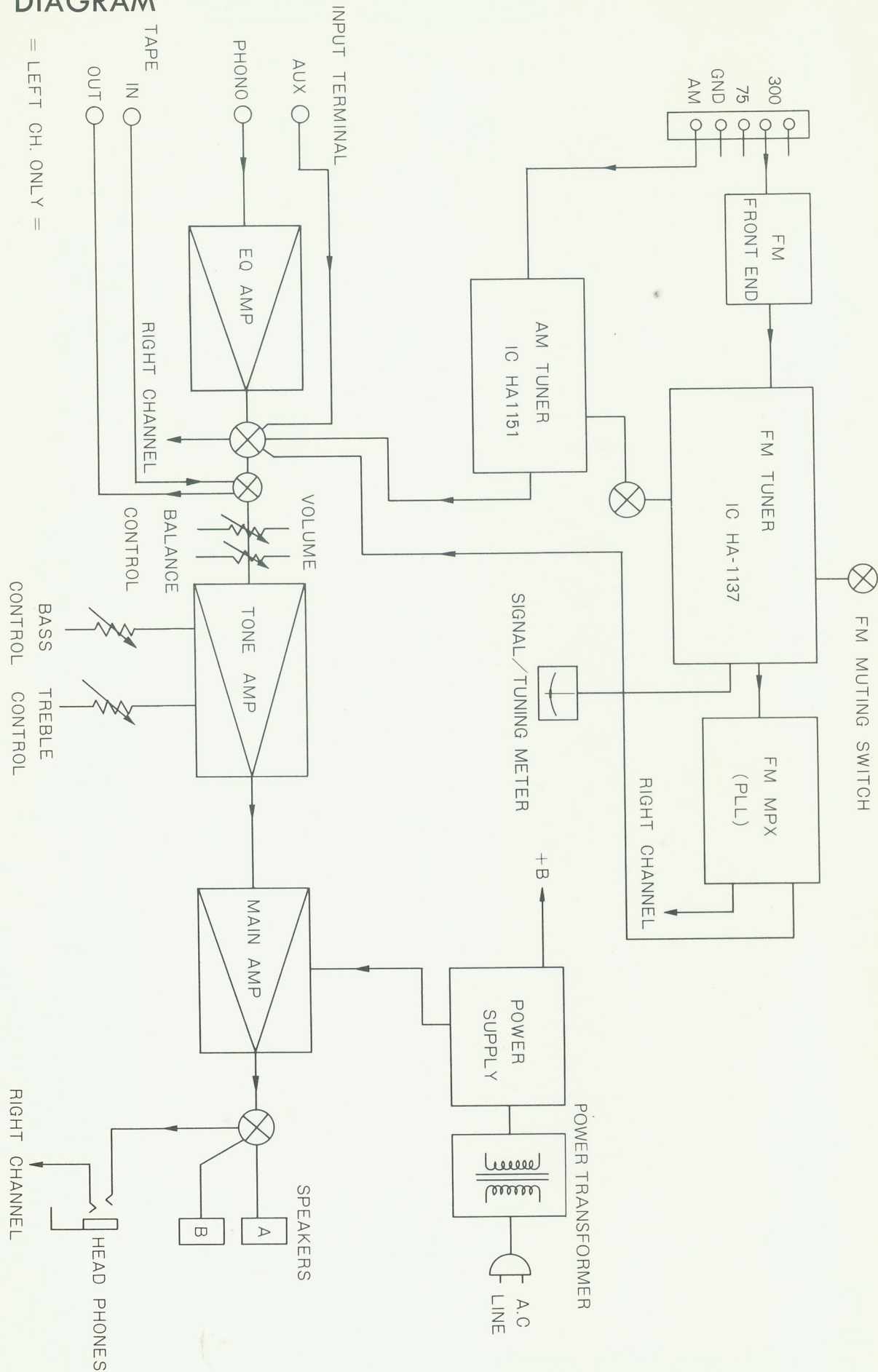
HEAT SINK #7081720



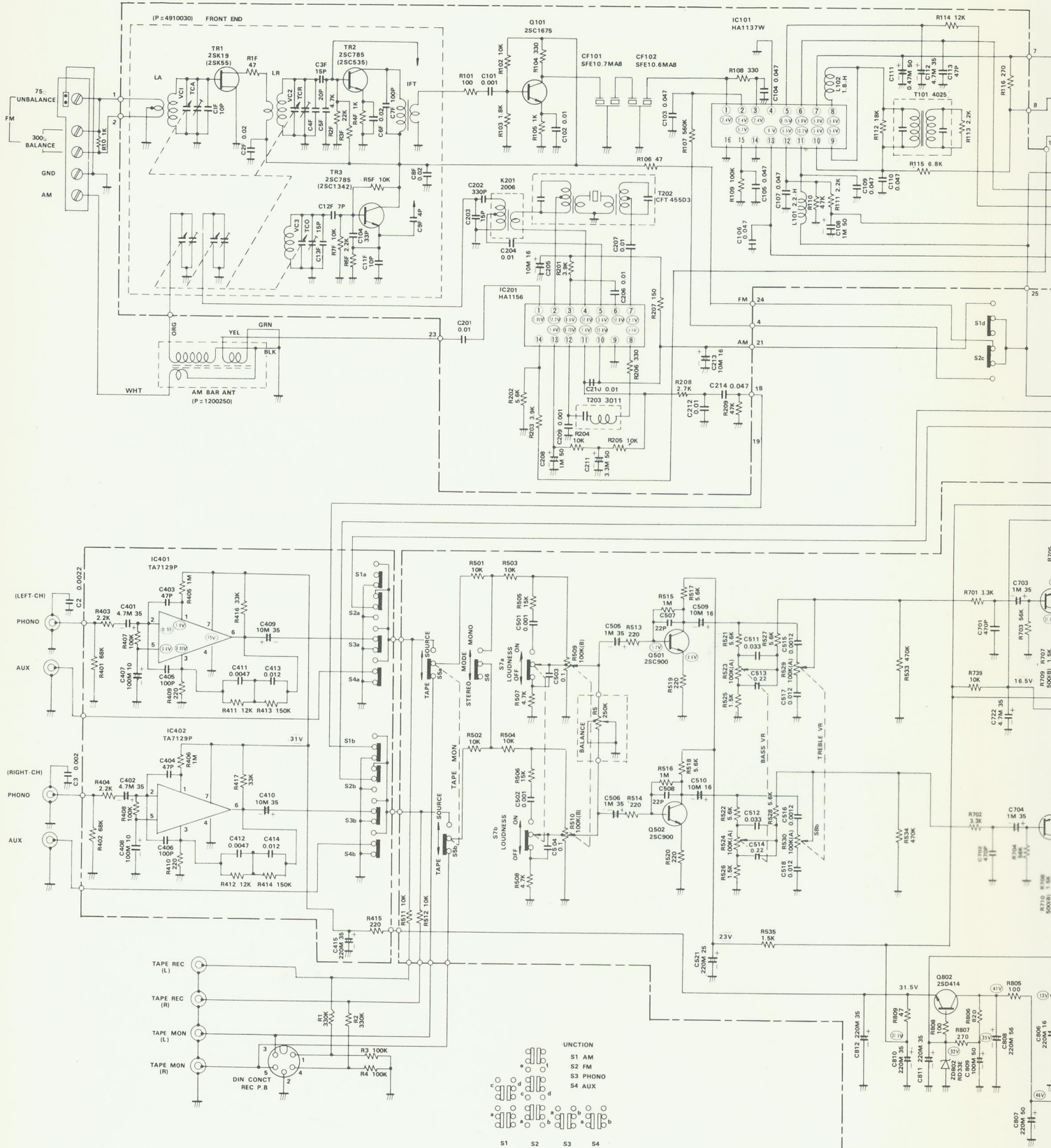
