



HI-FI COMPONENTS

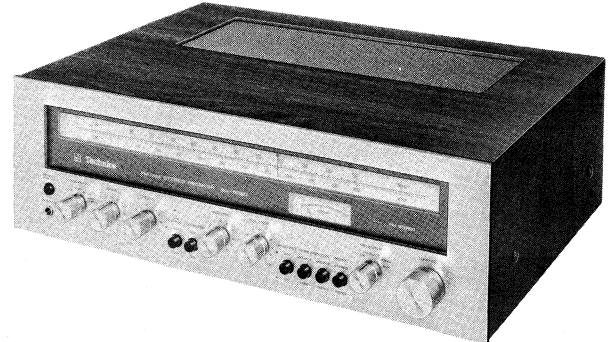


# Service Manual

## FM/AM STEREO RECEIVER



MODEL SA-5150



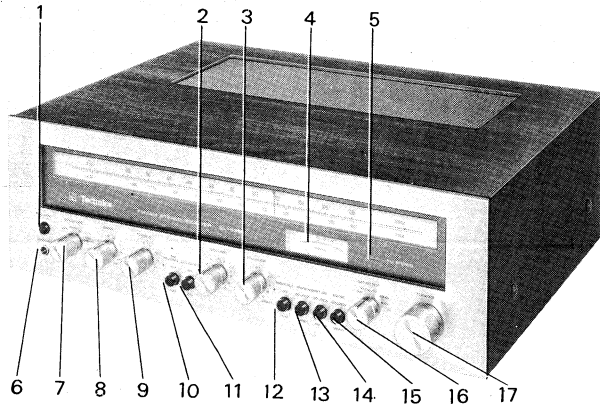
MODEL SA-5350

TECHNICAL SPECIFICATIONS (IHF)	SA-5150	SA-5350
<b>AMPLIFIER SECTION</b>		
1 kHz continuous power both channels driven	20W+20W(4Ω), 17W+17W(8Ω)	37W+37W(4Ω), 33W+33W(8Ω)
20 Hz~20 kHz continuous power (SA-5350) both channels driven	16W+16W(4Ω), 16W+16W(8Ω)	30W+30W(4Ω), 28W+28W(8Ω)
40 Hz~20 kHz continuous power (SA-5150) both channels driven	5 Hz~35 kHz, -3 dB	5 Hz~35 kHz, -3 dB
Power bandwidth (both channels driven at 8Ω)	0.8 %	0.5 %
Total harmonic distortion	0.8 %	0.7 %
Intermodulation distortion	0.7 mV	0.6 mV
Residual hum & noise	20 (8 Ω)	20 (8 Ω)
Damping factor	2 mV/50 kΩ	2 mV/50 kΩ
Input sensitivity and impedance	180 mV/30 kΩ	180 mV/40 kΩ
	180 mV/30 kΩ	180 mV/40 kΩ
S/N (IHF, A)	70 dB	70 dB
	90 dB	90 dB
Frequency response	RIAA standard curve ±1 dB	RIAA standard curve ±0.5 dB
	7 Hz~60 kHz, ±3 dB	5 Hz~60 kHz, ±1 dB
Tone control	50 Hz, +10 dB~-10 dB	50 Hz, +10 dB~-10 dB
	10 kHz, +10 dB~-10 dB	10 kHz, +10 dB~-10 dB
Loudness control (volume at -30 dB)	50 Hz, +10 dB	50 Hz, +10 dB
High filter		7 kHz, -6 dB/oct.
<b>FM TUNER SECTION</b>		
Frequency range	88~108 MHz	88~108 MHz
Sensitivity	1.9 μV	1.9 μV
Total harmonic distortion	0.4%	0.4%
	0.3%	0.3%
S/N	70 dB	70 dB
Frequency response	20 Hz~13 kHz, ±1 dB	20 Hz~13 kHz, ±1 dB
Alternate channel selectivity	70 dB	70 dB
Capture ratio	1.8 dB	1.6 dB
Image rejection at 98 MHz	50 dB	50 dB
IF rejection at 98 MHz	60 dB	70 dB
Spurious response rejection at 98 MHz	65 dB	65 dB
AM suppression	50 dB	50 dB
Stereo separation	40 dB	40 dB
	30 dB	30 dB
Leak carrier	-40 dB	-45 dB
<b>AM TUNER SECTION</b>		
Frequency range	520~1610 kHz	520~1610 kHz
Sensitivity	30 μV, 350 μV/m	30 μV, 230 μV/m
Selectivity	25 dB	25 dB
Image rejection at 1,000 kHz	40 dB	45 dB
IF rejection at 1,000 kHz	50 dB	50 dB
<b>GENERAL</b>		
Power consumption	164 W	300 W
Power supply	110/120/220/240 V	110/120/220/240 V
Dimensions (W×H×D)	16 1/2"×5 1/2"×13 1/2" (420×140×355) mm	16 1/2"×5 1/2"×13 1/2" (420×140×355) mm
Weight	15.5 lb. (7 kg)	21.2 lb. (9.6 kg)

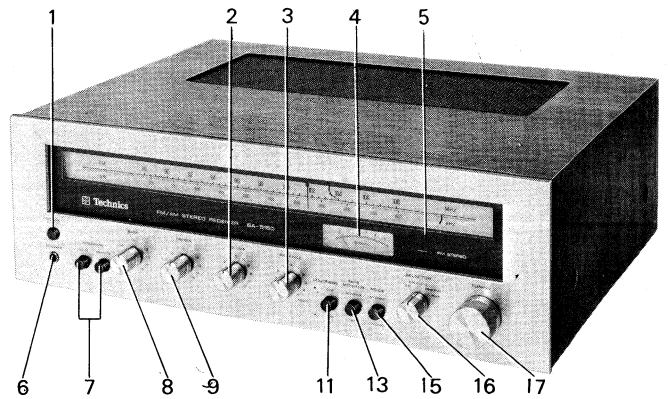
For accommodating future improvements, specifications are subject to change without notice.

**Matsushita Electric**  
 Matsushita Electric Trading Co., Ltd.  
 P. O. Box 288, Central Osaka, Japan

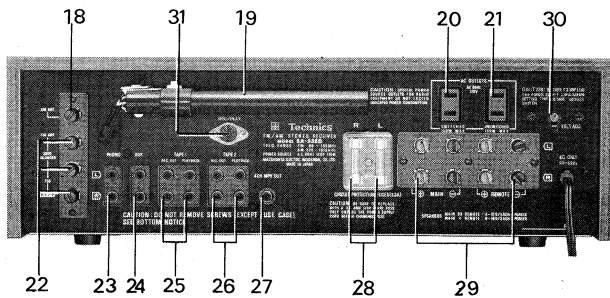
## ■ LOCATION OF CONTROLS



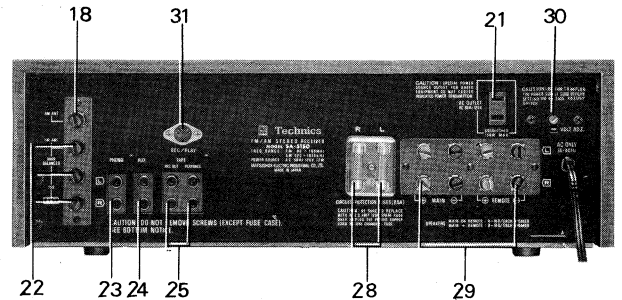
**Model SA-5350**



**Model SA-5150**



**Model SA-5350**



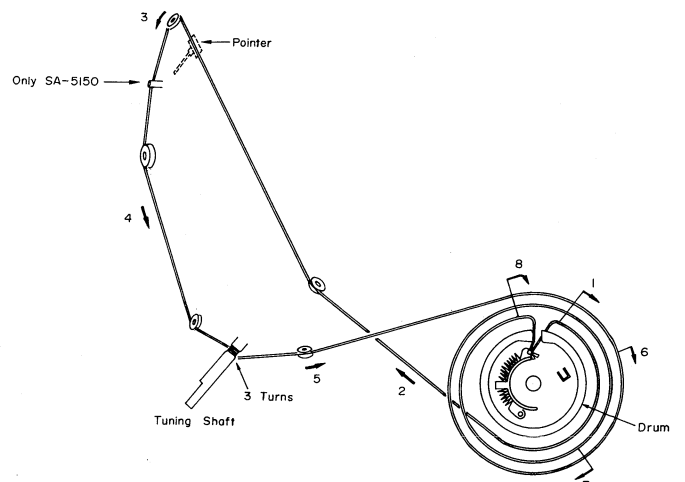
**Model SA-5150**

1. POWER SOURCE SWITCH
2. VOLUME CONTROL
3. BALANCE CONTROL
4. SIGNAL METER
5. STEREO INDICATOR (STEREO EYE)
6. HEADPHONES JACK
7. SPEAKERS SWITCH
8. BASS CONTROL
9. TREBLE CONTROL
10. FM MUTING SWITCH
11. LOUDNESS SWITCH
12. HIGH FILTER SWITCH
13. TAPE MONITOR (TAPE 1) SWITCH
14. TAPE MONITOR (TAPE 2) SWITCH
15. MODE SWITCH
16. SELECTOR SWITCH

17. TUNING CONTROL
18. AM ANTENNA TERMINAL
19. AM FERRITE CORE ANTENNA
20. AC OUTLET.....Switched (Not Attach for England)
21. AC OUTLET.....Unswitched (Not Attach for England)
22. FM ANTENNA TERMINALS
23. PHONO INPUT TERMINALS
24. AUX INPUT TERMINALS
25. TAPE MONITOR (TAPE 1) TERMINALS
26. TAPE MONITOR (TAPE 2) TERMINALS
27. 4 CH. MPX OUTPUT TERMINAL
28. CIRCUIT PROTECTION FUSES
29. SPEAKER TERMINALS
30. VOLTAGE SELECTOR SWITCH
31. TAPE MONITOR DIN SOCKET

## ■ DIAL CORD INSTALLATION GUIDE

1. Dial cord length is  $78\frac{3}{4}$ " (200 cm).
2. Tuning gang is positioned at maximum capacity. (Frequency is minimum)
3. Arrow marks (1~8) indicate correct order and direction of stringing dial cord.

