

# Service Manual

FM/AM Stereo Receiver

SA-101

[E],[EG],[XGH],  
[XAL],[XA]

SA-101(K)

[E],[XGH]

SA-101



SA-101(K)

\* The colors of this model include silver and black. The black type model is provided with (K) in the Service Manual.

## Areas

- \* [E] and [EG] are available in European and Scandinavia.
- \* [XGH] is available in Holland.
- \* [XAL] is available in Australia.
- \* [XA] is available in Asia, Latin America, Middle East and Africa.

## TECHNICAL SPECIFICATIONS

Specifications are subject to change without notice for further improvement.

## [DIN 45 500]

## AMPLIFIER SECTION

40 Hz~20 kHz continuous power output both channels driven	2 × 18W (4Ω) 2 × 18W (8Ω)
40 Hz~16 kHz continuous power output both channels driven	2 × 18W (4Ω) 2 × 18W (8Ω)
1 kHz continuous power output both channels driven	2 × 20W (4Ω) 2 × 20W (8Ω)
Total harmonic distortion rated power at 40 Hz~20 kHz	0.15% (4Ω) 0.04% (8Ω)
rated power at 40 Hz~16 kHz	0.15% (4Ω) 0.04% (8Ω)
rated power at 1 kHz	0.04% (4Ω, 8Ω)
half power at 40 Hz~20 kHz	0.025% (8Ω)
half power at 1 kHz	0.009% (8Ω)
-26 dB power at 1 kHz	0.1% (4Ω)
50 mW power at 1 kHz	0.12% (4Ω)
Intermodulation distortion rated power at 250 Hz: 8 kHz=4:1, 4Ω	0.15%
rated power at 60 Hz: 7 kHz=4:1, SMPTE, 8Ω	0.04%
Power bandwidth both channels driven, -3 dB	10 Hz~25 kHz (4Ω)
Damping factor	10 (4Ω), 20 (8Ω)
Input sensitivity and impedance	
PHONO	2.5 mV/47kΩ
AUX	150 mV/27kΩ
TAPE REC/PLAY	180 mV/27kΩ
PHONO maximum input voltage (1 kHz, RMS)	130 mV

## S/N

rated power (4Ω) PHONO	70 dB (78 dB, IHF, A, 8Ω)
AUX	88 dB (95 dB, IHF, A, 8Ω)
-26 dB power (4Ω) PHONO, AUX	64 dB
50 mW power (4Ω) PHONO, AUX	64 dB

## Frequency response

PHONO	RIAA standard curve ±0.8 dB (30 Hz~15 kHz)
AUX	7 Hz~45 kHz (-1 dB) ±0.8 dB (20 Hz~20 kHz)
Tone controls BASS	50 Hz, +10 dB~ -10 dB
TREBLE	20 kHz, +10 dB~ -10 dB
Loudness control (volume at -30 dB)	50 Hz, +9 dB

## Output voltage and impedance

TAPE REC OUT	150 mV
TAPE REC/PLAY	30 mV/82kΩ
Channel balance, AUX 250 Hz~6,300 Hz	±1.0 dB
Channel separation, AUX 1 kHz	55 dB
Headphones output level and impedance	300 mV/330Ω
Load impedance	
MAIN or REMOTE	4Ω~16Ω
MAIN and REMOTE	8Ω~16Ω

## FM TUNER SECTION

Frequency range	88~108 MHz
Sensitivity	
S/N 30 dB	1.9 μV (300Ω), 1.3 μV (75Ω)
S/N 26 dB	1.7 μV (300Ω), 1.2 μV (75Ω)
S/N 20 dB	1.5 μV (300Ω), 0.9 μV (75Ω)
IHF usable sensitivity	1.9 μV (IHF '58)
IHF 46 dB stereo quieting sensitivity	22 μV/75Ω

<b>Total harmonic distortion</b>		<b>Channel balance (250 Hz~6,300 Hz)</b>	±1.5 dB
<b>MONO</b>	0.18%	<b>Limiting point</b>	1.2 µV
<b>STEREO</b>	0.3%	<b>Power bandwidth</b>	
<b>S/N</b>		<b>IF amplifier</b>	180 kHz
<b>MONO</b>	60 dB (75 dB, IHF)	<b>FM demodulator</b>	1000 kHz
<b>STEREO</b>	58 dB (70 dB, IHF)	<b>Antenna terminals</b>	300Ω (balanced)
<b>Frequency response</b>	20 Hz~15 kHz, +1 dB~ -2 dB		75Ω (unbalanced)
	20 Hz~14 kHz, +1.5 dB~ -1.5 dB	<b>AM TUNER SECTION</b>	
<b>Alternate channel selectivity</b>	65 dB	<b>Frequency range</b>	525~1605 kHz
<b>Capture ratio</b>	1.2 dB	<b>Sensitivity (S/N 20 dB)</b>	30 µV, 300 µV/m
<b>Image rejection at 98 MHz</b>	55 dB	<b>Selectivity</b>	30 dB
<b>IF rejection at 98 MHz</b>	70 dB	<b>Image rejection at 1,000 kHz</b>	50 dB
<b>Spurious response rejection at 98 MHz</b>	80 dB	<b>IF rejection at 1,000 kHz</b>	40 dB
<b>AM suppression</b>	50 dB	<b>GENERAL</b>	
<b>Stereo separation</b>		<b>Power consumption</b>	250W
<b>1 kHz</b>	40 dB	<b>Power supply</b>	AC 50 Hz/60 Hz, 110V/120V/220V/240V
<b>10 kHz</b>	30 dB	<b>Dimensions (W×H×D)</b>	410 × 127 × 290 mm
<b>Carrier leak</b>			(16-5/32" × 5" × 11-13/32")
<b>19 kHz</b>	30 dB (-40 dB, IHF)	<b>Weight</b>	5.9 kg
<b>38 kHz</b>	50 dB (-50 dB, IHF)		(13.0 lb.)

## TECHNISCHE DATEN Spezifikationen können infolge von Verbesserungen ohne Ankündigung geändert werden.

### [DIN 45 500]

#### VERSTÄRKERTEIL

<b>Dauerton-Ausgangsleistung bei 40 Hz ~ 20 kHz</b>	
<b>beide Kanäle angesteuert</b>	2 × 18W (4 Ω) 2 × 18W (8 Ω)
<b>Dauerton-Ausgangsleistung bei 40 Hz ~ 16 kHz</b>	
<b>beide Kanäle angesteuert</b>	2 × 18W (4 Ω) 2 × 18W (8 Ω)
<b>Dauerton-Ausgangsleistung bei 1 kHz</b>	
<b>beide Kanäle angesteuert</b>	2 × 20W (4 Ω) 2 × 20W (8 Ω)
<b>Gesamtklirrfaktor</b>	
<b>Nennleistung bei 40 Hz ~ 20 kHz</b>	0.15% (4 Ω) 0.04% (8 Ω)
<b>Nennleistung bei 40 Hz ~ 16 kHz</b>	0.15% (4 Ω) 0.04% (8 Ω)
<b>Nennleistung bei 1 kHz</b>	0.04% (4 Ω, 8 Ω)
<b>halbe Nennleistung bei 40 Hz ~ 20 kHz</b>	0.025% (8 Ω)
<b>halbe Nennleistung bei 1 kHz</b>	0.009% (8 Ω)
<b>-26 dB Leistung bei 1 kHz</b>	0.1% (4 Ω)
<b>50 mW Leistung bei 1 kHz</b>	0.12% (4 Ω)
<b>Intermodulationsfaktor</b>	
<b>Nennleistung bei 250 Hz: 8 kHz = 4:1, 4 Ω</b>	0.15%
<b>Nennleistung bei 60 Hz: 7 kHz = 4:1, nach SMPTE, 8 Ω</b>	0.04%
<b>Leistungsbandbreite</b>	
<b>beide Kanäle angesteuert bei -3 dB</b>	10 Hz ~ 25 kHz (4 Ω)
<b>Dämpfungsfaktor</b>	10 (4 Ω), 20 (8 Ω)
<b>Eingangsempfindlichkeit und -impedanz</b>	
<b>Phono</b>	2.5 mV/47 kΩ
<b>Aux</b>	150 mV/27 kΩ
<b>Tape Aufnahme/Wiedergabe (TAPE REC/PLAY)</b>	180 mV/27 kΩ
<b>Maximale TA-Eingangsspannung (1 kHz, eff.)</b>	130 mV
<b>Geräuschabstand</b>	
<b>Nennleistung (4 Ω)</b>	
<b>Phono</b>	70 dB (78 dB, IHF, A, 8Ω)
<b>Aux</b>	88 dB (95 dB, IHF, A, 8Ω)
<b>-26 dB Leistung (4 Ω) Phono, Aux</b>	64 dB
<b>50 mW Leistung (4 Ω) Phono, Aux</b>	64 dB
<b>Frequenzgang</b>	Phono RIAA-Standardkurve
	±0.8 dB (30 Hz ~ 15 kHz)
	Aux 7 Hz ~ 45 kHz (-1 dB)
	±0.8 dB (20 Hz ~ 20 kHz)
<b>Klangregler</b>	
<b>Bauregler (BASS)</b>	50 Hz, +10 dB ~ -10 dB
<b>Höhenregler (TREBLE)</b>	20 kHz, +10 dB ~ -10 dB

<b>Gehörrichtige Lautstärkekorrektur (Loudness)</b>	
<b>(bei -30 dB Ausgangsleistung)</b>	50 Hz, +9 dB
<b>Ausgangsspannung und -impedanz</b>	
<b>Tape Aufnahme (TAPE, REC OUT)</b>	150 mV
<b>Tape Aufnahme/Wiedergabe (TAPE REC/PLAY)</b>	30 mV/82 kΩ
<b>Kanalabweichung (Aux, 250 Hz ~ 6300 Hz)</b>	±1.0 dB
<b>Übersprechdämpfung (Aux, 1 kHz)</b>	55 dB
<b>Kopfhörerpegel und -impedanz</b>	300 mV/330 Ω
<b>Lautsprecherimpedanz</b>	
<b>MAIN oder REMOTE</b>	4 Ω ~ 16 Ω
<b>MAIN und REMOTE</b>	8 Ω ~ 16 Ω

#### UKW-TUNERTEIL

<b>Wellenbereich</b>	88 ~ 108 MHz
<b>Eingangsempfindlichkeit</b>	
<b>S/R 30 dB</b>	1.9 µV (300 Ω), 1.3 µV (75 Ω)
<b>S/R 26 dB</b>	1.7 µV (300 Ω), 1.2 µV (75 Ω)
<b>S/R 20 dB</b>	1.5 µV (300 Ω), 0.9 µV (75 Ω)
<b>Nutzempfindlichkeit nach IHF</b>	1.9 µV (nach IHF '58)
<b>Stereoschaltsschwelle bei 46 dB nach IHF</b>	22 µV/75 Ω
<b>Gesamtklirrfaktor</b>	
<b>Mono</b>	0.18%
<b>Stereo</b>	0.3%
<b>Geräuschabstand</b>	
<b>Mono</b>	60 dB (75 dB nach IHF)
<b>Stereo</b>	58 dB (70 dB nach IHF)
<b>Frequenzgang</b>	20 Hz ~ 15 kHz (+1 dB ~ -2 dB)
	20 Hz ~ 14 kHz (+1.5 dB ~ -1.5 dB)
<b>Trennschärfe bei Störsender</b>	65 dB
<b>Einfangverhältnis</b>	1.2 dB
<b>Spiegelfrequenz-Dämpfung bei 98 MHz</b>	55 dB
<b>ZF-Dämpfung bei 98 MHz</b>	70 dB
<b>Ansprechdämpfung auf Nebenfrequenzen bei 98 MHz</b>	80 dB
<b>AM-Unterdrückung</b>	50 dB
<b>Übersprechdämpfung</b>	
<b>1 kHz</b>	40 dB
<b>10 kHz</b>	30 dB
<b>Trägerrest</b>	
<b>19 kHz</b>	-30 dB (-40 dB nach IHF)
<b>38 kHz</b>	-50 dB (-50 dB nach IHF)
<b>Kanalabweichung (250 Hz ~ 6300 Hz)</b>	±1.5 dB
<b>Begrenzereinsatz</b>	1.2 µV
<b>Bandbreite</b>	
<b>ZF-Verstärker</b>	180 kHz
<b>UKW-Demodulator</b>	1000 kHz
<b>Antennenanschluß</b>	300 Ω (symmetrisch)
	75 Ω (unsymmetrisch)

<b>AM-TUNERTEIL</b>		<b>ALLGEMEINE DATEN</b>	
Wellenbereiche	525 ~ 1605 kHz	Leistungsaufnahme	250 W
Eingangsempfindlichkeit (S/R 20 dB)	30 $\mu$ V, 300 $\mu$ V/m	Netzspannung	Wechselstrom 50 Hz/60 Hz, 110V/120V/220V/240V
Trennschärfe	30 dB	Abmessungen (B×H×T)	410 × 127 × 290 mm
Spiegelfrequenz-Dämpfung bei 1000 kHz	50 dB	Gewicht	5.9 kg
ZF-Dämpfung bei 1000 kHz	40 dB		