FRONT ENT (#4910030)

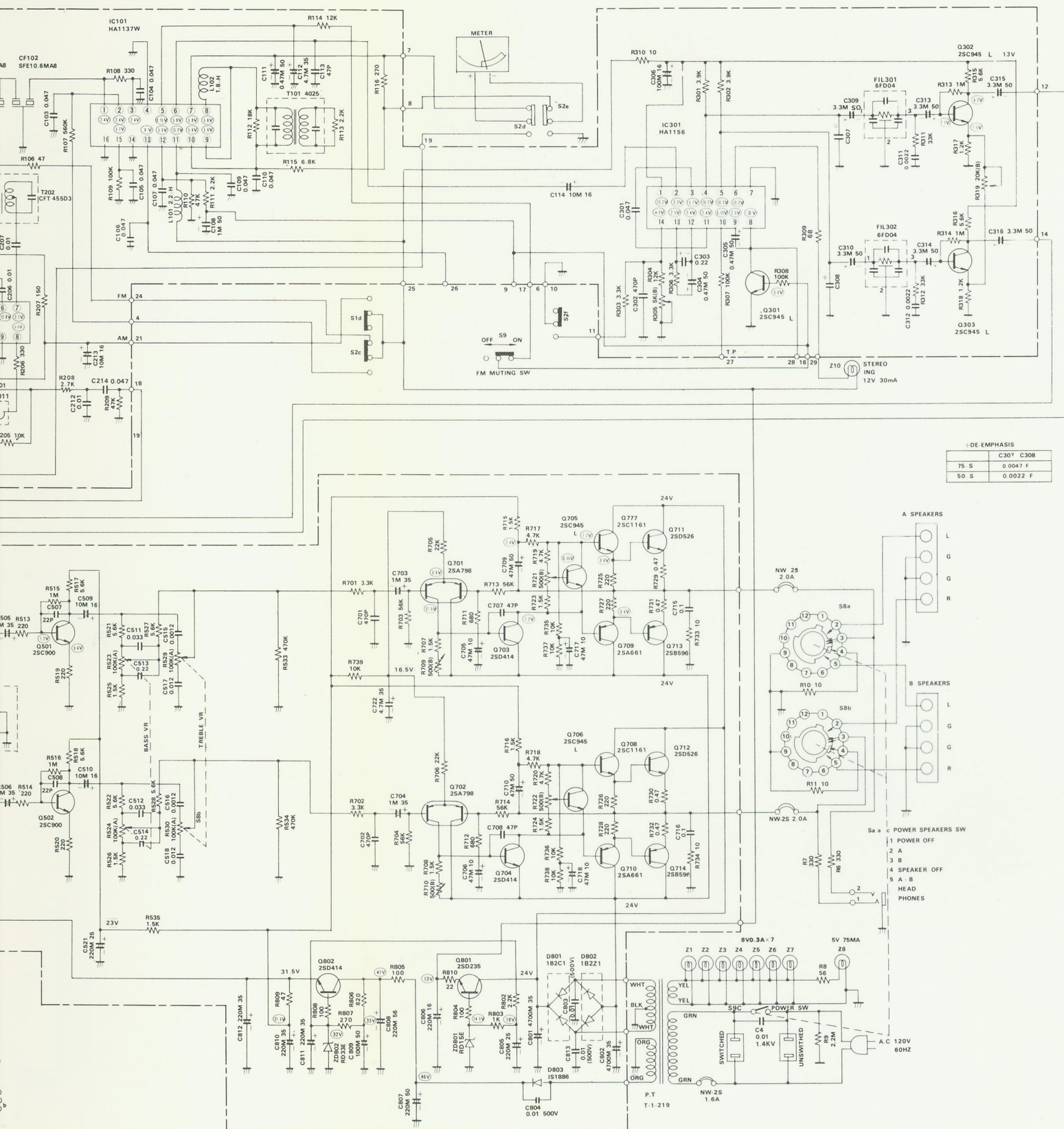
	※ C307, C308
75 μ sec	0. 0047 MF
50 μ sec	0. 0022 MF

