

# Service Manual

FM/AM Stereo Receiver

SA-818

[M], [MC]



Simulated wood cabinet

## Areas

- \* [M] is available in U.S.A.
- \* [MC] is available in Canada.

## TECHNICAL SPECIFICATIONS (Specifications are subject to change without notice for further improvement.)

(IHF '78)

### ■ AMPLIFIER SECTION

#### Rated minimum sine wave RMS power output

20 Hz~20 kHz both channels driven

0.005% total harmonic distortion

110W per channel (8 ohms)

0.008% total harmonic distortion

150W per channel (4 ohms)

#### 1 kHz continuous power output

both channels driven

0.001% total harmonic distortion

120W per channel (8 ohms)

170W per channel (4 ohms)

#### Dynamic headroom

1.5 dB (8 ohms)

2.0 dB (4 ohms)

#### Total harmonic distortion

rated power at 20 Hz~20 kHz

0.005% (8 ohms)

0.008% (4 ohms)

half power at 20 Hz~20 kHz

0.005% (8 ohms)

half power at 1 kHz

0.001% (8 ohms)

#### SMPTE intermodulation distortion

0.01% (8 ohms)

#### Frequency response

PHONO

RIAA standard curve  $\pm 0.3$  dB

AUX, TAPE

5 Hz~100 kHz, -3 dB

20 Hz~20 kHz, +0 dB, -0.3 dB

#### Input sensitivity

PHONO

0.28 mV (2.5mV, IHF '66)

AUX, TAPE

16 mV (150mV, IHF '66)

#### S/N (IHF, A)

PHONO

74 dB (82 dB, IHF '66)

AUX, TAPE

79 dB (100 dB, IHF '66)

#### Maximum input voltage

PHONO

180 mV (190 mV, 1 kHz)

#### Input impedance

PHONO

47 kilohms

AUX, TAPE

33 kilohms

#### Tone controls

bass

50 Hz, +10 dB~-10 dB

treble

20 kHz, +10 dB~-10 dB

middle

1 kHz, +6 dB~-6 dB

#### Acoustic controls (at tone "0" position)

low boost

100 Hz, +6 dB

high boost

10 kHz, +6 dB

low cut

70 Hz, -6 dB/oct.

high cut

7 kHz, -6 dB/oct.

#### Loudness control (volume at -30 dB)

50 Hz, +9 dB

#### Muting

-20 dB

#### Output voltage

REC OUT

150 mV

#### Low frequency damping factor

50 (8 ohms)

25 (4 ohms)

#### Load impedance

MAIN or REMOTE

4~16 ohms

MAIN and REMOTE

8~16 ohms

# Technics

Panasonic Company  
Division of Matsushita Electric  
Corporation of America  
One Panasonic Way, Secaucus,  
New Jersey 07094

Panasonic Hawaii, Inc.  
320 Waiakamilo Road, Honolulu,  
Hawaii 96817

Panasonic Canada  
Division of Matsushita Electric,  
of Canada Ltd.  
5770 Ambler Drive,  
Mississauga, Ontario L4W 2T3

## ■ FM TUNER SECTION

Frequency range*	87.9~107.9 MHz
Sensitivity	10.3 dBf (1.8 $\mu$ V, IHF '58)
50 dB quieting sensitivity	
MONO	13.2 dBf (2.5 $\mu$ V IHF '58)
STEREO	36.2 dBf (35.4 $\mu$ V IHF '58)
Total harmonic distortion (normal)	
100 Hz	0.15% (MONO), 0.25% (STEREO)
1 kHz	0.1% (MONO), 0.15% (STEREO)
6 kHz	0.25% (MONO), 0.3% (STEREO)
S/N	
MONO	76 dB
STEREO	72 dB
Frequency response	20 Hz~15 kHz, +0.2 dB, -0.8 dB
Alternate channel selectivity	
normal $\pm$ 400 kHz	65 dB
narrow $\pm$ 400 kHz	85 dB
narrow $\pm$ 300 kHz	75 dB
Capture ratio (normal)	1.2 dB
Image rejection at 98.1 MHz	80 dB
IF rejection at 98.1 MHz	90 dB
Spurious response rejection at 98.1 MHz	100 dB
AM suppression	60 dB
Stereo separation (normal)	
1 kHz	45 dB
10 kHz	35 dB
Carrier leak	
19 kHz	-65 dB
38 kHz	-70 dB
FM de-emphasis	25 $\mu$ s, 50 $\mu$ s, 75 $\mu$ s
Antenna terminals	300 ohms (balanced) 75 ohms (unbalanced)

## ■ AM TUNER SECTION

Frequency range*	530~1620 kHz
Sensitivity	30 $\mu$ V, 250 $\mu$ V/m
Selectivity	55 dB
Image rejection at 1000 kHz	50 dB
IF rejection at 1000 kHz	45 dB

## ■ GENERAL

Power consumption	590W, 740 VA
Power supply	AC 120V, 60 Hz
Batteries (for memory "back-up")	DC 4.5V 3 "AA" size batteries Panasonic UM-3 or equivalent
Dimensions (W×H×D)	566 × 172 × 396 mm (22-9/32" × 6-25/32" × 15-19/32")
Weight	18.5 kg (40.8 lb.)

### Note:

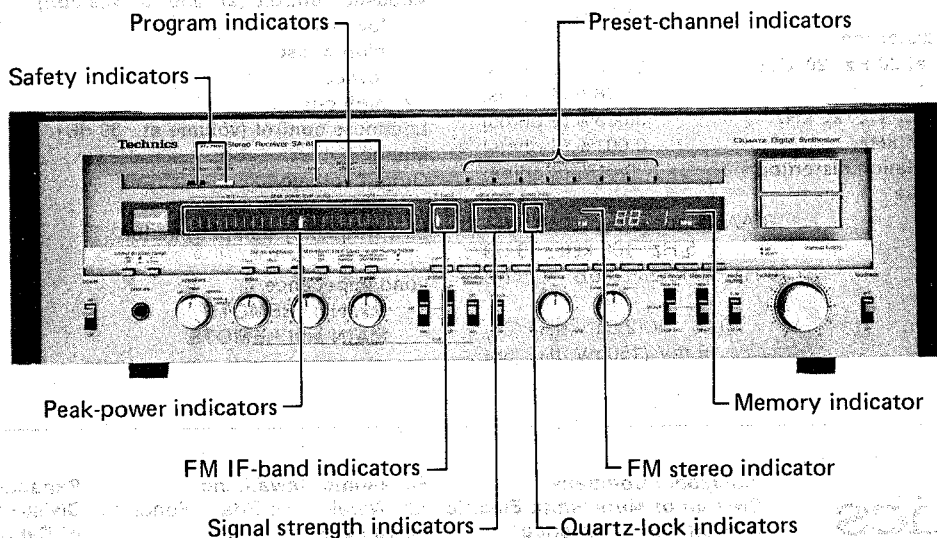
Total harmonic distortion is measured by the digital spectrum analyzer (HP. 3045 system).

\*This unit is equipped with an FM/AM allocation selector on the rear panel. The specifications shown above are correct with this selector set to the "FM 200 kHz/AM 10 kHz" position. If it is set to the "FM 50 kHz/AM 9 kHz" position, however, the FM frequency range becomes 87.5~108.0 MHz, and the AM frequency range becomes 522~1611 kHz.

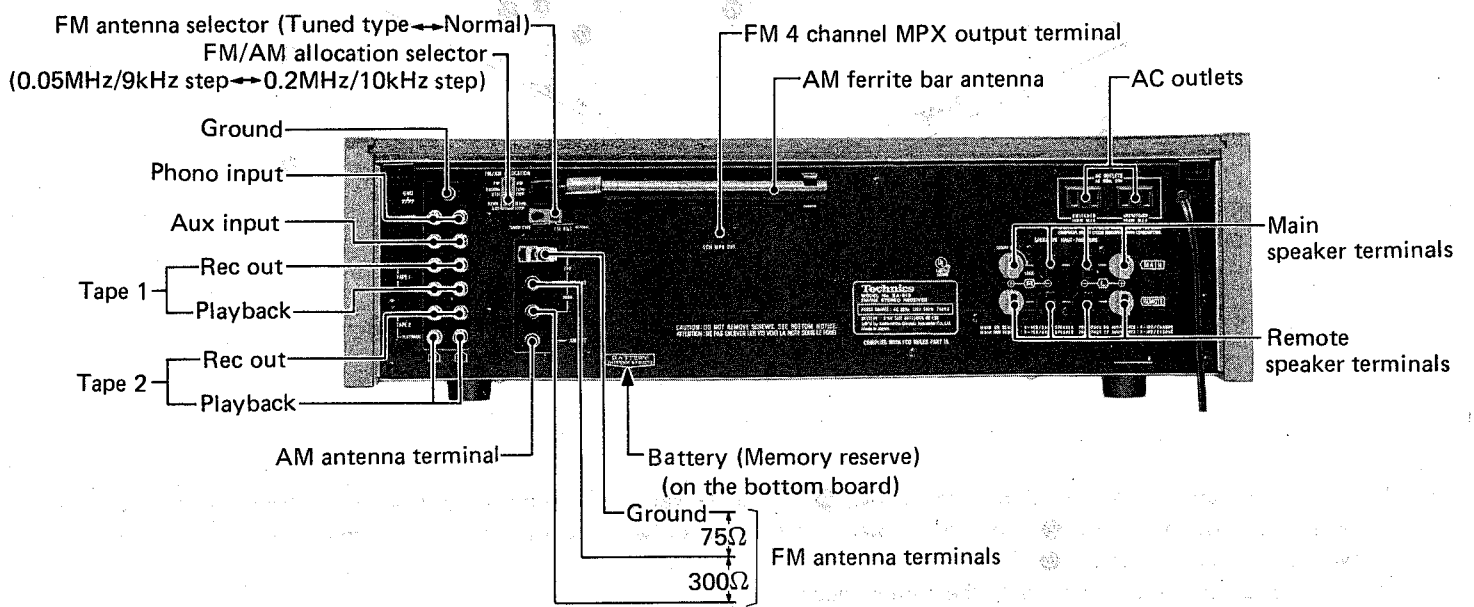
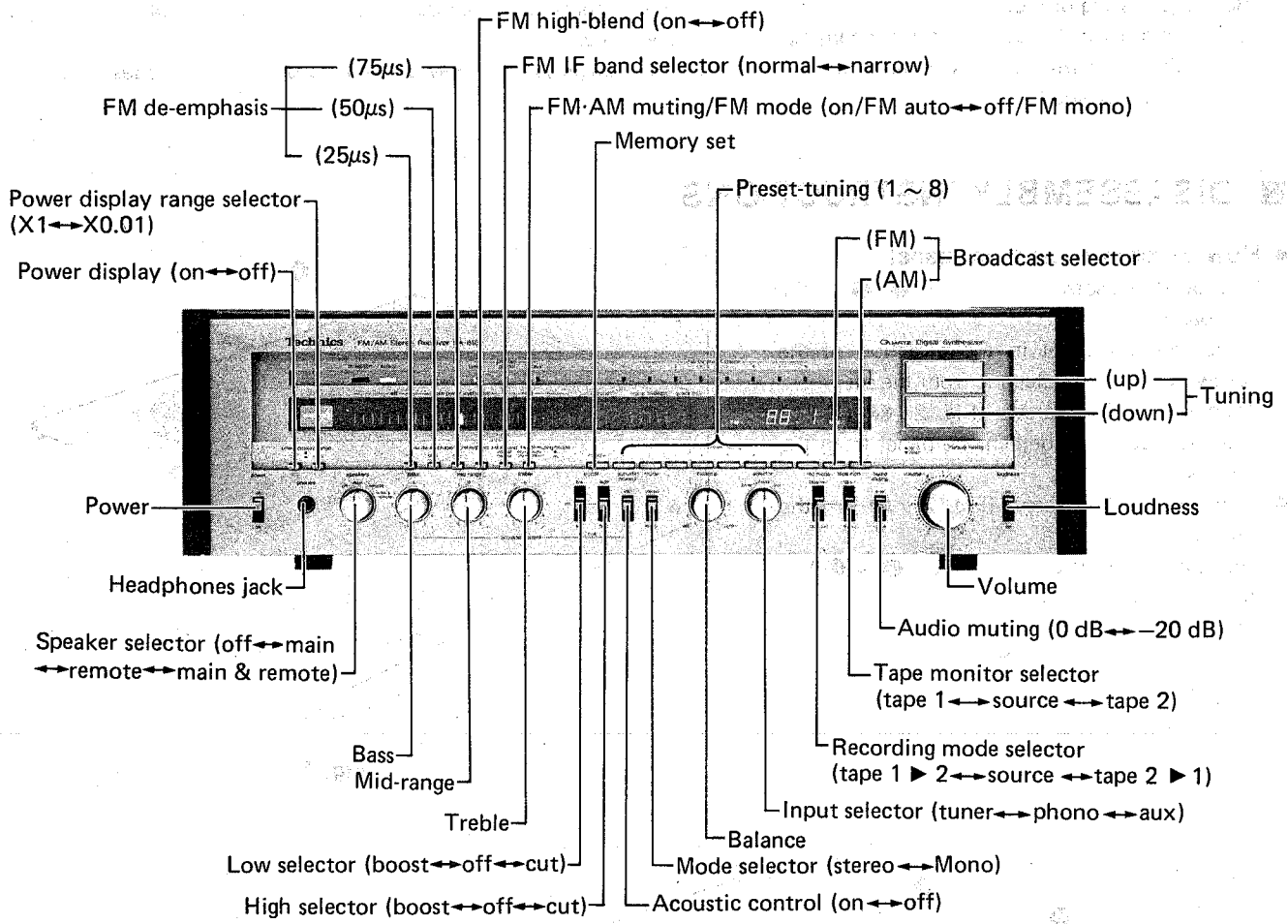
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## ■ LOCATION OF CONTROLS



OF REPAIR AND THE REPAIR OF



## ■ BEFORE STARTING THE REPAIRING

Before adjusting or repairing, be sure to short-circuit opposite poles of the  $8200\mu\text{F}$  capacitors (C701 ~ 704) with a resistor approximately of " $50\Omega$ , 5W" for discharging the charged voltage.

Short-circuiting with a screw driver and the like is not only dangerous, but may destroy transistors and diodes, and should therefore be avoided.

## ■ DISASSEMBLY INSTRUCTIONS

### ● How to remove the front panel

1. Remove the 2 setscrews (Fig. 1 : ①, ②) of the top panel.
2. Slide the top panel in the direction of the arrow in Fig. 1 to detach it from the set.
3. Remove the 7 setscrews (Fig. 2 : ③ ~ ⑨) of the right panel to detach the panel from the chassis.
4. Remove the 1 setscrew (Fig. 2 : ⑩) of the left panel.
5. Remove the 5 setscrews (Fig. 2 : ⑪ ~ ⑮) of the front panel.

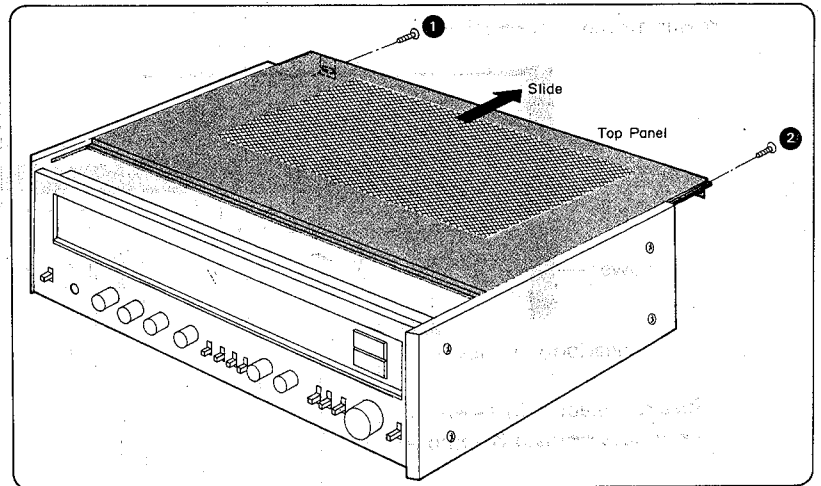


Fig. 1

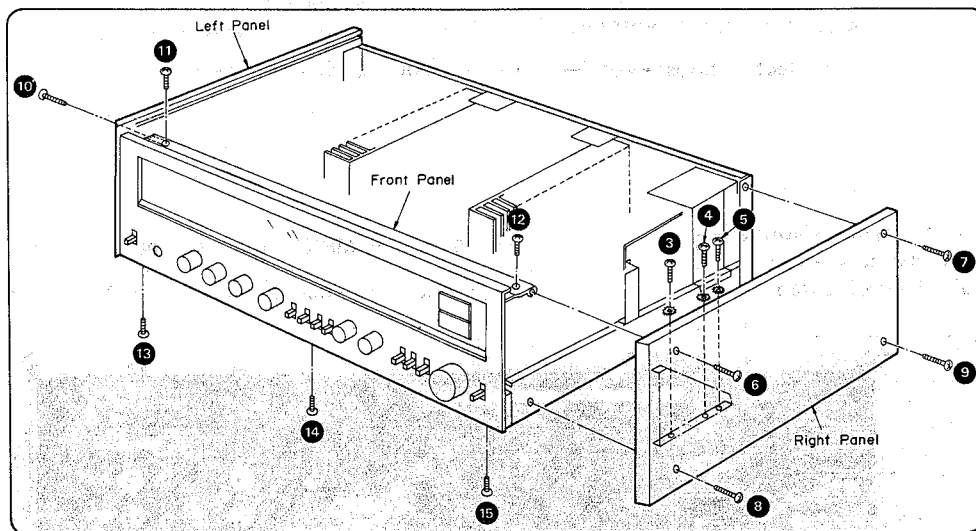


Fig. 2

6. Move the front panel in the direction of the arrow **A** in Fig. 3. Next, holding the left bottom of the front panel, move it in the direction of the arrow **B** until the power switch knob is disengaged from the hole of the front panel, and then remove the front panel. (arrow **C**)

Note: Take care not to give damage to the switch knobs.

7. As shown in Fig. 4, remove the setscrews ⑯, ⑰, and 5 lugs to detach the LED display printed circuit boards from the back of the front panel.

● **How to remove the printed circuit boards**

1. Remove the front panel, and the LED display printed circuit boards secured on it. (Refer to "How to remove the front panel.")
2. Remove the 2 setscrews (Fig. 5 : 18 , 19 ) to detach the printed circuit board (top) of the tuner circuit as shown in Fig. 5.
3. To detach the voltage regulator printed circuit board, remove the setscrews 20 and 21 , then lift the board in the direction of the arrow in the Fig. 5 to detach it from the chassis.
4. To detach the FL display printed circuit board (center), first remove the tuner printed circuit board and the 4 setscrews (Fig. 6 : 22 ~ 25 ) of the shield plate (upper), and then lift the circuit board in the direction of the arrow in Fig. 6.

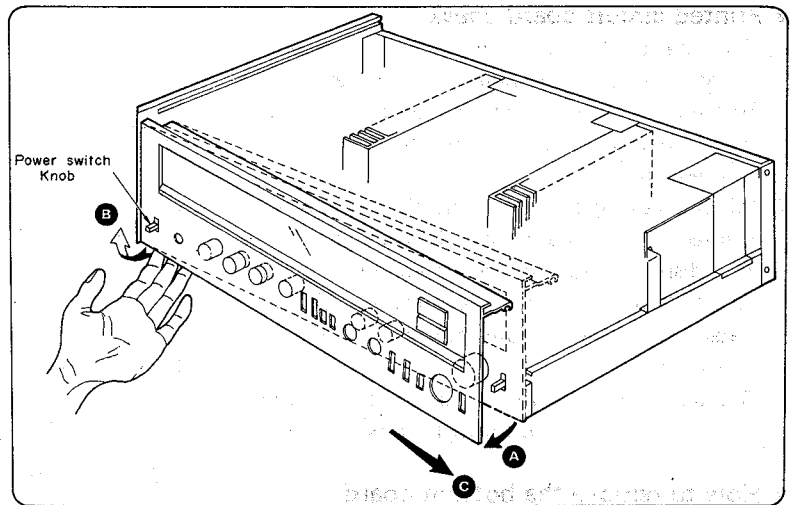


Fig. 3

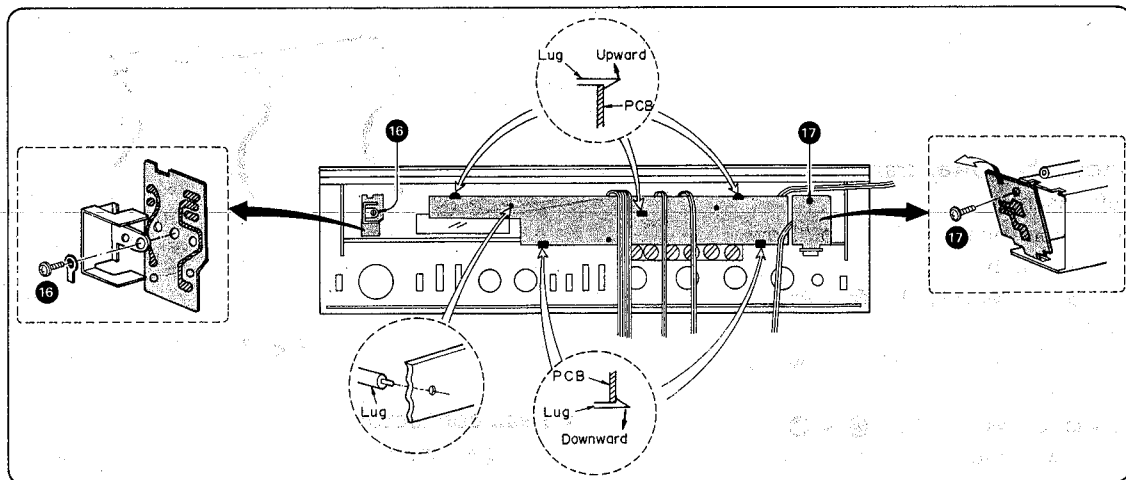


Fig. 4

**Note:** For 18 and 20 in Fig. 5, screw (XTB3+8BFZ1) provided with pin like A encircled by dotted line is used. However, to replace them, use 3 x 8mm tapping screw (XTB3+8BFZ) and toothed lock washer (XWC3B) like B.