**CARACTERISTIQUES TECHIQUES** Sujet à changement sans préavis.  
[DIN 45 500]

**SECTION AMPLIFICATEUR**

<b>Puissance de sortie continue de 40 Hz~20 kHz, les deux canaux en circuit</b>	2 × 18W (4 $\Omega$ ) 2 × 18W (8 $\Omega$ )
<b>Puissance de sortie continue de 40 Hz~16 kHz, les deux canaux en circuit</b>	2 × 18W (4 $\Omega$ ) 2 × 18W (8 $\Omega$ )
<b>Puissance de sortie continue à 1 kHz, les deux canaux en circuit</b>	2 × 20W (4 $\Omega$ ) 2 × 20W (8 $\Omega$ )
<b>Distorsion harmonique totale</b>	
à puissance nominale (40 Hz~20 kHz)	0.15% (4 $\Omega$ ) 0.04% (8 $\Omega$ )
à puissance nominale (40 Hz~16 kHz)	0.15% (4 $\Omega$ ) 0.04% (8 $\Omega$ )
à puissance nominale (1 kHz)	0.04% (4 $\Omega$ 8 $\Omega$ )
à demi-puissance (40 Hz~20 kHz)	0.025% (8 $\Omega$ )
à demi-puissance (1 kHz)	0.009% (8 $\Omega$ )
puissance de -26 dB à 1 kHz	0.1% (4 $\Omega$ )
puissance de 50 mW à 1 kHz	0.12% (4 $\Omega$ )
<b>Distorsion d'intermodulation</b>	
à puissance nominale à 250 Hz: 8 kHz=4:1, 4 $\Omega$	0.15%
à puissance nominale à 60 Hz: 7 kHz=4:1, SMPTE, 8 $\Omega$	0.04%
<b>Réponse de fréquences</b>	
les deux canaux en circuit, -3 dB	10 Hz~25 kHz (4 $\Omega$ )
<b>Coefficient d'amortissement</b>	10 (4 $\Omega$ ), 20 (8 $\Omega$ )
<b>Sensibilité et impédance d'entrée</b>	
PHONO	2.5 mV/47k $\Omega$
AUX	150 mV/27k $\Omega$
<b>BANDE ENREGISTREMENT/LECTURE (TAPE REC/PLAY)</b>	180 mV/27k $\Omega$
<b>PHONO (tension d'entrée maximum, 1 kHz RMS)</b>	130 mV
<b>Signal/Bruit</b>	
à puissance nominale (4 $\Omega$ )	
PHONO	70 dB (78 dB, IHF, A, 8 $\Omega$ )
AUX	88 dB (95 dB, IHF, A, 8 $\Omega$ )
puissance de -26 dB (4 $\Omega$ )	64 dB
PHONO, AUX	
puissance de 50 mW (4 $\Omega$ )	64 dB
PHONO, AUX	
<b>Réponse de fréquence</b>	
PHONO	Courbe nominale RIAA $\pm$ 0.8 dB (30 Hz~15 kHz)
AUX	7 Hz~45 kHz (-1 dB) $\pm$ 0.8 dB (20 Hz~20 kHz)
<b>Réglage de la tonalité</b>	
BASSES (BASS)	50 Hz, +10 dB~ -10 dB
AIGUS (TREBLE)	20 kHz, +10 dB~ -10 dB
<b>Compensateur physiologique (volume à -30 dB)</b>	50 Hz, +9 dB
<b>Tension de sortie et impédance</b>	
<b>SORTIE ENREGISTREMENT/BANDE, (TAPE, REC OUT)</b>	150 mV
<b>ENREGISTREMENT/LECTURE BANDE (TAPE REC/PLAY)</b>	30 mV/82k $\Omega$

**SECTION SYNTONISATEUR FM**

<b>Equilibrage des canaux, AUX 250 Hz~6 300 Hz</b>	$\pm$ 1.0 dB
<b>Séparation des canaux, AUX 1 kHz</b>	55 dB
<b>Niveau de sortie des casques et impédance</b>	300 mV/330 $\Omega$
<b>Impédance de charge</b>	
<b>PRINCIPALE ou AUXILIAIRE (MAIN or REMOTE)</b>	4 $\Omega$ ~16 $\Omega$
<b>PRINCIPALE et AUXILIAIRE (MAIN and REMOTE)</b>	8 $\Omega$ ~16 $\Omega$

**SECTION SYNTONISATEUR FM**

<b>Gamme de fréquence</b>	88~108 MHz
<b>Sensibilité</b>	
S/B 30 dB	1.9 $\mu$ V (300 $\Omega$ ), 1.3 $\mu$ V (75 $\Omega$ )
S/B 26 dB	1.7 $\mu$ V (300 $\Omega$ ), 1.2 $\mu$ V (75 $\Omega$ )
S/B 20 dB	1.5 $\mu$ V (300 $\Omega$ ), 0.9 $\mu$ V (75 $\Omega$ )
<b>Sensibilité utilisable IHF</b>	1.9 $\mu$ V (IHF '58)
<b>Sensibilité stéréo au seuil de 46 dB, IHF</b>	22 $\mu$ V/75 $\Omega$
<b>Distorsion harmonique totale</b>	
MONO	0.18%
STEREO	0.3%
<b>Signal/Bruit</b>	
MONO	60 dB (75 dB, IHF)
STEREO	58 dB (70 dB, IHF)
<b>Réponse de fréquence</b>	20 Hz~15 kHz, +1 dB~ -2 dB 20 Hz~14 kHz, +1.5 dB~ -1.5 dB
<b>Sélectivité alternée par canal</b>	65 dB
<b>Taux de capture</b>	12 dB
<b>Rejection d'image à 98 MHz</b>	55 dB
<b>Rejection FI à 98 MHz</b>	70 dB
<b>Rejection de réponse parasite à 98 MHz</b>	80 dB
<b>Suppression AM</b>	50 dB
<b>Séparation stéréophonique</b>	
1 kHz	40 dB
10 kHz	30 dB
<b>Fuite de porteuse</b>	
19 kHz	-30 dB (-40 dB, IHF)
38 kHz	-50 dB (-50 dB, IHF)
<b>Equilibrage de canaux (250 Hz~6,300 Hz)</b>	$\pm$ 1.5 dB
<b>Point de limite</b>	1.2 $\mu$ V
<b>Largeur de bande</b>	
Amplificateur FI	180 kHz
Démodulateur FM	1000 kHz
<b>Bornes d'antenne</b>	300 $\Omega$ (symétrique) 75 $\Omega$ (asymétrique)

**SECTION SYNTONISATEUR AM**

<b>Gamme de fréquence</b>	525~1605 kHz
<b>Sensibilité (S/B 20 dB)</b>	30 $\mu$ V, 300 $\mu$ V/m
<b>Sélectivité</b>	30 dB
<b>Rejection d'image à 1,000 kHz</b>	50 dB
<b>Rejection FI à 1,000 kHz</b>	40 dB

**DIVERS**

<b>Consommation</b>	250W
<b>Alimentation</b>	CA 50 Hz/60 Hz, 110V/120V/220V/240V
<b>Dimensions (L×H×Pr)</b>	410 × 127 × 290 mm
<b>Poids</b>	5.9 kg

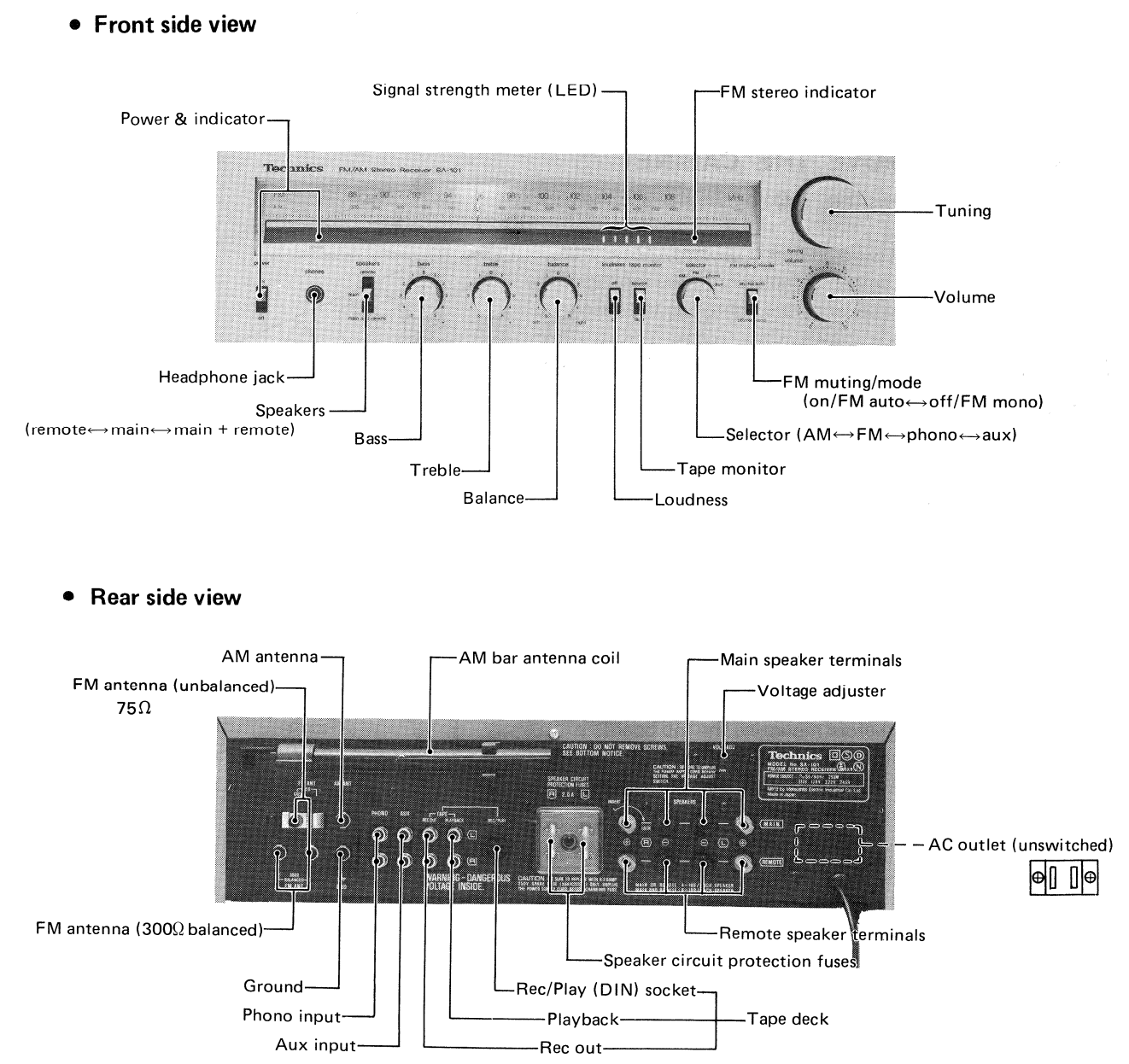
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**NOTE (Speaker circuit fuse)**

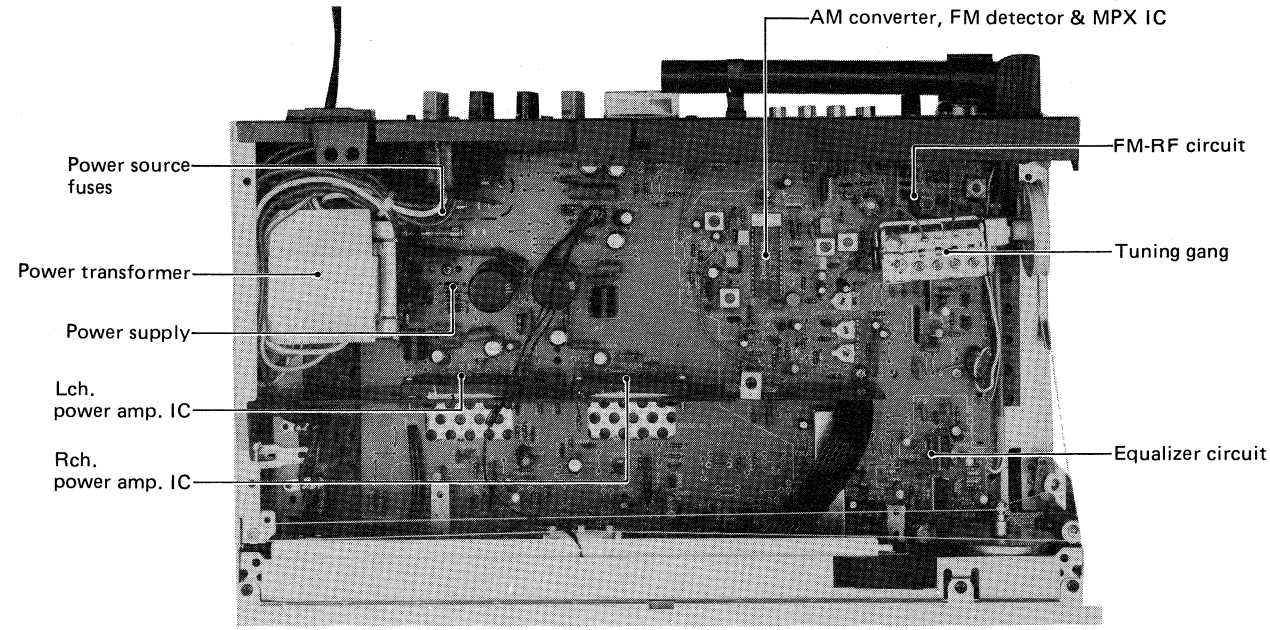
The unit is provided with the speaker circuit protection fuses at the right and left channels respectively. The fuses is to prevent the power IC from destruction, should the speaker terminals be short-circuited. Accordingly, if the unit fails to function upon completion of the speaker connections, check the speaker circuit protection fuses first of all for possible blowing.

**LOCATION OF CONTROLS**



AC outlet is not equipped on units some areas.

● Inside view



■ HOW TO REMOVE THE CABINET

1. Remove the 9 setscrews (Fig. 1: A) on the side and the back of the cabinet.
2. Shift the cabinet backward and lift it upward.
3. When mounting the cabinet, completely fit the top lug of the cabinet with the front panel before tightening the setscrews.

■ HOW TO REMOVE THE FRONT PANEL AND THE BOTTOM BOARD

1. Remove the 3 setscrews [Fig. 1: ①~③] holding the front panel and remove the 3 setscrews [Fig. 2: ④~⑥] holding the bottom board.
2. Pull the front panel outward from the front of the unit.
3. To remove the bottom board, remove the 9 setscrews [Fig. 2: ⑦~⑮] holding the bottom board.