BLOCK DIAGRAM



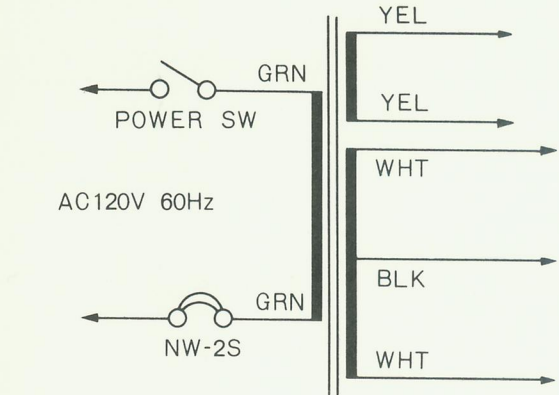
OVERALL DIAGRAM MODEL 3035



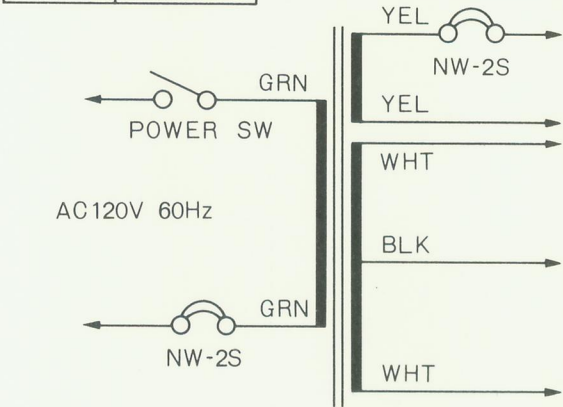


PARTIAL CHANGES MADE ACCORDING DESTINATION

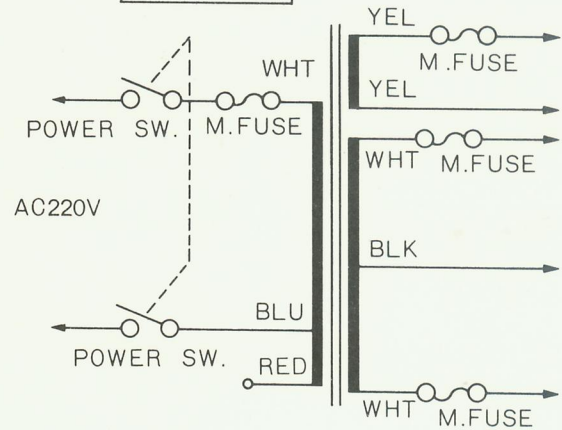
120V	U.S.A
------	-------



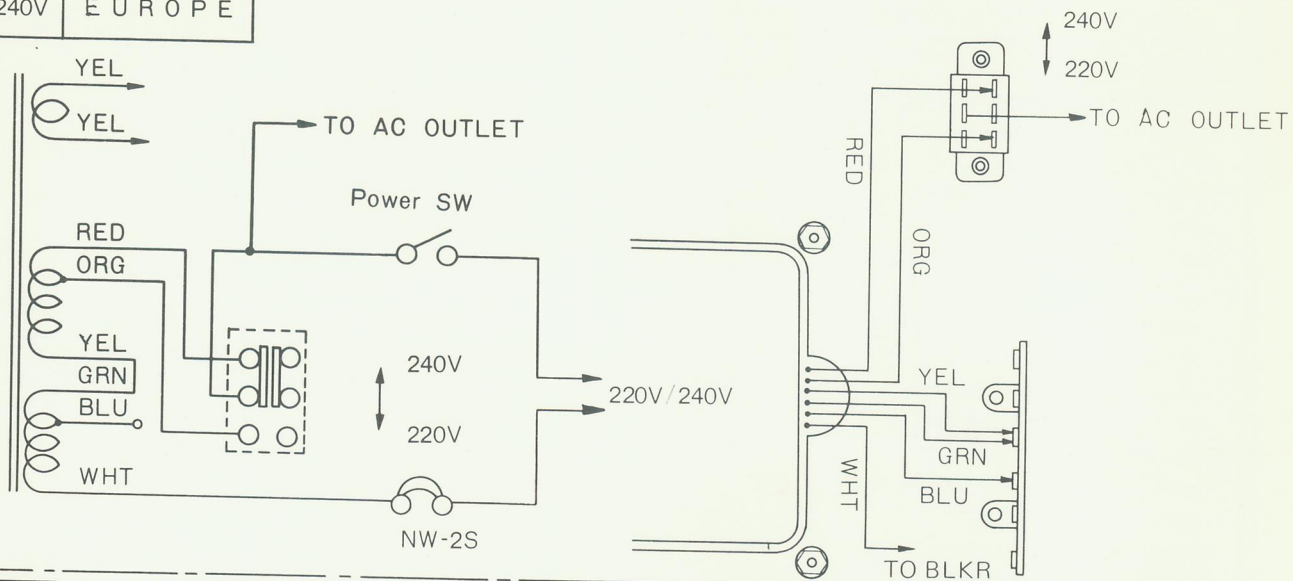
120V	CANADA
------	--------



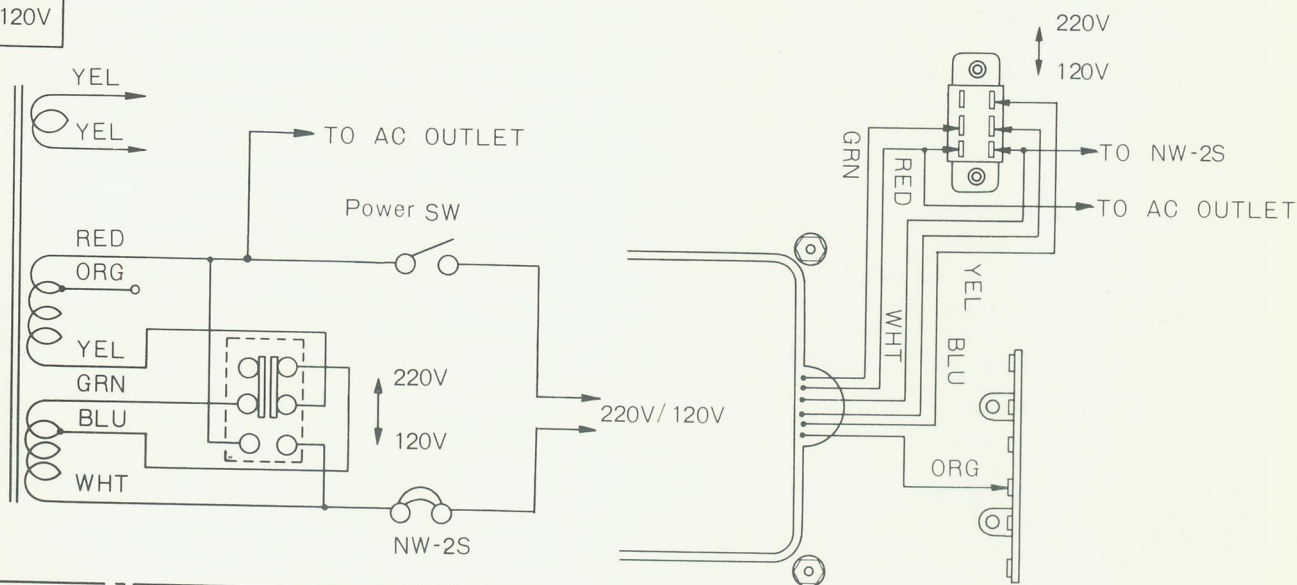
220V	SWEDEN	WEST-GERMANY
	DENMARK	



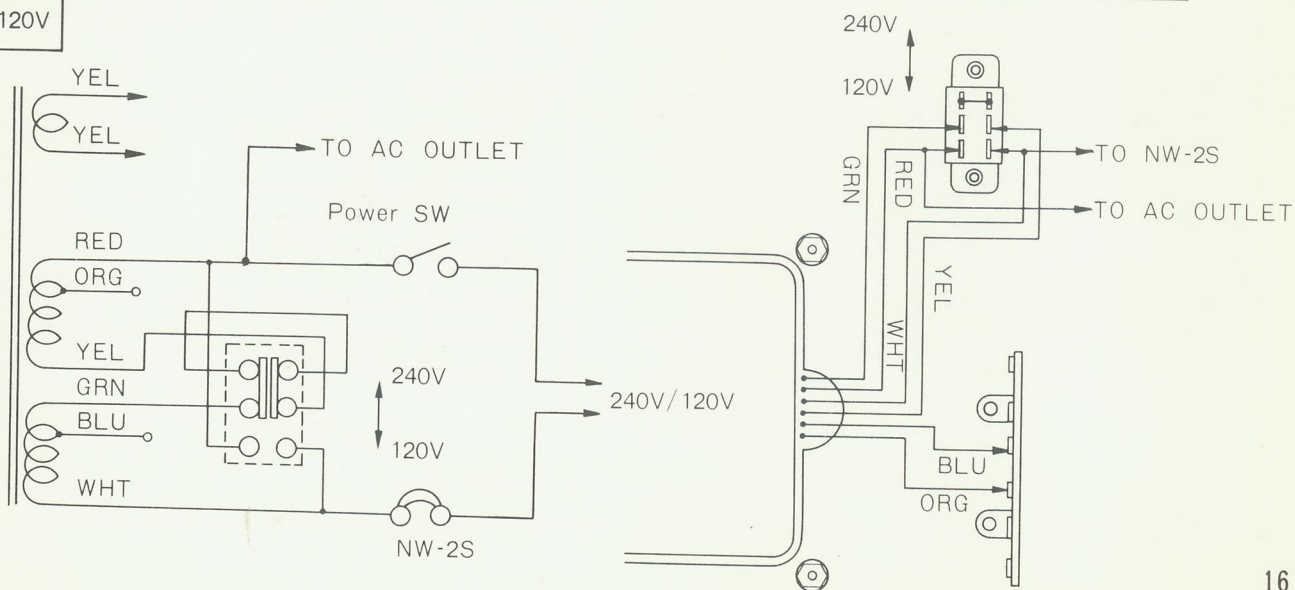
220V/240V EUROPE



220V/120V



240V/120V



PARTS LIST

Parts No.	Description	Symbol	Parts No.	Description	Symbol	
FINAL ASSEMBLY			740062 O	CORD STP SR-39-4	AC OUTLET	
982475 O	CARTON BOX	TUNING VOLUME OTHERS	450015 O	AC SOCKET		
984057 O	STYROL PAD		490067 O	NW-2S 2.0A		
960151 E	OWNERS MANUAL		490066 O	NW-2S 1.6A		
961121 E	DIAGRAM		445046 O	SP SCW TER 4P		
967003 A	WARRANTY CARD		445052 O	ANT TER	SPEAKER ANTENNA TERMINAL L1	
969004 O	POLI CLOTH		120025 O	AM BAR ANT		
458136 O	Q-MATCH ANT (EX)		440005 O	GND TER NUT		
			444081 O	US PIN TER 4P×2		
788307 O	PANEL SUB ASSEMBLY		WOOD COVER.	453022 O	DIN CONCT	R3, R4, R1, R2, C2, C3,
700167 O	DUST RING			324104 J	RES RD1/4S 100 KOHM	