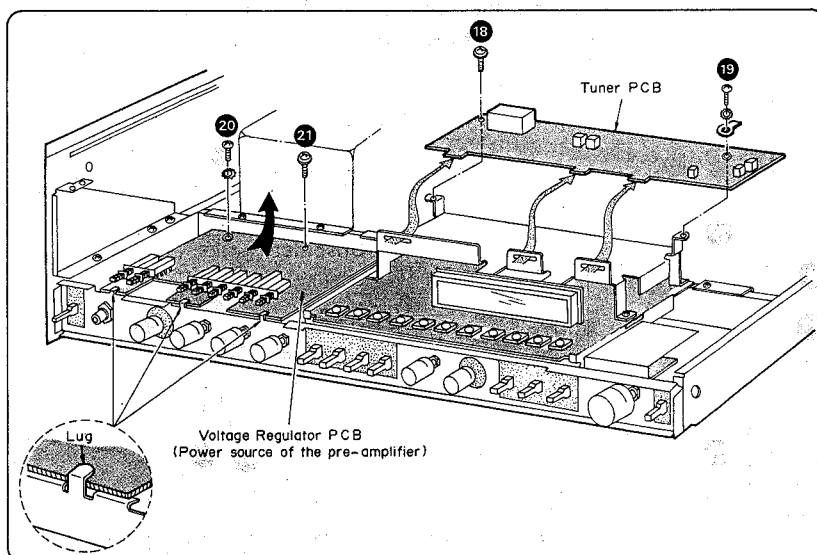
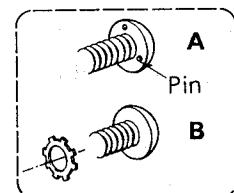


Fig. 5



## ● Printed circuit board check

1. For the LED display printed circuit board, tuner printed circuit board, voltage regulator printed circuit board and FL display printed circuit board, refer to "How to remove the printed circuit board."
2. When checking the tone control and pre-drive printed circuit board, first detach the tuner, FL display and voltage regulator printed circuit board, then remove setscrew 26 to detach the shield plate bottom (lower) as shown in Fig. 7. Subsequently, remove the bottom board, and then the printed circuit board can be checked.

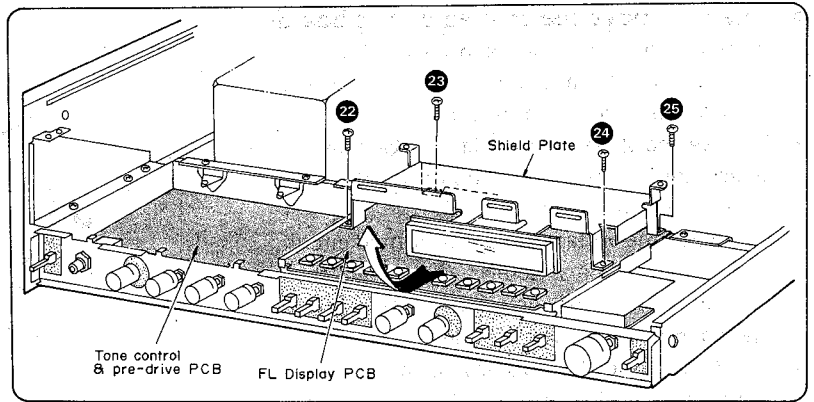


Fig. 6

## ● How to remove the bottom board

1. Remove the 12 setscrews (Fig. 8 : 27 ~ 38) of the bottom board.
2. Remove the bottom board.

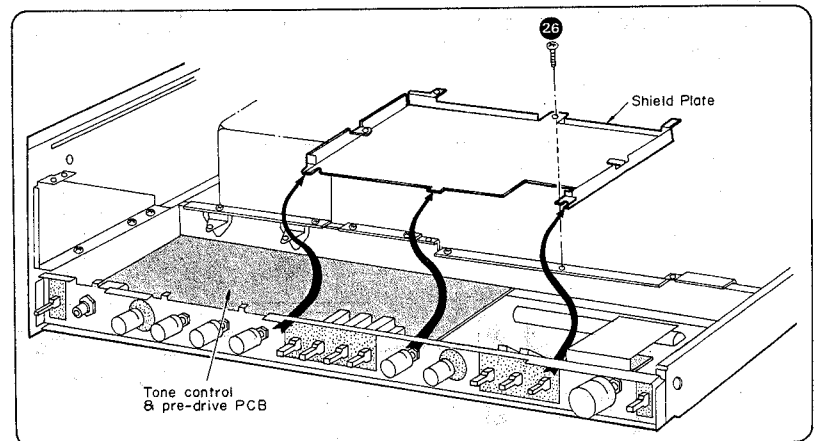


Fig. 7

## ● How to remove the power transistor

(Example: Left channel)

1. Remove the bottom board. (Refer to "How to remove the bottom board.")
2. Remove the 4 setscrews (Fig. 9 : 39 ~ 42) of the heat sink.
3. Remove the top panel. (Refer to "How to remove the front panel.")
4. Remove the 4 setscrews (Fig. 10 : 43 ~ 46) of the metal fitting which secures the electrolytic condenser. Then the metal fitting can be removed.
5. Unsolder the power transistor. (Fig. 9)
6. Remove the transistor along with the heat-sink from the printed circuit board as shown in Fig. 10.
7. When installing the power transistor onto the heat-sink, apply a heat diffusing agent to both sides of the mica plate.

## ● Lead connector

1. To disconnect the lead wires from the lead connector, open the "lead holder" of the connector as shown in Fig. 11, and pull out the lead wires.
2. The lead wires are provided with identification colors or patterns as in Fig. 11. So, insert them into the connector in correct positions.
3. It is advisable to put pencil marks on both the leads and the connector beforehand for the convenience of insertion.

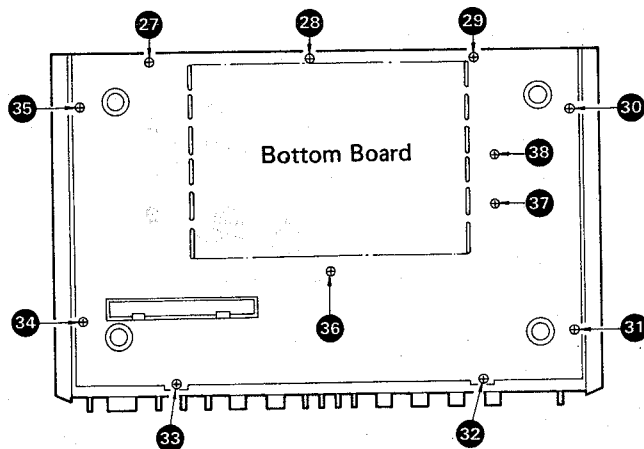


Fig. 8

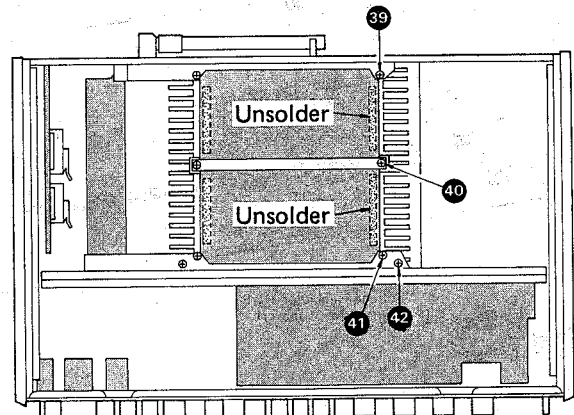


Fig. 9

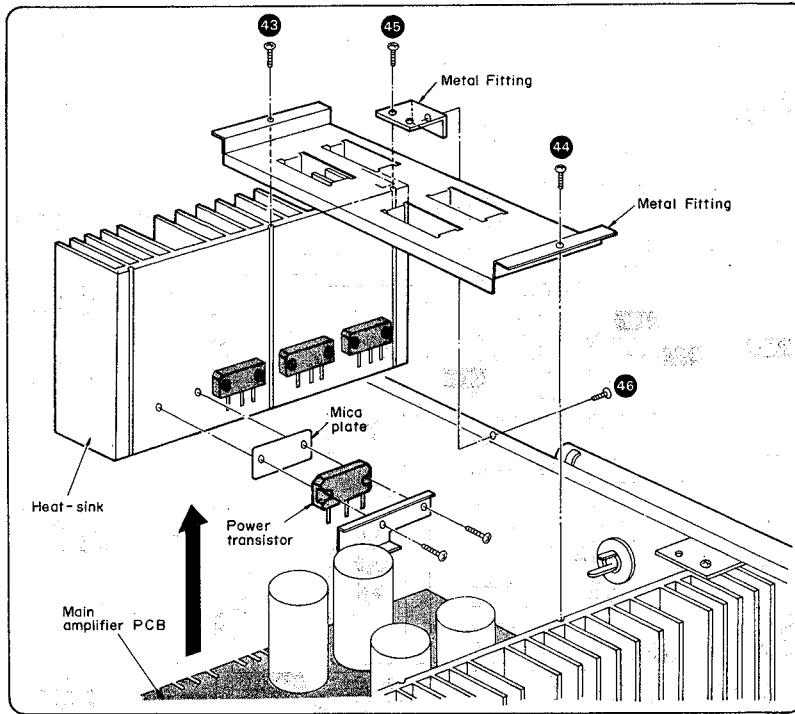


Fig. 10

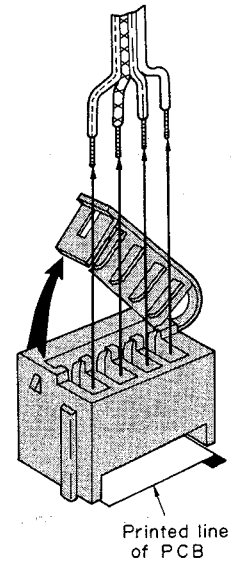


Fig. 11

- Since standardized parts are mentioned in the parts list, they are sometimes different in Part No. and Color from the product parts.

Screw No.	Type	Color	Product Part No.	Figure No.
① ~ ②	⊕ 3 x 8mm, Tapping (With plain washer)	Black	XTW3+8HFZ	1
③ ~ ⑤	⊕ 4 x 10mm, Tapping	Gold	XTB4+10F	2
⑥ ~ ⑩	⊕ 4 x 25mm (With spring washer & plain washer)	Black	XYAS4+25001	2
⑪ ~ ⑮	⊕ 3 x 8mm, Tapping	Black	XTB3+8BFZ	2
⑯ ~ ⑱	⊕ 3 x 10mm, Tapping (With plain washer)	Gold	XTW3+10H	4, 5
⑲ ~ ⑳	⊕ 3 x 8mm, Tapping (With toothed lock washer)	Black	XTBS3+8BFZ1	5
㉑	⊕ 3 x 10mm, Tapping (With plain washer)	Gold	XTW3+10H	5
㉒ ~ ㉖	⊕ 3 x 8mm, Tapping	Gold	XTB3+8B	6, 7
㉗ ~ ㉘	⊕ 3 x 8mm, Tapping	Red	XTB3+8BFYR	8
㉙ ~ ㉚	⊕ 3 x 10mm, Tapping (With plain washer)	Red	XTW3+10HFYR	9
㉛ ~ ㉞	⊕ 3 x 10mm, Tapping	Black	XTB3+10BFZ	10

• To remove the remote control switch band

1. Press the band with a screw driver in the direction shown in Fig. 12.
2. Remove the band, first at point (A) as shown in Fig. 13. (Care should be taken not to hold (C) in Fig. 12.)

3. Then remove the band at point (B).
4. When re-attaching the band start at point (B).

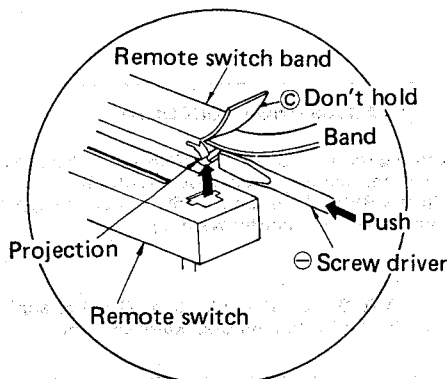


Fig. 12

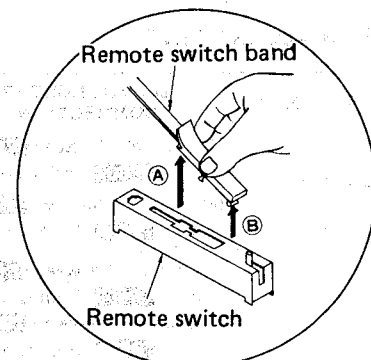
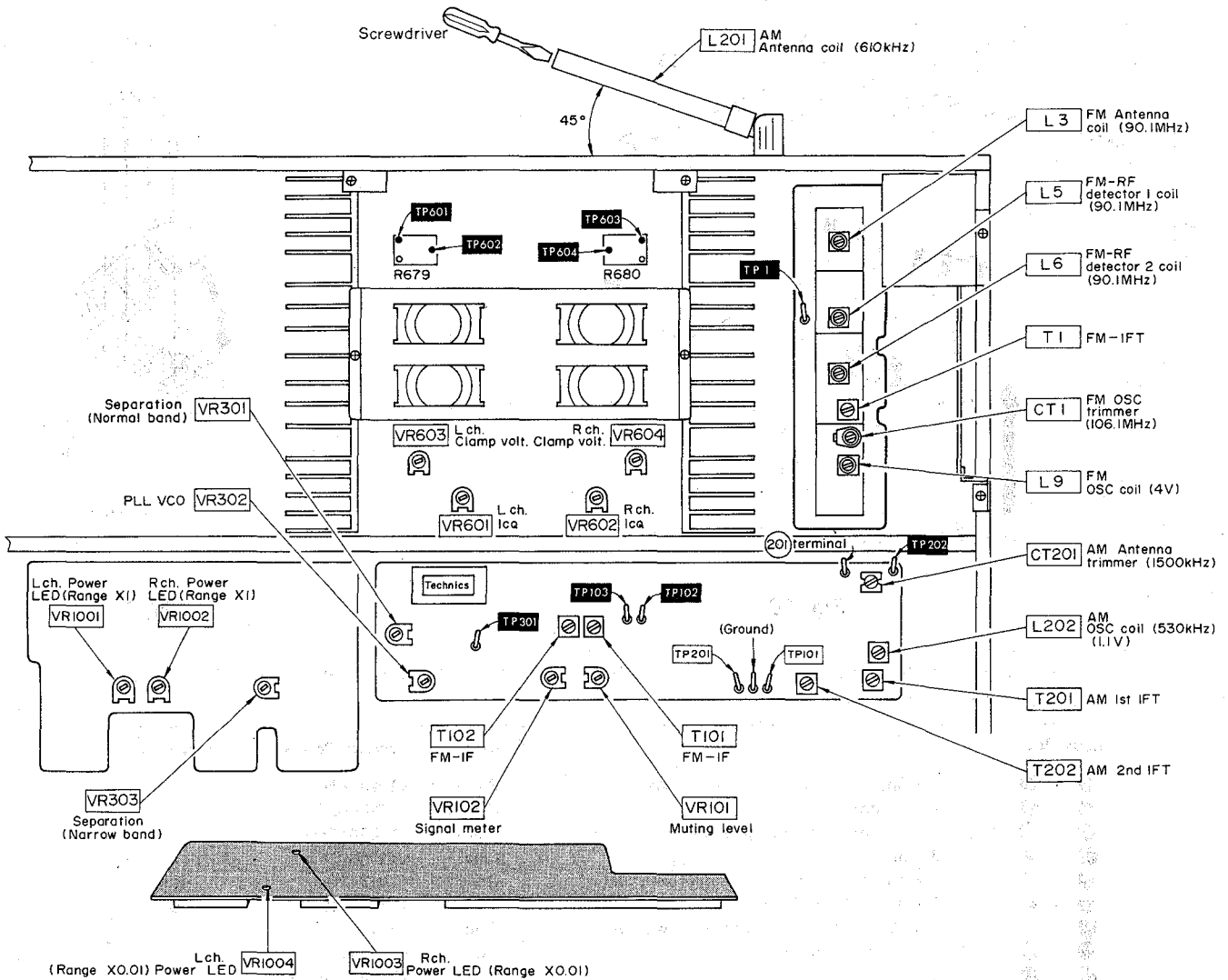


Fig. 13

## ADJUSTMENT POINTS



## ADJUSTING INSTRUCTIONS

### ● Setting of controls and instruments to be used

\* Before the adjustment, VR601, VR602, VR603 and VR604 should be turned to counter-clockwise direction.

1. Speaker switch . . . . . Main
2. Sound volume . . . . . 0 (minimum)
3. DC voltmeter (capable to measure 5mV)

### AMPLIFIER ADJUSTMENT

No.	ADJUSTMENTS	DC VOLTMETER CONNECTION	PARTS ADJUSTED	ADJUSTING PROCEDURE
1	Clamp voltage	(L channel) Between <b>TP601</b> and <b>TP602</b> (minus probe) (R channel) Between <b>TP603</b> and <b>TP604</b> (minus probe)	VR603 (L channel) VR604 (R channel)	* Turn <i>Icq</i> semi-fixed resistors VR601, VR602 to minimum. (counter-clockwise direction) * Adjust VR603 (L ch) and VR604 (R ch) to approx. 0.5mV after ten minutes warm-up time.
2	<i>Icq</i>	(L channel) Between <b>TP601</b> and <b>TP602</b> (minus probe) (R channel) Between <b>TP603</b> and <b>TP604</b> (minus probe)	VR601 (L channel) VR602 (R channel)	* Adjust VR601 (L ch) and VR602 (R ch) to approx. 8 ~ 12mV after ten minutes warm-up time.



● **Setting**

- \* Connect a low frequency oscillator to the AUX input terminal, and 8-ohm load resistor and audio AC voltmeter to the speaker terminal.
- \* Add 1kHz signal from the low frequency oscillator to the set.
- \* Set the sound volume to the maximum point.
- \* Set the power display switch to "on" position.

No.	ADJUSTMENTS	POWER DISPLAY RANGE SELECT SWITCH POSITION	PARTS ADJUSTED	ADJUSTING PROCEDURE
1	LED peak power level display	X1	VR1001 (Left channel)	1. Adjust the input level so that the AC voltmeter indicates 20V. 2. Adjust VR1001 while observing the peak power level display so that the LED at 55W is about to turn on.
2			VR1002 (Right channel)	Adjust VR1002 in the same way as for left channel. If the indication of left channel changes, re-adjust VR1001.
3		X0.01	VR1004 (Left channel)	1. Adjust the input level so that the AC voltmeter indicates 0.1V. 2. Adjust VR1004 while observing the peak power level display so that the LED at 0.1W is about to turn on.
4			VR1003 (Right channel)	Adjust VR1003 in the same way as for left channel. If the indication of left channel changes, re-adjust VR1004.

- \* Set FM/AM allocation selector to "FM 0.2MHz/AM 10kHz" position.
- \* Set antenna selector to "normal" position.

**AM TUNER ADJUSTMENT**

**\* Setting and Equipment used**

1. AC and DC electronic voltmeters (VTVM)
2. AM signal generator (AM-SG)
3. Maintain line voltage at 120 volts.
4. Output of signal generator should be no higher than necessary to obtain an output reading.
5. Adjust the antenna coil (L201) position by using a screwdriver so that it is at approximately 45 degrees to the rear panel.
6. Set input selector to "tuner" position.
7. Use a non-metal screwdriver for the adjustment.
8. Set FM-AM muting/mode switch to "off/FM mono" position.
9. Set broadcast selector to "AM" position.
10. Set tape monitor and recording mode selector to "source" position.
11. Set speaker selector to "main & remote" position.
12. Set mode switch to "stereo" position.

Step No.	AM SIGNAL GENERATOR		DISPLAY FREQUENCY	PREPARATIONS	PARTS ADJUSTED	ADJUSTING PROCEDURE
	CONNECTION	FREQUENCY				
<b>AM-IF ADJUSTMENT</b>						
1	Connect AM-SG to AM antenna terminal through 200pF capacitor. Common to chassis. (Powerful input)	450kHz (30% Mod. with 400Hz)	Frequency of non-interference	Connect AC VTVM or scope to "Speaker" terminals of the set.	T201 (1st IFT) T202 (2nd IFT)	* Adjust the input frequency and adjustment points so that the output becomes maximum.
<b>AM-RF ADJUSTMENT</b>						
2	Connect AM-SG to AM antenna terminal through 200pF capacitor. Common to chassis. (Weak input)	530kHz (30% Mod. with 400Hz)	530kHz	Connect DC VTVM to TP202 terminal.	L202 (OSC Coil)	Adjust L202 to 1.1V ± 0.05V.
3		610kHz (30% Mod. with 400Hz)	610kHz	Connect AC VTVM to scope to "Speaker" terminals of the set.	L201 (ANT Coil)	1. Adjust for maximum output. 2. Adjust ferrite core of L201 by screwdriver.
4		1500kHz (30% Mod. with 400Hz)	1500kHz	Connect AC VTVM to scope to "Speaker" terminals of the set.	CT201 (ANT Trimmer)	1. Adjust for maximum output. 2. Repeat steps (3) and (4) until the frequency correctly matches the dial display.

## FM TUNER ADJUSTMENT

### \* Equipment used

1. FM signal generator (FM-SG)
2. Stereo modulator
3. Distortion analyser
4. Oscilloscope
5. AC and DC electronic voltmeters (VTVM).
6. Frequency counter (19kHz and 108MHz measurable).
7. FM 300Ω dummy antenna (Fig. 12).

### \* Preparation of FM signal generator (FM-SG)

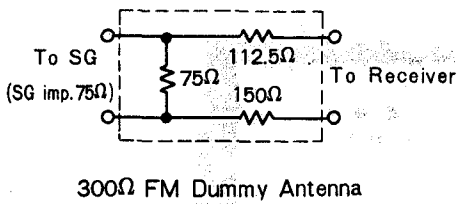
1. Connect stereo modulator to FM-SG.
2. Apply SG output to antenna terminal of the set through 300Ω FM dummy antenna.
3. The standard input of the set is 60dB (1mV), 400Hz 100% modulation (Because of using dummy antenna, SG output must be 12dB plus (IHF). That is, when input is 60dB, SG output is to be 72dB).