**Note:** When turning on the power supply with the top board removed, stop the indicator lamp retaining spring with tape as shown in Fig. 3 so that it will not come off the rear panel.

Remove the tape before mounting the top board. Correctly align the rear panel hole to the P.C.B. hole so that the indicator lamp lead wire retaining spring is at right angles to the P.C.B.

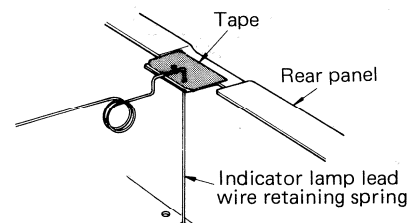


Fig. 3

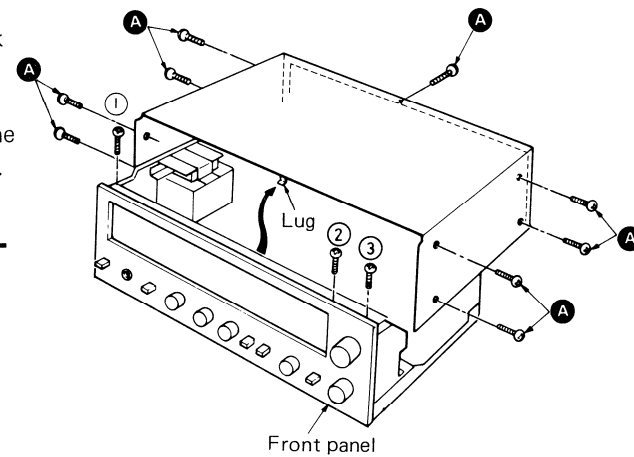


Fig. 1

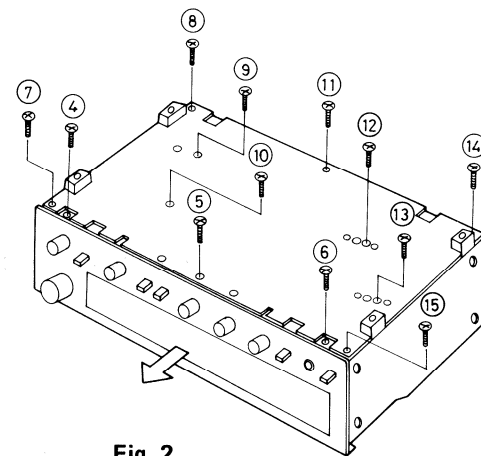
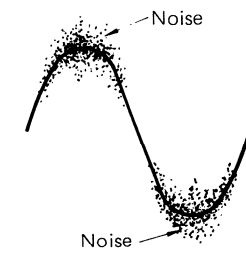
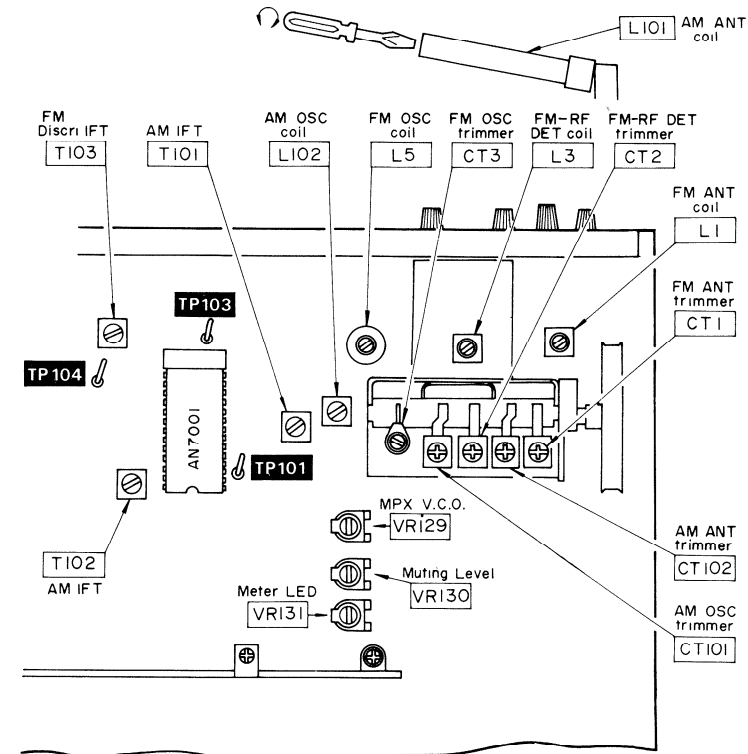
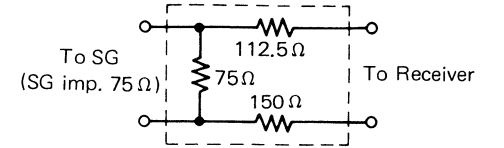


Fig. 2

■ ADJUSTMENT POINTS



AF output wave form  
Fig. 6 (Abb. 6)



300Ω FM dummy antenna  
Fig. 4 (Abb. 4)

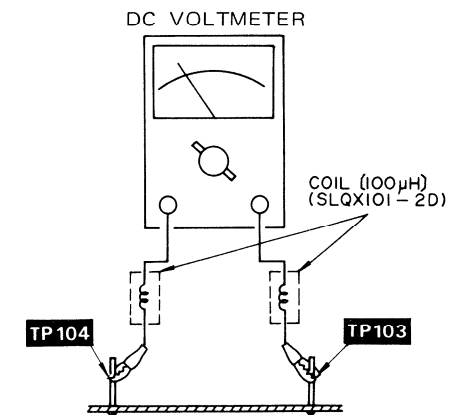
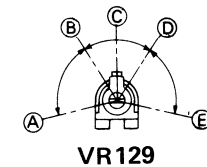


Fig. 5 (Abb. 5)



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

Fig. 7 (Abb. 7)

■ ADJUSTMENT INSTRUCTIONS

ENGLISH

AM SIGNAL GENERATOR CONNECTION		DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUSTMENT POINTS	REMARKS
<b>AM ADJUSTMENT</b>					
1	Higher side through 0.001μF to AM antenna trimmer terminal. Common to chassis.	450kHz (30% Mod. with 400 Hz)	Point of non-interference	T101 (1st IFT) T102 (2nd IFT)	Adjust the input frequency and adjustment points so that the output becomes maximum.
2	Fashion loop of several turns of wire and radiate signal into loop of receiver.	600kHz (30% Mod. with 400Hz)	600kHz	L102 (OSC Coil) L101 (ANT Coil)	Adjust for maximum output. Adjust ferrite core of L101 by screw driver.
3	Fashion loop of several turns of wire and radiate signal into loop of receiver.	1500kHz (30% Mod. with 400Hz)	1500kHz	CT101 (OSC Trimmer) CT102 (ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).

- Notes:**
1. Band selector switch . . . . . { AM (AM Adjustment)  
FM (FM Adjustment)
  2. FM muting & mode switch . . . . . off/mono
  3. Maintain line voltage at rated voltage.
  4. 300Ω FM dummy antenna . . . . . Refer to fig. 4.
  5. Output of signal generator should be no higher than

6. Fix the bottom board before adjustment to chassis.
7. Adjustment the AM antenna coil (L101) position by using a screw driver so that it is at approximately 25 degrees to the rear panel.

necessary to obtain an output reading.



FM SIGNAL GENERATOR		DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUSTMENT POINTS	REMARKS	
CONNECTION	FREQUENCY					
<b>FM RF ADJUSTMENT</b>						
4	Connect to FM 300Ω antenna terminal through 300Ω FM dummy antenna.	90MHz (100% Mod. with 400Hz) weak input.	90MHz	Connect scope to "SPEAKER" terminal.	L5 (OSC Coil) L3 (RF DET Coil) L1 (ANT Coil)	<ul style="list-style-type: none"> <li>• Add weak input so that noise is included in the output wave form.</li> <li>• Make the adjustment so that the output wave form is vertically symmetrical. (Fig. 6)</li> <li>• Repeat the steps (4) and (5) until the frequency correctly matches the dial scale.</li> </ul>
		106MHz (100% Mod. with 400Hz) weak input.	106MHz	Connect scope to "SPEAKER" terminal.	CT3 (OSC Trimmer) CT2 (RF DET Trimmer) CT1 (ANT Trimmer)	
<b>FM-IF ADJUSTMENT</b>						
6	Connect to FM 300Ω antenna terminal through 300Ω FM dummy antenna.	No-Signal	100MHz	Connect DC VTVM to between <b>TP104</b> and <b>TP103</b> through choke coil. Refer to fig. 5.	T103 (Discriminator IFT)	<ul style="list-style-type: none"> <li>• Adjust T103 core so that voltage measured in signal mode is 0V in 300mV range.</li> <li>• Add weak input so that noise is included in the output wave form.</li> <li>• Make the tuning so that the output wave form is vertically symmetrical. (Fig. 6)</li> <li>• Adjust T103 core so that voltage measured in signal mode is 0V in 300mV range.</li> <li>• Repeat steps (6) and (7).</li> </ul>
		100MHz (100% Mod. with 400Hz) weak input.	100MHz	Connect DC VTVM to between <b>TP104</b> and <b>TP103</b> through choke coil. Connect scope to "SPEAKER" terminal.		
<b>SIGNAL METER LED (Light Emitting Diode) INDICATOR ADJUSTMENT</b>						
8	Connect to FM 300Ω antenna terminal through 300Ω FM dummy antenna. Apply 45dB(178μV) to receiver.	100MHz (100% Mod. with 400Hz)	100MHz	Signal meter LED	VR131 (Meter LED)	<ul style="list-style-type: none"> <li>• Adjust VR131 while observing the signal meter LED so that the indicator at 5th is about to turn on.</li> </ul>
<b>FM MUTING LEVEL ADJUSTMENT</b>						
9	Connect to FM 300Ω antenna terminal through 300Ω FM dummy antenna. Apply 16 dB (6.3μV) to receiver.	100MHz (100% Mod. with 400Hz)	100MHz	Connect AC VTVM or scope to "SPEAKER" terminals.	VR130 (Muting Level)	<ul style="list-style-type: none"> <li>• FM muting/mode switch to "on/auto".</li> <li>• Adjust so that output can be obtained.</li> </ul>
<b>FM MPX V.C.O. ADJUSTMENT</b>						
Using a frequency counter			Using alternate system			
10	1 100MHz Non-modulated mono signal applied to receiver.		1 Apply stereo signal from generator or stereo station to receiver.			
	2 FM muting/mode switch to "on/FM auto".		2 Adjust <b>VR129</b> until stereo indicator lights up. Cement arm of <b>VR129</b> as shown in fig. 7.			
	3 Connect frequency counter to <b>TP101</b> through resistor (100kΩ).					
	4 Adjust <b>VR129</b> to 19kHz, ±30Hz.					

**ABGLEICHANWEISUNG** DEUTSCH

(Für Deutschland)

MW MESSENDER		SKALENZEIGEREIN-STELLUNG DES TUNER	ANZEIGEGEIRÄT (Röhrenvoltmeter oder Oszillograph bzw. Klirrfaktor-Meßgerät)	ABGLEICHSPUNKTE	BEMERKUNGEN
ANSCHLUSS	FREQUENZ				
<b>MW-ZF-ABGLEICH</b>					
1	Heißes Ende des Meßsenders über einen 0.001μF Kondensator an den AM Antenneneingang schließen. Kaltes Ende an Masse.	450kHz (400Hz Modul., 30%)	Kein Empfang	T101 (1, IFT) T102 (2, IFT)	Die Eingangsfrequenz und die Einstellungspunkte so adjustieren, daß der Ausgang den maximalen Wert erreicht.