785104 O	KNOB R9GL-37	324334 J		RES RD1/4S 330 KOHM		
785117 O	KNOB R9GL-29D	231222 Z		C-CAP 0.0022MF (+80% -20%)		
785102 O	KNOB R9GL-23D	EQ AMP PCB ASSEMBLY				
785116 O	PUSH BUTTON OL-4	463057 O		EQ AMP PCB	IC 410, IC402 R409, R410, R415 R403, R404, R416, R417, R411, R412, R401, R402, R407, R408, R413, R414, R405, R406, C403, C404, C405, C406, C411, C412, 1 C413, C414, C410, C420, C409, C410, C407, C408, C415,	
783103 O	WOOD COVER	404064 O		TETRA PUSH SW 25EF2020		
887416W	TFTS 4×16	518035 S		IC TA-7129P		
732359 O	BOTTOM PLT	324221 J		RES RD1/4S 220OHM1/4W		
740054 O	POLY FOOT	324222 J		RES RD1/4S 2.2 KOHM1/4W		
CHASS ASSEMBLY			324333 J	RES RD1/4S 33 KOHM1/4W		
110219 O	PT T-1-219	T1	324123 J	RES RD1/4S 12 KOHM1/4W		
315225 K	RES. RC 1/2 GF 2.2MOHM ±10%	R9	324683 J	RES RD1/4S 68 KOHM1/4W		
740086 O	DIAL DRUM 37φ MK2	Z9	324104 J	RES RD1/4S 100KOHM1/4W		
744029 O	SPRING (J)		324154 J	RES RD1/4S 150KOHM1/4W		
786048 O	NEEDLE SUB ASSEMBLY		324105 J	RES RD1/4S 1MOHM 1/4W		
580505 O	PL-5 5V75MA		232470 K	C-CAP 47PF ±10% SL		
FRONT PLATE ASSEMBLY			232101 K	C-CAP 100PF ±10% SL		