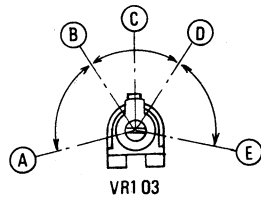


## ALIGNMENT INSTRUCTIONS.....READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

**Note:** The "ICQ" adjustment should be started 1~2 minutes after setting the power switch to the ON position.

CIRCUIT	DC VTVM CONNECTION	ADJUSTMENT POINTS	REMARKS					
<b>MAIN AMP ALIGNMENT.....Only Model SA-5350</b>								
1	ICQ Connect DC VTVM between point ② [Positive side] and point ④ [Negative Side]. (Left and Right channels)	VR601 [Left and Right channel]	Make adjustments so that the indication on DC VTVM becomes 5 mV.					
<p><b>Notes :</b></p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>1. Volume control .....Maximum Variable (FM-IF Alignment)</p> <p>2. Balance control .....Center</p> <p>3. Mode switch .....Stereo</p> <p>4. FM muting switch .....Off (Model SA-5350)</p> <p>5. Selector switch .....AM (AM Alignment) FM Auto (FM Alignment)</p> </div> <div style="width: 45%;"> <p>6. Tape monitor switch.....Source</p> <p>7. Maintain line voltage at rated voltage.</p> <p>8. Output of signal generator should be no higher than necessary to obtain an output reading.</p> </div> </div>								
SIGNAL GENERATOR or SWEEP GENERATOR		RECEIVER DIAL SETTING	VTVM or SCOPE CONNECTION	ADJUSTMENT POINTS	REMARKS			
CONNECTION	FREQUENCY	[DISTANCE]	SA-5350	SA-5150	SA-5350	SA-5150		
<b>AM ALIGNMENT</b>								
2	High side through 0.001μF to TP5, Common to chassis.	455 kHz (Set for England to 470kHz)	Point of non-interference.	TP1	TP104	T1 (AM 1st IFT) T2 (AM 2nd IFT)	Adjust for maximum output.	
3	Fashion loop of several turns of wire and radiate signal into loop of receiver.	600 kHz (30% Mod. with 400 Hz)	600 kHz [15.7mm (5/8")]	Speaker terminals of set.		L9 (AM OSC Coil) L8 (AM ANT Coil)	Adjust for maximum output.	
4		1500 kHz (30% Mod. with 400 Hz)	1500 kHz [191.3mm (7 1/32")]	Speaker terminals of set.		Trimmer CT4 (OSC) CT3 (ANT)	Trimmer CT5 (OSC) CT4 (ANT)	Adjust for maximum output. Repeat steps (3) and (4).
<b>FM-IF ALIGNMENT</b>								
5	/	/	Point of non-interference.	Speaker terminals of set		T101 (DISCRI IFT) [Primary]	Adjust for maximum output noise.	
6	/	/	Point of non-interference.	Between TP4 and 101 terminal	Between TP101 and TP102	T102 (DISCRI IFT) [Secondary]	Make sure that DC VTVM becomes 0V.	
<b>FM-RF ALIGNMENT</b>								
7	Connect to FM antenna terminal through FM dummy antenna (300Ω).	90 MHz (100% Mod. with 400 Hz)	90 MHz [29.2mm (1 1/8")]	Speaker terminals of set.		L6 (FM OSC Coil)* L4 (FM DET Coil) L2 (FM ANT Coil)	Adjust for maximum output.	
8		106 MHz (100% Mod. with 400 Hz)	106 MHz [186.2mm (7 5/16")]	Speaker terminals of set.		Trimmer CT5 (OSC) CT2 (DET) CT1 (ANT)	Trimmer CT3 (OSC) CT2 (DET) CT1 (ANT)	Adjust for maximum output.
* Use six cornered alignment tool for aligning FM OSC coil (L6).								
<b>FM-MONO DISTORTION ALIGNMENT</b>								
9	Connect to FM antenna terminal through FM dummy antenna (300Ω).	98 MHz (100% Mod. with 400 Hz)	98 MHz	Connect distortion meter to speaker terminals.		T102 (FM DISCRI) [Primary]	T101 [Primary]	Adjust for minimum distortion
10	/	/	Point of non-interference.	Connect DC VTVM to TP4 and 101 terminal.	Connect DC VTVM to TP101 and TP102.	T101 (FM DISCRI) [Secondary]	T102 [Secondary]	Make sure that DC VTVM becomes 0V.
<b>SIGNAL METER ALIGNMENT</b>								
11	Connect to FM antenna terminal through FM dummy antenna (300Ω).	98 MHz (30% Mod. with 400 Hz) [Output 20dB]	98 MHz	Signal meter of set.		T104	T103	Adjust for maximum indication.
12		/	/	/		T103	/	Adjust for minimum indication.
13		98 MHz (30% Mod. with 400 Hz) [Output 60dB]	98 MHz	Signal meter of set.		VR102		Adjust for about 4.7 point of signal meter indication.
<b>MUTING LEVEL ALIGNMENT.....Only Model SA-5350</b>								
<b>Note :</b> FM muting switch to ON position.								
14	Connect to FM antenna terminal through FM dummy antenna (300Ω).	98 MHz 100% Mod. with 400 Hz) [Output 28dB, IHF]	98 MHz (Input Level 16dB)	Speaker terminals of set.		VR101		Adjust so that output can be obtained.

FM MPX PILOT ALIGNMENT					
When use the frequency counter			When not use the frequency counter		
15	① 98 MHz Non-modulation mono signal applied to set. ② Connect the frequency counter through 100 kΩ resistor to TP3 (SA-5350) [TP103 (SA-5150)], Common to chassis. ③ Adjust VR103 to 19 kHz ± 100 Hz.			① Stereo signal applied to set or receive the FM stereo station. ② Adjust VR103 to lighting point of stereo indicator and sement contactor of VR103 as shown fig. 1.	
	<b>Notes :</b> Stereo-modulator ..... Connect stereo-modulator output to EXT. MOD. terminal of signal generator. Inter OSC ..... 1 kHz Pilot signal modulation ..... 10% Signal generator ..... Frequency approximately 98 MHz, Output level/72dB (IHF), Modulation mode to FM 1. Selector switch ..... FM Auto 3. Mode switch ..... stereo 2. Balance control ..... Center 4. Maintain line voltage at rated voltage.				
	SIGNAL GENERATOR CONNECTION	STEREO MODULATOR MODE and MOD. RATE	INDICATOR (VTVM or SCOPE)	ADJUSTMENT POINTS SA-5350 SA-5150	REMARKS
<b>STEREO INDICATOR LIGHTING LEVEL ALIGNMENT ..... Only Model SA-5150</b>					
16	FM antenna terminal through dummy antenna. (Output 30dB/IHF).	Pilot signal to ON (L+R)	Stereo indicator (Stereo Eye) of set.  VR101	Stop turning immediately when the stereo eye light up for optimum adjustment.	
<b>SEPARATION ALIGNMENT</b>					
17	FM antenna terminal through dummy antenna.	L (and R) 30% Mnd.	VTVM across speaker terminals through low pass filter. Refer to fig. 2.  VR104	Adjust for minimum right (and left) output.	



A~B, D~E: Stereo OFF Position.  
 B~D: Stereo ON Position (Indicator Lighting)  
 C: Adjust Point of Pilot Circuit.

Fig. 1

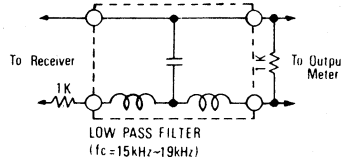
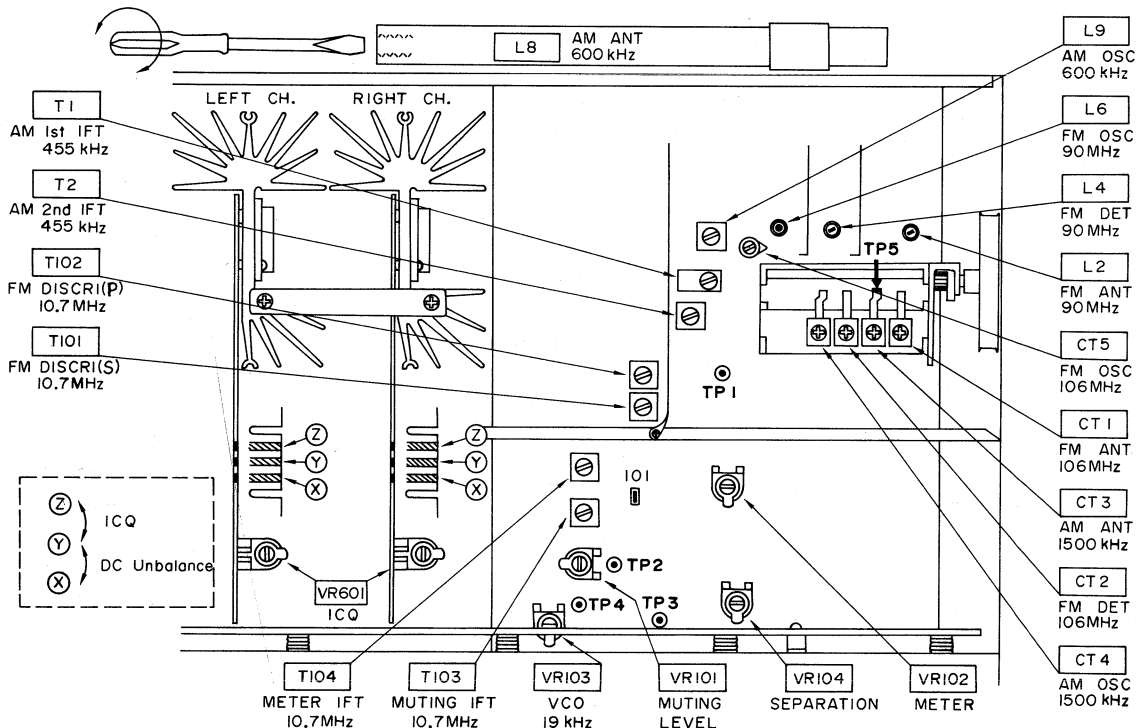