### \* Setting

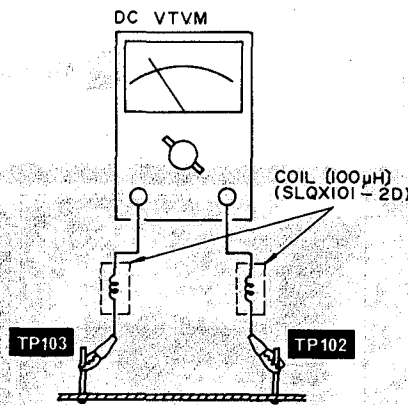
1. Set IF band selector to "normal" position.
2. Set broadcast selector to "FM" position.
3. Other setting are the same as in AM adjustment.

Step No.	FM SIGNAL GENERATOR		DISPLAY FREQUENCY	INDICATOR	ADJUSTMENT POINTS	REMARKS
	CONNECTION	FREQUENCY				
<b>FM-IF ADJUSTMENT</b>						
5	—	No-Signal	Frequency of non-interference	Connect DC VTVM between <b>TP102</b> and <b>TP103</b> through choke coil. (Refer to Fig. 13)	T101 (Discr. IFT)	Adjust T101 core so that voltage measured in signal mode is 0V in 300mV range.
<b>FM RF ADJUSTMENT</b>						
6	—	No-Signal	87.9MHz	Connect DC VTVM to <b>TP1</b> terminal.	L9 (OSC Coil)	Adjust L9 (OSC Coil) to 4.0V.
7	Connect FM-SG to FM antenna terminal through 300Ω FM dummy antenna.	90.1MHz (100% Mod. with 400Hz) weak input	90.1MHz	Connect scope to "Speaker" terminals of the set.	L5 (RF DET Coil 1st) L6 (RF DET Coil, 2nd) L3 (ANT Coil) T1 (FM IFT)	<ol style="list-style-type: none"> <li>1. Add weak input so that noise is included in the output wave form.</li> <li>2. Make the adjustment so that the output wave form is vertically symmetrical. Refer to Fig. 14.</li> <li>3. Repeat the steps (7) and (8) until the frequency correctly matches the broadcasts frequency display.</li> </ol>
8		106.1MHz (100% Mod. with 400Hz)	106.1MHz	Connect scope to "Speaker" terminals of the set.	CT1 (OSC Trimmer)	
<b>FM MONO DISTORTION ADJUSTMENT</b>						
9	Connect FM-SG to FM antenna terminal through 300Ω FM dummy antenna. (Apply 60dB to antenna terminal)	100.1MHz (100% Mod. with 400Hz)	100.1MHz	Connect distortion analyser to "Speaker" terminals of the set.	T101, T102 (Discr. IFT)	<ol style="list-style-type: none"> <li>1. Set the FM muting/FM mode switch to "on/auto" and then check step (5) in no signal mode.</li> <li>2. If it is deflected, readjust of T101.</li> <li>3. Adjust T102 core so that distortion of right and left channels are minimized.</li> </ol>
<b>FM MUTING LEVEL ADJUSTMENT</b>						
10	Connect FM-SG to FM antenna terminal through 300Ω FM dummy antenna. (Apply 16dB to antenna terminal)	100.1MHz (100% Mod. with 400Hz)	100.1MHz	Connect AC VTVM or scope to "Speaker" terminals of the set.	VR101 (Muting level)	<ol style="list-style-type: none"> <li>1. Set the FM muting/FM mode switch to "off/mono".</li> <li>2. With the FM muting/FM mode switch set to "on/auto", adjust VR101 so that the output is given with muting condition released.</li> </ol>
<b>SIGNAL METER LED (Light Emitting diode) INDICATOR ADJUSTMENT</b>						
11	Connect FM-SG to FM antenna terminal through 300Ω FM dummy antenna. (Apply 45dB to antenna terminal)	100.1MHz (100% Mod. with 400Hz)	100.1MHz	Signal meter LED	VR102 (Meter level)	Adjust VR102 while observing the signal meter LED so that the indicator at 5th is about to turn on.
<b>FM MPX PILOT (VCO) ADJUSTMENT</b>						
12	Connect FM-SG to FM antenna terminal through 300Ω FM dummy antenna. (Monaural signal)	100.1MHz (Non-modulated)	100.1MHz	Connect frequency counter to <b>TP301</b> terminal.	VR302 (VCO)	<ol style="list-style-type: none"> <li>1. Set the FM muting/FM mode switch to "on/auto".</li> <li>2. Adjust VR302 to 19kHz ± 30Hz.</li> </ol>

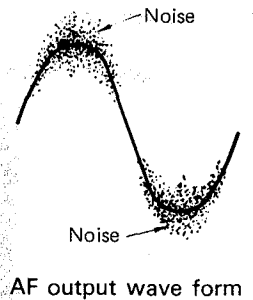
Step No.	FM SIGNAL GENERATOR		DISPLAY FREQUENCY	INDICATOR	ADJUSTMENT POINTS	REMARKS
	CONNECTION	FREQUENCY				
<b>STEREO DISTORTION ADJUSTMENT</b>						
13	Connect FM-SG to FM antenna terminal through 300Ω FM dummy antenna. (Pilot 10% Mod. stereo signal)	100.1MHz (100% Mod. with 400Hz (L mode))	100.1MHz	Connect distortion analyser to "Speaker" terminals of the set.	T1 (IFT)	<ol style="list-style-type: none"> <li>1. Set the FM muting/FM mode switch to "on/auto".</li> <li>2. Re-adjust the already adjusted T1 within ± 90° from the preset core position so that the distortion of L ch is minimized.</li> <li>3. Re-check the steps 5, 9 and 10.</li> </ol>
<b>SEPARATION ADJUSTMENT (Normal IF band)</b>						
14	Connect FM-SG to FM antenna terminal through 300Ω FM dummy antenna. (Pilot 10% Mod. stereo signal)	100.1MHz (100% Mod. with 1kHz) (L or R mode)	100.1MHz	Connect AC VTVM to "Speaker" terminals of the set.	VR301 (Normal IF separation)	<ol style="list-style-type: none"> <li>1. Set the IF band selector to "normal".</li> <li>2. Set the FM muting/FM mode switch to "on/auto".</li> <li>3. Adjust VR301 so that R output is minimized when stereo modulator is in L (L ch. modulation) mode and that L output is minimized in R mode.</li> </ol>
<b>SEPARATION ADJUSTMENT (Narrow IF band)</b>						
15	Connect FM-SG to FM antenna terminal through 300Ω FM dummy antenna. (Pilot 10% Mod. stereo signal)	100.1MHz (100% Mod. with 1kHz) (L or R mode)	100.1MHz	Connect AC VTVM to "Speaker" terminals of the set.	VR303 (Narrow IF separation)	<ol style="list-style-type: none"> <li>1. Set the IF band selector to "narrow".</li> <li>2. Set the FM muting/FM mode switch to "on/auto".</li> <li>3. Adjust VR303 so that R output is minimized when stereo modulator is in L (L ch. modulation) mode and that L output is minimized in R mode.</li> </ol>



**Fig. 12**

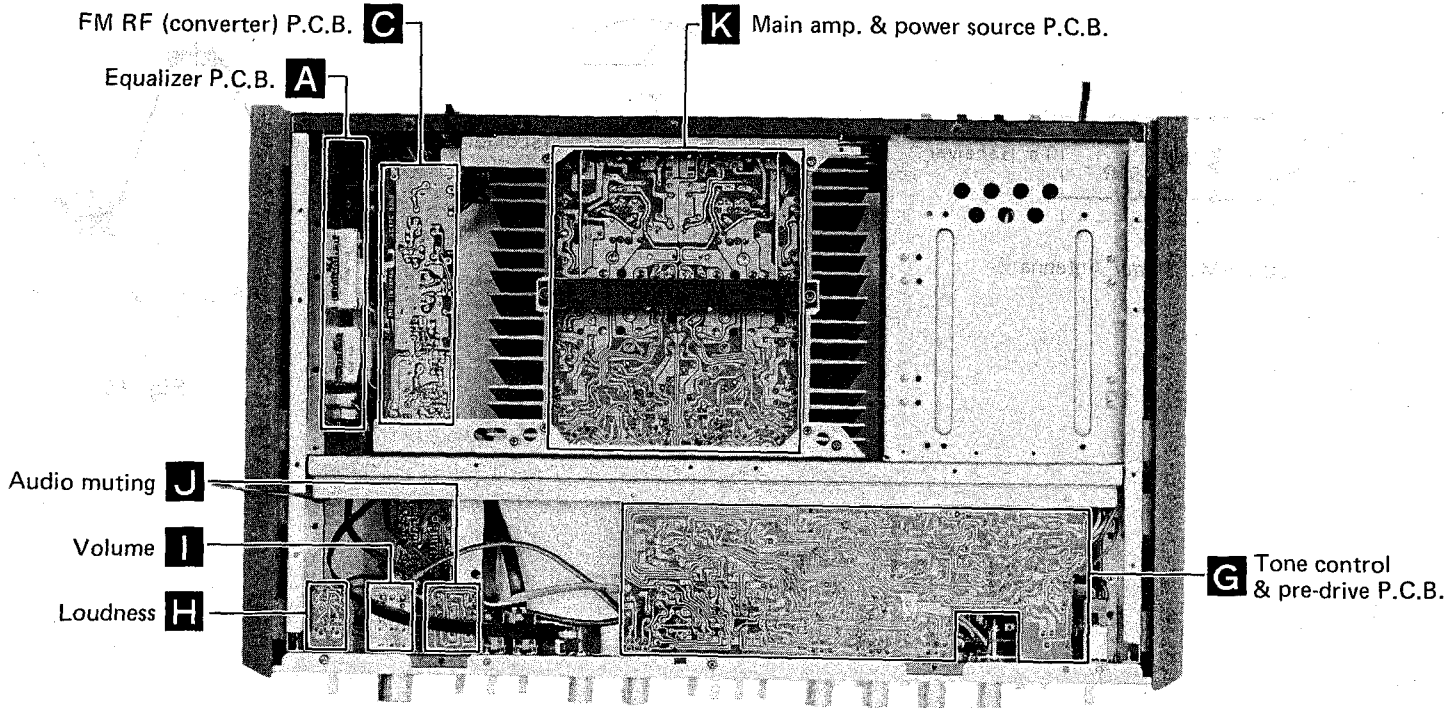
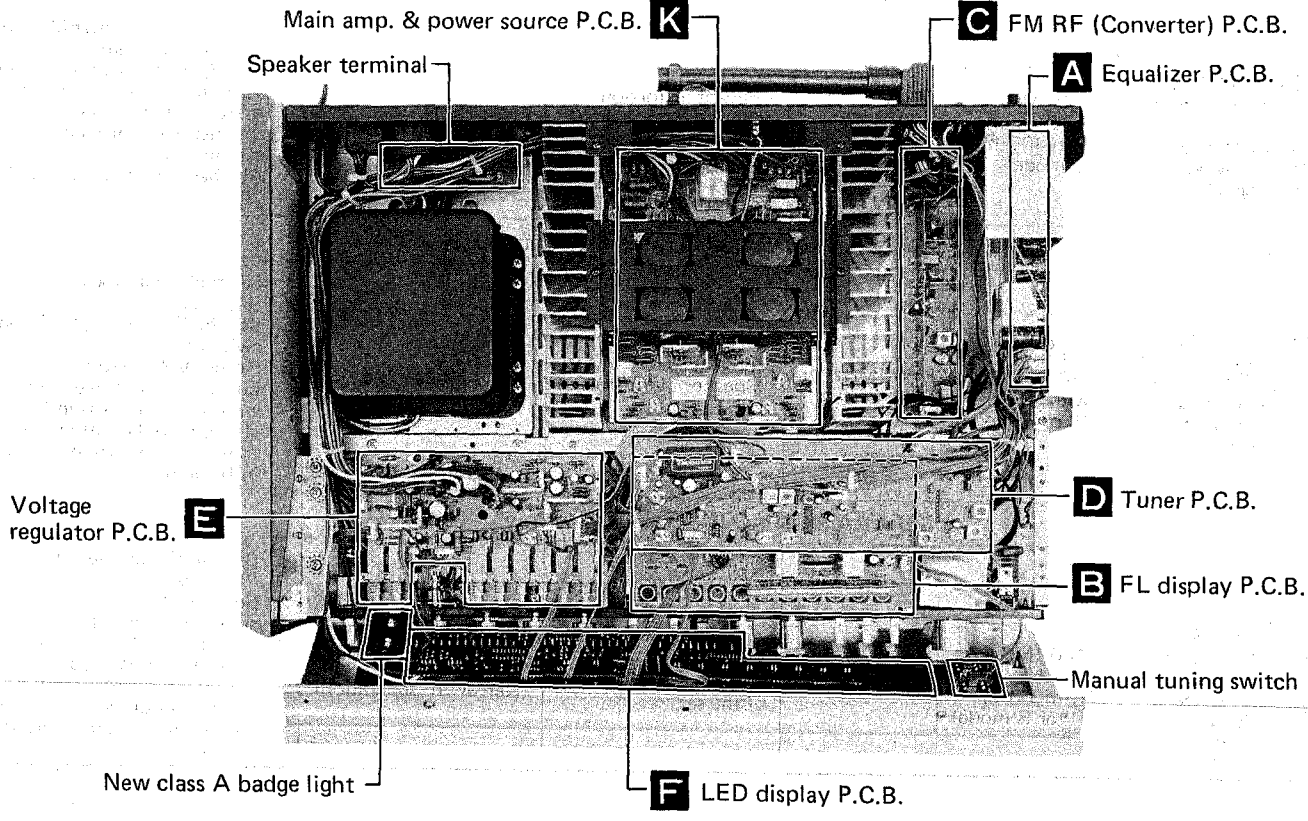


**Fig. 13**



**Fig. 14**

**LOCATION OF P.C.B.**



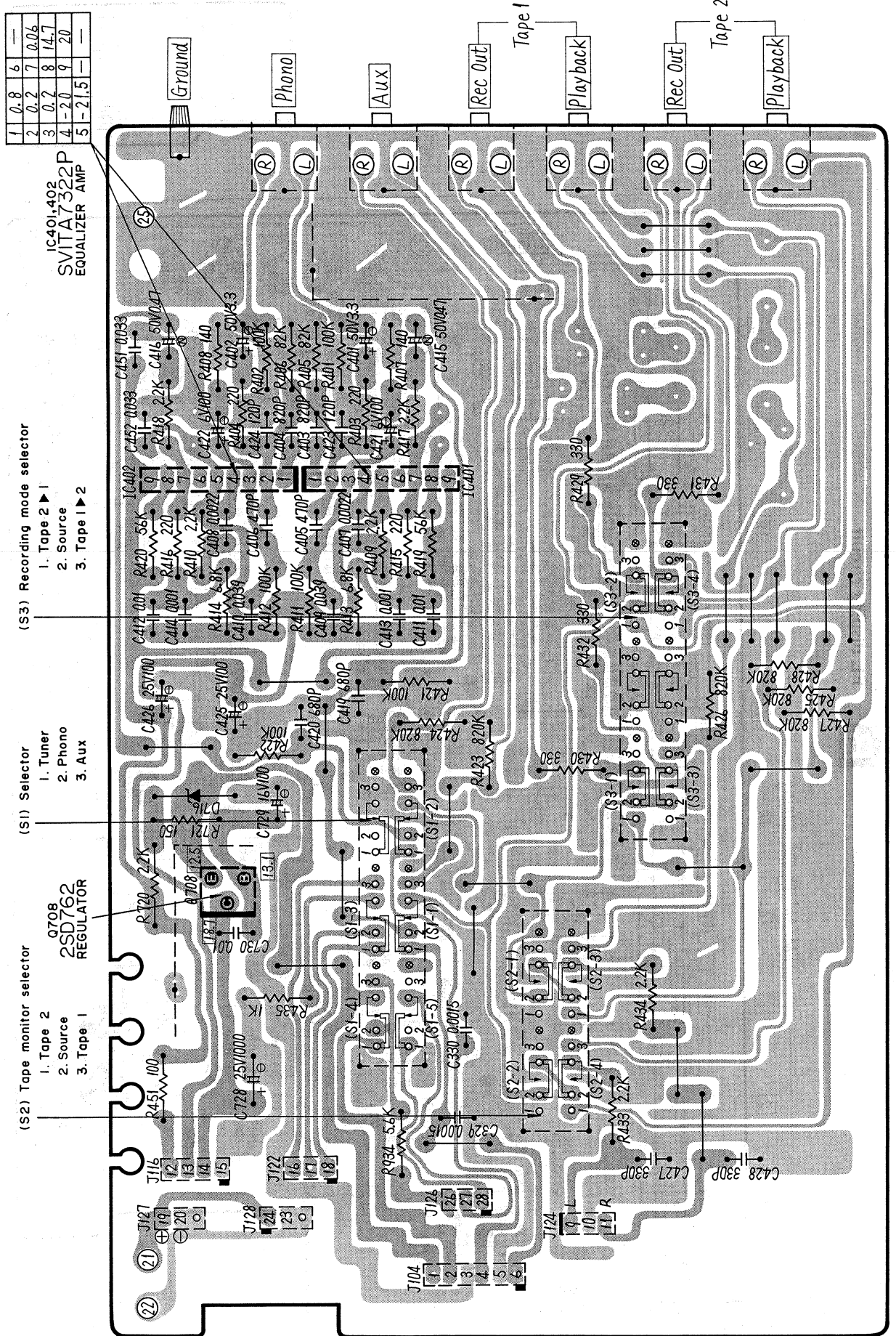
Bottom view

PRINTED CIRCUIT BOARDS

Ground (Earth) lines

Equalizer circuit

A



1	0.8	6	—
2	0.2	7	0.06
3	0.2	8	14.7
4	-2.0	9	2.0
5	-21.5	—	—

IC401.402  
SVTAT7322P  
EQUALIZER AMP

(S3) Recording mode selector  
1. Tape 2  
2. Source  
3. Tape 1

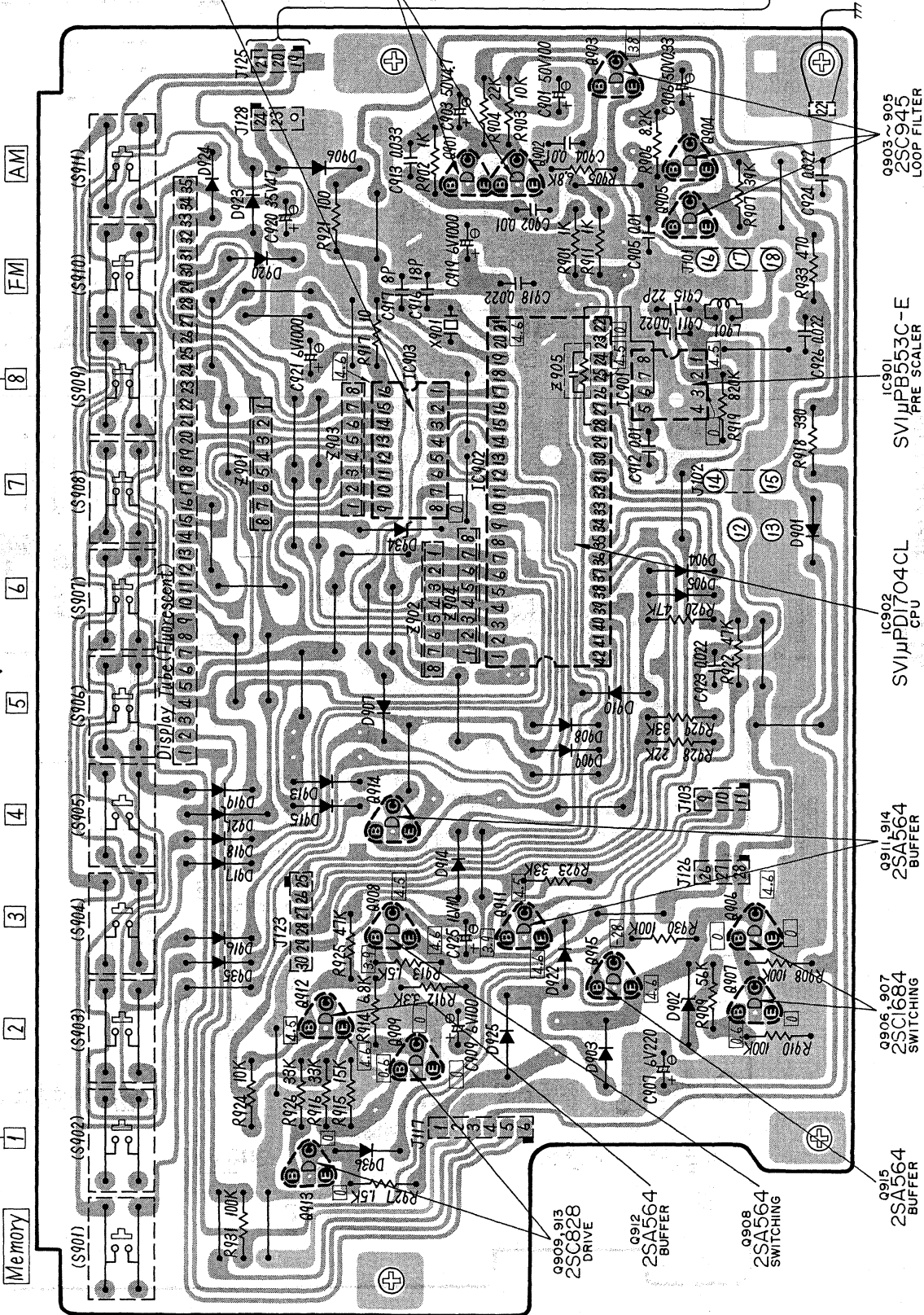
(S1) Selector  
1. Tuner  
2. Phono  
3. Aux