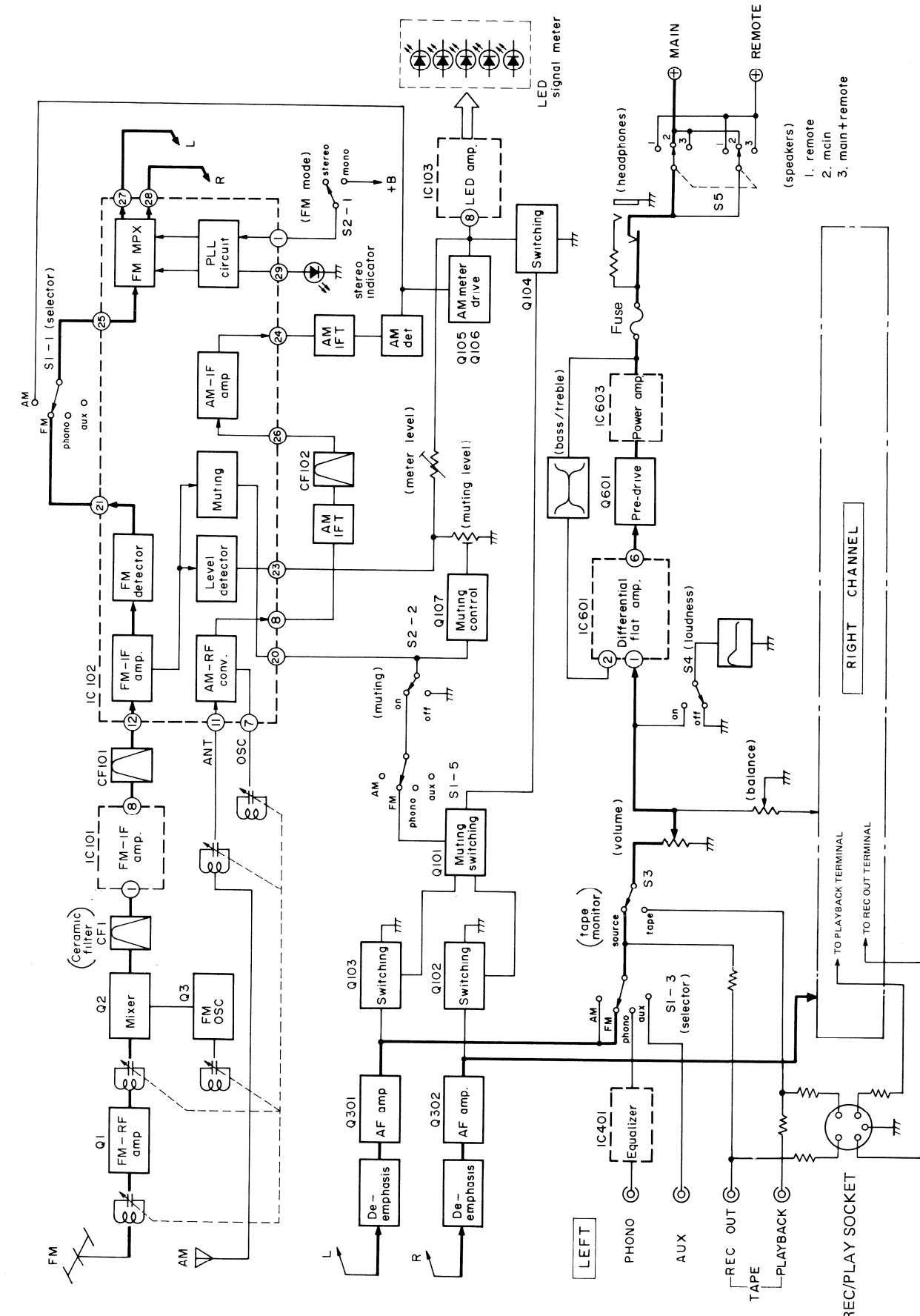
UKW MESSENDER		SKALENZEIGEREIN-STELLUNG DES TUNER	ANZEIGEGEIRÄT (Röhrenvoltmeter oder Oszillograph bzw. Klirrfaktor-Meßgerät)	ABGLEICHSPUNKTE	BEMERKUNGEN	
ANSCHLUSS	FREQUENZ					
<b>MW-HF-ABGLEICH</b>						
2	Das Meßsendersignal induktiv in den Tuner speisen. Hierzu behelfsmäßig eine Rahmenantenne fertigen und an den Eingang schließen.	600kHz (400Hz Modul., 30%)	600kHz	Wechselstrom Röhrenvoltmeter oder Oszillograph über den Lautsprecher schließen.	L102 (Osc. Spule) L101 (Ant. Spule)	Auf max. Ausgang abgleichen. Den Ferritkern von L101 mit einem Schraubendreher justieren.
		1500kHz (400Hz Modul., 30%)	1500kHz	Wechselstrom Röhrenvoltmeter oder Oszillograph über den Lautsprecher schließen.	CT101 (Osc. Trimmer) CT102 (Ant. Trimmer)	
<b>UKW-HF-ABGLEICH</b>						
4	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen.	87.5MHz (400Hz Modul., 100% Schwacher Eingang)	87.5MHz (Frequenz min.)	Oszillograph über den Lautsprecher schließen.	L5 (Osc. Spule)	<ul style="list-style-type: none"> <li>• Einen schwachen Eingang geben, bei dem Geräusch in der Ausgangswellenform enthalten wird.</li> <li>• So einstellen, daß die Ausgangswellenform vertikal symmetrisch wird. (Abb. 6)</li> <li>• Die Einstellung von (4), (5) und (6) wiederholen, bis die Frequenz mit der Skala übereinstimmt.</li> </ul>
		90MHz (400Hz Modul., 100% Schwacher Eingang)	90MHz	Oszillograph über den Lautsprecher schließen.	L3 (Det. Spule) L1 (Ant. Spule)	
5	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen.	106MHz (400Hz Modul., 100% Schwacher Eingang)	106MHz	Oszillograph über den Lautsprecher schließen.	CT3 (Osc. Trimmer) CT2 (Det. Trimmer) CT1 (Ant. Trimmer)	
		<b>UKW-ZF-ABGLEICH</b>				
7	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen.	Kein Signal	100MHz	Gleichstrom-Voltmeter zwischen <b>TP104</b> und <b>TP103</b> über Schutzdrossel anschließen. Vgl. Abb. 5.	T103 (Diskriminator IFT)	<ul style="list-style-type: none"> <li>• Den Kern von T103 so justieren, daß die gemessene Spannung im signallosen Modus 0V im 300mV Bereich beträgt.</li> <li>• Einen schwachen Eingang geben, bei dem Geräusch in der Ausgangswellenform enthalten wird.</li> <li>• So einstellen, daß die Ausgangswellenform vertikal symmetrisch wird. (Abb. 6)</li> <li>• Den Kern von T103 so justieren, daß die gemessene Spannung im signallosen Modus 0V im 300mV Bereich beträgt</li> <li>• Schritt (7) und (8) sing zu wiederholen.</li> </ul>
		100MHz (400Hz Modul., 100% Schwacher Eingang)	100MHz	Gleichstrom-Voltmeter zwischen <b>TP104</b> und <b>TP103</b> über Schutzdrossel anschließen. Vgl. Abb. 5. Oszillograph über den Lautsprecher schließen.		
<b>ABGLEICHEN DES SIGNALMETER-LED (LICHTERZEUGENDE DIODE) – ANZEIGERS</b>						
9	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen. Meßsender auf 45dB (178μV) einstellen.	100MHz (400Hz Modul., 100%)	100MHz	Signalmeter-LED	VR131 (Metervolumen)	Unter Beobachtung der Signalmeter-LED VR131 so justieren, daß der Anzeiger am 5. fast aufzuleuchten beginnt.
<b>UKW-MUTING-ABGLEICH</b>						
10	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen. Meßsender auf 16dB (6.3μV) einstellen.	100MHz (400Hz Modul., 100%)	100MHz	Röhrenvoltmeter oder Oszillograph über den Lautsprecher schließen.	VR130	FM Muting-Schalter auf "on/auto" So einstellen, daß ein Ausgang zu vernehmen ist.
<b>UKW-STEREO-DEKODER-ABGLEICH</b>						
Unter Verwendung eines Zählers			Alternativ-Meßmethode			
11	1. Unmoduliertes Mono-Signal 100MHz in das Gerät speisen.		1. Stereosignal entweder von einem Stereogenerator, oder einem Sender einspeisen.			
	2. FM muting/mode-Schalter auf "on/auto" stellen.		2. <b>VR129</b> so einstellen, bis die Stereolampe auf leuchtet.			
	3. Zähler über einen Widerstand 100k ohm an <b>TP101</b> schließen.		3. Schleifer von <b>VR129</b> sichern, wie in Abb. 7 gezeigt.			
	4. <b>VR129</b> auf 19kHz ±30Hz einstellen.					

INSTRUCTIONS D'ALIGNEMENT

FRANÇAIS

BLOCK DIAGRAM

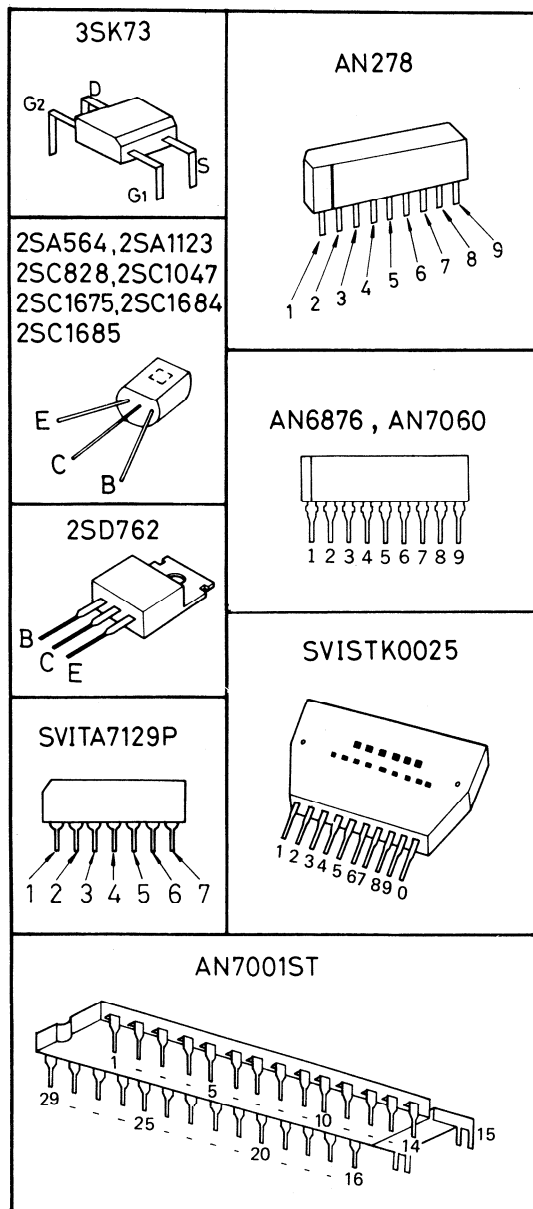
AM/FM GENERATEUR		AIGUILLE SUR LE CADRAN	INDICATEUR (VOLT-METRE ELECTRONIQUE OSCILLOSCOPE OU DISTORSIONMETRE)	POINTS DE REGLAGE	OBSERVATIONS
<b>ALIGNMENT AM</b>					
1	Côté chaud, à travers 0.001µF, sur le trimmer de l'antenne AM, point (A) commun au châssis	450kHz (modulé à 30% par 400Hz)	Point sans signal	T101(1 transfo FI) T102(2 transfo FI)	Régler la fréquence d'entrée et les points de réglage de telle sorte que la sortie devienne maximale.
2	Faire une boucle de quelques tours et rayonner le signal dans le cadre de l'ampli-tuner.	600kHz (modulé à 30% par 400Hz)	600kHz	L102 (bobine OSC) L101 (bobine ANT)	Régler au maximum de signal de sortie. Réglez le noyau ferrite de L101 à l'aide d'un tournevis.
3	Faire une boucle de quelques tours et rayonner le signal dans le cadre de l'ampli-tuner	1500kHz (modulé à 30% par 400Hz)	1500kHz	CT101 (trimmer OSC) CT102 (trimmer ANT)	Régler au maximum de signal de sortie. Recommencez les étapes (2) et (3).
<b>ALIGNEMENT RF-FM</b>					
4	Branchez sur la prise d'antenne FM à travers une antenne fictive FM. Entrée faible	90MHz (modulé à 100% par 400Hz)	90MHz	L5 (bobine OSC) L3 (bobine DET) L1 (bobine ANT)	<ul style="list-style-type: none"> <li>Appliquer une entrée faible de telle sorte que le parasite soit compris dans la forme de l'onde de sortie.</li> <li>Faire le réglage de telle sorte que la forme de l'onde de sortie soit verticalement symétrique. (Voir fig. 6)</li> </ul>
5	Branchez sur la prise d'antenne FM à travers une antenne fictive FM. Entrée faible	106MHz (modulé à 100% par 400Hz)	106MHz	CT3 (trimmer OSC) CT2 (trimmer DET) CT1 (trimmer ANT)	<ul style="list-style-type: none"> <li>Refaire les réglages (4) et (5) jusqu'à ce que la fréquence corresponde correctement avec l'échelle du cadran.</li> </ul>
<b>ALIGNEMENT FI-FM</b>					
6		Point sans signal	100MHz		<ul style="list-style-type: none"> <li>Régler le noyau T103 de telle sorte que le voltage mesuré dans le mode sans signal, soit de 0V dans la gamme des 300mV.</li> </ul>
7	Branchez sur la prise d'antenne FM à travers une antenne fictive FM. Entrée faible	100MHz (modulé à 100% par 400Hz)	100MHz	T103 (Transfo FI discr.)	<ul style="list-style-type: none"> <li>Appliquer une entrée faible de telle sorte que le parasite soit compris dans la forme de l'onde de sortie.</li> <li>Faire le réglage de telle sorte que la forme de l'onde de sortie soit verticalement symétrique. (Voir fig. 6)</li> <li>Régler le noyau T103 de telle sorte que le voltage mesuré dans le mode sans signal, soit de 0V dans la gamme des 300mV.</li> <li>Recommencez les étapes (6) et (7)</li> </ul>
<b>ALIGNEMENT DE L'INDICATEUR DE SIGNAL DE LA DIODE A EMISSION DE LUMIERE (DEL).</b>					
8	Branchez sur la prise d'antenne FM à travers une antenne fictive FM. Niveau de sortie du générateur 45 dB (178µV).	100MHz (modulé à 100% par 400Hz)	100MHz	DEL du compteur à signal R144 (Registor variable du compteur)	<ul style="list-style-type: none"> <li>Régler VR131 en observant la DEL du compteur à signal afin que l'indicateur au 5ème est à presque tourner.</li> </ul>
<b>REGLAGE DU SEUIL DU SILENCIEUX D'ACCORD</b>					
9	Branchez sur la prise d'antenne FM à travers une antenne fictive FM. Niveau de sortie du générateur 16 dB (6.3µV).	100MHz (modulé à 100% par 400Hz)	100MHz	VR130	Commutateur de silencieux sur "on/auto". Réglez pour obtenir une lecture en sortie.
<b>ALIGNEMENT DU PILOTE MULTIPLEX FM</b>					
Avec un fréquencemètre			Par un autre système		
10	1. Signal mono 100MHz non modulé appliqué à l'appareil. 2. Commutateur de silencieux sur "on/auto". 3. Branchez le fréquencemètre sur TP101 à travers une résistance de 100kΩ. 4. Réglez VR129 sur 19kHz ±30Hz.		1. Appliquez à l'appareil un signal stéréo provenant d'un générateur ou de la réception d'un émetteur. 2. Réglez VR129 jusqu'à ce que l'indicateur de stéréophonie s'allume. Collez le curseur de VR129 comme indiqué sur la fig. 7		