580806 J	PL-8 8V0,3A	Z1~Z7	222472 J	M-CAP 0.0047MF ±5% CQ92M		
580107 O	PL-12 12V30MA (WIRE FR-1)	Z9	222123 J	M-CAP 0.012MF ±5% CQ92M		
324330 J	RES RD1/4S 33 OHM1/4W	R8	211415 Q	E-CAP 35R4,7 CEO4W		
712098 O	PULLY SHAFT	M1 R5 (BALANCE) S8 C4 R6, R7 R10, R11	211420 Q	E-CAP 35R10 CEO4W		
740079 O	PULLY 9φ		211130 Q	E-CAP 10R100 CEO4W		
740083 O	PULLY 20φ		211432 Q	E-CAP 35R20 CEO4W		
715212 O	DIAL SHAFT		AMP PCB ASSEMBLY 1/3			
780191 O	DIAL SCALE		4630580	AMP PCB	MAIN AMP SECTION	
458157 O	METER					
431040 O	VR V24L52N 3BM 250K 25KC					
405097 O	ROTARY SW SR26N 2-4-5 25KC (TV-5)		S8	708172 O	H-SINK	Q713, Q714, Q711, Q712, Q709, Q701, Q703, Q707 Q704, Q708 Q705, Q706, Q701, Q702, R725, R726, R727, R728 R711, R712
455010 O	EAR JACK		R6, R7	513059 S	TR 2SB596	
239103 P	C-CAP 0.01MF (+100% -0%) 1,4KV		C4	513060 S	TR 2SD526	
362331 B	MO-RES. RS2B 330 OHM 2W	R6, R7	514084 S	TR 2SA661		
362100 B	MO-RES. RS2B 10 OHM 2W	R10, R11	515075 S	TR 2SA1166		
BACK PLATE ASSEMBLY			515077 S	TR 2SC945 (L)		
606002 J	PLUG CORD KP-2	POWER SUPPLY	514085 S	TR 2SA798		
			324221 J	RES RD1/4S 220 OHM 1/4W		
			324681 J	RES RD1/4S 680 OHM 1/4W		