(S2) Tape monitor selector  
1. Tape 2  
2. Source  
3. Tape 1

Q708  
2SD762  
REGULATOR

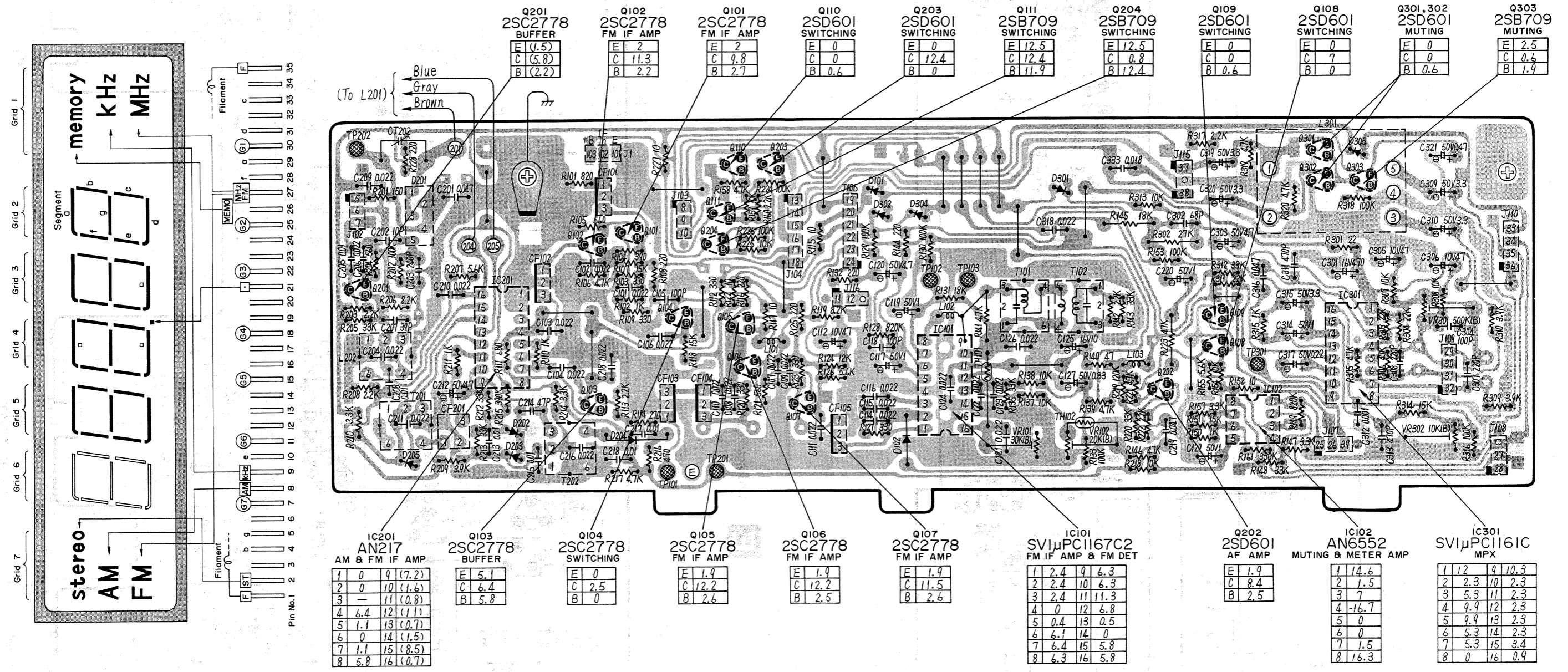
B FL display circuit

FM/AM preset tuning



**D** Tuner circuit

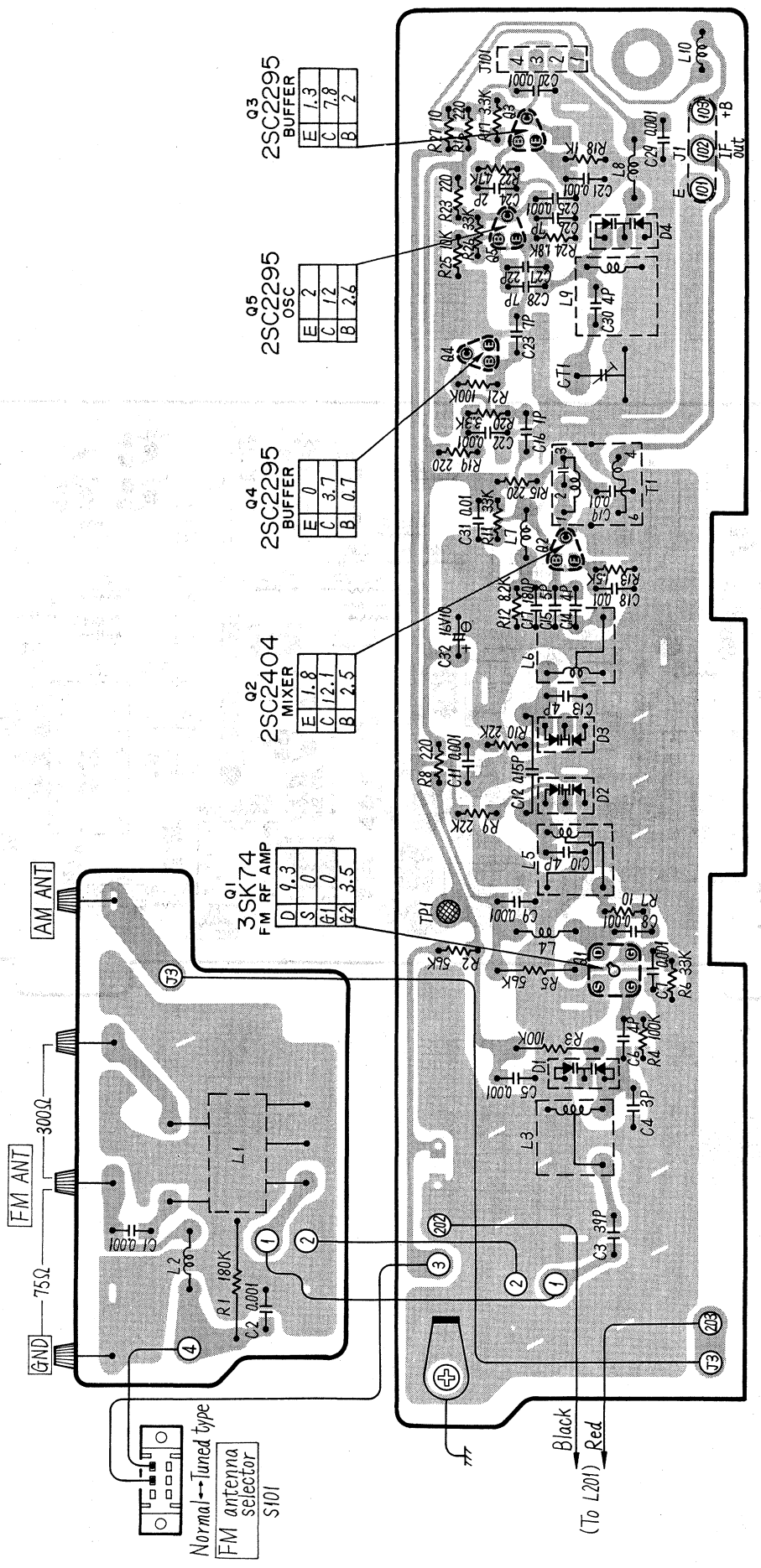
• Fluorescent Display Tube (FL)



<b>Q201</b> 2SC2778 BUFFER	<b>Q102</b> 2SC2778 FM IF AMP	<b>Q101</b> 2SC2778 FM IF AMP	<b>Q110</b> 2SD601 SWITCHING	<b>Q203</b> 2SD601 SWITCHING	<b>Q111</b> 2SB709 SWITCHING	<b>Q204</b> 2SB709 SWITCHING	<b>Q109</b> 2SD601 SWITCHING	<b>Q108</b> 2SD601 SWITCHING	<b>Q301,302</b> 2SD601 MUTING	<b>Q303</b> 2SB709 MUTING
E (1.5)	E 2	E 2	E 0	E 0	E 12.5	E 12.5	E 0	E 0	E 0	E 2.5
C (5.8)	C 11.3	C 9.8	C 12.4	C 12.4	C 12.4	C 0.8	C 0	C 7	C 0	C 0.6
B (2.2)	B 2.2	B 2.7	B 0.6	B 0	B 11.9	B 12.4	B 0.6	B 0	B 0.6	B 1.9

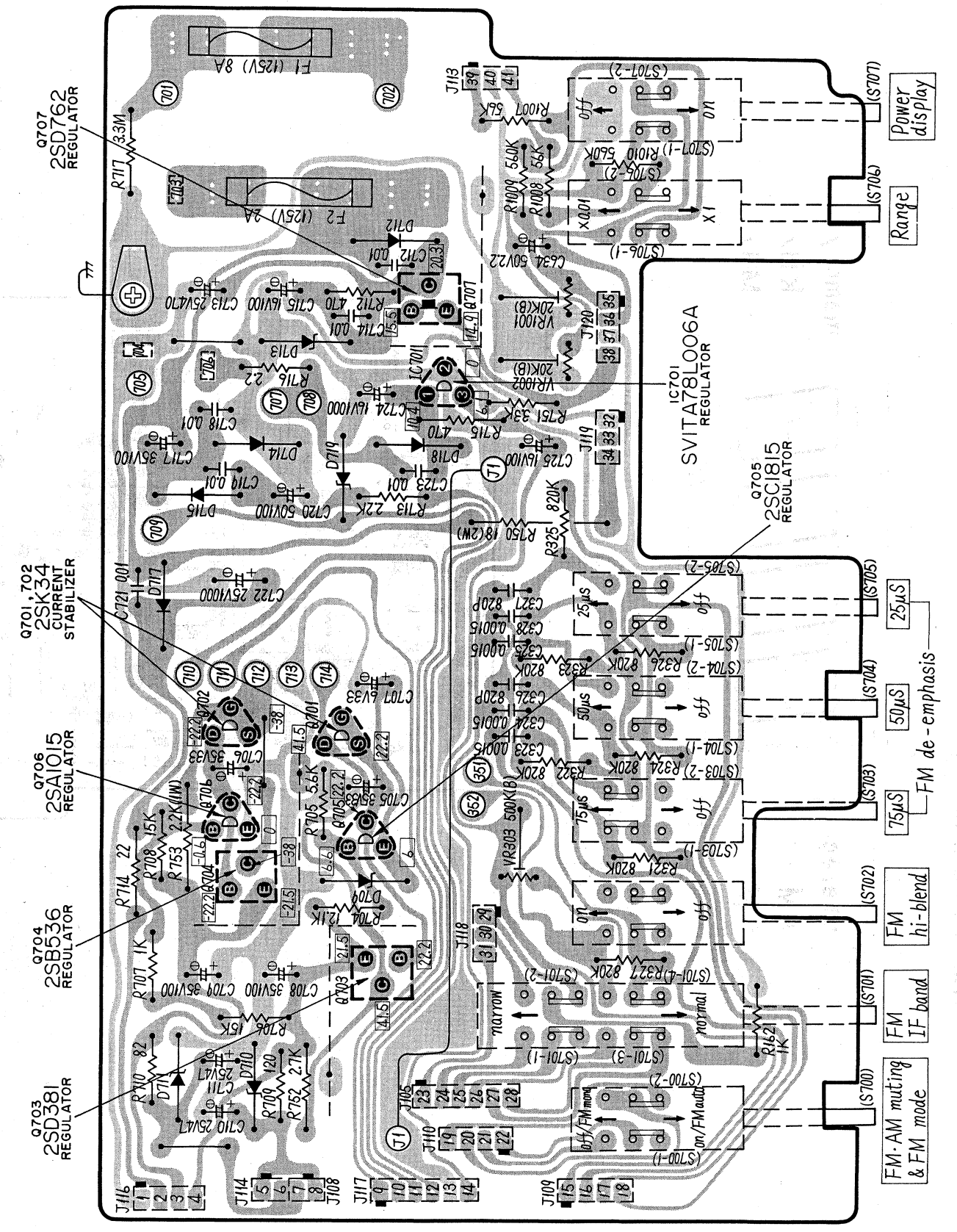
<b>IC201</b> AN217 AM & FM IF AMP	<b>Q103</b> 2SC2778 BUFFER	<b>Q104</b> 2SC2778 SWITCHING	<b>Q105</b> 2SC2778 FM IF AMP	<b>Q106</b> 2SC2778 FM IF AMP	<b>Q107</b> 2SC2778 FM IF AMP	<b>IC101</b> SV1μPC1167C2 FM IF AMP & FM DET	<b>Q202</b> 2SD601 AF AMP	<b>IC102</b> AN6552 MUTING & METER AMP	<b>IC301</b> SV1μPC1161C MPX
1 0 9 (7.2)	E 5.1	E 0	E 1.9	E 1.9	E 1.9	1 2.4 9 6.3	E 1.9	1 14.6	1 12 9 10.3
2 0 10 (1.6)	C 6.4	C 2.5	C 12.2	C 12.2	C 11.5	2 2.4 10 6.3	C 8.4	2 1.5	2 2.3 10 2.3
3 - 11 (0.8)	B 5.8	B 0	B 2.6	B 2.5	B 2.6	3 2.4 11 11.3	B 2.5	3 7	3 5.3 11 2.3
4 6.4 12 (1.1)						4 0 12 6.8		4 -16.7	4 9.9 12 2.3
5 1.1 13 (0.7)						5 0.4 13 0.5		5 0	5 9.9 13 2.3
6 0 14 (1.5)						6 6.1 14 0		6 0	6 5.3 14 2.3
7 1.1 15 (8.5)						7 6.4 15 5.8		7 1.5	7 5.3 15 3.4
8 5.8 16 (0.7)						8 6.3 16 5.8		8 16.3	8 0 16 0.9

FM RF circuit



SA-818 SA-818

Voltage regulator circuit for tuner and pre-amplifier

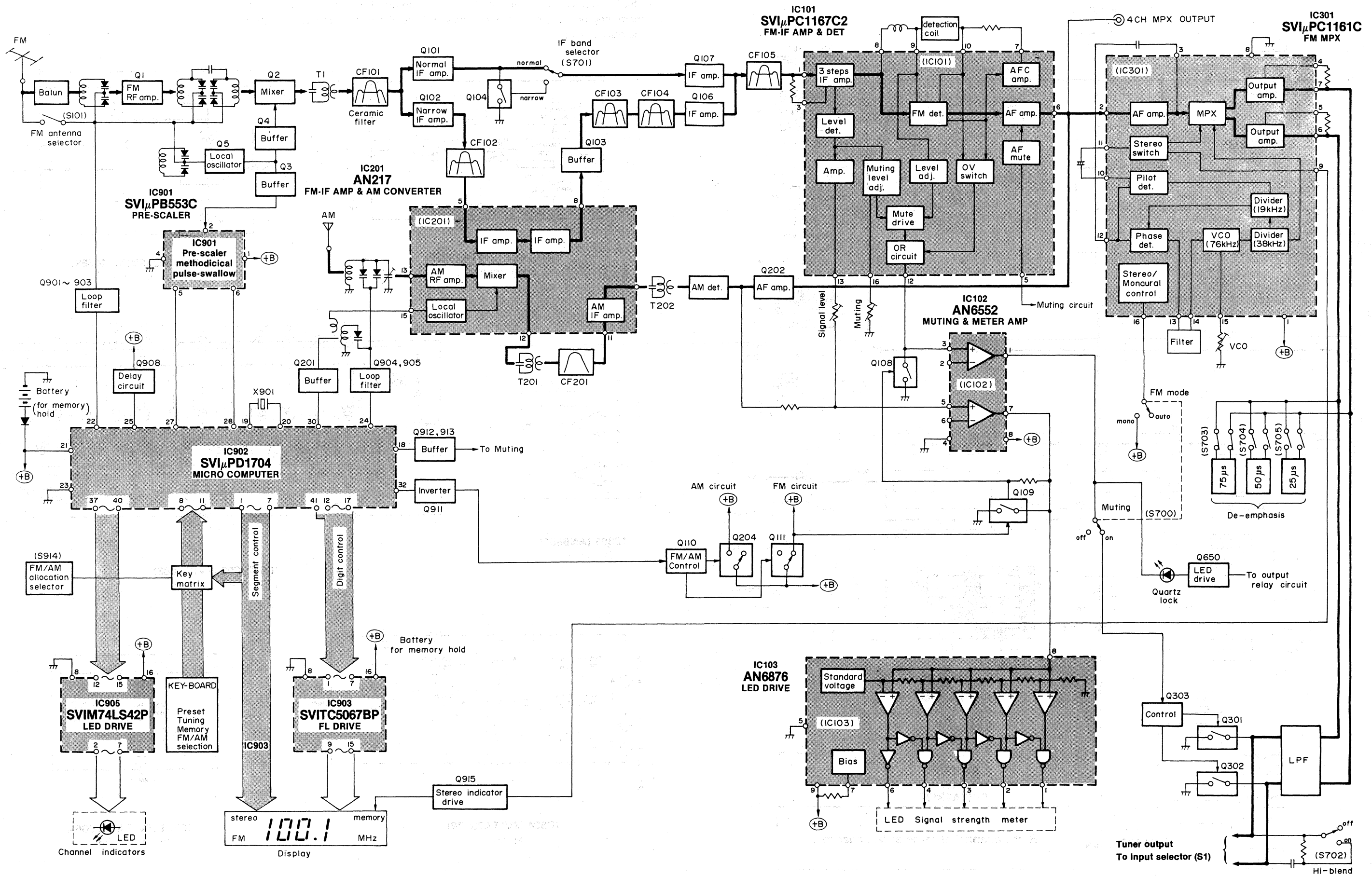




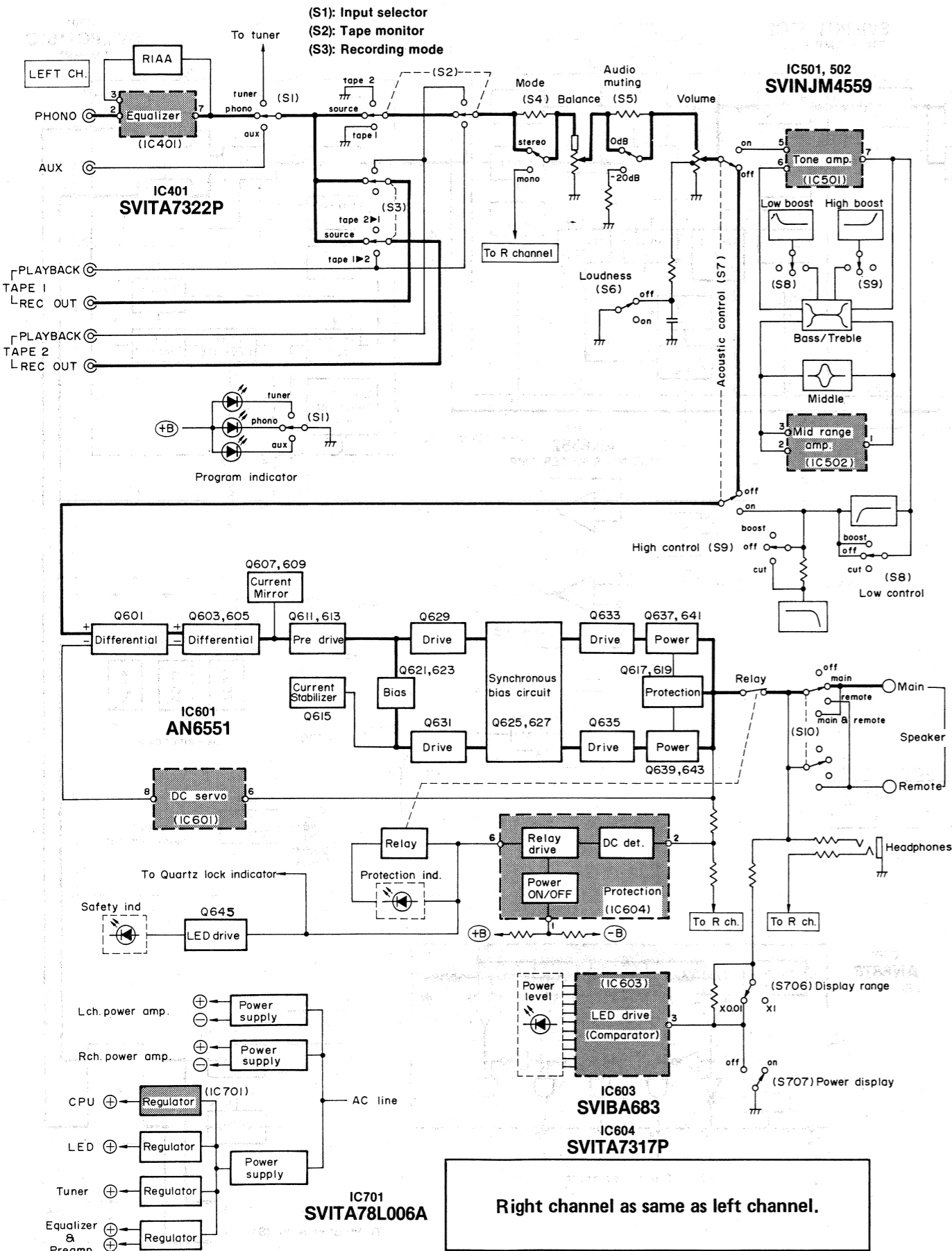




■ BLOCK DIAGRAM (Tuner and FL Display)