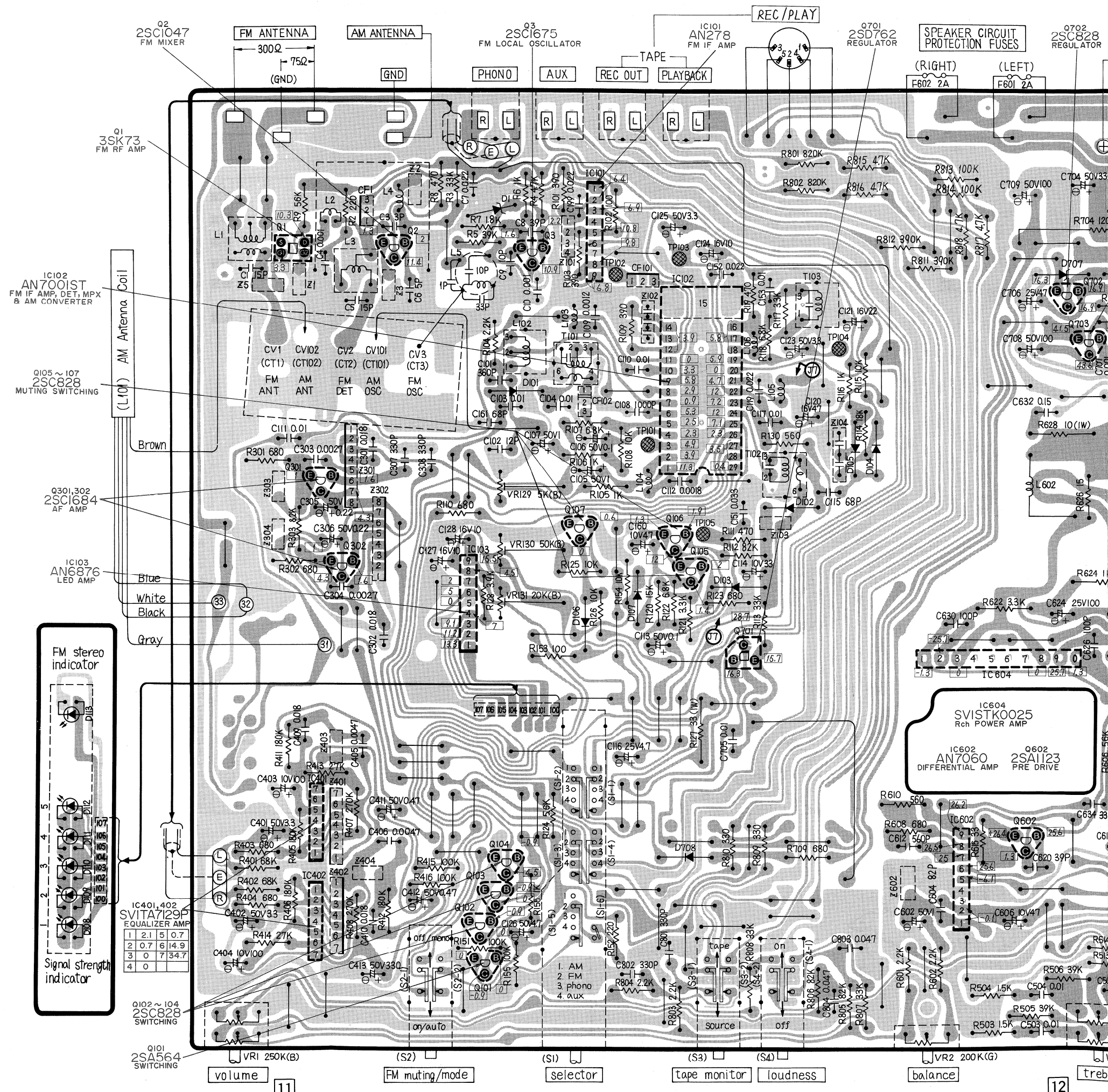
**PRINTED CIRCUIT BOARD WIRING VIEW**

Ground (Earth) lines

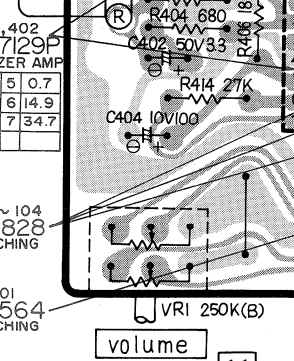
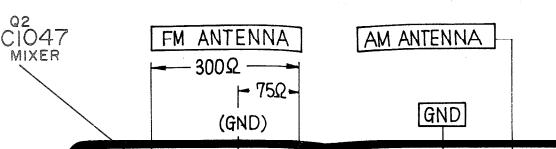
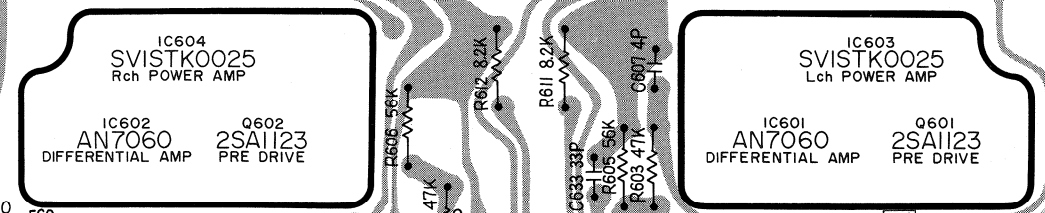
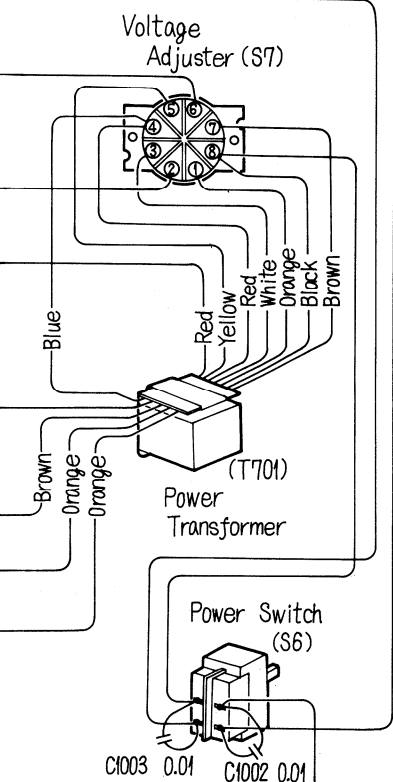
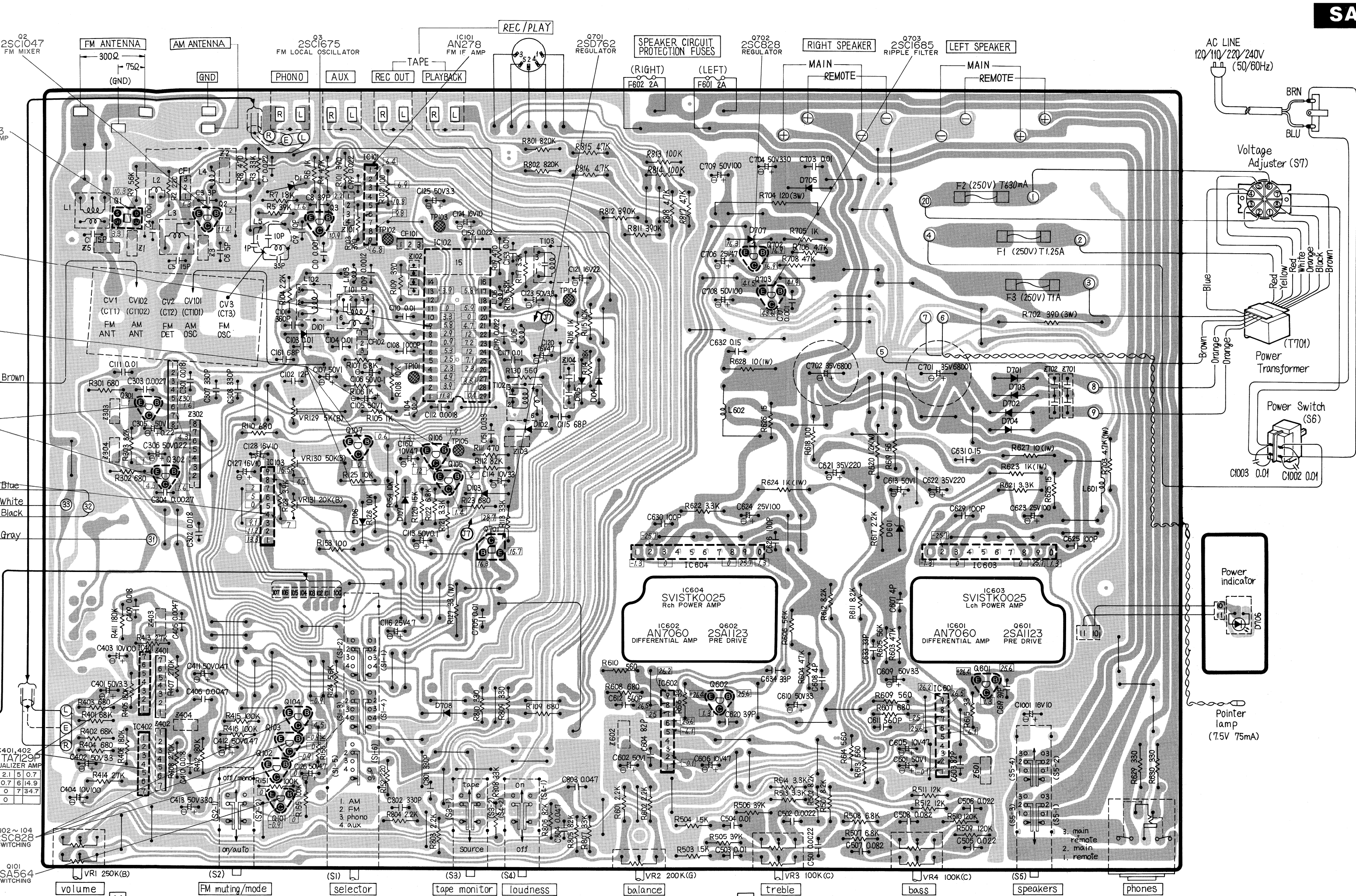
**Terminal guide of transistors and IC's**