Fig. 2

**Model SA-5350**

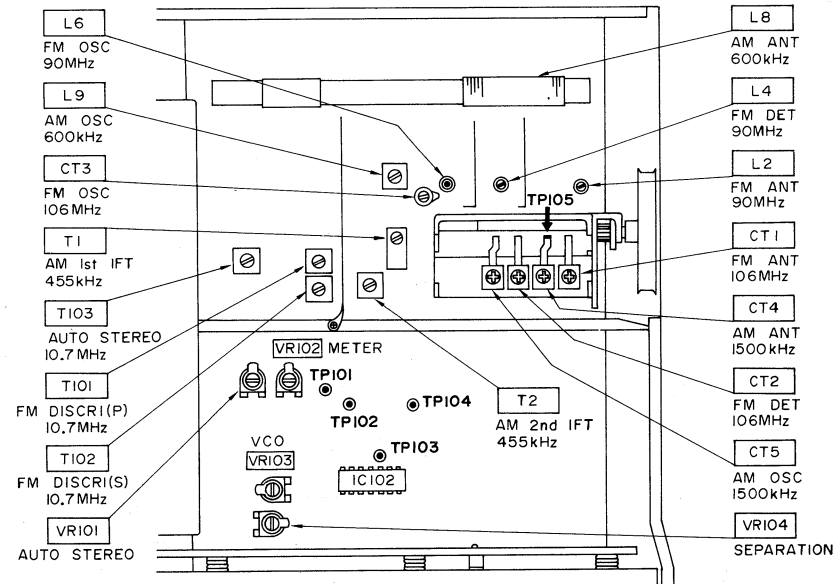
**ALIGNMENT POINTS**





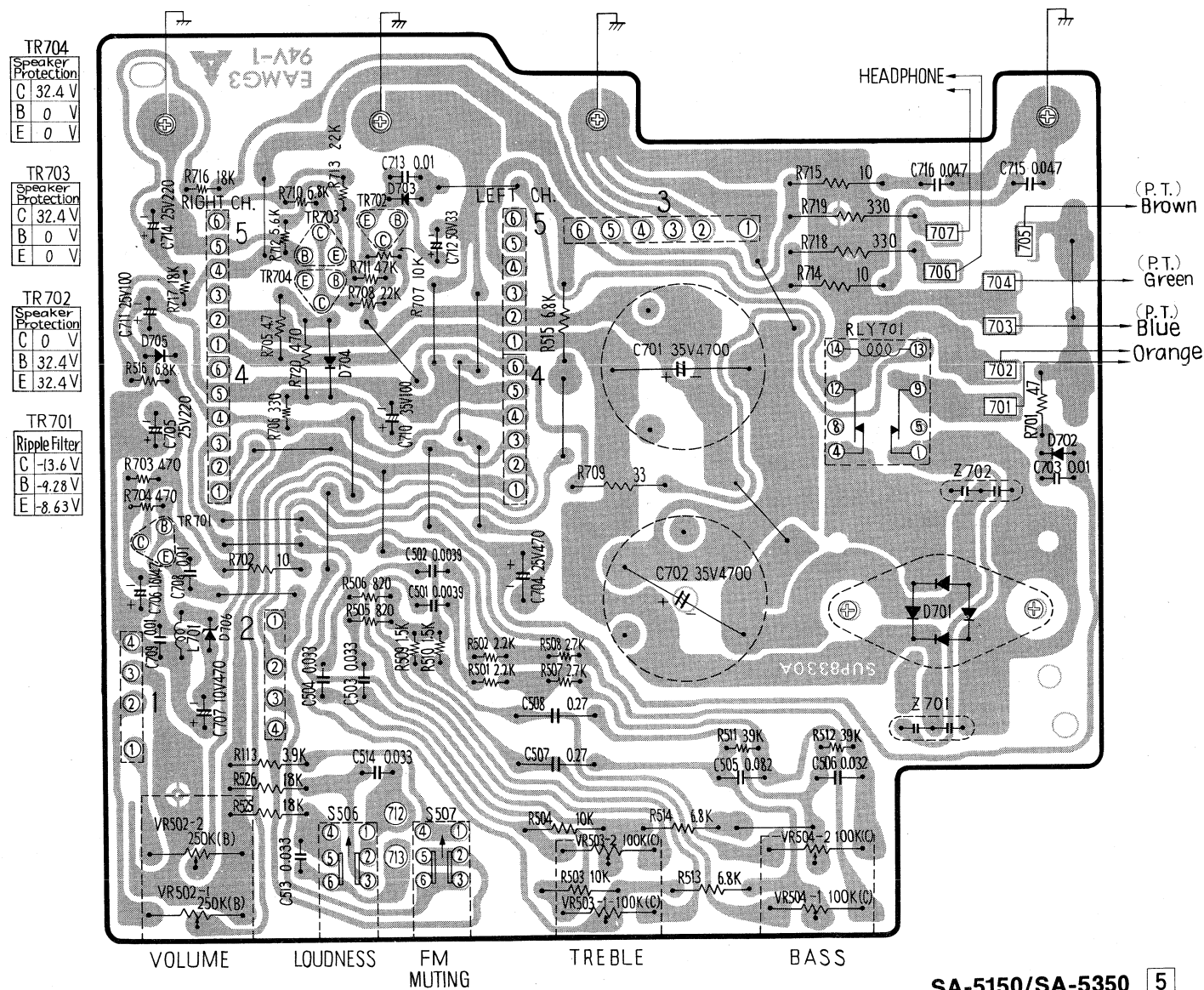
Model SA-5150

ALIGNMENT POINTS



Model SA-5350

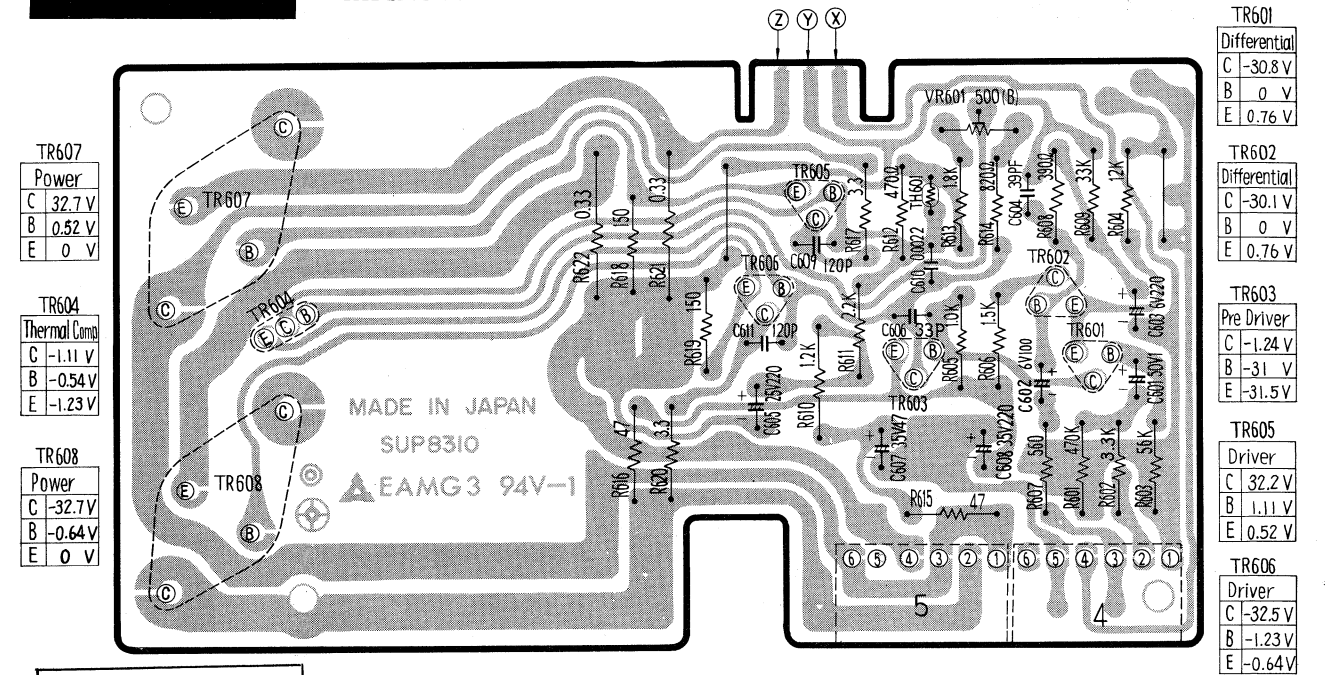
POWER SOURCE & TONE CONTROL CIRCUIT BOARD



SA-5150/SA-5350 5

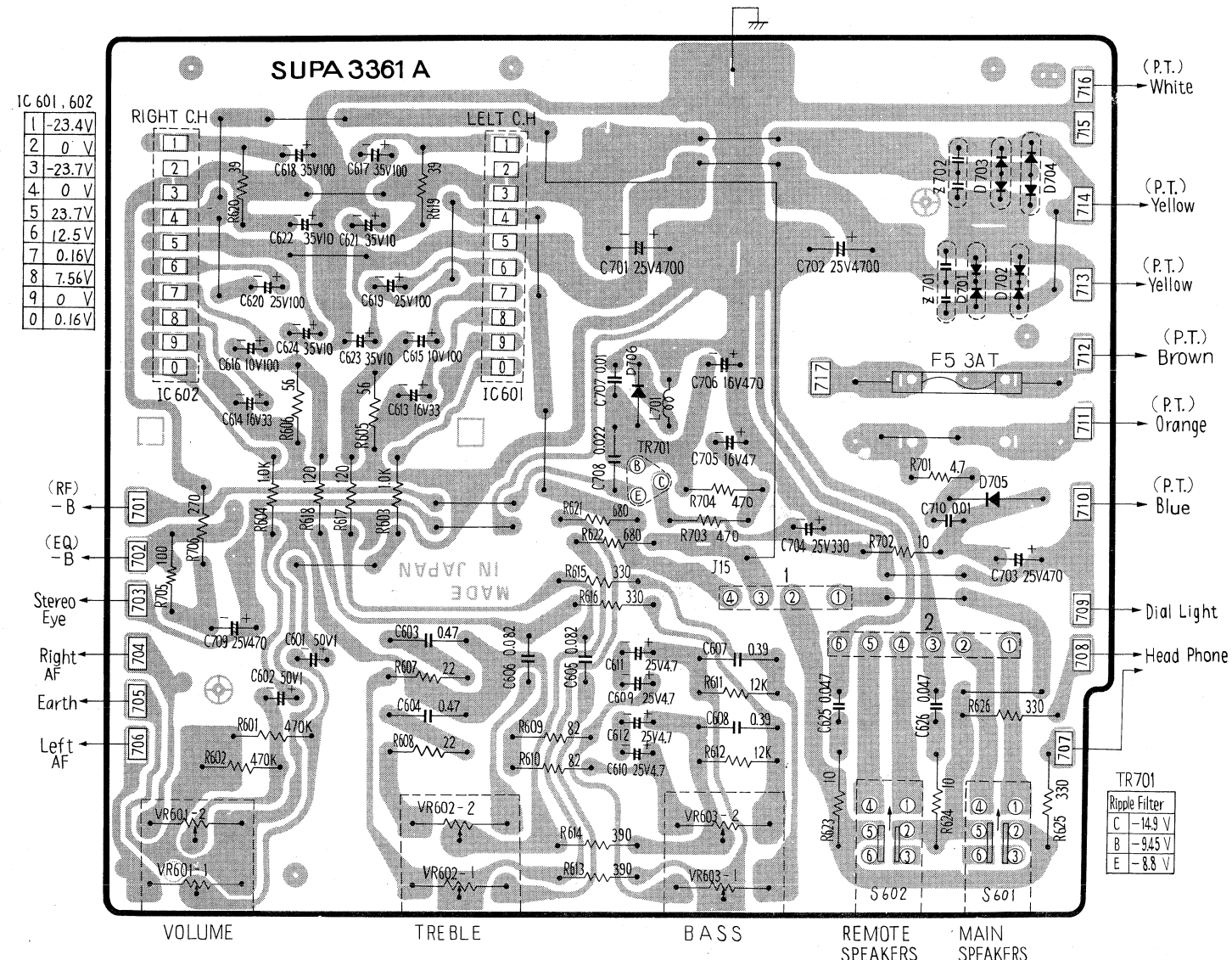
Model SA-5350

MAIN AMPLIFIER CIRCUIT BOARD...L ch. or R ch.