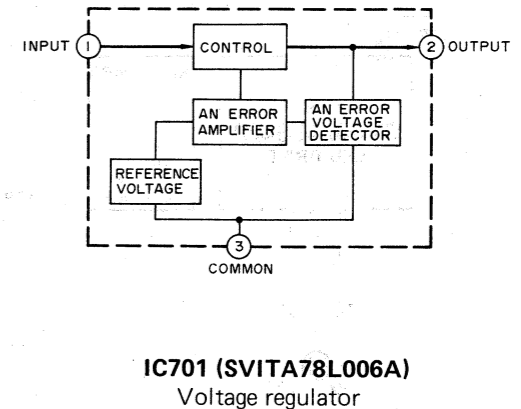
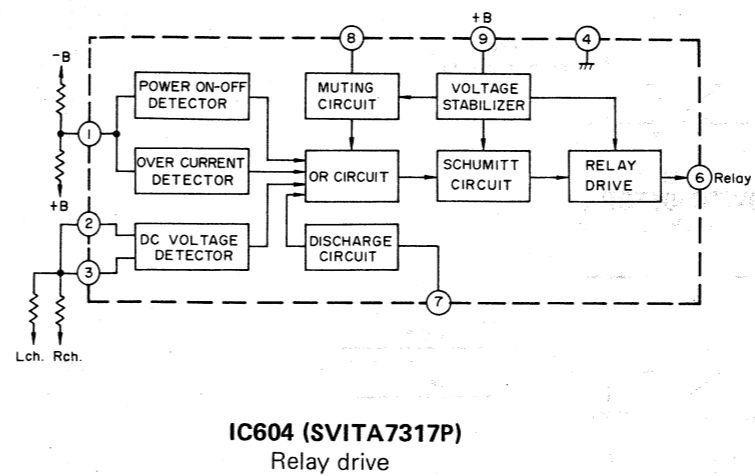
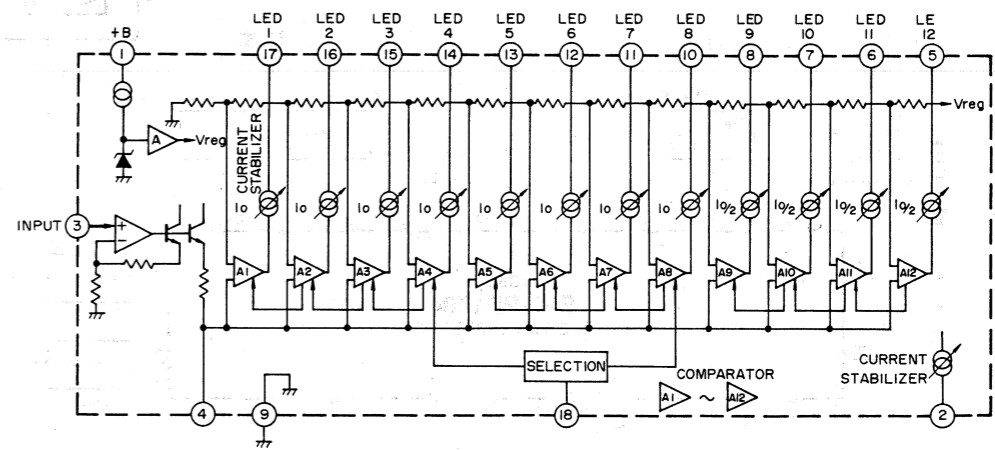
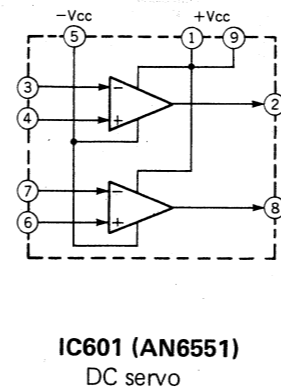
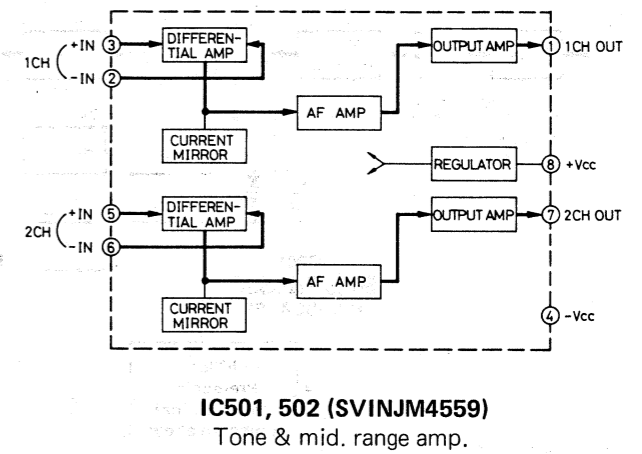
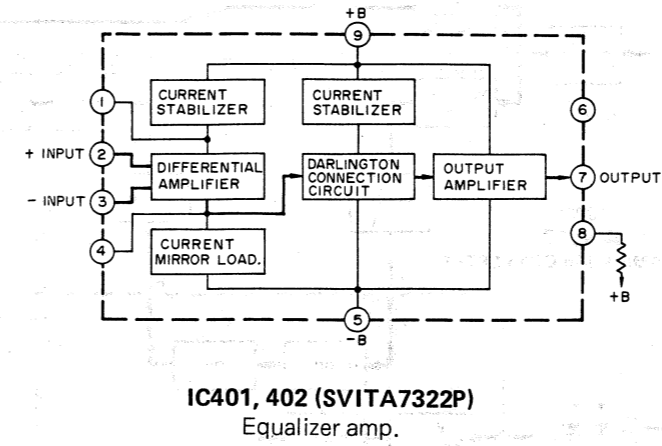


**BLOCK DIAGRAM** (Amplifier and Tone control)



**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.



## HOW TO REPLACE

### (RESISTOR, CAPACITOR)

1. Remove solder from chip by using a soldering iron.
2. Remove chip with tweezers, holding the chip by the leads, pulling in the direction of the arrow as shown in fig. 1.
3. Solder circuit board first in the direction of the arrow as shown in fig. 1.

#### Notes:

1. Do not use chip again which has been removed from circuit board.
2. Use lead wire with insulator chip jumper.

Color	Ch
Black	Ch
Brown, White or Green	

## SA-818 SA-818

## REPLACEMENT PARTS LIST . . . . . Electrical Parts

- Notes:**
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
  2.  $\Delta$  indicates that only parts specified by the manufacturer be used for safety.
  3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

#### Areas

- \* [M] is available in U.S.A.
- \* [MC] is available in Canada.

Ref. No.	Part No.	Part Name & Description
<b>INTEGRATED CIRCUITS</b>		
IC101	SVIUPC1167C2	IC, FM IF Amp. & FM Detector
IC102	AN6552F	IC, Muting & LED Meter Amplifier
IC103	AN6876	IC, LED Driver
IC201	AN217P-BB	IC, AM & FM IF Amplifier
IC301	SVIUPC1161C	IC, FM Multiplex
IC401, 402	SVITA7322P	IC, Equalizer Amplifier
IC501, 502	SVINJM4559DS	IC, Tone & Mid Range Amplifier
IC601	AN6551	IC, DC Servo
IC602, 603	SVIBA683	IC, LED Power Meter Driver
IC604	SVITA7317P	IC, Relay Driver
IC701	SVITA78L006A	IC, Voltage Regulator
IC901	SVIUPB553C-E	IC, Pre-Scaler
IC902	SVIUPD1704CL	IC, Micro-Computer
IC903	SVITC5067BP	IC, FL Driver
IC905	SVIM74LS42P	IC, Decoder
<b>TRANSISTORS</b>		
Q1	3SK74-L1	Transistor, FM RF Amplifier [FET]
Q2	2SC2404	Transistor, FM Mixer (Chip)
Q3, 4, 5	2SC2295	Transistor, Buffer & FM Oscillator (Chip)
Q101, 102, 103	2SC2778	Transistor, FM IF Amplifier, Buffer & Switching (Chip)
Q104, 105, 106		
Q107, 201		
Q108, 109, 110, 202, 203	2SD601	Transistor, Switching & AF Amplifier (Chip)
Q111, 204, 303	2SB709	Transistor, Switching (Chip)
Q301, 302	2SD601	Transistor, Mute Switching (Chip)
Q601, 602	2SK109-D	Transistor, Differential Amplifier [FET] (Use in ranks D or E)
Q603, 604, 605	2SC2631-R	Transistor, Differential Amplifier (Use in ranks Q, R or S)
Q606		
Q607, 608, 609, 610	2SA992	Transistor, Current Mirror
Q611, 612	2SA921-T	Transistor, Pre-Driver (Use in ranks R, S or T)
Q613, 614	2SA1124-R	Transistor, Pre-Driver (Use in ranks R or S)
Q615, 616	2SC2632-R	Transistor, Current Stabilizer (Use in ranks R or S)
Q617, 618	2SC1815-Y	Transistor, Protection (Use in ranks Y or O)
Q619, 620	2SA1015-Y	Transistor, Protection (Use in ranks Y or O)
Q621, 622, 625, 626	2SD661-S	Transistor, Ica & Synchronous Bias (Use in ranks R or S)
Q623, 624, 627, 628	2SB745-S	Transistor, Ica & Synchronous Bias (Use in ranks R or S)
Q629, 630	2SC2632-R	Transistor, Driver (Use in ranks R or S)
Q631, 632	2SA1124-R	Transistor, Driver (Use in ranks R or S) (Use pair ranks as same as Q629 ~ 631 and Q632)
Q633, 634	2SC1913-R	Transistor, Driver (Use in ranks R or Q)
Q635, 636	2SA913-R	Transistor, Driver (Use in ranks R or Q) (Use pair ranks as same as Q633 ~ 635 and Q636)
Q637, 641	2SD845-R	Transistor, Power (Use in ranks R or O)
Q639, 643	2SB755-R	Transistor, Power (Use in ranks R or O) (Use pair ranks as same as Q637, 639, 641 and Q643)
Q638, 642	2SD845-R	Transistor, Power (Use in ranks R or O)
Q640, 644	2SB755-R	Transistor, Power (Use in ranks R or O) (Use pair ranks as same as Q638, 640, 642 and Q644)
Q645	2SC1845	Transistor, LED Driver
Q650	2SA666AI-R	Transistor, LED Driver
Q701, 702	2SK34-D1	Transistor, Current Stabilizer [FET]
Q703	2SD381A-L9	Transistor, Regulator

Ref. No.	Part No.	Part Name & Description
Q704	2SB536A-L9	Transistor, Regulator
Q705	2SC1815-Y	Transistor, Regulator (Use in ranks Y or O)
Q706	2SA1015-Y	Transistor, Regulator (Use in ranks Y or O)
Q707, 708	2SD762-O	Transistor, Regulator (Use in ranks O or P)
Q901, 902, 903	2SC945-P2	Transistor, Loop Filter
Q904, 905		
Q906, 907	2SC1684-R	Transistor, Switching
Q908, 911, 912	2SA666AI-R	Transistor, Switching & Buffer
Q914, 915		
Q909, 913	2SC1328-T	Transistor, Driver
<b>DIODES</b>		
D1, 2, 3, 4	SVDBB204	Diode, Variable Capacitor (for FM)
D101, 203, 205, 302, 304, 305	MA151K	Diode, AGC & Switching
D102	MA162A	Diode
D201	SVDBB113	Diode, Variable Capacitor (for AM)
D202, 301	MA162A	Diode, AGC & Switching (Product Part No. : MA151A)
D103~107, 110	LN217RP	Light Emitting Diode, Red
401, 402, 403		
627, 628, 641		
642, 643, 644		
653 ~ 656, 926 ~ 933		
D108, 109, 629, 630, 632, 633 ~ 636, 645 ~ 648	LN317GP	Light Emitting Diode, Green
D204, 906		
D607, 608	2-OA99	Diode, AM Detector
D601 ~ 606	MA27B	Diode, Current Stabilizer
609 ~ 616, 625, 631	MA162A	Diode
D617 ~ 624	20A90	Diode, Synchronous Bias
D626	SVDSR1K2	Diode, Relay Pulse Killer
D637 ~ 640, 649, 650, 657, 658	LN417YP	Light Emitting Diode, Yellow
D651, 652, 902		
D701 ~ 708	SVDMZ303A	Diode, 3V Zener
D709	SVDS3V40	Rectifier
D710, 711	SVDMZ306B2	Diode, 6V Zener
D712, 714, 715, 717, 718, 925	SVDMZ316A1	Diode, 16V Zener
D713	SVDSR1K2	Rectifier
D716	SVDEQA0115R	Diode, 15V Zener
D719	SVDEQA0113RA	Diode, 13V Zener
D901, 903, 904, 905, 907, 908, 909, 910, 913 ~ 920, 922, 923, 924, 935, 936	SVDMZ336B	Diode, 36V Zener
D921	MA162A	Diode
D934	RVDRD6R2EB	Diode, 6.2V Zener
	SVDMZ327B	Diode, 27V Zener
<b>COLIS and TRANSFORMERS</b>		
L1	SLAA4W1-3	Coil, FM Antenna, Balun
L2, 4, 8	SLQX39G-M	Coil, Choke
L3	SLA4P43	Coil, FM Antenna
L5, 6	SLD4P43	Coil, FM RF Detector
L7	RLQY15G5-Y	Coil, Choke
L9	SLO4P85	Coil, FM Local Oscillator
L10, 101, 103	SLQX101-3M	Coil, Choke
L102	SLQW270-1K	Coil, Choke

Ref. No.	Part No.	Part Name & Description
L201	SLF2D69	Coil, AM
L202	SLO2C25-P	Coil, AM
L301	SLMA1Z3-Z	Coil, Low
L601, 602	SLQY15G-30	Coil, Chc
L901	RLQY25S2	Coil, Chc
L1001	SLQX101-3M	Coil, Chc
T1	SLI4C109	Transferr
T101	SLI4C511-K	Transferr
T102	SLI4C513-K	Transferr
T201	SLI2C127	Transferr
T202	SLI2C413R	Transferr
T701	SLT5R39	Transferr
<b>CERAMIC FILTERS</b>		
CF101, 104, 105	SVFE107MM-A	Ceramic F
CF102, 103	SVFE107MX2-A	Ceramic F
CF201	SVFSFP450H	Ceramic,
<b>CRYSTAL</b>		
X901	SVQ43U452	Crystal, 4
<b>VARIABLE RESISTORS</b>		
VR1	EWFM5AF25B15	Volume C
VR2	EWJEDA090252	Balance C
VR3	EWJFCO090C15	Treble Co
VR4	EWJFCY090530	Base Cont
VR5	EWJFAA090G54	Middle Ct
VR101	EVNK4AA00B34	Muting Le
VR102	EVNM4AA00B24	Signal LE
VR301	EVNM4AA00B55	Separatio
VR302	EVNM4AA00B14	PLL MPX
VR303	EVNK4AA00B55	Narrow B.
VR601 ~ 604	EVNM4AA00B13	Power Arr
VR1001, 1002	EVNM4AA00B24	Power LE
VR1003, 1004	EVNM4AA00B52	Power LE
<b>VARIABLE CAPACITORS</b>		
CT1	ECV1Z06X32E	Trimmer,
CT201	SVCTY121B269	Trimmer,
<b>THERMISTERS</b>		
TH101, 102	ERTD2FHL103S	Thermiste
601, 602		
<b>LAMP</b>		
PL1	XAM43P	Lamp, Ne
<b>FUSES</b>		
F1	XBA1F80NU14	Fuse, Pow
F2	XBA1F20NU14	Fuse, Pow
<b>COMPONENT COMBINATIONS</b>		
Z701 ~ 704	EXRFS203ZS	Componen
Z901, 902	EXBP87104K	Componen
Z903, 904	EXFP7331M	Componen
Z905	EXRP182K104C	Componen

# REPLACE CHIPS

## R, CAPACITOR AND JUMPER)

er from chip by using solder sucker.  
p with tweezers by rotating it while remov-  
shown in fig. 1.  
it board first and then solder chip in the  
the arrow as shown in fig. 2.

chip again which is removed from printed  
e with insulator for replacement instead of

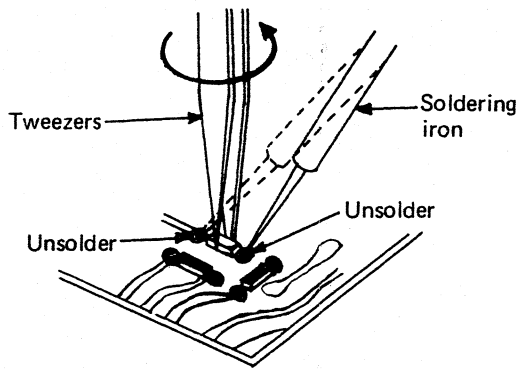


Fig. 1

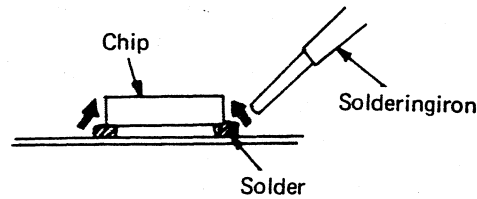


Fig. 2

### • Note for replacing chips

1. Do not heat chips more than three seconds.
2. Be careful not to damage the electrical leads.
3. Use soldering iron (less than 600°C) when replacing chips.

### • Precautions for repair

When frequency is not indicated, use a signal generator, driver, digit circuit, and micro-computer by oscilloscope.  
In this case, take care not to allow voltage terminals or application of voltage to IC terminals.

	Original Parts Name
	Chip Resistor and Jumper
Green	Chip Capacitor

Part No.	Part Name & Description
D69	Coil, AM Ferrite Bar Antenna
C25-P	Coil, AM Local Oscillator
123-Z	Coil, Low Pass Filter
15G-30	Coil, Choke
25S2	Coil, Choke
101-3M	Coil, Choke
109	Transformer, FM IF
511-K	Transformer, FM IF, Discriminator
513-K	Transformer, FM IF, Discriminator
127	Transformer, AM IF
413R	Transformer, AM IF
R39	Transformer, Power Source
107MM-A	Ceramic Filter, FM 10.7MHz, Red
107MX2-A	Ceramic Filter, FM 10.7MHz, Red
FP450H	Ceramic, Filter, AM 450kHz
BU452	Crystal, 4.5MHz, Counter Oscillator
SAF25B15	Volume Control, 100kΩ (B)
DA090252	Balance Control, 200kΩ (BH)
CO090C15	Treble Control, 100kΩ (C) Special
YO090530	Bass Control, 100kΩ (C) Special
AA090G54	Middle Control, 50kΩ (G)
4AA00B34	Muting Level Adjustment, 30kΩ (B)
4AA00B24	Signal LED Meter Adjustment, 20kΩ (B)
4AA00B55	Separation Adjustment, 500kΩ (B)
4AA00B14	PLL MPX Adjustment, 10kΩ (B)
4AA00B55	Narrow Band Separation Adjustment, 500kΩ (B)
4AA00B13	Power Amplifier Adjustment, 1kΩ (B)
4AA00B24	Power LED Meter Adjustment, 20kΩ (B)
4AA00B52	Power LED Meter Adjustment, 500Ω (B)
W06X32E	Trimmer, FM Local Oscillator
121B269	Trimmer, AM Antenna
FHL103S	Thermister, Thermal Compensation, 10kΩ
P	Lamp, New Class A Light, 12.6V 0.3A
80NU14	Fuse, Power Source, 8A (125V)
20NU14	Fuse, Power Source, 2A (125V)
ONS	
203ZS	Component Combination, 0.01μF (X2)
7104K	Component Combination, 100kΩ (X7)
331M	Component Combination, 330pF (X7)
82K104C	Component Combination, 0.0018μF & 100kΩ

Ref. No.	Part No.	Part Name & Description
<b>SWITCHES</b>		
S1	ESA26143	Switch, Selector
S2	ESA2631	Switch, Tape Monitor
S3	ESA26521	Switch, Recording Mode
S4, 5, 6	SSL149	Switch, Mode/Muting/Loudness
S7	SSL153	Switch, Acoustic Control
S8, 9	SSL159	Switch, High & Low Boost/Cut
S10	SSR145-1	Switch, Speaker
S11	SSL133	Switch, Power Source
S101, 914	ESD14116	Switch, FM Antenna/Allocation
S700 ~ 705	SSH621	Switch, FM De-emphasis 25μs/50μs/75μs/Hi-Blend/IF Band/Muting
S706, 707	SSH283	Switch, Power Display/Range
S901 ~ 913	SSG1	Switch, Memory/Preset/FM-AM/Manual
<b>FLUORESCENT DISPLAY TUBE</b>		
FL	SAD7M09ZA	Fluorescent Display Tube
<b>RELAY</b>		
RLY1	SSY19-1	Relay, Speaker Output
<b>RESISTORS</b>		
R1	ERO50CKF1823	Metal Film 182kΩ, 1/2W, ±1%
R2	RRD18XK563	Chip, 56kΩ, 1/8W, ±10%
R3	ERD25TJ104	Carbon, 100kΩ, 1/4W, ±5%
R4	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R5	ERD25TJ563	Carbon, 56kΩ, 1/4W, ±5%
R6	RRD18XK333	Chip, 33kΩ, 1/4W, ±10%
R7	RRD18XK100	Chip, 10kΩ, 1/8W, ±10%
R8	RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R9, 10	RRD18XK223	Chip, 22kΩ, 1/8W, ±10%
R11	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R12	RRD18XK822	Chip, 8.2kΩ, 1/8W, ±10%
R13	RRD18XK152	Chip, 1.5kΩ, 1/8W, ±10%
R15, 16	RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R17	RRD18XK332	Chip, 3.3kΩ, 1/8W, ±10%
R18	RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R19	RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R20	RRD18XK332	Chip, 3.3kΩ, 1/8W, ±10%
R21	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R22	RRD18XK472	Chip, 4.7kΩ, 1/8W, ±10%
R23	RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R24	RRD18XK182	Chip, 1.8kΩ, 1/8W, ±10%
R25	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R26	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R27	RRD18XK100	Chip, 10kΩ, 1/8W, ±10%
R101	RRD18XK821	Chip, 820Ω, 1/8W, ±10%
R102	RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R103	RRD18XK331	Chip, 330Ω, 1/8W, ±10%
R104	RRD18XK391	Chip, 390Ω, 1/8W, ±10%
R105	RRD18XK561	Chip, 560Ω, 1/8W, ±10%
R106	RRD18XK472	Chip, 4.7kΩ, 1/8W, ±10%
R107	RRD18XK153	Chip, 15kΩ, 1/8W, ±10%
R108	RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R109	RRD18XK331	Chip, 330Ω, 1/8W, ±10%
R110	RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R111	RRD18XK681	Chip, 680Ω, 1/8W, ±10%
R112	RRD18XK331	Chip, 330Ω, 1/8W, ±10%
R113	RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R114	RRD18XK271	Chip, 270Ω, 1/8W, ±10%
R115	RRD18XK100	Chip, 10kΩ, 1/8W, ±10%
R116	RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R117	RRD18XK100	Chip, 10kΩ, 1/8W, ±10%
R118	RRD18XK153	Chip, 15kΩ, 1/8W, ±10%
R119	RRD18XK822	Chip, 8.2kΩ, 1/8W, ±10%
R120	RRD18XK331	Chip, 330Ω, 1/8W, ±10%
R121	RRD18XK561	Chip, 560Ω, 1/8W, ±10%