Parts No.	Description	Symbol	Parts No.	Description	Symbol
324152 J	RES RD1/4S 1.5K OHM 1/4W	R708, R709, R715 R716, R723, R724	252410 M	T-CAP 35D1 CS15E	C505, C506,
324332 J	RES RD1/4S 3.3K OHM 1/4W	R701, R702,	211220 Q	E-CAP 16R10 CE04W	C509, C510,
324472 J	RES RD1/4S 4.7K OHM 1/4W	R717, R718 R719, R720,	211332 Q	E-CAP 25R220 CE04W	C521
324103 J	RES RD1/4S 10K OHM 1/4W	R735, R736, R737, R738, R739,	AMP PCB ASSEMBLY 3/3		
324223 J	RES RD1/4S 22K OHM 1/4W	R705, R706,	REG SECTION		
324563 J	RES RD1/4S 56K OHM 1/4W	R703, R704, R713, R714,	513056 S	TR 2SD235	Q801,
362479 B	MO-RES RS2B 0.47 OHM 2W	R729, R703, R731, R732,	515074 S	TR 2SD414	Q802,
361100 B	MO-RES RS1B 10 OHM 1W	R733, R734,	560028 S	D, 1B2C1	D801,
430040 O	KVSF10-7SNF B500	R709, R721, R710, R722,	560029 S	D, 1B2Z1	D802,
232470 K	C-CAP 47PF $\pm 10\%$ SL	C707, C708,	560033 S	D, 1S1886	D803,
232471 K	C-CAP 470PF $\pm 10\%$ SL	C701, C702,	502027 S	ZD, RD15E	ZD801,
222104 M	M-CAP 0.1MF $\pm 20\%$ CQ92M	C715, C716,	502029 S	ZD, RD33E	ZD802,
252410 M	T-CAP 35D1 CS15E	C703, C704,	324220 J	RES, RD1/4S 22 OHM 1/4W	R810,
211525 Q	E-CAP 50R47 CE04W	C709, C710,	324470 J	RES, RD1/4S 47 OHM 1/4W	R809,
211415 Q	E-CAP 35R4.7 CE04W	C717,	324101 J	RES RD1/4S 100 OHM 1/4W	R804, R808, R805
211125 Q	E-CAP 10R47 CE04W	C705, C706, C717, C718,	324102 J	RES RD1/4S 1 KOHM 1/4W	R803,
AMP PCB ASSEMBLY 2/3			324821 J	RES RD1/4S 820 OHM 1/4W	R806
TONE AMP SECTION			324332 J	RES RD1/4S 3.3 KOHM 1/4W	R802,
404061 O	TETRA PUSH SW IEF1620	R509, R510,	324271 J	RES RD1/4S 270 OHM	R807
432049 O	V16L4G3 N25KC B100K $\times 2$		238103 P	C-CAP 0.01MF $\left(\begin{smallmatrix} +100\% \\ -0 \end{smallmatrix} \right)$ 500V	C803, C804, C813,
432050 O	V16 L4 G3 N25KC A100K $\times 2$	R509, R530,	211530 Q	E-CAP 50R100 CE04W	C809,
515069 S	TR 2SC900	Q501, Q502	211532 Q	E-CAP 50R220 CE04W	C807, C808,
324221 J	RES RD1/4S 220 OHM 1/4W	R513, R514, R519, R520,	211432 Q	E-CAP 35R220 CE04W	C801, C811, C812
324152 J	RES RD1/4S 1.5 KOHM 1/W	R525, R526, R535	211332 Q	E-CAP 25R220 CE04W	C805,
324472 J	RES RD1/4S 4.7 KOHM 1/W	R507, R508,	211232 Q	E-CAP 16R220 CE04W	C806,
324562 J	RES RD1/4S 5.6 KOHM 1/W	R517, R521, R527, R518, R522, R528,	211445 Q	E-CAP 35R4700 CE04W	C801, C802,
324103 J	RES RD1/4S 10 KOHM 1/W	R501, R503, R511, R502, R504, R512,	TUNER PCB ASSEMBLY 1/3		
324153 J	RES RD1/4S 15 KOHM 1/W	R505, R506,	462024 O	TUNER PCB	
324474 J	RES RD1/4S 470KOHM 1/W	R533, R534,	491003 O	FRONT END FB5121112	
324105 J	RES RD1/4S 1MOHM 1/W	R515, R516,	FM IF SECTION		
232220 K	C-CAP 22PF $\pm 10\%$ SL	C507, C508,	518038 S	IC HA1137W	IC 101
222102 K	M-CAP 0.001MF $\pm 10\%$	C502, C501,	515082 S	TR 2SC1675	Q101
222122 K	M-CAP 0.0012MF $\pm 10\%$	C515, C516,	121067 O	INDUCTOR 180J (18mH)	L102
222123 K	M-CAP 0.012MF $\pm 10\%$	C517, C518	121070 O	PEAKING COIL (2.2 μ H)	L101
222333 K	M-CAP 0.033MF $\pm 10\%$	C511, C512,	124025 O	FM DET	T101
222104 K	M-CAP 0.1MF $\pm 10\%$	C503, C504,	128023 A	C-FIL SFE10.7 MA8	CF101, CF102
222224 K	M-CAP 0.22MF $\pm 10\%$	C513, C514,	324470 J	RES RD1/4S 47 OHM 1/4W	R106
			324101 J	RES RD1/4S 100 OHM 1/4W	R101
			324271 J	RES RD1/4S 330 OHM 1/4W	R104, R108
			224102 J	RES RD1/4S 1 KOHM 1/4W	R105
			324182 J	RES RD1/4S 1.8 KOHM 1/4W	R103
			324222 J	RES RD1/4S 2.2 KOHM 1/4W	R111, R113