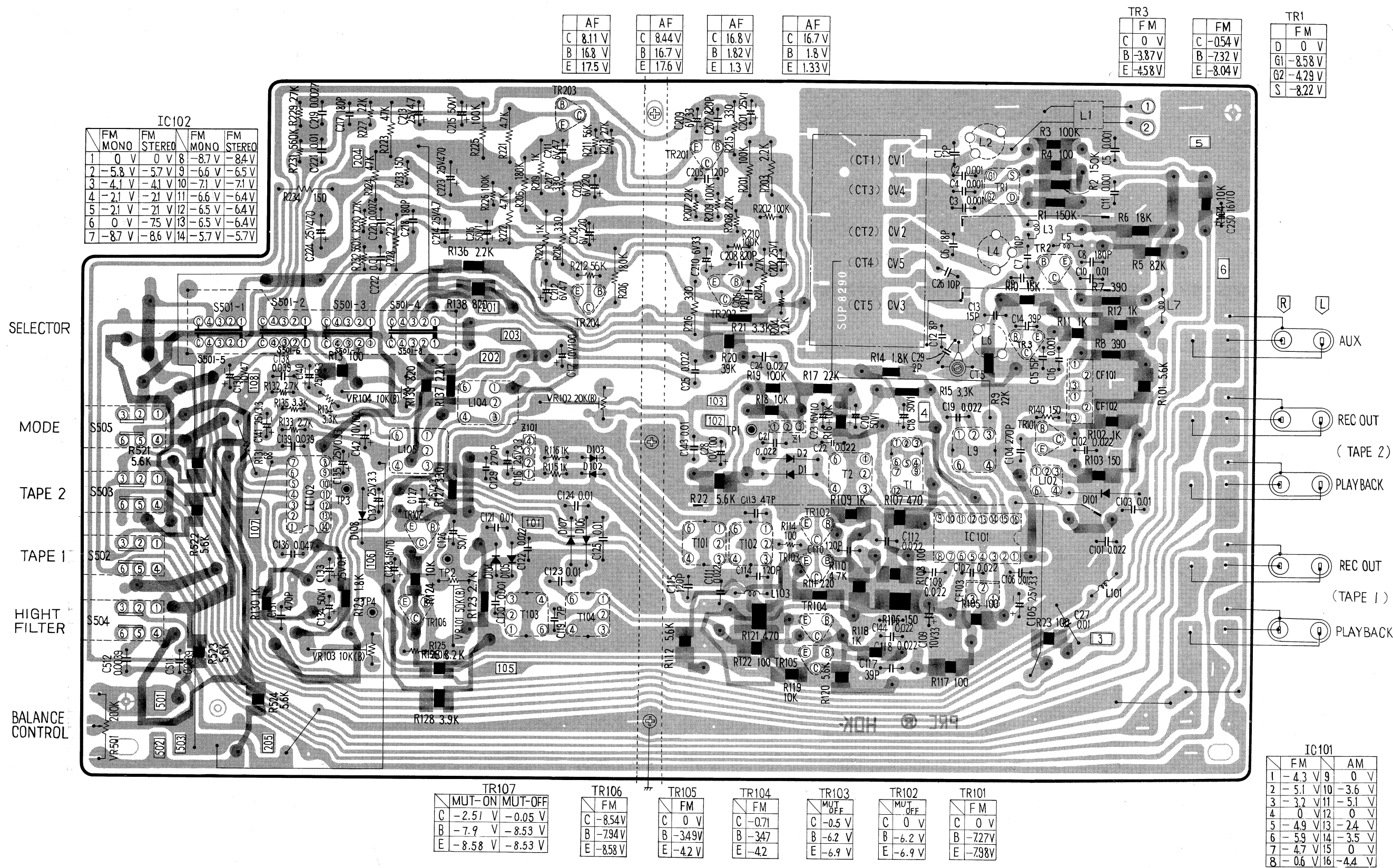
Model SA-5150

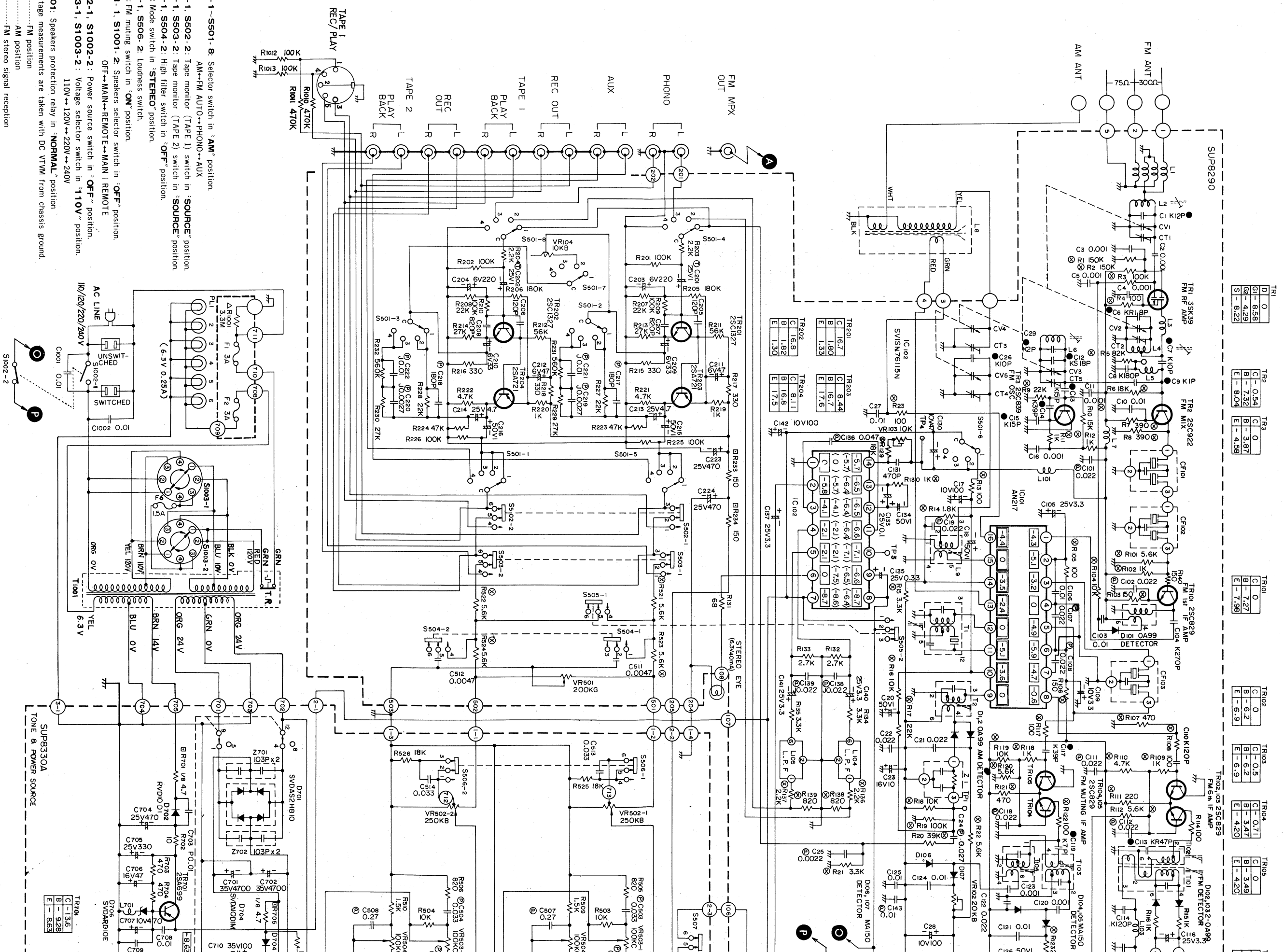
POWER SOURCE & TONE CONTROL CIRCUIT BOARD



SA-5150/SA-5350 6







TR1

D1	O
C1	8.58
B1	4.29
S1	8.22

TR2

C2	0.54
B2	7.32
E2	8.04

TR3

C3	O
B3	3.87
E3	4.58

TR101

C101	O
B101	7.27
E101	7.98

TR102

C102	O
B102	6.2
E102	6.9

TR103

C103	O
B103	6.2
E103	6.9

TR104

C104	0.71
B104	3.47
E104	4.20

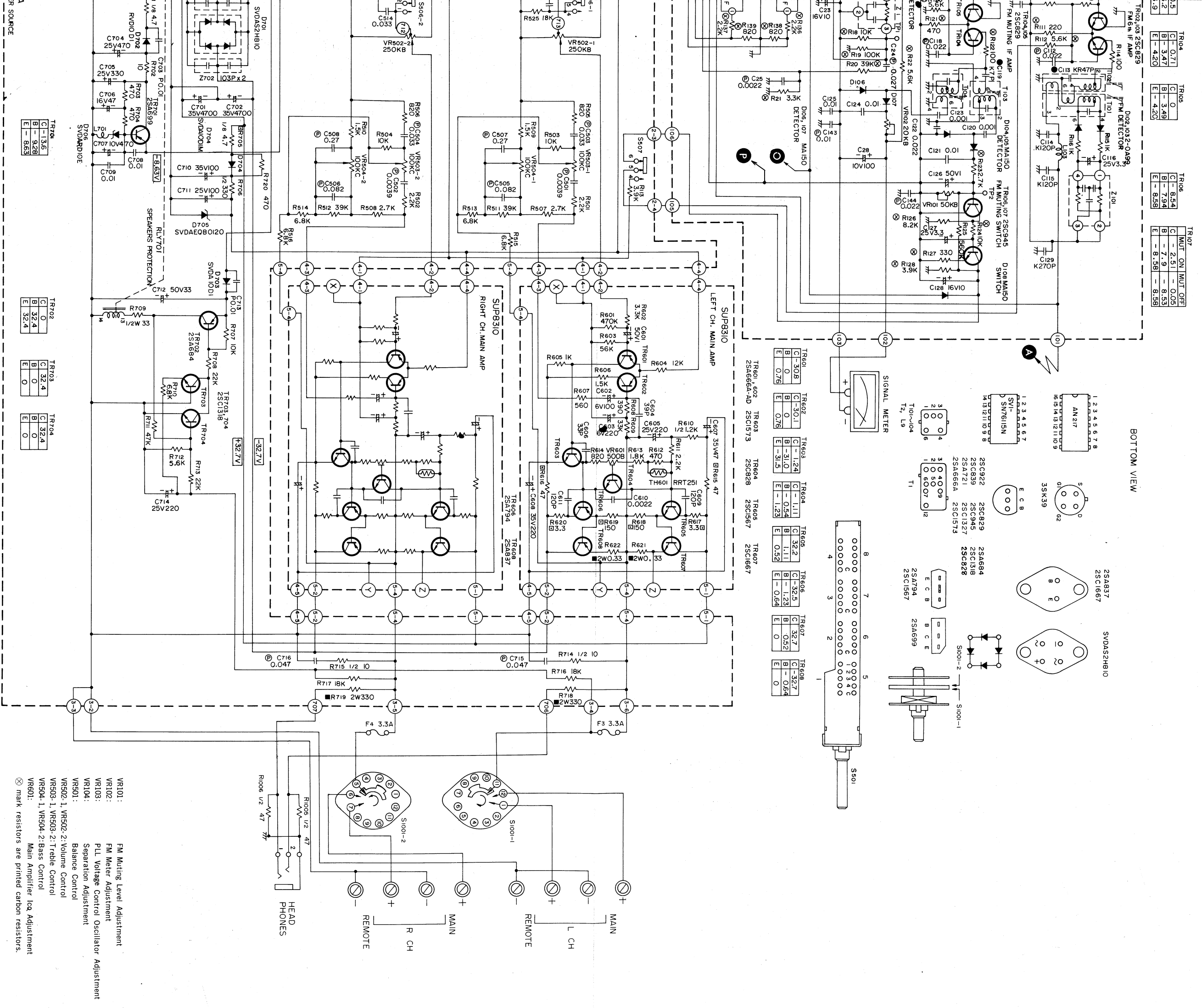
TR105

C105	O
B105	3.49
E105	4.20

Notes:

1. S501-1~S501-8: Selector switch in "AM" position.  
AM→FM AUTO→PHONO→AUX
2. S502-1, S502-2: Tape monitor (TAPE 1) switch in "SOURCE" position.
3. S503-1, S503-2: Tape monitor (TAPE 2) switch in "SOURCE" position.
4. S504-1, S504-2: High filter switch in "OFF" position.
5. S505: Mode switch in "STEREO" position.
6. S506-1, S506-2: Loudness switch.
7. S507: FM muting switch in "ON" position.
8. S1001-1, S1001-2: Speakers selector switch in "OFF" position.  
OFF→MAIN→REMOTE→MAIN+REMOTE
9. S1002-1, S1002-2: Power source switch in "OFF" position.  
110V→120V→220V→240V
10. S1003-1, S1003-2: Voltage selector switch in "NORMAL" position.
11. RLY701: Speakers protection relay in "NORMAL" position.
12. DC voltage measurements are taken with DC VTVM from chassis ground.

  FM position  
  AM position  
  FM stereo signal reception



- VR101: FM Muting Level Adjustment
  - VR102: FM Meter Adjustment
  - VR103: PLL Voltage Control Oscillator Adjustment
  - VR104: Separation Adjustment
  - VR501: Balance Control
  - VR502-1, VR502-2: Volume Control
  - VR503-1, VR503-2: Treble Control
  - VR504-1, VR504-2: Bass Control
  - VR601: Main Amplifier Icq Adjustment
- ⊗ mark resistors are printed carbon resistors.