Ref. No.	Part No.	Part Name & Description
R122	RRD18XK100	Chip, 10kΩ, 1/8W, ±10%
R123	RRD18XK331	Chip, 330Ω, 1/8W, ±10%
R124	RRD18XK123	Chip, 12kΩ, 1/8W, ±10%
R125	RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R126	RRD18XK562	Chip, 5.6kΩ, 1/8W, ±10%
R127	RRD18XK331	Chip, 330Ω, 1/8W, ±10%
R128	RRD18XK824	Chip, 820kΩ, 1/8W, ±10%
R129, 130	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R131	RRD18XK183	Chip, 18kΩ, 1/8W, ±10%
R132	RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R133	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R135	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R137, 138	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R139	RRD18XK472	Chip, 4.7kΩ, 1/8W, ±10%
R140	RRD18XK470	Chip, 47kΩ, 1/8W, ±10%
R141	ERD25TJ472	Carbon, 4.7kΩ, 1/4W, ±5%
R142	RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R143	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R144	RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R145	ERO25CKF1822	Metal Film, 18.2kΩ, 1/4W, ±1%
R146	RRD18XK473	Chip, 47kΩ, 1/8W, ±10%
R147	RRD18XK332	Chip, 3.3kΩ, 1/8W, ±10%
R148	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R149	RRD18XK824	Chip, 820kΩ, 1/8W, ±10%
R150	RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R151	RRD18XK153	Chip, 15kΩ, 1/8W, ±10%
R152	RRD18XK100	Chip, 10kΩ, 1/8W, ±10%
R153	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R154	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R155	RRD18XK562	Chip, 5.6kΩ, 1/8W, ±10%
R157	RRD18XK332	Chip, 3.3kΩ, 1/8W, ±10%
R158	RRD18XK473	Chip, 47kΩ, 1/8W, ±10%
R159	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R160	RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R161	RRD18XK334	Chip, 330kΩ, 1/8W, ±10%
R162	ERD25FJ102	Carbon, 1kΩ, 1/4W, ±5%
R163	ERD25FJ332	Carbon, 3.3kΩ, 1/4W, ±5%
R201	RRD18XK151	Chip, 15kΩ, 1/8W, ±10%
R202	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R203	RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R204	RRD18XK561	Chip, 560Ω, 1/8W, ±10%
R205	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R206	RRD18XK822	Chip, 8.2kΩ, 1/8W, ±10%
R207	RRD18XK562	Chip, 5.6kΩ, 1/8W, ±10%
R208	RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R209	RRD18XK392	Chip, 3.9kΩ, 1/8W, ±10%
R210	RRD18XK332	Chip, 3.3kΩ, 1/8W, ±10%
R211	RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R212, 213	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R214	RRD18XK332	Chip, 3.3kΩ, 1/8W, ±10%
R215	RRD18XK394	Chip, 390kΩ, 1/8W, ±10%
R216	RRD18XK471	Chip, 470Ω, 1/8W, ±10%
R217	RRD18XK472	Chip, 4.7kΩ, 1/8W, ±10%
R218	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R219	RRD18XK124	Chip, 120kΩ, 1/8W, ±10%
R220	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R221	RRD18XK472	Chip, 4.7kΩ, 1/8W, ±10%
R222	RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R223	ERO25CKF4642	Metal Film 46.4kΩ, 1/4W, ±1%
R224	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R225	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R226	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R227	RRD18XK100	Chip, 10kΩ, 1/8W, ±10%
R228	RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R301	RRD18XK220	Chip, 22Ω, 1/8W, ±10%
R302	ERO25CKF2672	Metal Film 26.7kΩ, 1/4W, ±5%
R303, 304	RRD18XK223	Chip, 22kΩ, 1/8W, ±10%
R305, 306	RRD18XK473	Chip, 47kΩ, 1/8W, ±10%
R307, 308	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R309, 310	RRD18XK392	Chip, 3.9kΩ, 1/8W, ±10%
R311	RRD18XK223	Chip, 22kΩ, 1/8W, ±10%

Ref. No.	Part No.	Part Name & Description
R312	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R313	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R314	RRD18XK153	Chip, 15kΩ, 1/8W, ±10%
R315	RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R316	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R317	RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R318	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R319, 320	RRD18XK472	Chip, 4.7kΩ, 1/8W, ±10%
R321, 322	ERD25TJ824	Carbon, 82kΩ, 1/4W, ±5%
R323, 324	ERD25TJ824	Carbon, 82kΩ, 1/4W, ±5%
R324, 325	ERD25TJ824	Carbon, 82kΩ, 1/4W, ±5%
R326, 327	ERD25TJ824	Carbon, 82kΩ, 1/4W, ±5%
R401, 402	ERO25CKF1003	Metal Film, 100kΩ, 1/4W, ±1%
R403, 404	ERD25FJ221	Carbon, 2.2kΩ, 1/4W, ±5%
R405, 406	ERO25CKF8252	Metal Film, 82kΩ, 1/4W, ±1%
R407, 408	ERO25CKF1400	Metal Film, 14kΩ, 1/4W, ±1%
R409, 410	ERD25FJ222	Carbon, 2.2kΩ, 1/4W, ±5%
R411, 412	ERO25CKF1003	Metal Film, 100kΩ, 1/4W, ±1%
R413, 414	ERD25FJ221	Carbon, 2.2kΩ, 1/4W, ±5%
R415, 416	ERD25FJ221	Carbon, 2.2kΩ, 1/4W, ±5%
R417, 418	ERD25FJ222	Carbon, 2.2kΩ, 1/4W, ±5%
R419, 420	ERD25TJ563	Carbon, 56kΩ, 1/4W, ±5%
R421, 422	ERD25TJ104	Carbon, 10kΩ, 1/4W, ±5%
R423, 424	ERD25TJ824	Carbon, 82kΩ, 1/4W, ±5%
R425, 426	ERD25TJ824	Carbon, 82kΩ, 1/4W, ±5%
R427, 428	ERD25TJ824	Carbon, 82kΩ, 1/4W, ±5%
R429, 430	ERD25FJ331	Carbon, 33kΩ, 1/4W, ±5%
R431, 432	ERD25FJ331	Carbon, 33kΩ, 1/4W, ±5%
R433, 434	ERD25FJ222	Carbon, 2.2kΩ, 1/4W, ±5%
R435	ERD25FJ102	Carbon, 1kΩ, 1/4W, ±5%
R451	ERD25FJ101	Carbon, 1kΩ, 1/4W, ±5%
R501, 502	ERD25TJ224	Carbon, 2.2kΩ, 1/4W, ±5%
R503, 504	ERD25TJ474	Carbon, 47kΩ, 1/4W, ±5%
R505, 506	ERD25TJ102	Carbon, 10kΩ, 1/4W, ±5%
R507, 508	ERD25TJ474	Carbon, 47kΩ, 1/4W, ±5%
R509, 510	ERD25FJ332	Carbon, 33kΩ, 1/4W, ±5%
R511, 512	ERD25FJ681	Carbon, 68kΩ, 1/4W, ±5%
R513, 514	ERD25FJ392	Carbon, 3.9kΩ, 1/4W, ±5%
R517, 518	ERD25FJ332	Carbon, 33kΩ, 1/4W, ±5%
R519, 520	ERD25TJ223	Carbon, 2.2kΩ, 1/4W, ±5%
R521, 522	ERD25TJ393	Carbon, 3.9kΩ, 1/4W, ±5%
R523, 524	ERD25FJ222	Carbon, 2.2kΩ, 1/4W, ±5%
R525, 526	ERD25FJ221	Carbon, 2.2kΩ, 1/4W, ±5%
R527, 528	ERD25FJ122	Carbon, 1.2kΩ, 1/4W, ±5%
R529, 530	ERD25FJ122	Carbon, 1.2kΩ, 1/4W, ±5%
R531, 532	ERD25TJ153	Carbon, 15kΩ, 1/4W, ±5%
R533, 534	ERD25TJ474	Carbon, 47kΩ, 1/4W, ±5%
R535, 536	ERD25TJ824	Carbon, 82kΩ, 1/4W, ±5%
R537, 538	ERD25FJ272	Carbon, 27kΩ, 1/4W, ±5%
R539, 540		

■ VARIABLE RESISTORS

● Note for replacing chips

1. Do not heat chips more than three (3) seconds.
2. Be careful not to damage the electrode of chips.
3. Use soldering iron (less than 60W) and tweezers for replacing chips.

● Precautions for repair

When frequency is not indicated, FL (display tube), FL driver, digit circuit, and micro-computer must be checked by oscilloscope.

In this case, take care not to allow shortcircuit between IC terminals or application of voltage from measuring instrument to IC terminals.

● Alteration of resistance values according to the rotation

Alteration characteristics as shown below are often used. The set at optimum levels, and are used according to the sound volume adjustment; (A) and (C) are for bass and quality adjustment; and (BH) is for the adjustment of sound. In the case of this unit, variable resistor with characteristic angle of 150° (center) is used for bass adjustment. Also, at rotational angle of 150° (center) is used for treble adjustment. Variable resistors are interlocked with characteristics (C) and (A) components.

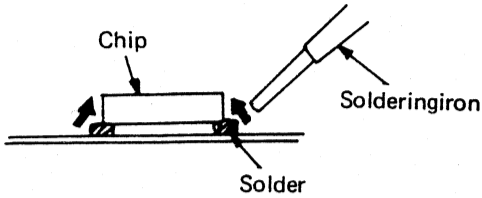


Fig. 2

**SA-818 SA-818**

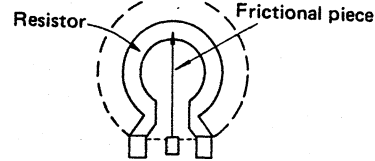
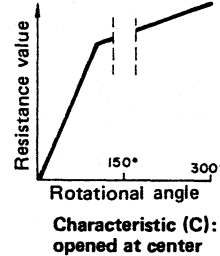
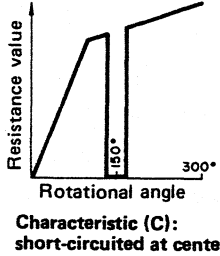
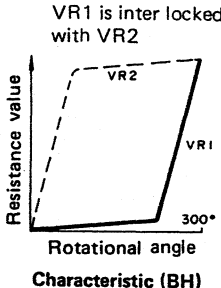
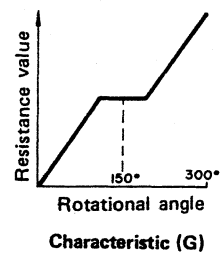
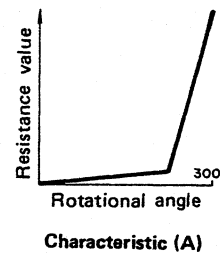
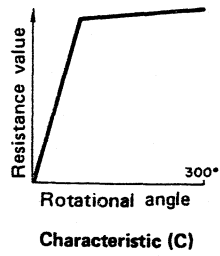
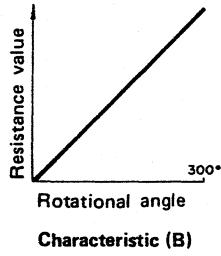
Ref. No.	Part No.	Part Name & Description
R122	RRD18XK100	Chip, 10Ω, 1/8W, ±10%
R123	RRD18XK331	Chip, 330Ω, 1/8W, ±10%
R124	RRD18XK123	Chip, 12kΩ, 1/8W, ±10%
R125	RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R126	RRD18XK562	Chip, 5.6kΩ, 1/8W, ±10%
R127	RRD18XK331	Chip, 330Ω, 1/8W, ±10%
R128	RRD18XK824	Chip, 820kΩ, 1/8W, ±10%
R129, 130	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R131	RRD18XK183	Chip, 18kΩ, 1/8W, ±10%
R132	RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R133	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R135	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R137, 138	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R139	RRD18XK472	Chip, 4.7kΩ, 1/8W, ±10%
R140	RRD18XK470	Chip, 47Ω, 1/8W, ±10%
R141	ERD25TJ472	Carbon, 4.7kΩ, 1/4W, ±5%
R142	RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R143	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R144	RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R145	ERO25CKF1822	Metal Film, 18.2kΩ, 1/4W, ±1%
R146	RRD18XK473	Chip, 47kΩ, 1/8W, ±10%
R147	RRD18XK332	Chip, 3.3kΩ, 1/8W, ±10%
R148	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R149	RRD18XK824	Chip, 820kΩ, 1/8W, ±10%
R150	RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R151	RRD18XK153	Chip, 15kΩ, 1/8W, ±10%
R152	RRD18XK100	Chip, 10Ω, 1/8W, ±10%
R153	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R154	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R155	RRD18XK562	Chip, 5.6kΩ, 1/8W, ±10%
R157	RRD18XK332	Chip, 3.3kΩ, 1/8W, ±10%
R158	RRD18XK473	Chip, 47kΩ, 1/8W, ±10%
R159	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R160	RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R161	RRD18XK334	Chip, 330kΩ, 1/8W, ±10%
R162	ERD25FJ102	Carbon, 1kΩ, 1/4W, ±5%
R163	ERD25FJ332	Carbon, 3.3kΩ, 1/4W, ±5%
R201	RRD18XK151	Chip, 150Ω, 1/8W, ±10%
R202	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R203	RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R204	RRD18XK561	Chip, 560Ω, 1/8W, ±10%
R205	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R206	RRD18XK822	Chip, 8.2kΩ, 1/8W, ±10%
R207	RRD18XK562	Chip, 5.6kΩ, 1/8W, ±10%
R208	RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R209	RRD18XK392	Chip, 3.9kΩ, 1/8W, ±10%
R210	RRD18XK332	Chip, 3.3kΩ, 1/8W, ±10%
R211	RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R212, 213	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R214	RRD18XK332	Chip, 3.3kΩ, 1/8W, ±10%
R215	RRD18XK394	Chip, 390kΩ, 1/8W, ±10%
R216	RRD18XK471	Chip, 470Ω, 1/8W, ±10%
R217	RRD18XK472	Chip, 4.7kΩ, 1/8W, ±10%
R218	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R219	RRD18XK124	Chip, 120kΩ, 1/8W, ±10%
R220	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R221	RRD18XK472	Chip, 4.7kΩ, 1/8W, ±10%
R222	RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R223	ERO25CKF4642	Metal Film, 46.4kΩ, 1/4W, ±1%
R224	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R225	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R226	RRD18XK100	Chip, 100kΩ, 1/8W, ±10%
R227	RRD18XK100	Chip, 10Ω, 1/8W, ±10%
R228	RRD18XK221	Chip, 220Ω, 1/8W, ±10%
R301	RRD18XK220	Chip, 22Ω, 1/8W, ±10%
R302	ERO25CKF2672	Metal Film, 26.7kΩ, 1/4W, ±5%
R303, 304	RRD18XK223	Chip, 22kΩ, 1/8W, ±10%
R305, 306	RRD18XK473	Chip, 47kΩ, 1/8W, ±10%
R307, 308	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R309, 310	RRD18XK392	Chip, 3.9kΩ, 1/8W, ±10%
R311	RRD18XK223	Chip, 22kΩ, 1/8W, ±10%

Ref. No.	Part No.	Part Name & Description
R312	RRD18XK333	Chip, 33kΩ, 1/8W, ±10%
R313	RRD18XK103	Chip, 10kΩ, 1/8W, ±10%
R314	RRD18XK153	Chip, 15kΩ, 1/8W, ±10%
R315	RRD18XK102	Chip, 1kΩ, 1/8W, ±10%
R316	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R317	RRD18XK222	Chip, 2.2kΩ, 1/8W, ±10%
R318	RRD18XK104	Chip, 100kΩ, 1/8W, ±10%
R319, 320	RRD18XK472	Chip, 4.7kΩ, 1/8W, ±10%
R321, 322	ERD25TJ824	Carbon, 820kΩ, 1/4W, ±5%
R323, 324	ERD25TJ824	Carbon, 820kΩ, 1/4W, ±5%
R324, 325	ERD25TJ824	Carbon, 820kΩ, 1/4W, ±5%
R326, 327	ERD25TJ824	Carbon, 820kΩ, 1/4W, ±5%
R401, 402	ERO25CKF1003	Metal Film, 100kΩ, 1/4W, ±1%
R403, 404	ERD25FJ221	Carbon, 220Ω, 1/4W, ±5%
R405, 406	ERO25CKF8252	Metal Film, 82.5kΩ, 1/4W, ±1%
R407, 408	ERO25CKF1400	Metal Film, 140Ω, 1/4W, ±5%
R409, 410	ERD25FJ222	Carbon, 2.2kΩ, 1/4W, ±5%
R411, 412	ERO25CKF1003	Metal Film, 100kΩ, 1/4W, ±1%
R413, 414	ERO25CKF6811	Metal Film, 6.81kΩ, 1/4W, ±1%
R415, 416	ERD25FJ221	Carbon, 220Ω, 1/4W, ±5%
R417, 418	ERD25FJ222	Carbon, 2.2kΩ, 1/4W, ±5%
R419, 420	ERD25TJ563	Carbon, 56kΩ, 1/4W, ±5%
R421, 422	ERD25TJ104	Carbon, 100kΩ, 1/4W, ±5%
R423, 424	ERD25TJ824	Carbon, 820kΩ, 1/4W, ±5%
R425, 426	ERD25TJ824	Carbon, 820kΩ, 1/4W, ±5%
R427, 428	ERD25TJ824	Carbon, 820kΩ, 1/4W, ±5%
R429, 430	ERD25FJ331	Carbon, 330Ω, 1/4W, ±5%
R431, 432	ERD25FJ331	Carbon, 330Ω, 1/4W, ±5%
R433, 434	ERD25FJ222	Carbon, 2.2kΩ, 1/4W, ±5%
R435	ERD25FJ102	Carbon, 1kΩ, 1/4W, ±5%
R451	ERD25FJ101	Carbon, 100Ω, 1/4W, ±5%
R501, 502	ERD25TJ224	Carbon, 220kΩ, 1/4W, ±5%
R503, 504	ERD25TJ474	Carbon, 470kΩ, 1/4W, ±5%
R505, 506	ERD25FJ102	Carbon, 1kΩ, 1/4W, ±5%
R507, 508	ERD25TJ474	Carbon, 470kΩ, 1/4W, ±5%
R509, 510	ERD25FJ332	Carbon, 3.3kΩ, 1/4W, ±5%
R511, 512	ERD25FJ681	Carbon, 680Ω, 1/4W, ±5%
R513, 514	ERD25FJ392	Carbon, 3.9kΩ, 1/4W, ±5%
R517, 518	ERD25FJ332	Carbon, 3.3kΩ, 1/4W, ±5%
R519, 520	ERD25TJ223	Carbon, 22kΩ, 1/4W, ±5%
R521, 522	ERD25TJ393	Carbon, 39kΩ, 1/4W, ±5%
R523, 524	ERD25FJ222	Carbon, 2.2kΩ, 1/4W, ±5%
R525, 526	ERD25FJ221	Carbon, 220Ω, 1/4W, ±5%
R527, 528	ERD25FJ122	Carbon, 1.2kΩ, 1/4W, ±5%
R529, 530	ERD25FJ122	Carbon, 1.2kΩ, 1/4W, ±5%
R531, 532	ERD25TJ153	Carbon, 15kΩ, 1/4W, ±5%
R533, 534	ERD25TJ474	Carbon, 470kΩ, 1/4W, ±5%
R535, 536	ERD25TJ824	Carbon, 820kΩ, 1/4W, ±5%
R537, 538	ERD25FJ272	Carbon, 2.7kΩ, 1/4W, ±5%
R539, 540	ERD25TJ123	Carbon, 12kΩ, 1/4W, ±5%
R541, 542	ERD25TJ333	Carbon, 33kΩ, 1/4W, ±5%
R543, 544	ERD25FJ332	Carbon, 3.3kΩ, 1/4W, ±5%
R545, 546	ERD25FJ103	Carbon, 10kΩ, 1/4W, ±5%
R601, 602	ERD25FJ101	Carbon, 100Ω, 1/4W, ±5%
R603, 604	ERD25TJ104	Carbon, 100kΩ, 1/4W, ±5%
R605, 606	ERD25FJ222	Carbon, 2.2kΩ, 1/4W, ±5%
R607, 608	ERD25FJ682	Carbon, 6.8kΩ, 1/4W, ±5%
R609, 610	ERD25FJ682	Carbon, 6.8kΩ, 1/4W, ±5%
R611, 612	ERD25FJ272	Carbon, 2.7kΩ, 1/4W, ±5%
R613, 614	ERD25FJ390	Carbon, 39Ω, 1/4W, ±5%
R615, 616	ERD25FJ101	Carbon, 100Ω, 1/4W, ±5%
R617, 618	ERD25FJ101	Carbon, 100Ω, 1/4W, ±5%
R619, 620	ERD25FJ392	Carbon, 3.9kΩ, 1/4W, ±5%
R621, 622	ERD25FJ562	Carbon, 5.6kΩ, 1/4W, ±5%
R623, 624	ERD25TJ473	Carbon, 47kΩ, 1/4W, ±5%
R625, 626	ERD25FJ561	Carbon, 560Ω, 1/4W, ±5%
R627, 628	ERD25FJ560	Carbon, 56Ω, 1/4W, ±5%
R629, 630	ERD25TJ820	Carbon, 82Ω, 1/4W, ±5%
R631, 632	ERD25TJ394	Carbon, 390kΩ, 1/4W, ±5%
R633, 634	ERD25TJ473	Carbon, 47kΩ, 1/4W, ±5%
R635, 636	ERD25TJ223	Carbon, 22kΩ, 1/4W, ±5%
R637, 638	ERD25TJ223	Carbon, 22kΩ, 1/4W, ±5%