Parts No.	Description	Symbol	Parts No.	Description	Symbol
324103 J	RES RD1/4S 10 KOHM 1/4W	R102, R115	TUNER PCB ASSEMBLY 3/3		
324123 J	RES RD1/4S 12 KOHM 1/4W	R114	MPX AMP SECTION		
324183 J	RES RD1/4S 18 KOHM 1/4W	R112	518036 S	IC HA1156	IC 301,
324473 J	RES RD1/4S 47 KOHM 1/4W	R110	515077 S	TR 2SC945 (L)	Q301, Q302, Q303,
324104 J	RES RD1/4S 220 KOHM 1/4W	R109	128025 O	FIL EXA-6FD04	FIL,301, FIL,302,
324564 J	RES RD1/4S 560 KOHM 1/4W	R107	324100 J	RES RD1/4S 10 OHM 1/4W	R301,
232470 J	C-CAP 47PF $\pm 10\%$ SL	C113	324680 J	RES RD1/4S 68 OHM 1/4W	R309,
231101 Z	C-CAP 0.001MF $\left(\begin{smallmatrix} +80\% \\ -20\% \end{smallmatrix}\right)$ CK45YG	C101	324122 J	RES RD1/4S 1.2 KOHM 1/4W	R317, R318,
231103 Z	C-CAP 0.01MF $\left(\begin{smallmatrix} +80\% \\ -20\% \end{smallmatrix}\right)$ CK45YG	C102, C115	324332 J	RES RD1/4S 3.3 KOHM 1/4W	R303, R306,
231473 Z	C-CAP 0.047MF $\left(\begin{smallmatrix} +80\% \\ -20\% \end{smallmatrix}\right)$ CK45YG	C103, C105, C107 C110, C104, C106, C109	324392 J	RES RD1/4S 3.9 KOHM 1/4W	R301, R302,
211505 Q	E-CAP 50R0.47 CEO4W	C111	324562 J	RES RD1/4S 5.6 KOHM 1/4W	R315, R316,
211415 Q	E-ACP 35R4.7 CEO4W	C112	324123 J	RES RD1/4S 12 KOHM 1/4W	R304,
211220 Q	E-CAP 16R10 CEO4W	C114	324333 J	RES RD1/4S 33 KOHM 1/4W	R311, R312,
211510 Q	E-CAP 50R1 CEO4W	C108	324104 J	RES RD1/4S 100 KOHM 1/4W	R307, R308,
TUNER PCB ASSEMBLY 2/3			324105 J	RES RD1/4S 1 MOHM 1/4W	R313, R314,
AM SECTION			430031 O	KVSF 10-7ANF .B5K	R305,
518039 S	IC HA1151	IC201,	430033 O	KV8F 10-7ANF .B20K	R319,
122006 O	AM OSC COIL	T201,	231222 K	C-CAP 0.0022MF $\pm 10\%$ CK45YP	C311, C312,
123011 O	AM IFT COIL	T203,	222682 K	M-CAP 0.0068MF $\pm 10\%$ CQ92M	(C307,C308)75 μ S
128021 O	C-FIL CF-455D-3	T202	222222 K	M-CAP 0.0022MF $\pm 10\%$ CQ92M	(307,C308)50 μ S
324151 J	RES RD1/4S 150 OHM 1/4W	R207	222473 K	M-CAP 0.047MF $\pm 10\%$ CQ92M	C301,
324331 J	RES RD1/4S 330 OHM 1/4W	R206,	252402 M	T-CAP 35D0.22 CS15E	C303,
324272 J	RES RD1/4S 2.7KOHM 1/4W	R208	223471 J	S-CAP 470PF $\pm 5\%$ CQ09S	C302,
324392 J	RES RD1/4S 3.9KOHM 1/4W	R201, R203,	211505 Q	E-CAP 50R0.47 CEO4W	C304, C305,
324103 J	RES RD1/4S 10K OHM 1/4W	R204, R205,	211513 Q	E-CAP 50R3.3 CEO4W	C309, C313, C315,
324473 J	RES RD1/4S 47 KOHM 1/4W	R209,	211230 Q	E-CAP 16R100 CEO4W	C310, C314, C316, C306
231150 K	C-CAP 15PF $\pm 10\%$ SL	C203			
2321102Z	C-CAP 0.001MF $\left(\begin{smallmatrix} +80\% \\ -20\% \end{smallmatrix}\right)$ CK45YG	C209,			
231103 Z	C-CAP 0.01 MF $\left(\begin{smallmatrix} +80\% \\ -20\% \end{smallmatrix}\right)$ CK45YG	C201, C207, C212 C206, C210			
231473 Z	C-CAP 0.047MF $\left(\begin{smallmatrix} +80\% \\ -20\% \end{smallmatrix}\right)$ CK45YG	C214,			
222103 K	M-CAP 0.01MF $\pm 10\%$ CQ92M	C204,			
223361 K	S-CAP 360PF $\pm 10\%$ CQ09S	C202,			
211510 Q	E-CAP 50R1 CEO4W	C208,			
211513 Q	E-CAP 50R3.3	C211			
211220 Q	E-CAP 16R10 CEO4W	C205, C213,			
324821 J	RES RD1/4S 820 OHM	R202			

SEMICONDUCTOR SPECIFICATION

TRANSISTOR COMPLEMENT.