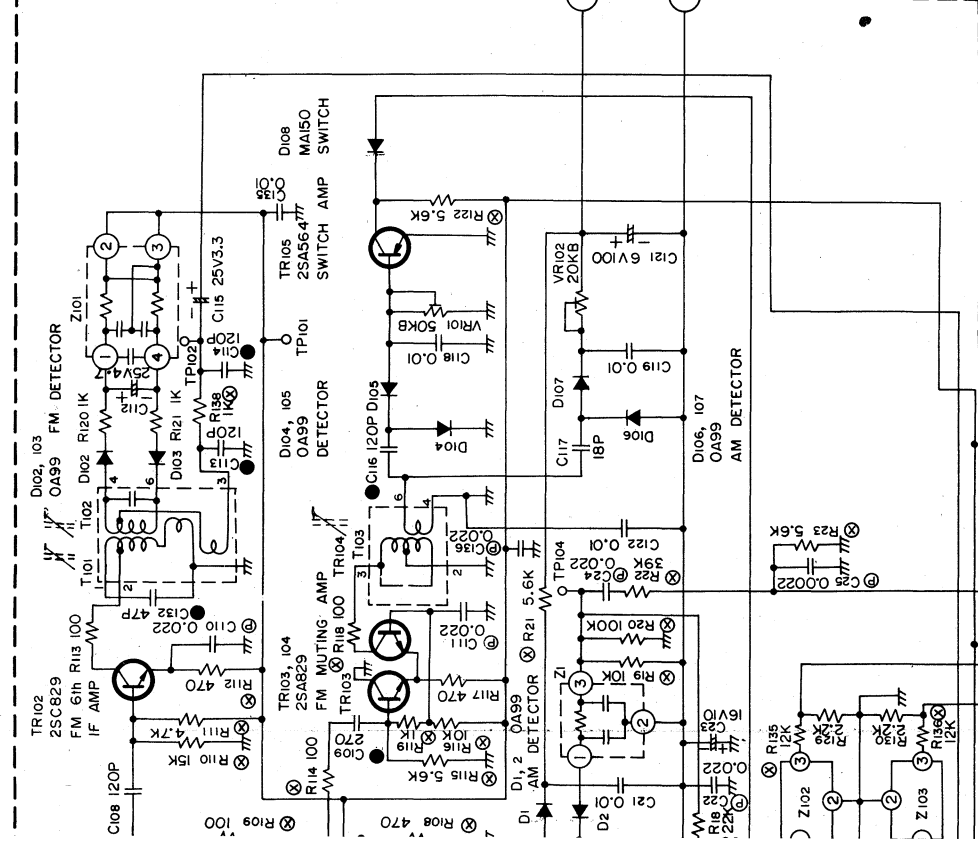
with the development of new technology.)

TRI05 (MONO) (STEREO)	
C	- 8.55 0.02
B	- 0.12 0.74
E	0 0

TRI04	
C	0.684
B	- 3.46
E	- 4.17

TRI03	
C	0
B	- 3.46
E	- 4.17

TRI02	
C	0.312
B	- 6.79
E	- 4.17



BOTTOM VIEW

1 2 3 4 5 6 7 8 9

AN217 IC101

35K39

5 6 1 2 3 4

25C829 25C839 25A721 25C922

IC02

08 40 09 08 00 08 00 10

T2, 101 102, 103 L9

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T1

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SVISTK027K IC601, 602

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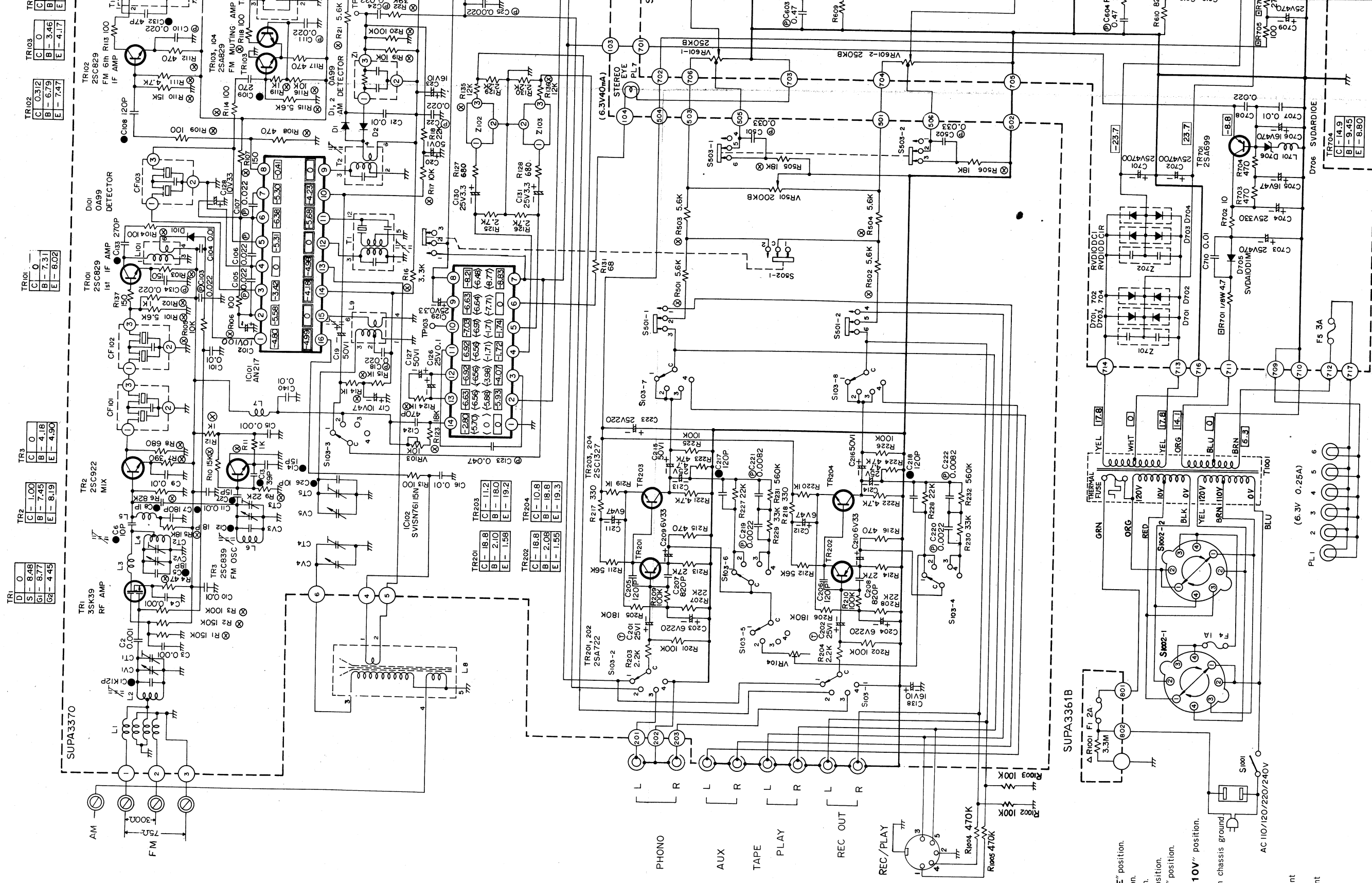
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1 2 3 4 5 6 7 8 9

# Schematic Diagram .....

## Model SA-5150

(This schematic diagram may be modified at any time with the development of new components.)

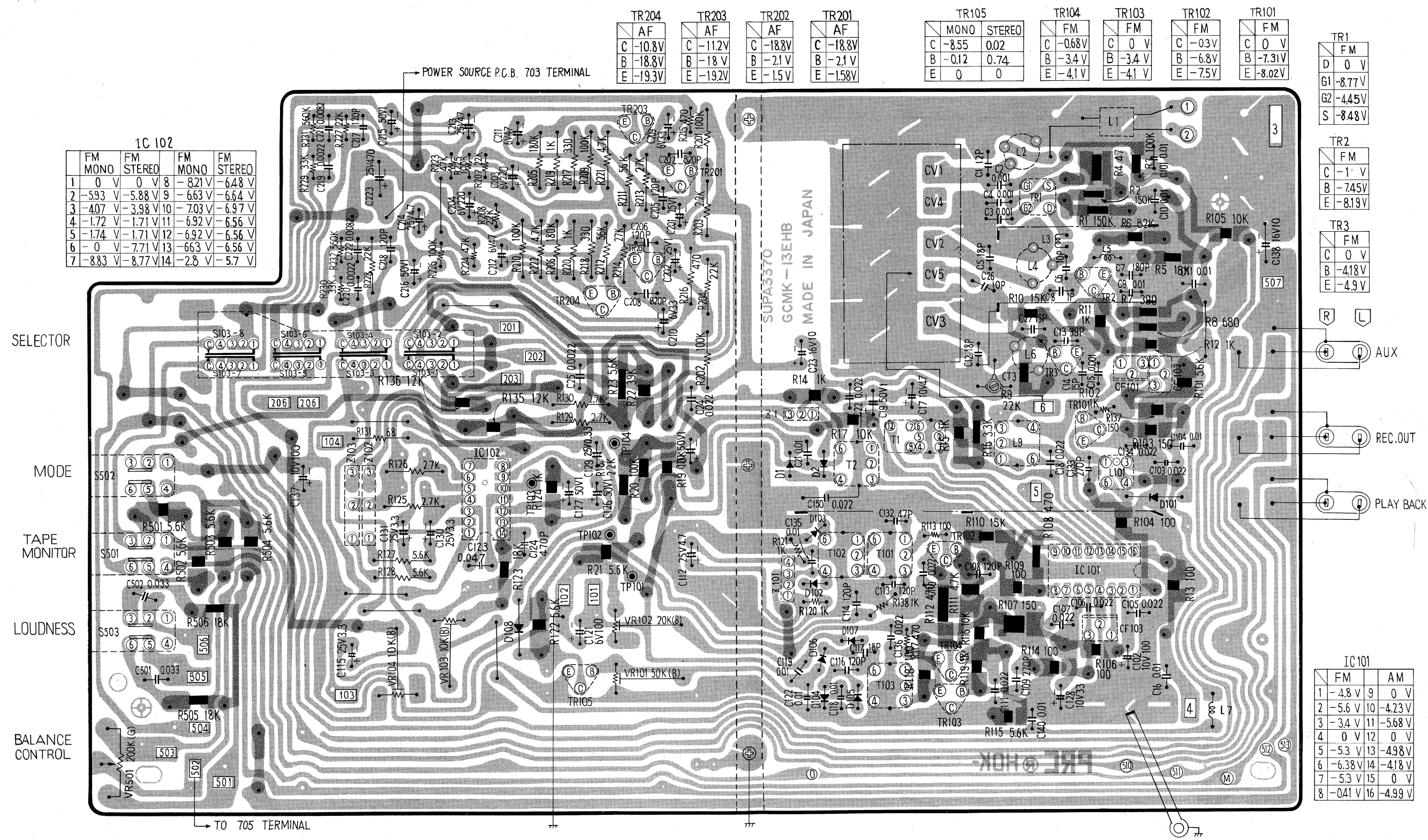


### Notes:

- S103-1** - **S103-8**: Selector switch in 'AM' position.  
AM ↔ FM AUTO ↔ PHONO ↔ AUX
  - S501-1**, **S501-2**: Tape monitor switch in 'SOURCE' position.
  - S502-1**, **S502-2**: Mode switch in 'STEREO' position.
  - S503-1**, **S503-2**: Loudness switch in 'OFF' position.
  - S601-1**, **S601-2**: Main speakers switch in 'OFF' position.
  - S602-1**, **S602-2**: Remote speakers switch in 'OFF' position.
  - S1001**: Power source switch in 'OFF' position.
  - S1002-1**, **S1002-2**: Voltage selector switch in '110V' position.  
110V ↔ 120V ↔ 220V ↔ 240V
9. DC voltage measurements are taken with DC VTVM from chassis ground.
- FM position  
     AM position  
     FM stereo signal reception

- VR101: Stereo Indicator Lighting Level Adjustment
- VR102: FM Meter Adjustment
- VR103: PLL Voltage Control Oscillator Adjustment
- VR104: Separation Adjustment
- VR501: Balance Control
- VR601-1, VR601-2: Volume Control
- VR602-1, VR602-2: Treble Control
- VR603-1, VR603-2: Bass Control

✕ mark resistors are printed carbon resistors.