1	2.1	5	0.7
2	0.7	6	14.9
3	0	7	34.7
4	0		





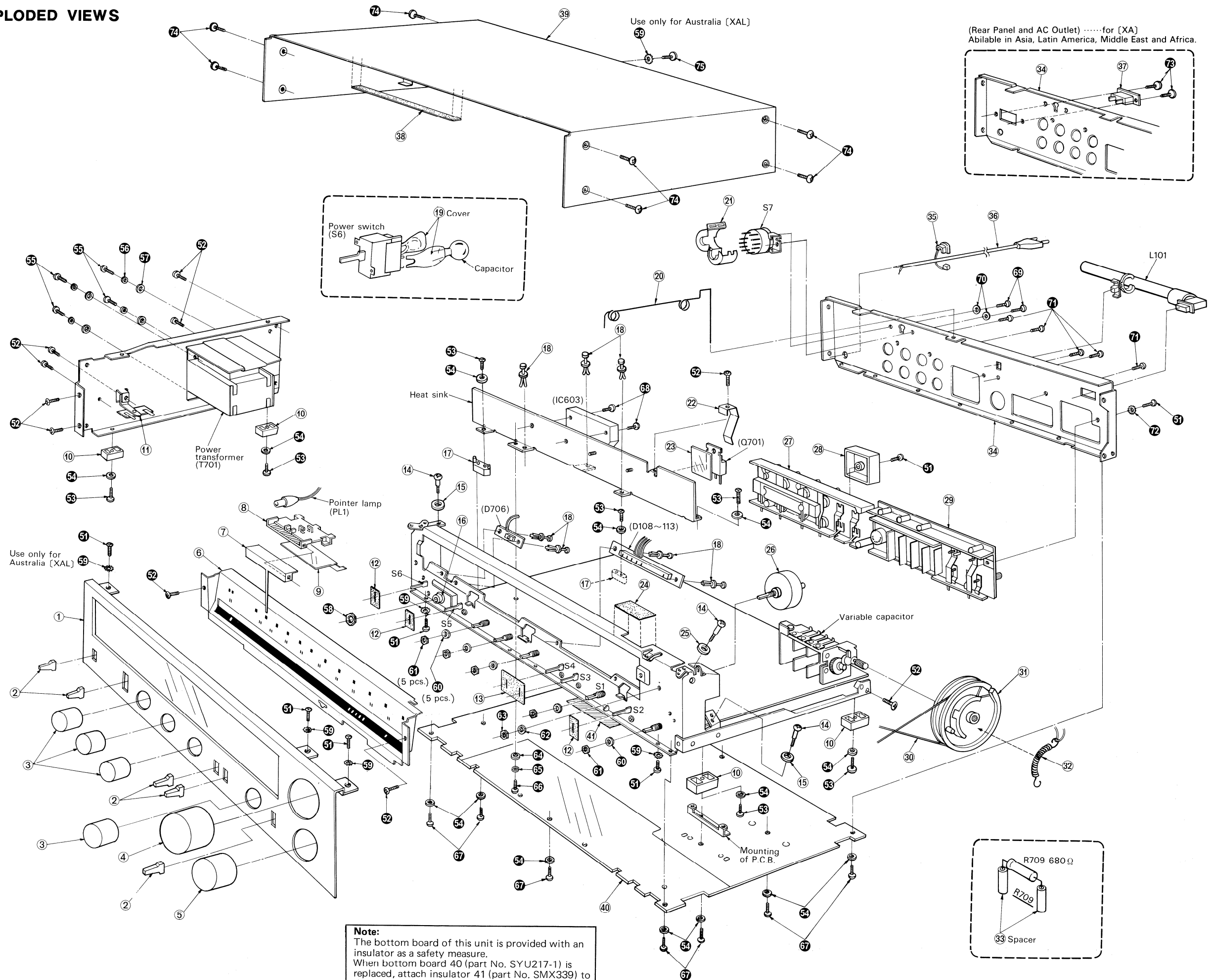


2.1	5	0.7
0.7	6	14.9
0	7	34.7
0	0	0

0101 SA564 SWITCHING

11

EXPLODED VIEWS



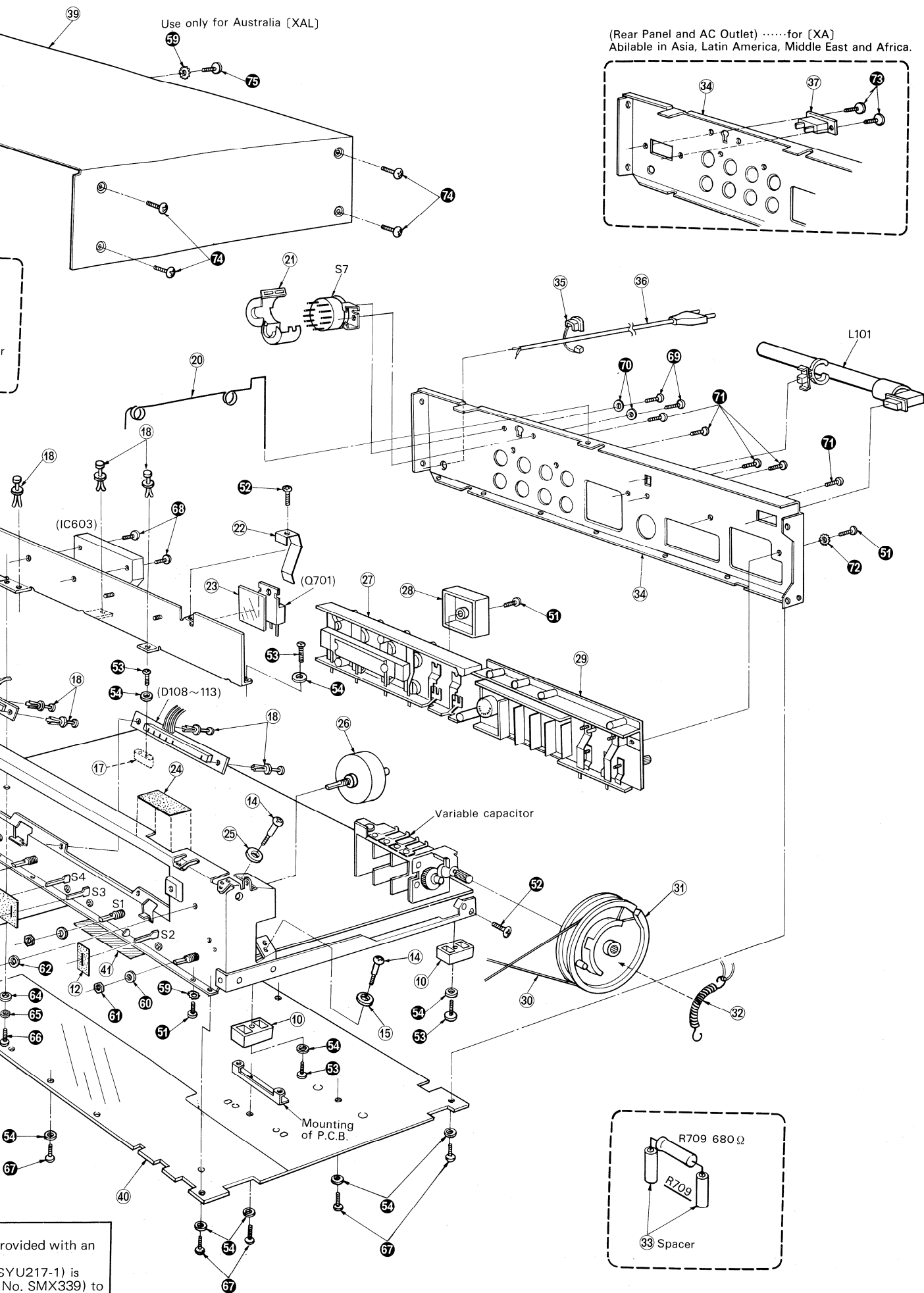
**Note:**  
The bottom board of this unit is provided with an insulator as a safety measure. When bottom board 40 (part No. SYU217-1) is replaced, attach insulator 41 (part No. SMX339) to the same place as it was before the replacement.



REPLACEMENT PARTS LIST ..... Cabinet & Chassis Parts

- NOTES:**
- Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
  - $\Delta$  indicates that only parts specified by the manufacturer be used for safety.
  - $\square$ -marked parts are used for black type only, while  $\circ$ -marked parts are for silver type only.
  - Parts other than  $\square$ - and  $\circ$ -marked are used for both black and silver types.
  - Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

Black type model No. : SA-101(K)



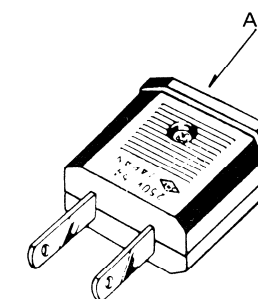
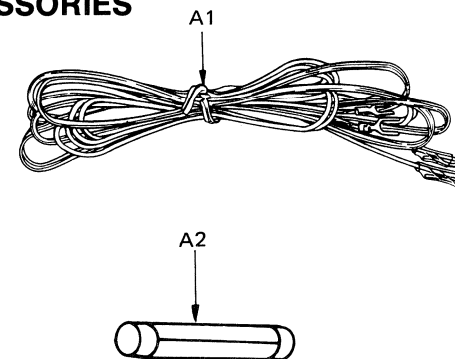
Ref. No.	Part No.	Part Name & Description
<b>CABINET and CHASSIS PARTS</b>		
1	$\circ$ SGWA101D	Panel, Front Ass'y
1	$\square$ SGWA101KD	Panel, Front Ass'y (Black)
2	$\circ$ SBD29	Knob, Lever Switches
2	$\square$ SBD29-1	Knob, Lever Switches (Black)
3	$\square$ SBN909-2	Knob, Bass, Treble, Balance & Selector
3	$\square$ SBN909-1	Knob, Bass, Treble, Balance & Selector (Black)
4	$\circ$ SBN881-3	Knob, Tuning
4	$\square$ SBN881-2	Knob, Tuning (Black)
5	$\square$ SBN885-3	Knob, Volume
5	$\square$ SBN885-4	Knob, Volume (Black)
6	$\circ$ SKD3830	Scale, Dial
6	$\square$ SKD3831	Scale, Dial (Black)
7	SDP5077	Pointer, Dial
8	SDP927	Bracket, Pointer & Pointer Lamp
9	SDA85	Slider, Pointer
10	SKL237	Foot
11	SJR205	Terminal, 2P
12	SHS2425	Fiber, Power, Speaker & Mode Switch
13	SHS2427	Fiber, Loudness & Tape Monitor Switch
14	SHD3X21F-1	Shaft, Dial Pulley
15	<b>RDR14-2</b>	Pulley, Dial
16	XCJS6P21E-A	Jack, Headphones
17	SHE101	Mounting, Heat Sink & P.C.B.
18	SHR401-1	Latch, LED P.C.B. & Heat Sink M'tg
19	SMXA65	Cover, Line Capacitor
20	SUL31	Mounting, Pointer Lamp Wire
21	SUV453	Cover, Voltage Adjuster
22	SUS181	Spring, Transistor (Q701) Press
23	SMX181	Mica Plate, Transistor (Q701)
24	SHS1033	Fiber, Front Chassis
25	<b>RDR13-1</b>	Pulley, Dial
26	SDT8063	Shaft, Tuning (with Flywheel)
27	SJF8021-1	Terminal, Speakers
28	SUV337	Cover, Speaker Circuit Fuses
29	SJF8019-1	Terminal, Input & Antenna
30	SDZ051-2	Cord, Dial (1.8m 70 $\frac{1}{16}$ " )
31	SDD47-1	Drum, Variable Capacitor
32	<b>SDSA4121</b>	Spring, Dial Cord
33	SMX51-3	Spacer, Resistor (H/U9)
34	SGP2070-1A	Rear Panel
34 [E]	SGPA101K	Rear Panel (SGP2070-1A with Name Plate SGT21870)
34 [XA]	SGP2070-2A	Rear Panel
34 [XAL]	SGP2070-3A	Rear Panel
35 [XAL] only	SHR131	Bushing, AC Cord
35 [Other Areas]	SFSR4N4	Bushing, AC Cord
36 [XAL] only	<b>QFC1207M</b>	AC Cord, Power Source
36 [Other Areas]	<b>SJA88</b>	AC Cord, Power Source
37 [XA] only	SJS9205-1	Socket, AC Outlet
38	SHS2437	Fiber, Cabinet
39	SKC270H	Cabinet
39	SKC270B	Cabinet (Black)
40	SYU217-1	Bottom Board
41	SMX339	Insulator, Bottom Board

Ref. No.	Part No.	Part Name & Description
<b>SCREWS, NUTS and WASHERS</b>		
51	<b>XTB3+8BFZ</b>	Screw, Tapping, $\oplus$ 3 x 8 (Front Panel)
52	<b>XTB3+8BFN</b>	Screw, Tapping, $\oplus$ 3 x 8 (Chassis)
53	<b>XTV3+10BFN</b>	Screw, Tapping, $\oplus$ 3 x 10 (Feet, Heat Sink)
54	<b>XWG3</b>	Washer, Plain, $\phi$ 3
55	<b>XSN4+12BVS</b>	Screw, $\oplus$ 4 x 12 (Transformer)
56	<b>XWA4BFZ</b>	Washer, Spring, $\phi$ 4
57	<b>XWG4FZ</b>	Washer, Plain, $\phi$ 4
58	<b>XNS12</b>	Nut, M12 (Headphone Jack)
59 [XAL] only	<b>XWC3B</b>	Washer, External Toothed Lock, $\phi$ 3
60	<b>XWV8</b>	Washer, Plain, $\phi$ 8
61	<b>XNS8</b>	Nut, M8 (Volume, Selector, Bass . . . .)
62	<b>XWV11</b>	Washer, Plain, $\phi$ 11
63	<b>XNS11</b>	Nut, M11 (Tuning Shaft)
64	<b>XWG3FN</b>	Washer, Plain, $\phi$ 3
65	<b>XWA3BFN</b>	Washer, Spring, $\phi$ 3
66	<b>XTB3+10BFN</b>	Screw, Tapping, $\oplus$ 3 x 10 (Heat Sink)
67	<b>XTV3+12BFN</b>	Screw, Tapping, $\oplus$ 3 x 12 (Bottom Board)
68	<b>XTB3+16BFN</b>	Screw, Tapping, $\oplus$ 3 x 16 (Power IC)
69	<b>XSN3+6BVS</b>	Screw, $\oplus$ 3 x 6 (Voltage Adjuster)
70	<b>XWA3BFZ</b>	Washer, Spring, $\phi$ 3
71	<b>XTB3+10BFZ</b>	Screw, Tapping, $\oplus$ 3 x 10 (Rear Panel)
72	<b>XWC3B</b>	Washer, External Toothed Lock, $\phi$ 3
73 [XA] only	<b>XTN3+8BFZ</b>	Screw, Tapping, $\oplus$ 3 x 8 (AC Outlet)
74	$\square$ <b>XTB4+8BFZ</b>	Screw, Tapping, $\oplus$ 4 x 8 (Cabinet)
75	$\circ$ <b>XTB4+8BFZ</b>	Screw, Tapping, $\oplus$ 4 x 8 (Cabinet) Black
76	$\square$ <b>XTB3+8BFZ</b>	Screw, Tapping, $\oplus$ 3 x 8 (Cabinet)
77	$\circ$ <b>XTB3+8BFZ</b>	Screw, Tapping, $\oplus$ 3 x 8 (Cabinet) Black
<b>ACCESSORIES</b>		
A1	SSA267	Cord, FM Indoor Antenna
A2	XBA2C20SS0	Fuse, Speaker Circuit (2A 250V)
A3 [XA] only	SJP5213-1	Plug Adaptor, Power Source
<b>PACKING PARTS</b>		
P1	SPP661	Polyethylene Bag
P2 [XAL] only	SPS2541-1	Pad, Left Side
P2 [Other Areas]	SPS2541	Pad, Left Side
P3 [XAL] only	SPS2543-1	Pad, Right Side
P3 [Other Areas]	SPS2543	Pad, Right Side
P4	SPS2545	Pad, Lower Side
P5	SPS2547	Pad, Upper Side
P6 [XAL] only	$\circ$ SPG2401	Carton Box
P6 [Other Areas]	$\circ$ SPG2399	Carton Box
P6	$\square$ SPG2403	Carton Box (Available in Black Type Model)
P7	SQF10285	Instructions Book, Printed Matter

**Areas**

- \* [E] and [EG] are available in European and Scandinavia.
- \* [XGH] is available in Holland.
- \* [XAL] is available in Australia.
- \* [XA] is available in Asia, Latin America, Middle East and Africa.

ACCESSORIES



provided with an SYU217-1) is (No. SMX339) to replacement.

REPLACEMENT PARTS LIST Electric Parts

NOTES: 1. Part numbers are indicated on most mechanical parts Please use this part number for parts orders 2. Δ indicates that only parts specified by the manufacturer be used for safety.

Table with columns: Ref. No., Part No., Part Name & Description. Sections include: INTEGRATED CIRCUIT, TRANSISTORS, DIODES, COILS and TRANSFORMERS, COMPONENT COMBINATIONS.

Table with columns: Ref. No., Part No., Part Name & Description. Sections include: CERAMIC FILTERS, FUSES, LAMP, SWITCHES, VARIABLE RESISTORS, VARIABLE CAPACITOR.