Ref. No.	Part No.	Part Name & Description
R639, 640	ERD25FJ681	Carbon, 680Ω, 1/4W, ±5%
R641, 642	ERD25FJ391	Carbon, 390Ω, 1/4W, ±5%
R643, 644	ERD25FJ472	Carbon, 4.7kΩ, 1/4W, ±5%
R645, 646	ERD25FJ472	Carbon, 4.7kΩ, 1/4W, ±5%
R647, 648	ERD25FJ152	Carbon, 1.5kΩ, 1/4W, ±5%
R649, 650	ERD25FJ122	Carbon, 1.2kΩ, 1/4W, ±5%
R651, 652	ERD25FJ152	Carbon, 1.5kΩ, 1/4W, ±5%
R653, 654	ERD25FJ471	Carbon, 470Ω, 1/4W, ±5%
R655, 656	ERD25FJ471	Carbon, 470Ω, 1/4W, ±5%
R657, 658	ERG1ANJ822	Metal Oxide, 8.2kΩ, 1W, ±5%
R659, 660	ERD25FJ822	Carbon, 820Ω, 1/4W, ±5%
R661, 662	ERD25FJ152	Carbon, 1.5kΩ, 1/4W, ±5%
R663, 664	ERD25FJ821	Carbon, 820Ω, 1/4W, ±5%
R665, 666	ERG1ANJ822	Metal Oxide, 8.2kΩ, 1W, ±5%
R667, 668	ERD25FJ102	Carbon, 1kΩ, 1/4W, ±5%
R669, 670	ERD25FJ221	Carbon, 220Ω, 1/4W, ±5%
R671, 672	ERD25FAJ2R2	Carbon, 2.2Ω, 1/4W, ±5%
R673, 674	ERD25FAJ2R2	Carbon, 2.2Ω, 1/4W, ±5%
R675, 676	ERD25FAJ2R2	Carbon, 2.2Ω, 1/4W, ±5%
R677, 678	ERD25FAJ2R2	Carbon, 2.2Ω, 1/4W, ±5%
R679, 680	ERF5GEKR47N	Non-Flammable, 0.47Ω, 5W, ±10%
R681, 682	ERF5RKR47	Non-Flammable, 0.47Ω, 5W, ±10%
R683, 684	ERF5RKR47	Non-Flammable, 0.47Ω, 5W, ±10%
R685, 686	ERG2ANJ120	Metal Oxide, 12Ω, 2W, ±5%
R687, 688	ERD2ANJ120	Metal Oxide, 12Ω, 2W, ±5%
R689, 690	ERD25FJ680	Carbon, 68Ω, 1/4W, ±5%
R691, 692	ERD25FJ680	Carbon, 68Ω, 1/4W, ±5%
R693, 694	ERD25TJ823	Carbon, 82kΩ, 1/4W, ±5%
R695	ERD25TJ123	Carbon, 12kΩ, 1/4W, ±5%
R696	ERD25TJ154	Carbon, 150kΩ, 1/4W, ±5%
R697	ERD25TJ333	Carbon, 33kΩ, 1/4W, ±5%
R698	ERD25TJ153	Carbon, 15kΩ, 1/4W, ±5%
R699	ERD1ANJ472	Metal Oxide, 4.7kΩ, 1W, ±5%
R701	ERG1ANJ222	Metal Oxide, 2.2kΩ, 1W, ±5%
R702	ERQ1CJ271	Fuse Type Metallic, 270Ω, 1W, ±5%
R703	ERQ2CJ221	Fuse Type Metallic, 220Ω, 2W, ±5%
R704	ERO25CKF1212	Metal Film, 12.1kΩ, 1/4W, ±1%
R705	ERO25CKF5601	Metal Film, 5.6kΩ, 1/4W, ±1%
R706	ERO25CKF1502	Metal Film, 15kΩ, 1/4W, ±1%
R707	ERD25FJ102	Carbon, 1kΩ, 1/4W, ±5%
R708	ERO25CKF1502	Metal Film, 15kΩ, 1/4W, ±1%
R709	ERD25FJ121	Carbon, 120Ω, 1/4W, ±5%
R710	ERD25FJ820	Carbon, 82Ω, 1/4W, ±5%
R712	ERD25FJ471	Carbon, 470Ω, 1/4W, ±5%
R713	ERD25FJ222	Carbon, 2.2kΩ, 1/4W, ±5%
R714	ERD50FJ220	Carbon, 22Ω, 1/2W, ±5%
R715	ERD50FJ471	Carbon, 470Ω, 1/2W, ±5%
R716	ERD25FAJ2R2	Carbon, 2.2Ω, 1/4W, ±5%
R717	ERG12ZGK335	Solid, 3.3MΩ, 1/2W, ±10%
R720	ERD50FJ222	Carbon, 2.2kΩ, 1/2W, ±5%
R721	ERD25FJ151	Carbon, 150Ω, 1/3W, ±5%
R750	ERG2ANJ180	Metal Oxide, 18Ω, 2W, ±5%
R751	ERD25FJ332	Carbon, 3.3kΩ, 1/4W, ±5%
R752	ERD50FJ272	Carbon, 2.7kΩ, 1/2W, ±5%
R753	ERG1ANJ222	Metal Oxide, 2.2kΩ, 1W, ±5%
R901, 902	ERD25FJ102	Carbon, 1kΩ, 1/4W, ±5%
R903	ERD25FJ103	Carbon, 10kΩ, 1/4W, ±5%
R904	ERD25TJ223	Carbon, 22kΩ, 1/4W, ±5%
R905	ERD25FJ682	Carbon, 6.8kΩ, 1/4W, ±5%
R906	ERD25FJ822	Carbon, 8.2kΩ, 1/4W, ±5%
R907	ERD25TJ393	Carbon, 39kΩ, 1/4W, ±5%
R908	ERD25TJ104	Carbon, 100kΩ, 1/4W, ±5%
R909	ERD25TJ563	Carbon, 56kΩ, 1/4W, ±5%
R910	ERD25TJ104	Carbon, 100kΩ, 1/4W, ±5%
R911	ERD25FJ102	Carbon, 1kΩ, 1/4W, ±5%
R912	ERD25FJ332	Carbon, 3.3kΩ, 1/4W, ±5%
R913	ERD25FJ152	Carbon, 1.5kΩ, 1/4W, ±5%
R914	ERD25FJ682	Carbon, 6.8kΩ, 1/4W, ±5%
R915	ERD25TJ153	Carbon, 15kΩ, 1/4W, ±5%
R916	ERD25TJ333	Carbon, 33kΩ, 1/4W, ±5%
R917	ERD25FJ100	Carbon, 10Ω, 1/4W, ±5%

**Rotational angles of variable resistors**

often used for sets. All are intended to keep the frequency response of the circuit. For example, characteristic (B) is used for bass and treble sound quality adjustment; (G) is for medium sound level adjustment; (C) is for short-circuiting between its ends at rotational angle. Also, variable resistor with characteristic (C) whose resistance is zero at 150 degrees and characteristic (BH) in which two variable resistors (A) combined is used for the adjustment of sound level balance.



Option	Ref. No.	Part No.	Part Name & Description
1/4W, ±5%	R918	ERD25FJ331	Carbon, 330Ω, 1/4W, ±5%
1/4W, ±5%	R919	ERD25J824	Carbon, 820kΩ, 1/4W, ±5%
1/4W, ±5%	R920	ERD25J473	Carbon, 47kΩ, 1/4W, ±5%
1/4W, ±5%	R921	ERD25FJ101	Carbon, 100Ω, 1/4W, ±5%
1/4W, ±5%	R922	ERD25J473	Carbon, 47kΩ, 1/4W, ±5%
1/4W, ±5%	R923	ERD25J333	Carbon, 33kΩ, 1/4W, ±5%
1/4W, ±5%	R924	ERD25FJ103	Carbon, 10kΩ, 1/4W, ±5%
1/4W, ±5%	R925	ERD25J473	Carbon, 47kΩ, 1/4W, ±5%
1/4W, ±5%	R926	ERD25J333	Carbon, 33kΩ, 1/4W, ±5%
1W, ±5%	R927	ERD25FJ152	Carbon, 1.5kΩ, 1/4W, ±5%
1/4W, ±5%	R928	ERD25J223	Carbon, 22kΩ, 1/4W, ±5%
1/4W, ±5%	R929	ERD25J333	Carbon, 33kΩ, 1/4W, ±5%
1/4W, ±5%	R930, 931	ERD25J104	Carbon, 100kΩ, 1/4W, ±5%
1/4W, ±5%	R932	ERD25FJ331	Carbon, 330Ω, 1/4W, ±5%
1W, ±5%	R933	ERD25FJ471	Carbon, 470Ω, 1/4W, ±5%
1/4W, ±5%	R934	ERD25FJ562	Carbon, 5.6kΩ, 1/4W, ±5%
1/4W, ±5%	R1001	ERD25J224	Carbon, 22kΩ, 1/4W, ±5%
1/4W, ±5%	R1002	ERD25J223	Carbon, 22kΩ, 1/4W, ±5%
1/4W, ±5%	R1003	ERG2ANJ681	Metal Oxide, 680Ω, 2W, ±5%
1/4W, ±5%	R1004	ERD25FJ681	Carbon, 680Ω, 1/4W, ±5%
5W, ±10%	R1005, 1006	ERG2ANJ331	Metal Oxide, 330Ω, 2W, ±5%
1W, ±5%	R1007, 1008	ERD25J563	Carbon, 56kΩ, 1/4W, ±5%
1/4W, ±5%	R1009, 1010	ERD25J564	Carbon, 560kΩ, 1/4W, ±5%
1/4W, ±5%	R1013, 1014	ERD25J683	Carbon, 68kΩ, 1/4W, ±5%
1/4W, ±5%	R1015, 1016	ERD25J224	Carbon, 22kΩ, 1/4W, ±5%
2W, ±5%	R1017, 1018	ERD25J273	Carbon, 27kΩ, 1/4W, ±5%
1/4W, ±5%	R1019, 1020	ERD25FJ103	Carbon, 10kΩ, 1/4W, ±5%
1/4W, ±5%	R1022	ERD25FJ121	Carbon, 120Ω, 1/4W, ±5%
1/4W, ±5%	R1023	ERD25J104	Carbon, 100kΩ, 1/4W, ±5%
1/4W, ±5%	R1024	ERD50FJ122	Carbon, 1.2kΩ, 1/2W, ±5%
1/4W, ±5%	R1025	ERD25FJ103	Carbon, 10kΩ, 1/4W, ±5%
1/4W, ±5%	R1026	ERD25FJ103	Carbon, 10kΩ, 1/4W, ±5%
1W, ±5%	R1050	ERD25J473	Carbon, 47kΩ, 1/4W, ±5%
1W, ±5%	R1051	ERD25J333	Carbon, 33kΩ, 1/4W, ±5%
1W, ±5%	R1052	ERD25FJ332	Carbon, 3.3kΩ, 1/4W, ±5%
1W, ±5%	R1053	ERD25FJ182	Carbon, 1.8kΩ, 1/4W, ±5%
1/4W, ±5%	R1061, 1062	ERD25J224	Carbon, 22kΩ, 1/4W, ±5%
<b>CAPACITORS</b>			
1/4W, ±5%	C1, 2	ECUX1H102ZF	Chip, 0.001μF, 50V, ±80%
1/4W, ±5%	C3	ECUX1H390KC	Chip, 39pF, 50V, ±10%
1/4W, ±5%	C4	ECUX1H030DC	Chip, 3pF, 50V, ±0.5pF
1/4W, ±5%	C5	ECUX1H102ZF	Chip, 0.001μF, 50V, ±80%
1/4W, ±5%	C6	ECUX1H040DC	Chip, 4pF, 50V, ±0.5pF
1/4W, ±5%	C7, 8	ECUX1H102ZF	Chip, 0.001μF, 50V, ±80%
1/4W, ±5%	C9	ECUX1H102ZF	Chip, 0.001μF, 50V, ±80%
1/4W, ±5%	C10	ECUX1H040DC	Chip, 4pF, 50V, ±0.5pF
1/4W, ±5%	C11	ECUX1H102ZF	Chip, 0.001μF, 50V, ±80%
1/4W, ±5%	C12	ECGN5R15K	Ceramic, 0.15pF, 500V, ±10%
1/4W, ±5%	C13, 14	ECUX1H040DC	Chip, 4pF, 50V, ±0.5pF
1/4W, ±5%	C15	ECUX1H050DC	Chip, 5pF, 50V, ±0.5pF
1/4W, ±5%	C16	ECUX1H010CC	Chip, 1pF, 50V, ±0.25pF
1/4W, ±5%	C17	ECUX1H181KD	Chip, 180pF, 50V, ±10%
1/4W, ±5%	C18, 19	ECUX1H103ZF	Chip, 0.01μF, 50V, ±80%
1/4W, ±5%	C20, 21	ECUX1H102ZF	Chip, 0.001μF, 50V, ±80%
1/4W, ±5%	C22	ECUX1H102ZF	Chip, 0.001μF, 50V, ±80%
1/4W, ±5%	C23	ECUX1H070DC	Chip, 7pF, 50V, ±0.5pF
1/4W, ±5%	C24	ECUX1H020CC	Chip, 2pF, 50V, ±0.25pF
1/4W, ±5%	C25	ECUX1H102ZF	Chip, 0.001μF, 50V, ±80%
1/4W, ±5%	C26	ECUX1H070DC	Chip, 7pF, 50V, ±0.5pF
1/4W, ±5%	C27	ECUX1H220KC	Chip, 22pF, 50V, ±10%
1/4W, ±5%	C28	ECUX1H070DC	Chip, 7pF, 50V, ±0.5pF
1/4W, ±5%	C29	ECUX1H102ZF	Chip, 0.001μF, 50V, ±80%
1/4W, ±5%	C30	ECUX1H040DC	Chip, 4pF, 50V, ±0.5pF
1/4W, ±5%	C31	ECUX1H103ZF	Chip, 0.01μF, 50V, ±80%
1/4W, ±5%	C32	ECEA1HS100	Electrolytic, 10μF, 50V, ±80%
1/4W, ±5%	C101, 102	ECUX1H223ZF	Chip, 0.022μF, 50V, ±80%
1/4W, ±5%	C103, 104	ECUX1H223ZF	Chip, 0.022μF, 50V, ±80%
1/4W, ±5%	C105	ECUX1H101K	Chip, 100pF, 50V, ±10%

Ref. No.	Part No.	Part Name & Description
C106, 107	ECUX1H223ZF	Chip, 0.022μF, 50V, ±80%
C108, 109	ECUX1H223ZF	Chip, 0.022μF, 50V, ±80%
C110, 111	ECUX1H223ZF	Chip, 0.022μF, 50V, ±80%
C112	ECEA1AS470	Electrolytic, 47μF, 10V
C114, 115	ECUX1H223ZF	Chip, 0.022μF, 50V, ±80%
C116	ECUX1H223ZF	Chip, 0.022μF, 50V, ±80%
C117	ECEA50Z1	Electrolytic, 1μF, 50V
C118	ECUX1H101K	Chip, 100pF, 50V, ±10%
C119	ECEA50Z1	Electrolytic, 1μF, 50V
C120	ECEA1JS4R7	Electrolytic, 4.7μF, 63V
C121, 122	ECUX1H223ZF	Chip, 0.022μF, 50V, ±80%
C123, 124	ECUX1H223ZF	Chip, 0.022μF, 50V, ±80%
C125	ECEA1HS100	Electrolytic, 10μF, 50V
C126	ECUX1H223ZF	Chip, 0.022μF, 50V, ±80%
C127	ECEA50ZR33	Electrolytic, 0.33μF, 50V
C128	ECUX1H223ZF	Chip, 0.022μF, 50V, ±80%
C129	ECEA50Z1	Electrolytic, 1μF, 50V
C130	ECEA50ZR33	Electrolytic, 3.3μF, 50V
C201	ECQM1H473KZ	Polyester, 0.047μF, 50V, ±10%
C202	ECUX1H100KC	Chip, 100pF, 50V, ±10%
C203	ECQP1241JZ	Polypropylene, 240pF, 100V, ±5%
C204	ECUX1H223ZF	Chip, 0.022μF, 50V, ±80%
C205	ECUX1H103ZF	Chip, 0.01μF, 50V, ±80%
C206	ECUX1H223ZF	Chip, 0.022μF, 50V, ±80%
C207	ECUX1H390KC	Chip, 39pF, 50V, ±10%
C208	ECUX1H103MD	Chip, 0.01μF, 50V, ±80%
C209, 210	ECUX1H223ZF	Chip, 0.022μF, 50V, ±80%
C211	ECUX1H223ZF	Chip, 0.022μF, 50V, ±80%
C212	ECEA1JS4R7	Electrolytic, 4.7μF, 63V
C213	ECUX1H103ZF	Chip, 0.01μF, 50V, ±80%
C214	ECUX1H470KC	Chip, 47pF, 50V, ±10%
C215	ECUX1H103ZF	Chip, 0.01μF, 50V, ±80%
C216	ECUX1H223ZF	Chip, 0.022μF, 50V, ±80%
C217, 218	ECUX1H103ZF	Chip, 0.01μF, 50V, ±80%
C219	ECQM1H473KZ	Polyester, 0.047μF, 50V, ±10%
C220	ECEA50Z1	Electrolytic, 1μF, 50V
C301	ECEA1CS471	Electrolytic, 470μF, 16V
C302	ECUX1H680KC	Chip, 68pF, 50V, ±10%
C303	ECEA50MR47R	Electrolytic, 4.7μF, 50V
C304	ECUX1H101K	Chip, 100pF, 50V, ±10%
C305, 306	ECEA1AS470	Electrolytic, 47μF, 10V
C307, 308	ECUX1H221K	Chip, 220pF, 50V, ±10%
C309, 310	ECEA50ZR33	Electrolytic, 3.3μF, 50V
C311	ECUX1H471MD	Chip, 470pF, 50V, ±20%
C312	ECUX1H102ZF	Chip, 0.001μF, 50V, ±80%
C313	ECQP1471JZ	Polypropylene, 470pF, 100V, ±5%
C314	ECEA50Z1	Electrolytic, 1μF, 50V
C315	ECEA50ZR33	Electrolytic, 3.3μF, 50V
C316	ECQM1H473KZ	Polyester, 0.047μF, 50V, ±10%
C317	ECEA50ZR22	Electrolytic, 0.22μF, 50V
C318	ECUX1H223ZF	Chip, 0.022μF, 50V, ±80%
C319, 320	ECEA50ZR33	Electrolytic, 3.3μF, 50V
C321	ECEA50ZR47	Electrolytic, 0.47μF, 50V
C323, 324	ECQM1H152JZ	Polyester, 0.0015μF, 50V, ±5%
C325, 326	ECQP1821JZ	Polypropylene, 820pF, 100V, ±5%
C327, 328	ECQP1241JZ	Polypropylene, 240pF, 100V, ±5%
C329, 330	ECQM1H152JZ	Polyester, 0.0015μF, 50V, ±5%
C333	ECQM1H183KZ	Polyester, 0.018μF, 50V, ±10%
C401, 402	ECEA50MR33R	Electrolytic, 3.3μF, 50V
C403, 404	ECKD1H821KB	Ceramic, 820pF, 50V, ±10%
C405, 406	ECKD1H471KB	Ceramic, 470pF, 50V, ±10%
C407, 408	ECKD1H222MD	Ceramic, 0.022μF, 50V, ±20%
C409, 410	ECQP1393GZ	Polypropylene, 0.039μF, 100V, ±2%
C411, 412	ECQP1103GZ	Polypropylene, 0.01μF, 100V, ±2%
C413, 414	ECQM1H102JZ	Polyester, 0.001μF, 50V, ±5%
C415, 416	ECEA1HN47S	Non-polar Electrolytic, 0.47μF, 50V
C419, 420	ECQP1681JZ	Polypropylene, 680pF, 100V, ±5%
C421, 422	ECEA1AS101	Electrolytic, 100μF, 10V
C423, 424	ECDD1H121K	Ceramic, 120pF, 50V, ±10%
C425, 426	ECEA1ES101	Electrolytic, 100μF, 25V
C427, 428	ECKD1H331KB	Ceramic, 330pF, 50V, ±10%
C451, 452	ECKD1H333ZF	Ceramic, 0.033μF, 50V, ±80%
C501, 502	ECEA50M1R	Electrolytic, 1μF, 50V
C503, 504	ECUX1H393KZ	Polyester, 0.039μF, 50V, ±10%
C505, 506	ECEA50MR33R	Electrolytic, 0.33μF, 50V
C507, 508	ECQM1H332KZ	Polyester, 0.033μF, 50V, ±10%
C509, 510	ECQM1H333KZ	Polyester, 0.033μF, 50V, ±10%