1C 102

	FM MONO	FM STEREO	FM MONO	FM STEREO
1	0 V	0 V	-8.21 V	-6.48 V
2	-5.93 V	-5.88 V	9	-6.63 V
3	-4.07 V	-3.98 V	10	-7.03 V
4	-1.72 V	-1.71 V	11	-6.92 V
5	-1.74 V	-1.71 V	12	-6.92 V
6	0 V	-7.71 V	13	-6.63 V
7	-8.83 V	-8.77 V	14	-2.8 V
			15	-5.7 V

TR204		TR203		TR202		TR201	
	AF		AF		AF		AF
C	-10.8V	C	-11.2V	C	-18.8V	C	-18.8V
B	-18.8V	B	-18 V	B	-2.1 V	B	-2.1 V
E	-19.3V	E	-19.2V	E	-1.5V	E	-1.58V

TR105		TR104		TR103		TR102		TR101		
	MONO	STEREO		FM		FM		FM		
C	-8.55	0.02	C	-0.68V	C	0 V	C	-0.3V	C	0 V
B	-0.12	0.74	B	-3.4V	B	-3.4 V	B	-6.8V	B	-7.31V
E	0	0	E	-4.1V	E	-4.1 V	E	-7.5V	E	-8.02V

TR1

	FM
D	0 V
G1	-8.77V
G2	-4.45V
S	-8.48V

TR2

	FM
C	-1 V
B	-7.45V
E	-8.19V

TR3

	FM
C	0 V
B	-4.18V
E	-4.9 V

R L

	AUX

REC. OUT



PLAY BACK

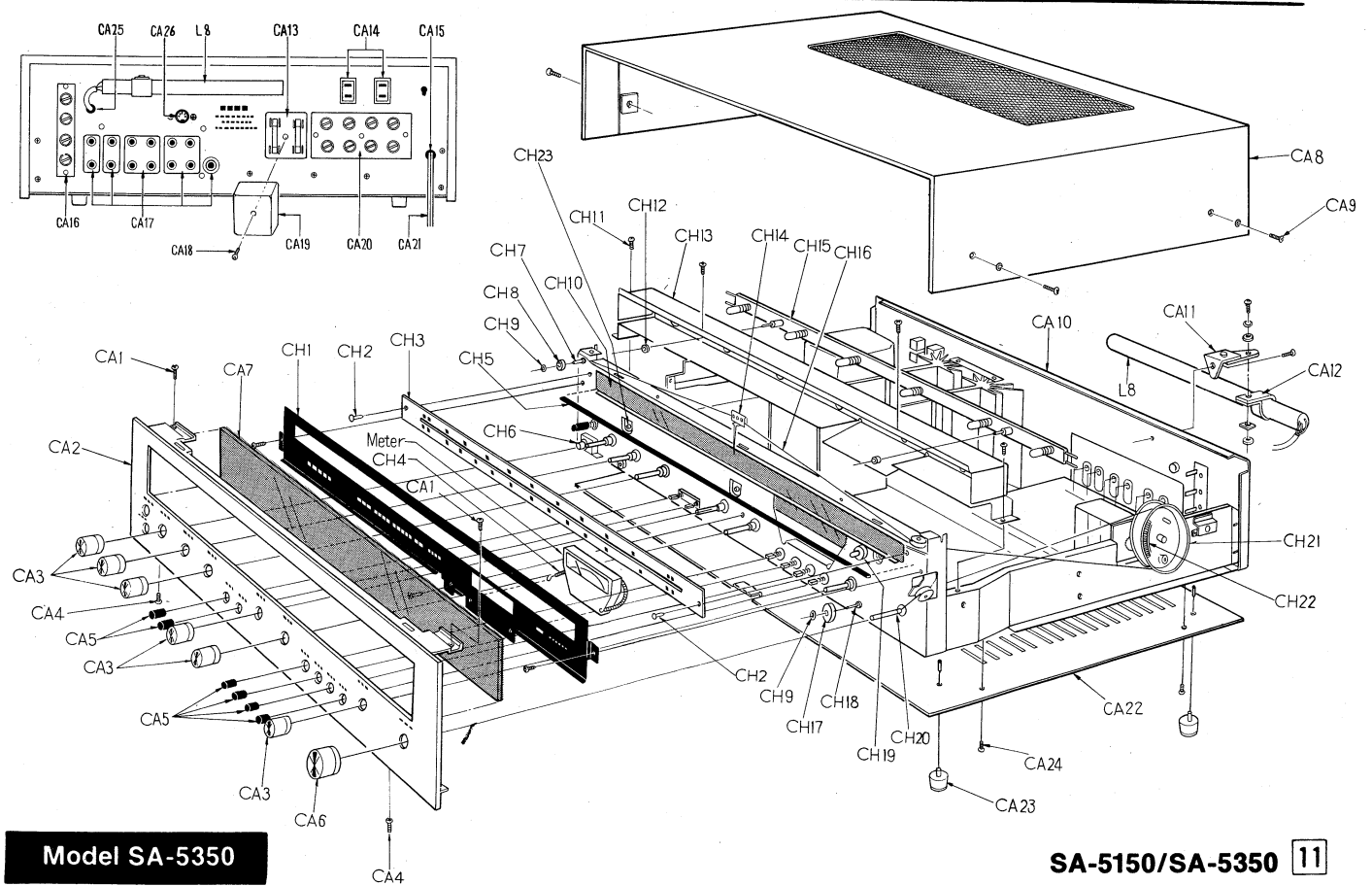
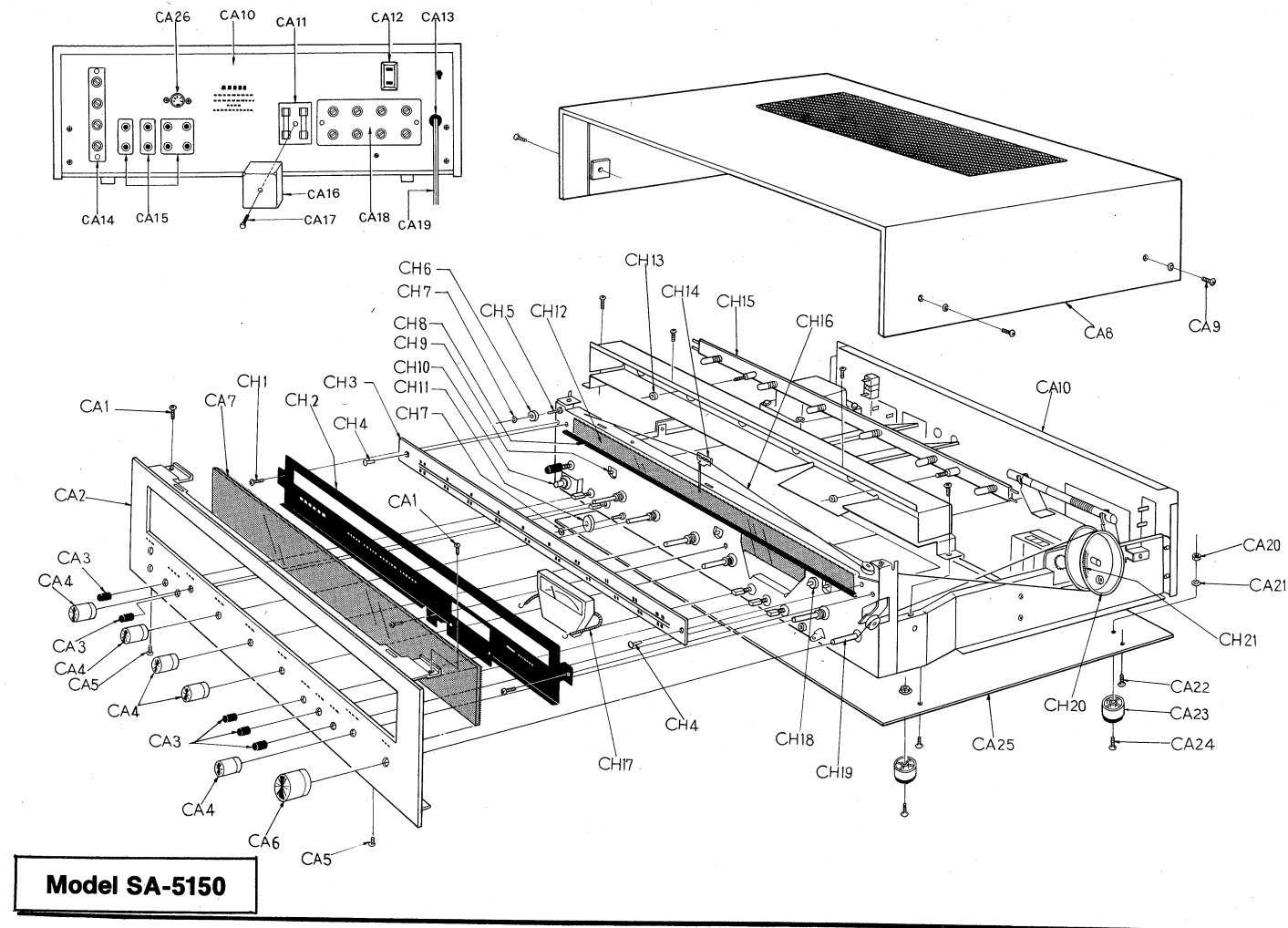


1C 101

	FM	AM
1	-4.8 V	9 0 V
2	-5.6 V	10 -4.23 V
3	-3.4 V	11 -5.68 V
4	0 V	12 0 V
5	-5.3 V	13 -4.98 V
6	-6.38 V	14 -4.18 V
7	-5.3 V	15 0 V
8	-0.41 V	16 -4.99 V