Type	Description	Class of Service	Maximum Ratings (T _A = 25°C) (Absolute Values)						Electrical Characteristics (Typical Value) T _A = 25°C											Manufacture
			Collector to Base Voltage V _{CB0}	Emitter to Base Voltage V _{EB0}	Collector Current I _C	Emitter Current I _E	Collector Dissipation P _C	Junction Temperature (°C)	Condition of Measurement		hfe (hFE)	NF	f _{ob} (fT)	C _{ob}	h _{ie} (real) Ω	Collector Cut-off Current		Emitter Cut-off Current		
									V _{CE} (V)	I _C (mA)						I _{CBO} max μA	V _{CB} (V)	V _{EB} max μA	V _{EB} (V)	
2SC785	NPN Si E-P	RF AMP	40	4	20		100	125	6	1.0	120	5	500	1.2		0.5	18	0.5	4	TOSHIBA
2SC535	NPN Si E-P	RF AMP	30	4	20		100	125	6	1.0	120	3.5	700	0.9		0.5	10			HITACHI
2SC1342	NPN Si P	RF AMP	30	4	30		100	125	6	1.0	120	5.5	250	1.1		0.5	10			HITACHI
2SC1675	NPN Si E-P	RF AMP	50	5	30		250	125	6	1.0	90	2.0	250	1.9		0.1	50	0.1	5	NEC
2SC945	NPN Si E	Low FREQ. Amp	50	5	100		250	125	6	1.0	150	4.0	300	4.5		0.1	40	0.1	3	NEC
2SC900	NPN Si E	Low FREQ. Low Noise Amp	30	5	30		250	125	3	0.5	400		100			0.05	25	0.1	3	NEC
2SC1166	NPN Si E	Power Output	60	5	200		600	150	2	50	100		120	9		0.1	20	0.1	5	TOSHIBA
2SD235	NPN Si D-J	Power Output	50	10	3.0A		1.5W	150	5	500	80		10			100	20	100	5	TOSHIBA
2SA798	PNP Si E-P	Low Noise Diff. Amp	-50	-5	-100		200	125	-6	-1.0	600		100			10	-50	10	-5	mitsubishi
2SA661	PNP Si E	Power Output	-60	-5	-200		600	150	-2	-50	100		100	9		-0.1	-20	-0.1	-5	TOSHIBA
2SD526	NPN Si TMe	Power Output	80	5	4.0A		30W	150	5	500	100		3			30	80	100	5	TOSHIBA
2SB596	PNP Si TMe	Power Output	-80	-5	-4.0A		30	150	-5	-500	100		3			30	-80	100	-5	TOSHIBA

RECTIFIER, DIODE, ZENER-DIODE COMPLEMENT.

Type	Description	Maximum Ratings (T _A =25℃)						Electrical Characteristics (Typical Value) T _A =25℃						Manufacture
		Peak Inverse Voltage (V)	Dissipation (mw)	Output Current (mA)	Inverse Current (A)	Surge Current (A)	Junction Temperature (℃)							
								Condi- tion		Condi- tion		Condi- tion		
1B2C1	Si RECTIFIER	100		2.0A (Ta=50℃)	V _R =100V MAX. 0.4mA	60	150							TOSHIBA
1B2Z1	Si RECTIFIER	100		2.0A (Ta=50℃)	V _R =100V MAX. 0.4mA	60	150							TOSHIBA
1S1886	Si RECTIFIER	200		1.0A (Ta=65℃)	V _R =200V MAX. 0.4mA	60	150							TOSHIBA
RD15E ®	Si ZENER DIODE			400	V _R =11V 2μA		175	V _Z I _Z =10mA	13.8V 15.6V	R _D I _Z =10mA	MAX 30Ω	ZEK I _Z =0.5mA	MAX 150Ω	NEC
RD33E ®	Si ZENER DIODE			400	V _R =25V 2μA		175	V _Z I _Z =5mA	31.0V 35.0V	R _D I _Z =5mA	MAX 160Ω	ZEK I _Z =0.5mA	MAX 400Ω	NEC

FIELD EFFECT TRANSISTOR COMPLEMENT.

Type	Description	Class of Service	Maximum Ratings						Electrical Characteristics (Typical Value) T _A =25°C														Manufacture		
			B _{DSE}	V _{GDO}	I _D	P _T	T _{stg}	T _{ch}	I _{GSS}		I _{DSS}		V _{GS}		Y _{fs}		Y _{OS}		C _{RSS}		P _G			N _F	
			(V)	(V)	(mA)	(mw)	(°C)	(°C)	Condi- tion	(nA)	Condi- tion	(mA)	Condi- tion	(V)	Condi- tion	(mV)	Condi- tion	(mΩ)	Condi- tion	(PF)	Condi- tion	(dB)		Condi- tion	(dB)
2SK55	N-CH : Si J-FET	RF AMP		-18		150	-55 1 +125	125	V _{GS} = -0.5V V _{DS} = 0V	MAX -10	V _{DS} = -10V V _{GS} = 0V	3 1 14	V _{DS} = 10V I _D = 10μA	-0.3 1 5.5	V _{DS} = 10V V _{GS} = 0V f _t = 100MHz	TYP 8			V _{DS} = 10V V _{GS} = 0V f _t = 1MHz	MAX 0.6	V _{DD} = 10V R _S = 33Ω f _t = 100MHz	TYP 18	V _{DD} = 10V R _S = 33Ω f _t = 100MHz	MAX 3.5	HITACHI
2SK19	N-CH Si J-FET	RF AMP		-18		200	-55 1 +125	125	V _{GS} = -1.0V V _{DS} = 0V	MAX -10	V _{DS} = -10V V _{GS} = 0	3 1 24	V _{DS} = 10V I _D = 1μA	-1.2 1 3	V _{DS} = 10V V _{GS} = 0V f _t = 100MHz	TYP 8			V _{GD} = 10V f _t = 1MHz	MAX 0.65	V _{DD} = 10V f _t = 100MHz	TYP 20	V _{DD} = 10V f _t = 100MHz	MAX 3.5	TOSHIBA

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