Resistors and Capacitors

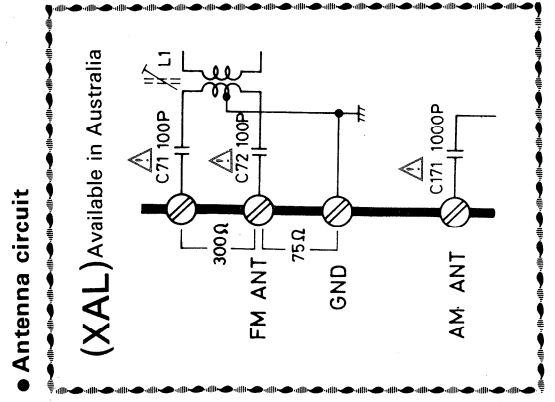
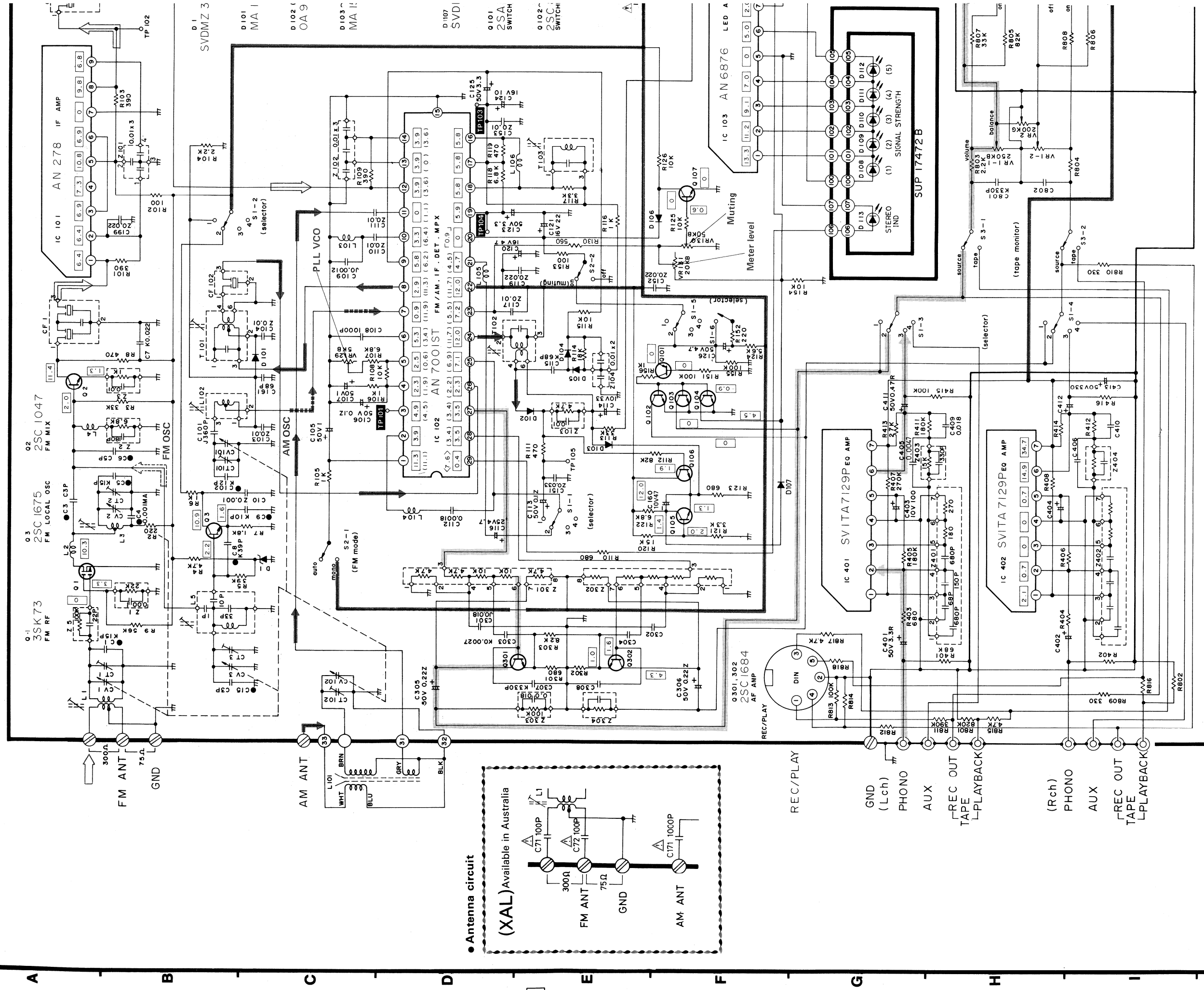
Table with columns: Ref. No., Part No., Part Name & Description. Section: RESISTORS.

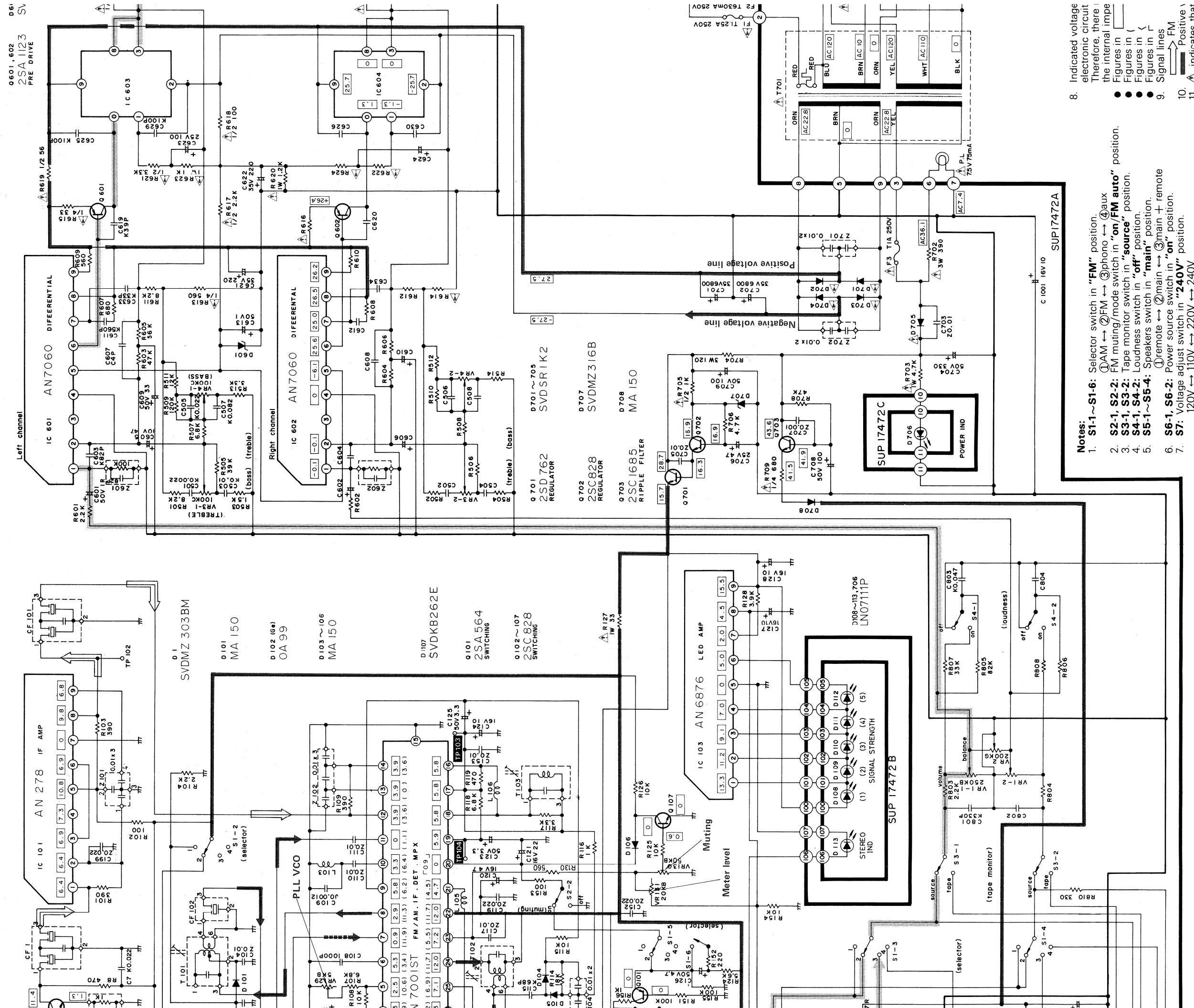
Table with columns: Ref. No., Part No., Part Name & Description. Lists various electronic components like carbon resistors, ceramic filters, fuses, lamps, switches, and variable components.

Table with columns: Ref. No., Part No., Part Name & Description. Section: CAPACITORS. Lists various types of capacitors including ceramic, electrolytic, and polyester.

■ SCHEMATIC DIAGRAM ..... MODEL SA-101 \* This schematic diagram may be modified at any time with the development of new technology.