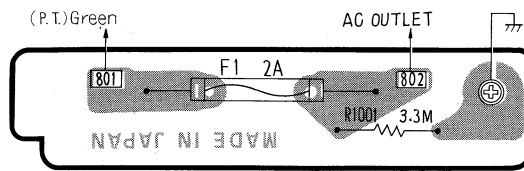


**■ CABINET & CHASSIS PARTS LOCATIONS**

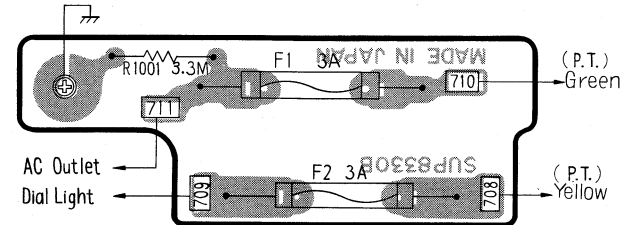


**■ AC FUSE CIRCUIT BOARD**

**Model SA-5150**



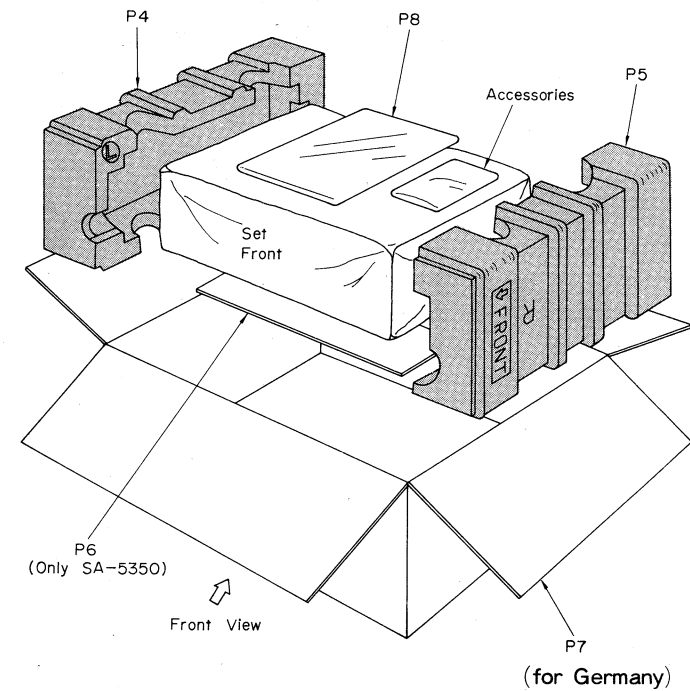
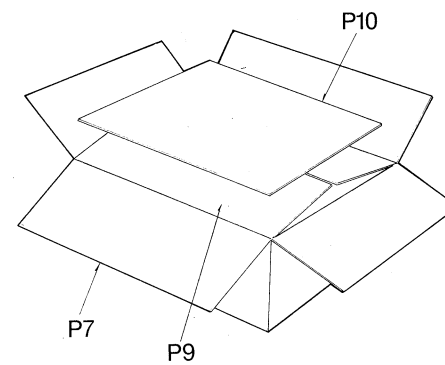
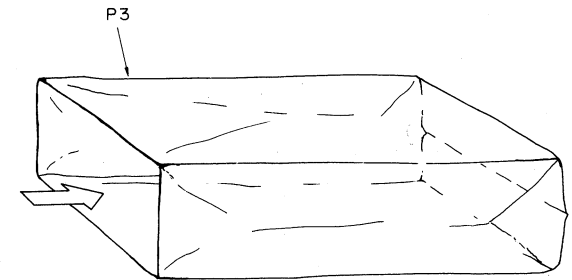
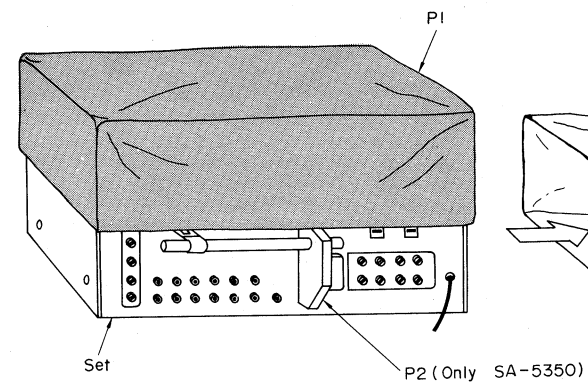
**Model SA-5350**



**Model SA-5150**

**Model SA-5350**

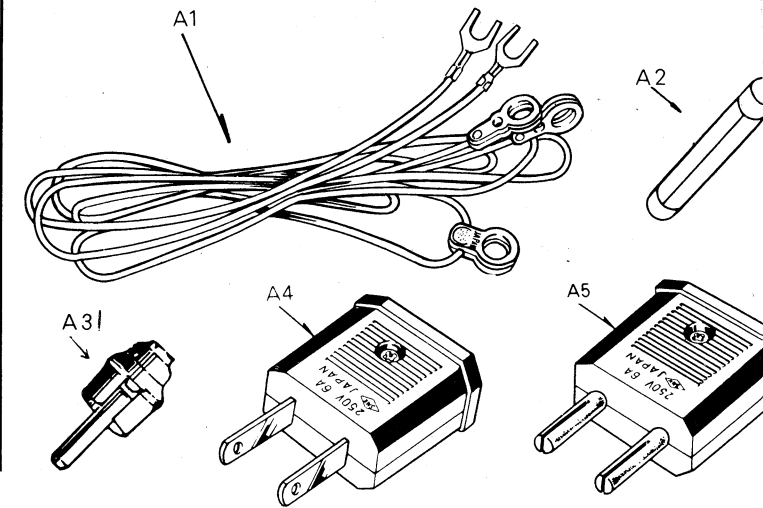
**PACKING PARTS**



**Model SA-5150**

**Model SA-5350**

**ACCESSORIES**







Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks	Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
C207, 208	ECKD1H821KB	820pF, 50WV, ±10%, Ceramic	2		CA3	SBNA116E	Knob, Speaker Switch, Bass, Treble, Volume, Balance & Selector Switch	6	
C2,3,4,5,11,16,120,123	ECKD1H102PF	0.001μF, 50WV, ±100% Ceramic	8		CA4	XTV3+8CK	Black Screw, Panel M'tg.	2	
C (610) × 2	ECKD1H222PF	0.0022μF, 50WV, " Ceramic	2		CA5	SBCA56	Button, Push Switche	6	○
C10,103,106,121,124,143,703,708,709,713	ECKD1H103PF	0.01μF, 50WV, " Ceramic	10		CA6	SBNA131E	Knob, Tuning	1	○
C21, 22, 122	ECKD1H223PF	0.022μF, 50WV, " Ceramic	3		CA7	SGUA34	Glass Plate	1	○
C27, 125	ECKD2H103PF	0.01μF, 500WV, " Ceramic	2		CA8(BRN)	SKAA830	Cabinet (Brown Wood)	1	○
C1001	ECQU2A103MD	0.01μF, 250VAC, ±20% Polyester	1		CA8(BLK)	SKAA830-1	Cabinet (Black Wood)	4	○
C25	ECQM05222KZ	0.0022μF, 50WV, ±10%, Polyester	1		CA9(BLK)	XSB4+16KS	Screw, Black Cabinet M'tg.	4	○
C219, 220	ECQM05272JZ	0.0027μF, 50WV, ±5%, Polyester	2		CA9(BRN)	XSB4+16BVCS	Screw, Brown Cabinet M'tg.	4	○
C501, 502, 511, 512	ECQM05392KZ	0.0039μF, 50WV, ±10%, Polyester	4		CA10	SGPA680-1A	Rear Panel	1	○
C221, 222	ECQM05103JZ	0.01μF, 50WV, ±5%, Polyester	2		CA11	SMA197	Mounting, AM Antenna Coil	1	○
C19,101,102,107,108,111,112,118,144	ECQM05223KZ	0.022μF, 50WV, ±10%, Polyester	9		CA12	SMAA6-2	Band, AM Antenna Coil	1	○
C24	ECQM05273KZ	0.027μF, 50WV, ±10%, Polyester	1		CA13	SJFA5201-1	Fuse Holder, Circuit Protection	1	○
C503,504,513,514	ECQM05333KZ	0.033μF, 50WV, ±10%, Polyester	4		CA14	SJSA66-1	Socket, AC	2	○
C138, 139	ECQM05223JZ	0.022μF, 50WV, ±5%, Polyester	2		CA15	RHR111	Bushing, AC Cord	1	○
C136, 715, 716	ECQM05473KZ	0.047μF, 50WV, ±10%, Polyester	3		CA16	SJFA4401-2	Terminal, Antenna	1	○
C505, 506	ECQM05823KZ	0.082μF, 50WV, ±10%, Polyester	2		CA17	SJFA3020	Terminal, Input	1	○
C507, 508	ECQM05274KZ	0.27μF, 50WV, ±10%, Polyester	2		CA18	XSN26+12	Screw, Fuse Cap M'tg.	1	○
C1002	ECQU2A103MD	0.01μF, 250VAC, ±20% Polyester	1		CA19	SJFA5202-1	Fuse Cap	1	○
C131	ECQS1471JZ-K	470pF, 125WV, ±5%, Styrol	1		CA20	SJFA4803-1	Terminal, Speakers	1	○
C209, 210	ECEA6V33L	33μF, 6.3WV, Electrolytic	2		CA21	SJAA3-1	AC Cord	1	○
C211, 212	ECEA6V47	47μF, 6.3WV, Electrolytic	2		CA22	SKUA440	Bottom Board	1	○
C (602) × 2	ECEA6V100L	100μF, 6.3WV, Electrolytic	2		CA23	SKL145	Leg	4	○
C203, 204, (603) × 2	ECEA6V220L	220μF, 6.3WV, Electrolytic	4		CA24	XTV3+8CFYR	Red Screw, Bottom Board M'tg.	5	○
C109	ECEA10V33L	33μF, 10WV, Electrolytic	1		CA25	RHR106	Bushing, AM Antenna Lead	1	○
C130	ECEA10V47L	47μF, 10WV, Electrolytic	1		CA26	XSN3+6FYRS	Red Screw, Bottom Board M'tg.	1	○
C17, 28, 142	ECEA10V100L	100μF, 10WV, Electrolytic	3			RJS31-1	DIN Socket, Tape Monitor	1	○
C707	ECEA10V470L	470μF, 10WV, Electrolytic	1		<b>CHASSIS PARTS</b>				
C23, 128, 250	ECEA16V10L	10μF, 16WV, Electrolytic	3		CH1	SDHA58-1	Mounting, Meter & Dial Scale	1	○
C706	ECEA16V47L	47μF, 16WV, Electrolytic	1		CH2	SHRA916-1	Lock Pin, Dial Scale	2	○
C105, 116, 127, 137, 140, 141	ECEA25V3R3L	3.3μF, 25WV, Electrolytic	6		CH3	SKDA530	Dial Scale	1	○
C213, 214	ECEA25V4R7L	4.7μF, 25WV, Electrolytic	2		CH4	SUSA69	Spring, Meter	1	○
C711	ECEA25V100L	100μF, 25WV, Electrolytic	1		CH5	SUMA8-1	Mounting, Dial Scale	1	○
C (605) × 2, 705, 714	ECEA25V220L	220μF, 25WV, Electrolytic	4		CH6	SJJA16	Jack, Headphones	1	○
C223, 224, 704	ECEA25V470L	470μF, 25WV, Electrolytic	3		CH7	RDY34	Shaft, Pulley (RDR20)	4	○
C (607) × 2	ECEA35V47L	47μF, 35WV, Electrolytic	2		CH8	RDR20	Pulley, Dial Cord	4	○
C710	ECEA35V100	100μF, 35WV, Electrolytic	1		CH9	RNW150-2	Lock Washer, Pulley	5	○
C (608) × 2	ECEA35V220	220μF, 35WV, Electrolytic	2		CH10	SDUA11	Filter, Dial Light	1	○
C18, 20, 126, 134, 215, 216 (601) × 2	ECEA50V1G	1μF, 50WV, Electrolytic	8		CH11	XTV3+8CK	Black Screw, Lamp House M'tg.	4	○
C712	ECEA25V33L	33μF, 25WV, Electrolytic	1		CH12	XNG3CS	Nut, Lamp Holder M'tg.	2	○
C133	ECAG25ER1X	0.1μF, 25WV, Electrolytic	1		CH13	SMPA59	Lamp House	1	○
C135	ECAG25ER33X	0.33μF, 25WV, Electrolytic	1		CH14	SDPA8	Pointer, Dial	1	○
C201, 202	ECST25EF1	1μF, 25WV, Electrolytic	2		CH15	SJSA206	Holder, Dial Lamp	1	○
C701, 702	ECE135R4700Y	4700μF, 35WV, Electrolytic	2		CH16	SDZ051-1	Cord, Dial [200cm (78¾")]	1 roll	○
<b>VARIABLE CAPACITORS</b>					CH17	RDR23	Pulley, Dial Cord	1	○
CV1~5 (CT1~4)	ECV5MX25X20G	Tuning Gang, AM/FM (with Trimmer)	1		CH18	RDY32	Shaft, Pulley (RDR23)	1	○
CT5	ECV1ZW06P35	FM OSC Trimmer, 6pF	1		CH19	SHGA204	Rubber Cushion, Stereo Eye	1	○
<b>COMPONENT COMBINATIONS</b>					CH20	SDTA10-1S	Tuning Shaft, Complete	4	○
Z1	EXAF203Z471	AM Detector	1		CH21	SDDA471S	Drum, Tuning	1	○
Z101	EXAF5DL04C	FM Detector	1		CH22	SDSA4121	Spring, Drum	1	○
Z701, 702	RXAF103P22HD	Hum Cancel, 0.01μF(×2), 500WV	2			XXAR3H6S	Screw, Drum M'tg.	2	○
<b>SWITCHES</b>						SJS5405	4Pin Socket, Lead Connector	2	○
S501	SSRA81	Selector Switch	1	○		SJS5603	6Pin Socket, Lead Connector	1	○
S502,503,504,505	SSHA57-1S	Tape 1, 2, Mode & Filter Switch	1	○		SHRA919	Lock Pin, Dial Light Filter	3	○
S506, 507,	SSHA56S	Loudness & Muting Switch	1	○		SJS41	Pin Clamp, (SJS5405, SJS5603)	14	○
S1001	ESRC124F30CE	Speakers Selector Switch	1	○	<b>ACCESSORIES</b>				
S1002	ESB7040T	Power Source Switch (with Button)	1	○	A1	SSAA3	FM Antenna Cord	1	○
S1003	SSRA71S	Voltage Selector Switch	1	○	A2	XBAS1A3301	Circuit Protection Fuse (3, 3A)	2	○
<b>RELAY and METER</b>					A3	RJP5	Pin Plug	4	○
RLY701	SSYA1	Speakers Protection Relay	1		A4	RJP16A5	AC Plug	1	○
	SSMA25-2	Signal Meter	1		A5	RJP17AS	AC Plug	1	○
<b>FUSES and LIGHTS</b>					<b>PACKING PARTS</b>				
F1	XBAS2B3002	3A Fuse, Power Source	1		P1	SPPA16-1	Soft Cover	1	○
F2	XBAS1B3003	3A Fuse, Power Source	2		P2	SPS5	Pad, AM Bar Antenna	1	○
F3, 4	XBAS1A3301	3.3A Fuse, Circuit Protection	2		P3	SPP163	Polyethylene Bag	1	○
F6	XBAS2B1501	1.5A Fuse, Power Source	1		P4	SPS1	Pad, Left Side	1	○
PL1~6	XAM35K	Dial Lamp, 6.3V 0.25A	6		P5	SPS3	Pad, Right Side	1	○
PL7	XAMR38S150A	Stereo Eye, 6.3V 40mA	1		P6	SPS13	Pad, Bottom Board	1	○
<b>CABINET PARTS</b>					P7	SPG499	Carton Box, Outer	1	○
CA1	XTS3+8BK	Black Screw, Panel M'tg.	2		P8	SQF969	Printed Matter, Complete	1	○
CA2	SGWA1410	Front Panel	1	○	P9	SPN5081	Carton Box, Inner	1	○
					P10	SPNA187	Pad, Upper	1	○
<b>PACKING PARTS (for Germany)</b>					P1	SPPA16-1	Soft Cover	1	○
					P2	SPS5	Pad, AM Bar Antenna	1	○
					P3	SPP163	Polyethylene Bag	1	○
					P4	SPS1	Pad, Left Side	1	○
					P5	SPS3	Pad, Right Side	1	○
					P6	SPS13	Pad, Bottom Board	1	○
					P7	SPG509	Carton Box	1	○
					P8(Germany)	SQF969	Printed Matter, Complete	1	○
					P9	.....	Deletion	.....	.....
					P10	.....	Deletion	.....	.....