1 2 3 4 5 6 7





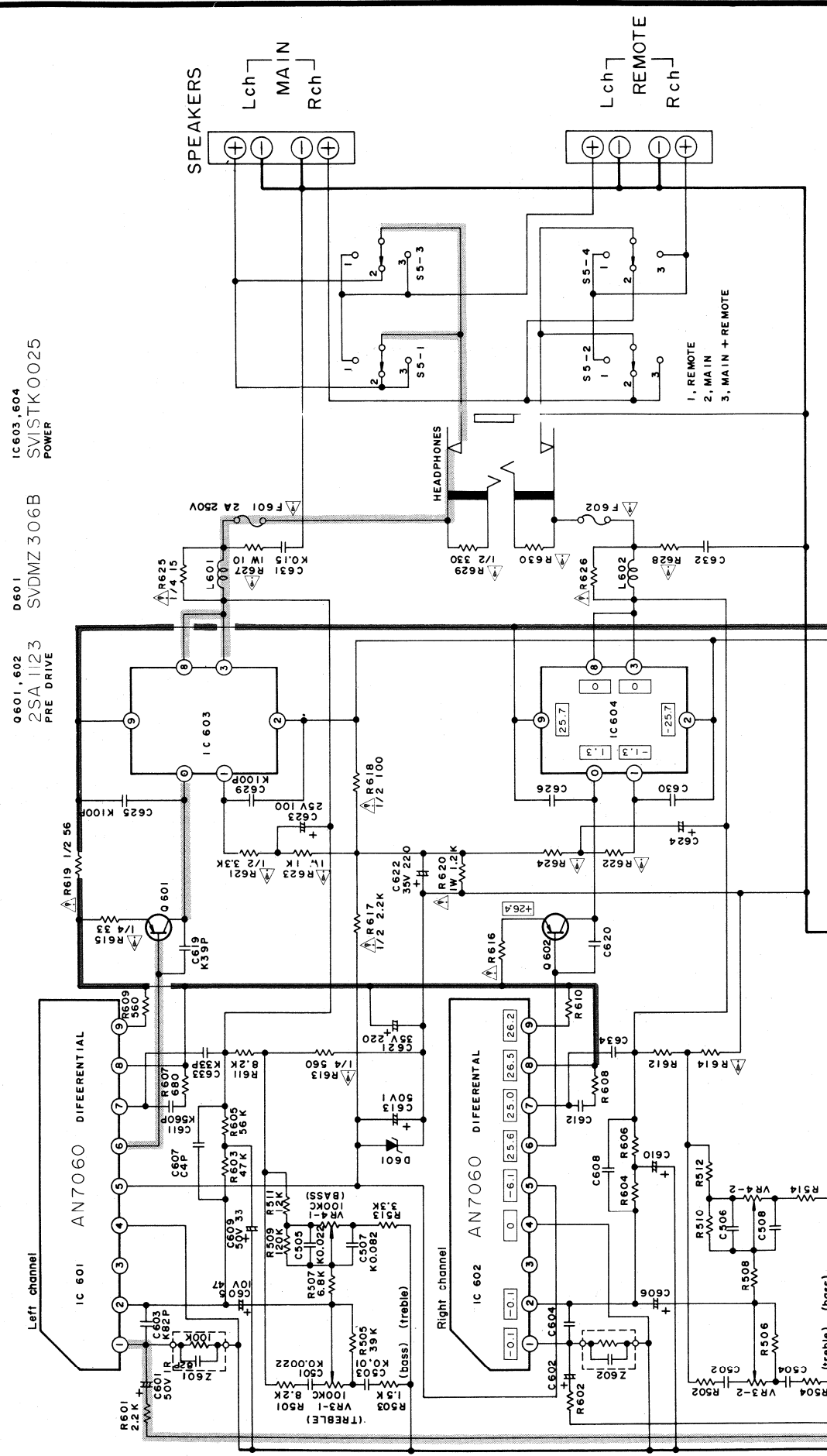
0601, 602  
2SA 1123  
PRE DRIVE

**Notes:**

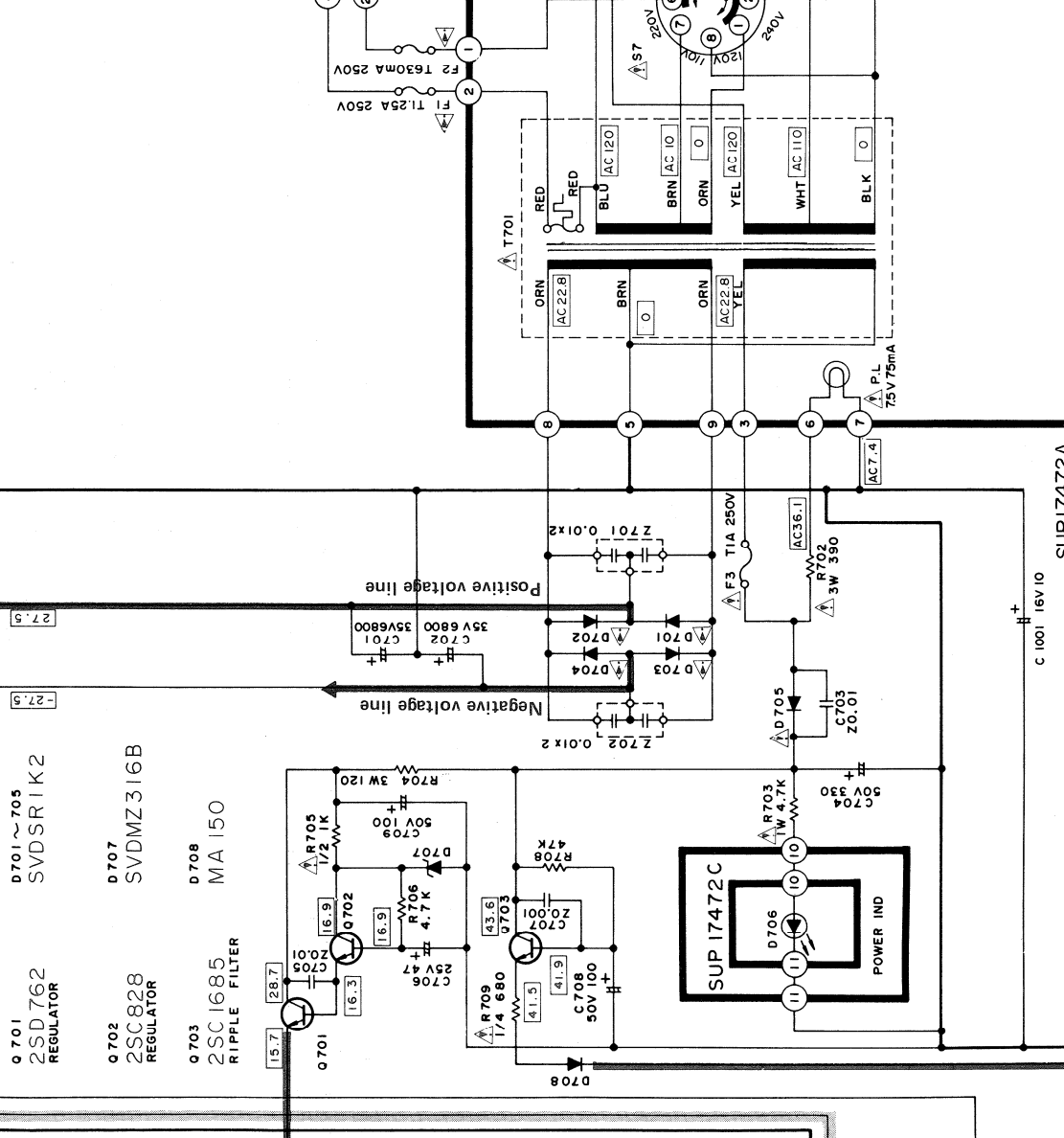
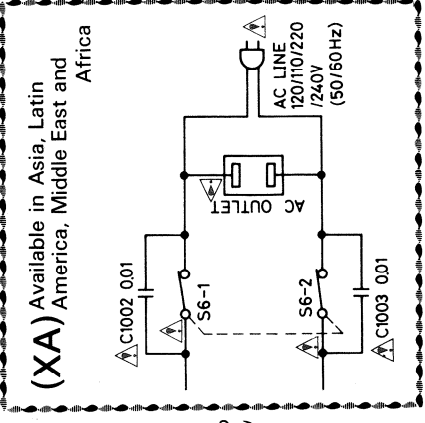
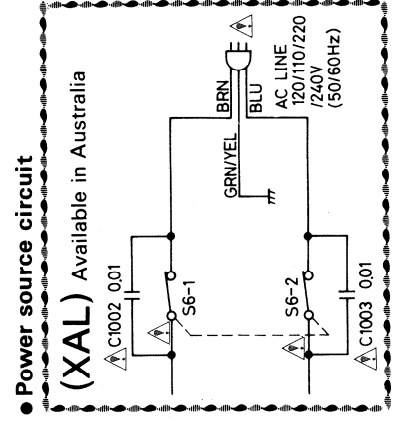
1. S1-1~S1-6: Selector switch in "FM" position.
2. S2-1, S2-2: FM muting/mode switch in "on/FM auto" position.
3. S3-1, S3-2: Tape monitor switch in "source" position.
4. S4-1, S4-2: Loudness switch in "off" position.
5. S5-1~S5-4: Speakers switch in "main" position.
6. S6-1, S6-2: Power source switch in "on" position.
7. S7: Voltage adjust switch in "240V" position. 120V ↔ 110V ↔ 220V ↔ 240V

8. Indicated voltage electronic circuit Therefore, there the internal impe
9. Figures in ( ) Figures in [ ] Figures in { } Signal lines
10. FM Positive that
11. Δ indicates that





Ref. No.	Production Parts No.	Standardized Parts No.
Q101	2SA564	2SA666A1-R
Q102 ~ 107, 702	2SC828	2SC1328-T
D101, 103 ~ 106, 708	MA150	MA162
D107	SVDKB262E	RVDKB262C
D601	SVDZM306B	RVDEQA0106S
D707	SVDZM316B	SVDRD16EB



**Notes:**

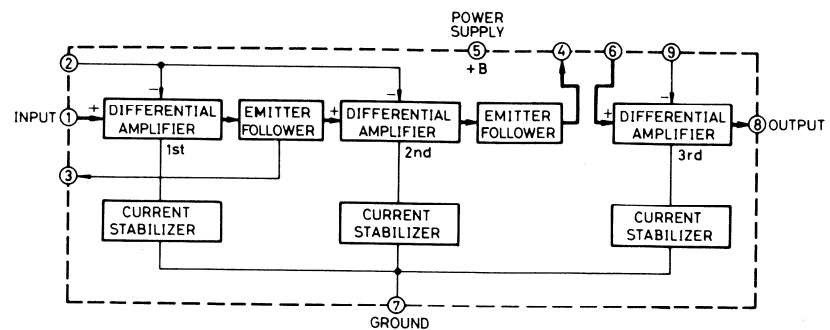
- S1-1 ~ S1-6: Selector switch in "FM" position.  
①AM ↔ ②FM ↔ ③phono ↔ ④aux
- S2-1, S2-2: FM muting/mode switch in "on/FM auto" position.
- S3-1, S3-2: Tape monitor switch in "source" position.
- S4-1, S4-2: Loudness switch in "off" position.
- S5-1 ~ S5-4: Speakers switch in "main" position.  
①remote ↔ ②main ↔ ③main + remote
- S6-1, S6-2: Power source switch in "on" position.
- S7: Voltage adjust switch in "240V" position.  
120V ↔ 110V ↔ 220V ↔ 240V

- Indicated voltage are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
- Figures in [ ] stand for DC voltage in FM (60dB signal reception) mode.
- Figures in ( ) stand for DC voltage in AM mode.
- Figures in { } stand for DC voltage in FM stereo signal reception mode.
- Figures in [ ] stand for DC voltage in FM (no signal) muting to on mode.
- Signal lines
- FM
- Positive voltage lines
- AM
- Audio Frequency
- ↑ indicates that only parts specified by the manufacturer be used for safety.

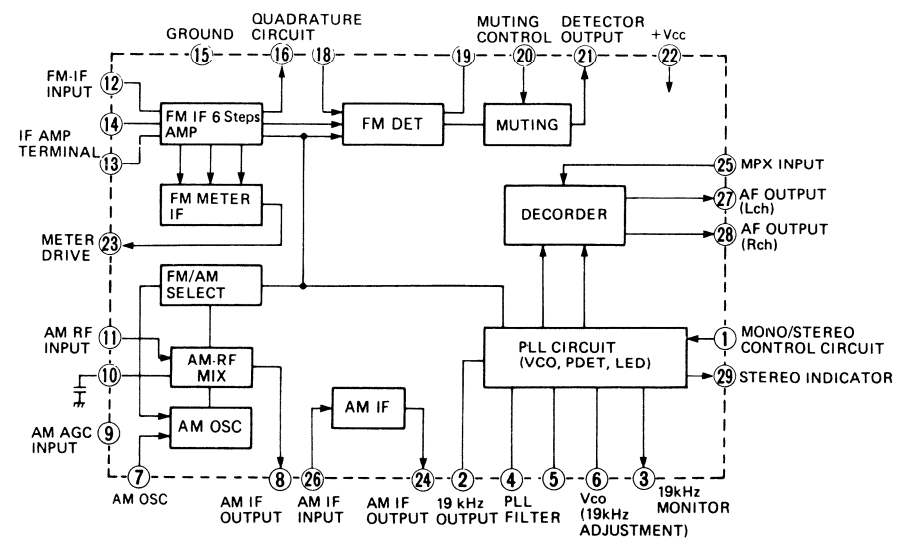


■ BLOCK DIAGRAM OF IC'S

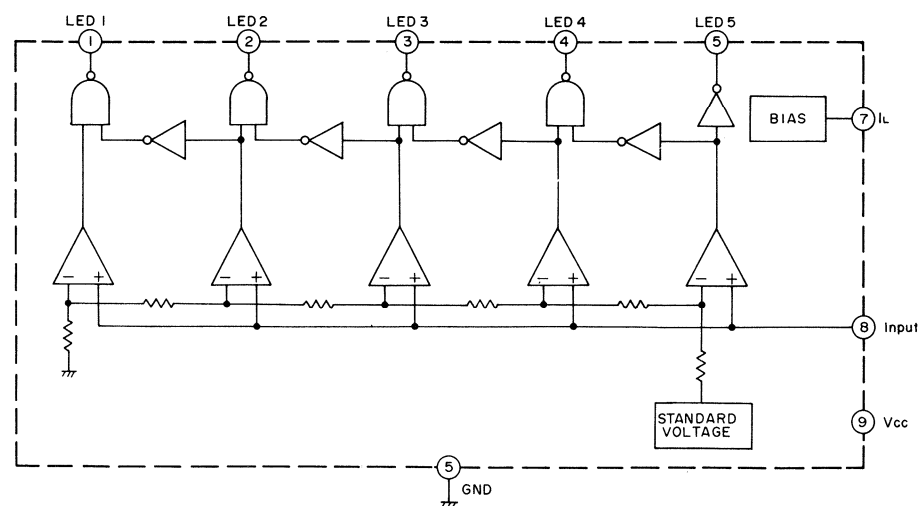
- This is the basic block diagram of the inside circuit of IC. In an actual circuit, there may be sometimes idle terminals or some different functions other than the basic circuit.



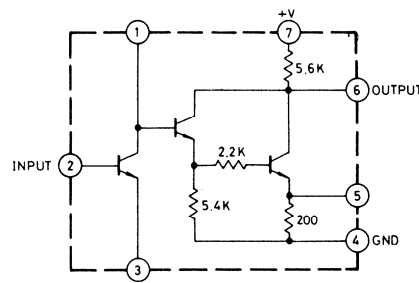
IC101 (AN278)  
FM IF amplifier



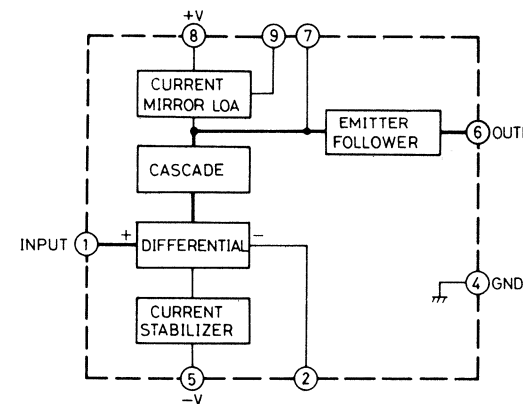
IC102 (AN7001ST)  
AM converter, FM IF amplifier, detector & MPX



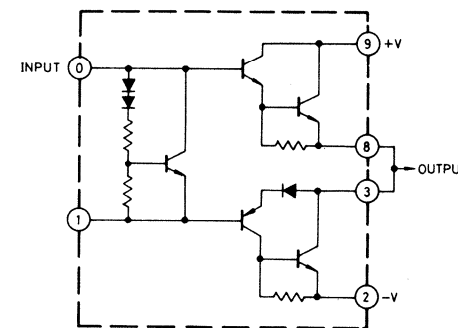
IC103 (AN6876)  
LED drive amplifier



IC401, 402 (SVITA7129P)  
Equalizer amplifier



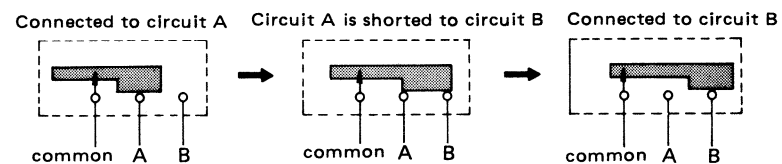
IC601, 602 (AN7060)  
Differential amplifier



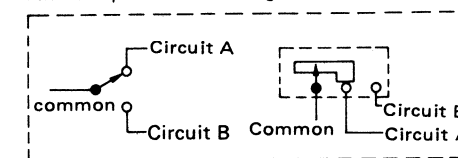
IC603, 604 (SVISTK0025)  
Power amplifier

● Shorting Switch

This unit uses a shorting switch. As illustrated below, the circuit is shorted to the next circuit without being opened. In the circuit diagram, the shaded area represents the common terminal.



An example of circuit diagram



■ DIAL CORD INSTALLATION GUIDE

● For threading a fresh cord, proceed as follows.

1. Prepare a fresh cord more than 180cm (70-15/16") in length.
2. Bring the variable capacitor into a state where the drum is completely turned to the right (maximum capacity and lowest frequency for the variable capacitor).
3. Direct the cord in the order from 1 to 9.
4. Stretch the cord in such a tension as the spring length is elongated by 1.5 times that of the original state.
5. Fix the knot of the cord with the adhesive.