**SA-5150**

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks	Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
C129 C701, 702	ECAG25ER33X ECET25R4700S	0.33μF, 25WV, Electrolytic 4700μF, 25WV, Electrolytic	1 2		<b>CHASSIS PARTS</b>				
<b>VARIABLE CAPACITORS</b>					CH1	XTV3+8C	Screw, Meter Bracket M'tg.	3	
CV1-5 (CT1,2,4,5) CT3					ECV5MX25X20G	Tuning Gang, AM/FM (With Trimmer)	1	○	
					ECV1ZW06P35	FM OSC Trimmer, 6pF	1		
<b>COMPONENT COMBINATIONS</b>					CH2	SDHA59-1	Bracket, Meter	1	○
Z1	EAXF203Z471	AM Detector	1		CH3	SKDA530	Scale, Dial	1	
Z101	EXA5DL04C	FM Detector	1		CH4	SHRA916-1	Lock Pin, Dial Scale	2	
Z102, 103	EXAM505F	Low Pass Filter	2		CH5	RDY34	Shaft, Pulley	4	
Z701, 702	RXAF103P22HD	Hum Cancel, 0.01μF(X2), 500WV	2		CH6	RDR20	Pulley, Dial Cord	4	
<b>SWITCHES</b>					CH7	RNW150-2	Lock Washer, Pulley	5	
S103	SSRA81	Selector Switch	1		CH8	SUMA8-1	Mounting, Dial Scale	1	
S501, 502, 503	SSHA59S	Mode, Tape Monitor, Loudness Switch	1	○	CH9	SHRA919	Lock Pin, Dial Light Filter	3	
S601, 602	SSHA58S	Main, Remote Speakers Switch	1	○	CH10	SJJA16	Jack, Headphones	1	
S1001	ESB7036	Power Switch (with Button)	1		CH11	RDR23	Pulley, Dial Cord	1	
S1001(England)	ESB7051	Power Switch (for England)	1	○	CH12	SDUA11	Blue Filter, Dial Light	1	
S1002	SSRA71S	Voltage Selector Switch	1		CH13	XNG3CS	Nut, Lamp Holder M'tg.	2	
<b>METER</b>					CH14	SDPA8	Pointer, Dial	1	
	SSMA25-2	Signal Meter	1		CH15	SJSA206	Holder, Dial Lamp	1	
<b>FUSES and LIGHTS</b>					CH16	SDZ051-1	Cord, Dial (200cm (78¾"))	1 roll	
F1	XBAS2B2002	2A Fuse, Power Source	1		CH17	SUSA69	Spring, Meter	1	
F2, 3	XBAS1A2501	2.5A Fuse, Circuit Protection	2		CH18	SHGA204	Rubber Bracket, Stereo Eye	1	
F4	XBA2K10NS5	1A Fuse, Power Source	1		CH19	SDTA10-1S	Tuning Shaft, Complete (with Flywheel)	1	
F5	XBAS1B3001	3A Fuse, Power Source	1		CH20	SDDA471S	Drum, Dial	1	
PL1-6	XAM35K	Dial Lamp, 6.3V 0.25A	6		CH21	SDS44121	Spring, Drum M'tg.	1	
PL7	XAMR38S200	Stereo Eye, 6.3V, 40mA	1			XXAR3H6S	Screw, Drum M'tg.	2	
<b>CABINET PARTS</b>						SJS5405	4 pin Socket, Lead Connector	1	
CA1	XTS3+8BK	Black Screw, Panel M'tg.	2			SJS5603	6 pin Socket, Lead Connector	1	
CA2	SGWA1420	Front Panel	1	○		SJS41	Pin Clamp (SJS5405, SJS5603)	10	
CA3	SBCA56	Button, Speakers, Loudness, Tape-Monitor & Mode Switch	5		<b>ACCESSORIES</b>				
CA4	SBNA116E	Knob, Bass, Treble, Volume, Balance & Selector Switch	5		A1	SSAA3	FM Antenna Cord	1	
CA5	XTV3+8CK	Black Screw, Panel M'tg.	2		A2	XBAS1A2501	Circuit Protection Fuse(2.5A)	2	
CA6	SBNA131E	Knob, Tuning	1		A3	RJP5	Pin Plug	4	
CA7	SGUA34	Glass Plate	1		A4	RJP16AS	AC Plug	1	
CA8(BRN)	SKAA830	Cabinet(Brown Wood)	1		A5	RJP17AS	AC Plug	1	Not belong for England
CA8(BLK)	SKAA830-1	Cabinet(Black Wood)	1	○	<b>PACKING PARTS</b>				
CA9(BRN)	XSB4+16BVCS	Screw, Brown Cabinet M'tg.	4		P1	SPPA16-1	Soft Cover	1	
CA9(BLK)	XSB4+16KS	Screw, Black Cabinet M'tg.	4		P3	SPP163	Polyethylene Bag	1	
CA10	SGPA700-1A	Rear Panel	1	○	P4	SPS1	Pad, Left Side	1	
CA10(England)	SGPA700-2A	Rear Panel, (for England)	1	○	P5	SPS3	Pad, Right Side	1	
CA11	SJFA5201-1	Holder, Circuit Protection Fuses	1	○	P7	SPG497	Carton Box, Outer	1	○
CA12	SJSA66-1	Socket, AC	1		P8	SQF957	Printed Matter, Complete	1	○
CA13	RHR111	Bushing, AC Cord	1		P9	SPN5079	Carton Box, Inner	1	○
CA13(England)	SHR113	Bushing, AC Cord(for England)	1		P10	SPNA187	Pad, Upper	1	
CA14	SJFA4401-2	Terminal, Ext. Antenna	1		<b>PACKING PARTS (for Germany &amp; England)</b>				
CA15	SJFA3806	Terminal, PHONO, AUX & Tape Monitor	1	○	P1	SPPA16-1	Soft Cover	1	
CA16	SJFA5202-1	Cover, Circuit Protection Fuses	1		P3	SPP163	Polyethylene Bag	1	
CA17	XSN26+12	Screw, Fuse Cover M'tg.	1		P4	SPS1	Pad, Left Side	1	
CA18	SJFA4803-1	Terminal, Speakers	1		P5	SPS3	Pad, Right Side	1	
CA19	SJAA3-1	AC Cord	1		P7	SPG507	Carton Box	1	○
CA19(England)	SJA73	AC Cord(for England)	1		P8(Germany)	SQF957	Printed Matter, Complete	1	
CA20	XNG4BS	Nut, Leg M'tg.	4		P8(England)	SQF1043	Printed Matter(for England)	1	○
CA21	XWG4	Washer, Leg M'tg.	4		P9	-----	Deletion	-----	
CA22	XTW3+10EFY	Screw, Bottom Baard M'tg.	6		P10	-----	Deletion	-----	
CA23	SKLA7	Leg	4	○					
CA24	XSN4+14S	Screw, Leg M'tg.	4						
CA25	SKUA450-1	Bottom Board	4	○					
CA26	RJS31-1	Socket, DIN(Tape Monitor)	1						