Ref. No.	Part No.	Part Name & Description
C511, 512	ECQM1H104KZ	Polyester, 0.1μF, 50V, ±10%
C513, 514	ECQM1H183KZ	Polyester, 0.018μF, 50V, ±10%
C515, 516	ECCD1H220K	Ceramic, 22pF, 50V, ±10%
C517, 518	ECQM1H473KZ	Polyester, 0.047μF, 50V, ±10%
C519, 520	ECQM1H472KZ	Polyester, 0.047μF, 50V, ±10%
C521, 522	ECEA50MR33R	Electrolytic, 0.33μF, 50V
C523, 524	ECEA1HN3R3S	Non-polar Electrolytic, 3.3μF, 50V
C525, 526	ECQM1H124KZ	Polyester, 0.12μF, 50V, ±10%
C527, 528	ECQM1H103KZ	Polyester, 0.01μF, 50V, ±10%
C529, 530	ECQM1H333KZ	Polyester, 0.033μF, 50V, ±10%
C531, 532	ECCD1H390K	Ceramic, 39pF, 50V, ±10%
C535	ECQM1H224KZ	Polyester, 0.22μF, 50V, ±10%
C536	ECQM1H474KZ	Polyester, 0.47μF, 50V, ±10%
C601, 602	ECKD1H102KB	Ceramic, 0.001μF, 50V, ±10%
C603, 604	ECCD2H100K	Ceramic, 10pF, 500V, ±10%
C605, 606	ECCD2H030C	Ceramic, 3pF, 500V, ±0.25pF
C611, 612	ECEA0JN221S	Non-polar Electrolytic, 220μF, 6.3V
C613, 614	ECEA50ZR33	Electrolytic, 3.3μF, 50V
C615, 616	ECKD1H103ZF	Ceramic, 0.01μF, 50V, ±80%
C617, 618	ECKD1H103ZF	Ceramic, 0.01μF, 50V, ±80%
C619, 620	ECEA2AS100	Electrolytic, 10μF, 100V
C621, 622	ECKD1H681KB	Ceramic, 680pF, 50V, ±10%
C623, 624	ECKD1H681KB	Ceramic, 680pF, 50V, ±10%
C625, 626 [M] only	ECQM1473KZ	Polyester, 0.047μF, 125V, ±10%
C625, 626 [MC] only	ECQM1H104KZ	Polyester, 0.1μF, 50V, ±10%
C627	ECEA1CS330	Electrolytic, 33μF, 16V
C628	ECEA1CN221S	Non-polar Electrolytic, 220μF, 16V
C629	ECEA50ZR33	Electrolytic, 3.3μF, 50V
C630	ECKD1H103ZF	Ceramic, 0.01μF, 50V, ±80%
C631, 632	ECEA1HS100	Electrolytic, 10μF, 50V
C633, 634	ECEA50ZR2R	Electrolytic, 2.2μF, 50V
C635, 636	ECQM1H104KZ	Polyester, 0.1μF, 50V, ±10%
C639, 640	ECCD1H560K	Ceramic, 56pF, 50V, ±10%
C650, 651	ECEA1HS100	Electrolytic, 10μF, 50V
C701, 702	ECET71V822Z	Electrolytic, 8200μF, 71V
C703, 704	ECET71V822Z	Electrolytic, 8200μF, 71V
C705, 706	ECEA1VS330	Electrolytic, 33μF, 35V
C707	ECEA1CS330	Electrolytic, 33μF, 16V
C708, 709	ECEA1VS101	Electrolytic, 100μF, 35V
C710, 711	ECEA1ES470	Electrolytic, 47μF,

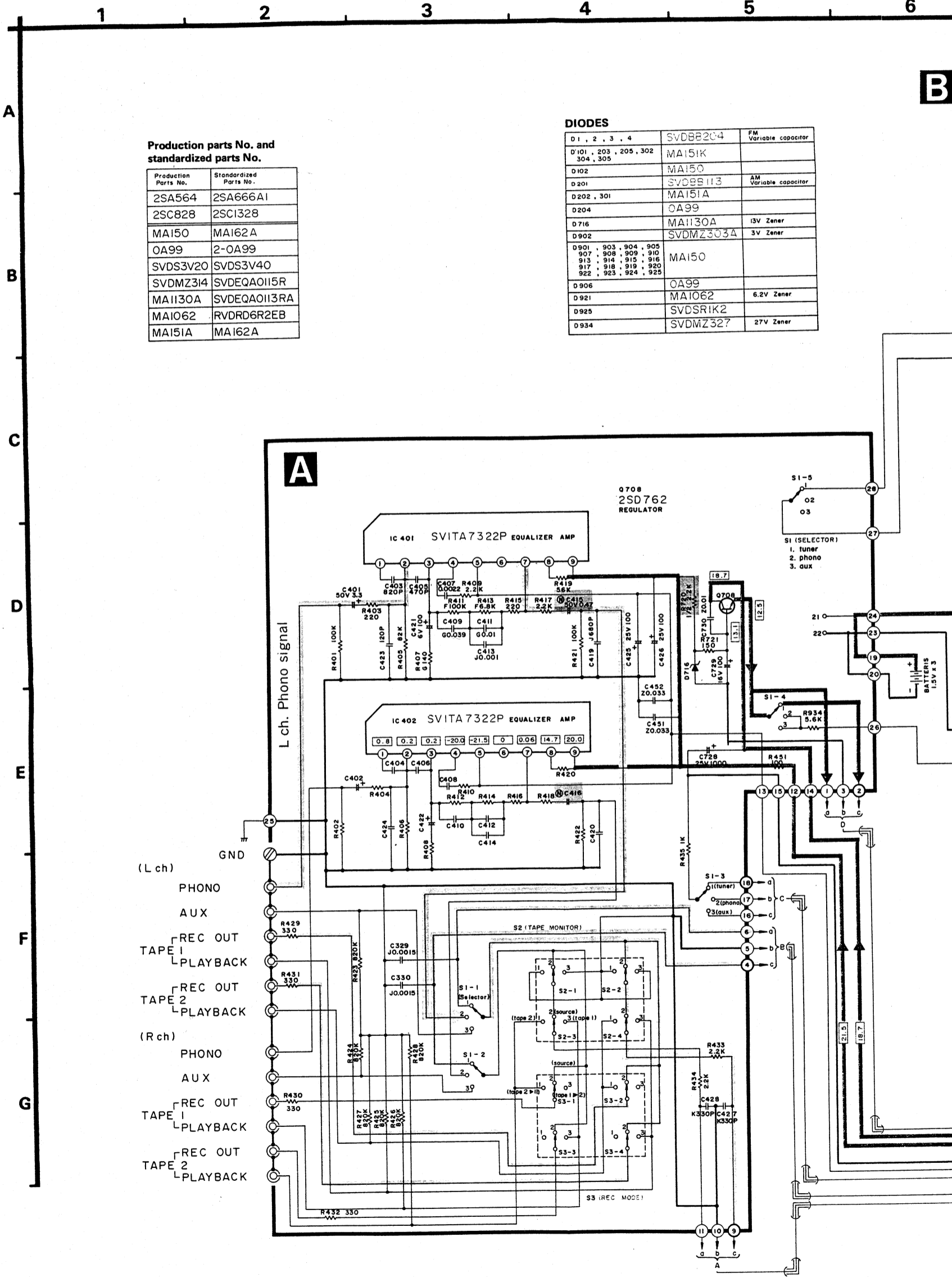


Production parts No. and standardized parts No.

Production Parts No.	Standardized Parts No.
2SA564	2SA666A1
2SC828	2SC1328
MA150	MA162A
OA99	2-OA99
SVDS3V20	SVDS3V40
SVDMZ314	SVDEQA0115R
MA1130A	SVDEQA0113RA
MA1062	RVDRD6R2EB
MA151A	MA162A

DIODES

D 1, 2, 3, 4	SVDBB204	FM Variable capacitor
D101, 203, 205, 302, 304, 305	MA151K	
D102	MA150	
D201	SVDBB113	AM Variable capacitor
D202, 301	MA151A	
D204	OA99	
D716	MA1130A	13V Zener
D902	SVDMZ303A	3V Zener
D901, 903, 904, 905, 907, 908, 909, 910, 913, 914, 915, 916, 917, 918, 919, 920, 922, 923, 924, 925	MA150	
D906	OA99	
D921	MA1062	6.2V Zener
D925	SVDSRIK2	
D934	SVDMZ327	27V Zener



Notes 1:

- S1-1 ~ S1-5 : Input selector switch in "tuner" position.  
( ① tuner → ② phono → ③ aux )
- S2-1 ~ S2-4 : Tape monitor switch in "source" position.  
( ① tape 2 → ② source → ③ tape 1 )
- S3-1 ~ S3-4 : Recording mode switch in "source" position.  
( ① tape 2 → ② source → ③ tape 1 → ④ 2 )
- S101 : FM antenna selector switch in "normal" position.  
( normal → tuned type )
- S901 : Memory set switch
- S902 ~ S909 : Preset tuning switch.  
( S902 : 1 ch. S903 : 2 ch. S904 : 3 ch.  
S905 : 4 ch. S906 : 5 ch. S907 : 6 ch.  
S908 : 7 ch. S909 : 8 ch. )

- S910 : FM tuner selection switch.
- S911 : AM tuner selection switch.
- S912 : Manual tuning "down" switch.
- S913 : Manual tuning "up" switch.
- S914 : FM/AM allocation selector switch in "FM 0.2MHz/AM 10kHz" step position.  
( FM 0.2MHz/AM 10kHz ↔ FM 0.05MHz/AM 9kHz )
- Indicated voltage values 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/AM signal reception 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.  
\* Figures in ( ) stand for DC voltage with the FM/AM selector circuit set at AM.

- \* [ ] marked terminal :
- \* [ ] marked terminal :
- 13. Transistor and IC terminals which are subject to change according to the component used.
- 14. Signal lines

FM/AM composite  
Audio frequency signal  
Positive voltage line

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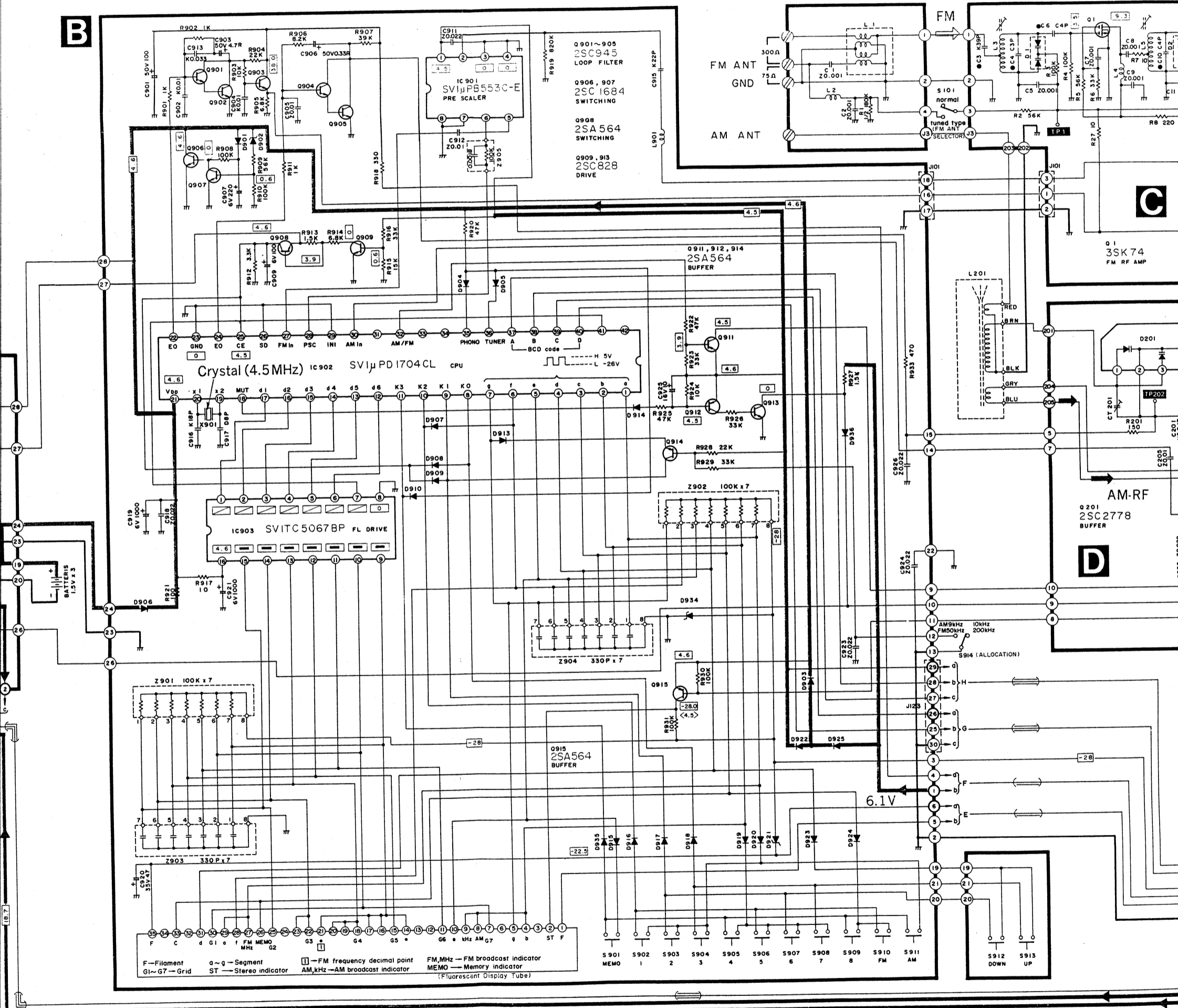
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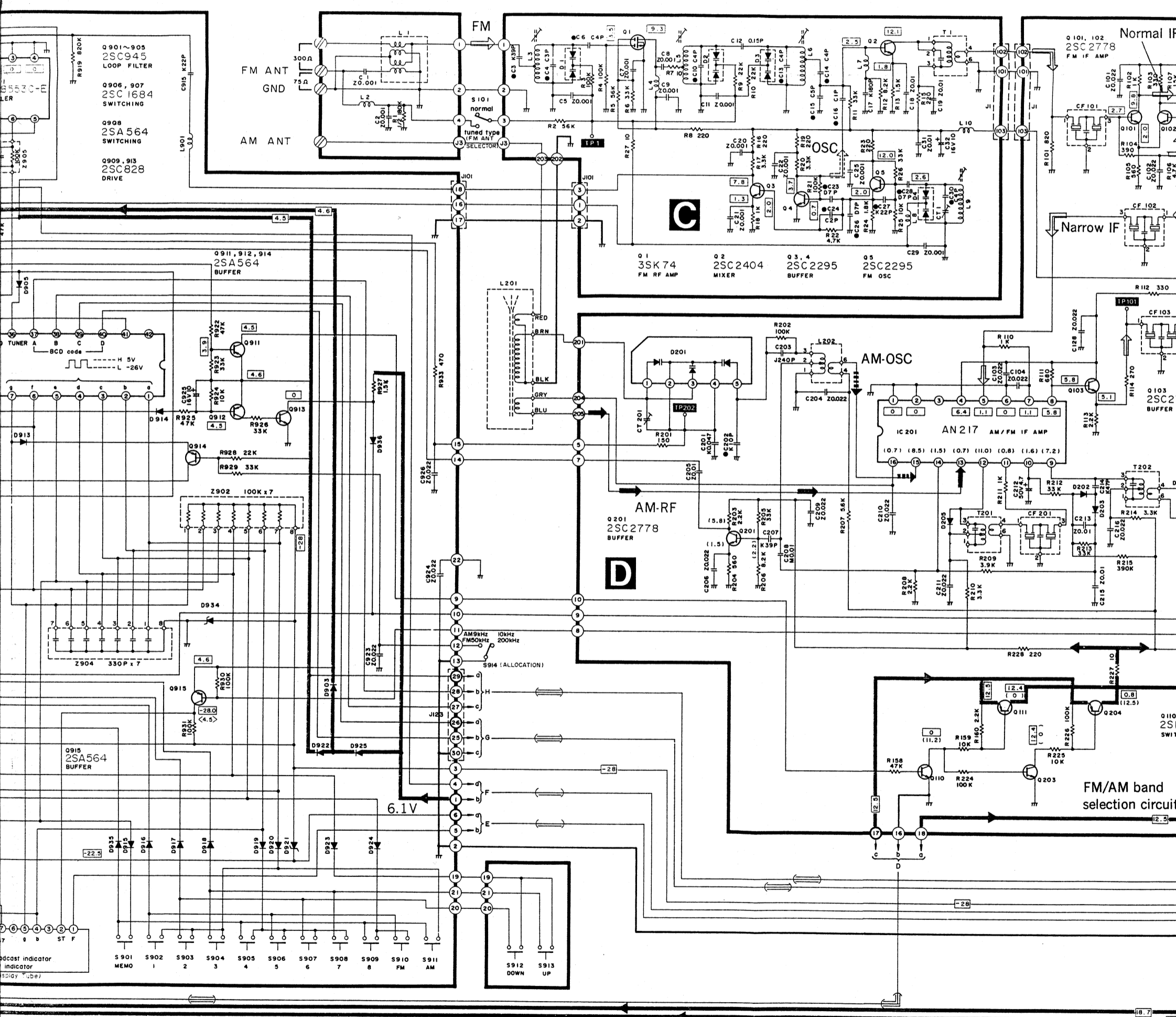


- 7. **S910** : FM tuner selection switch.
- 8. **S911** : AM tuner selection switch.
- 9. **S912** : Manual tuning "down" switch.
- 10. **S913** : Manual tuning "up" switch.
- 11. **S914** : FM/AM allocation selector switch in "FM 0.2MHz/AM 10kHz" step position. (FM 0.2MHz/AM 10kHz ↔ FM 0.05MHz/AM 9kHz)
- 12. Indicated voltage values 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/AM signal reception 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.
  - \* Figures in    stand for DC voltage with the FM/AM selector circuit set at AM.

- \*    marked terminal : 5V or 0V output.
- \*    marked terminal : 5V or -26V output.
- 13. Transistor and IC terminals which carry no voltage indication emit 5V pulse waveforms or are subject to change according to the frequency or input signal levels.
- 14. Signal lines
  - FM/AM composite signal
  - Audio frequency signal
  - AM signal
  - Positive voltage lines

The shaded area separates the components. When separating the components, the shaded area should be cut along the dashed line.

9                      10                      11                      12                      13                      14                      15                      16

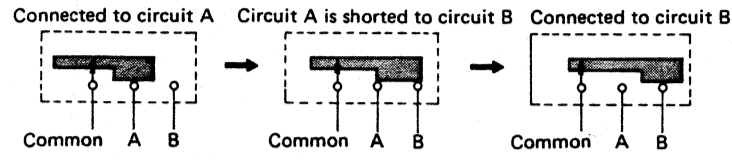


**IMPORTANT SAFETY NOTICE**

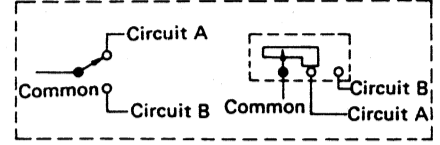
The shaded area on this schematic diagram incorporates special features important for safety. When servicing it is essential that only manufacturer's specified parts be used for the critical components in the shaded areas of the schematic.

**Shorting Switch (S1, S4 ~ S6, S8, S9, S700 ~ S705, S706 and S707)**

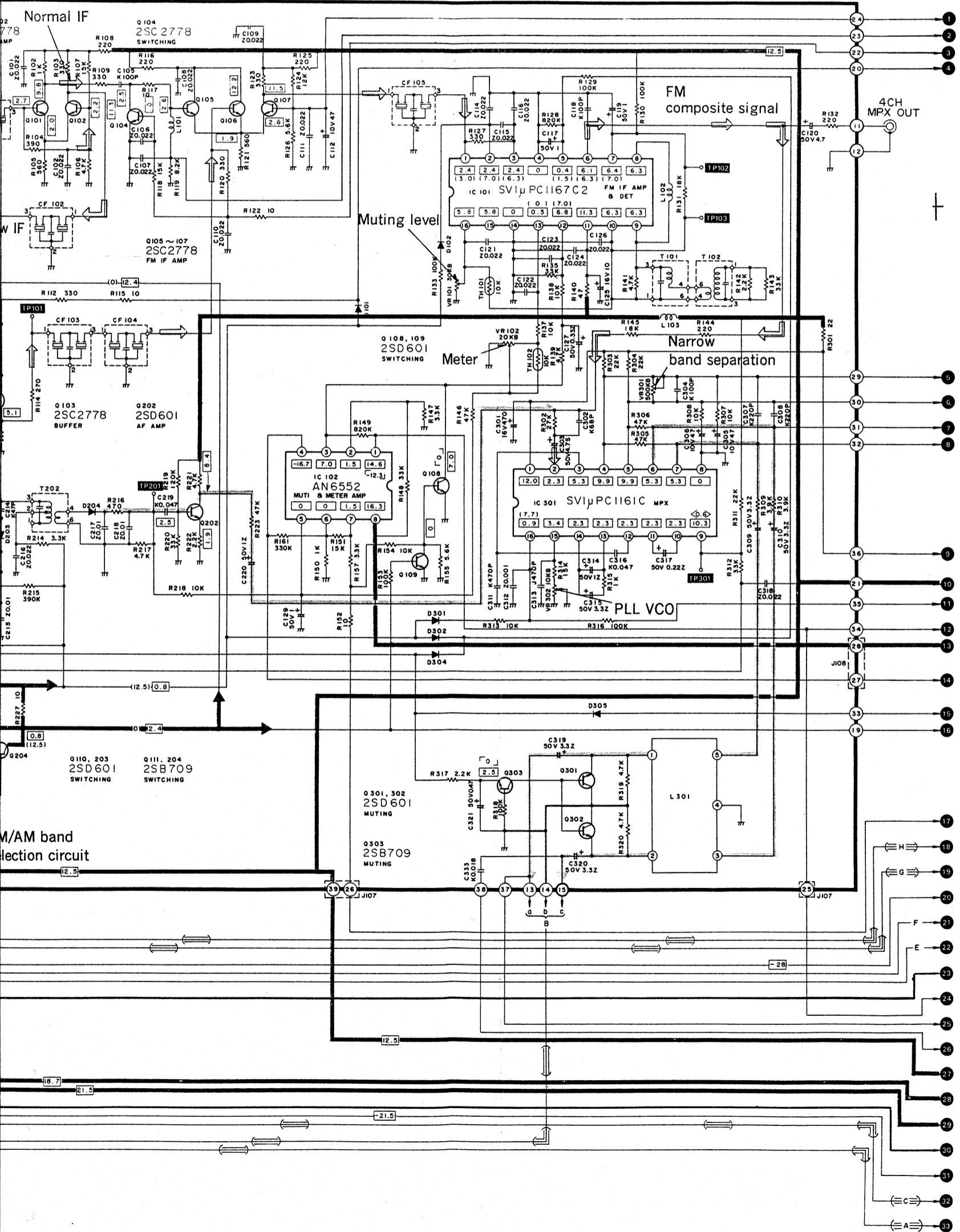
This unit uses a shorting switch. As illustrated below, the circuit is shorted to the next circuit without being opened. In the circuit diagram, the shaded area represents the common terminal.



An example of circuit diagram



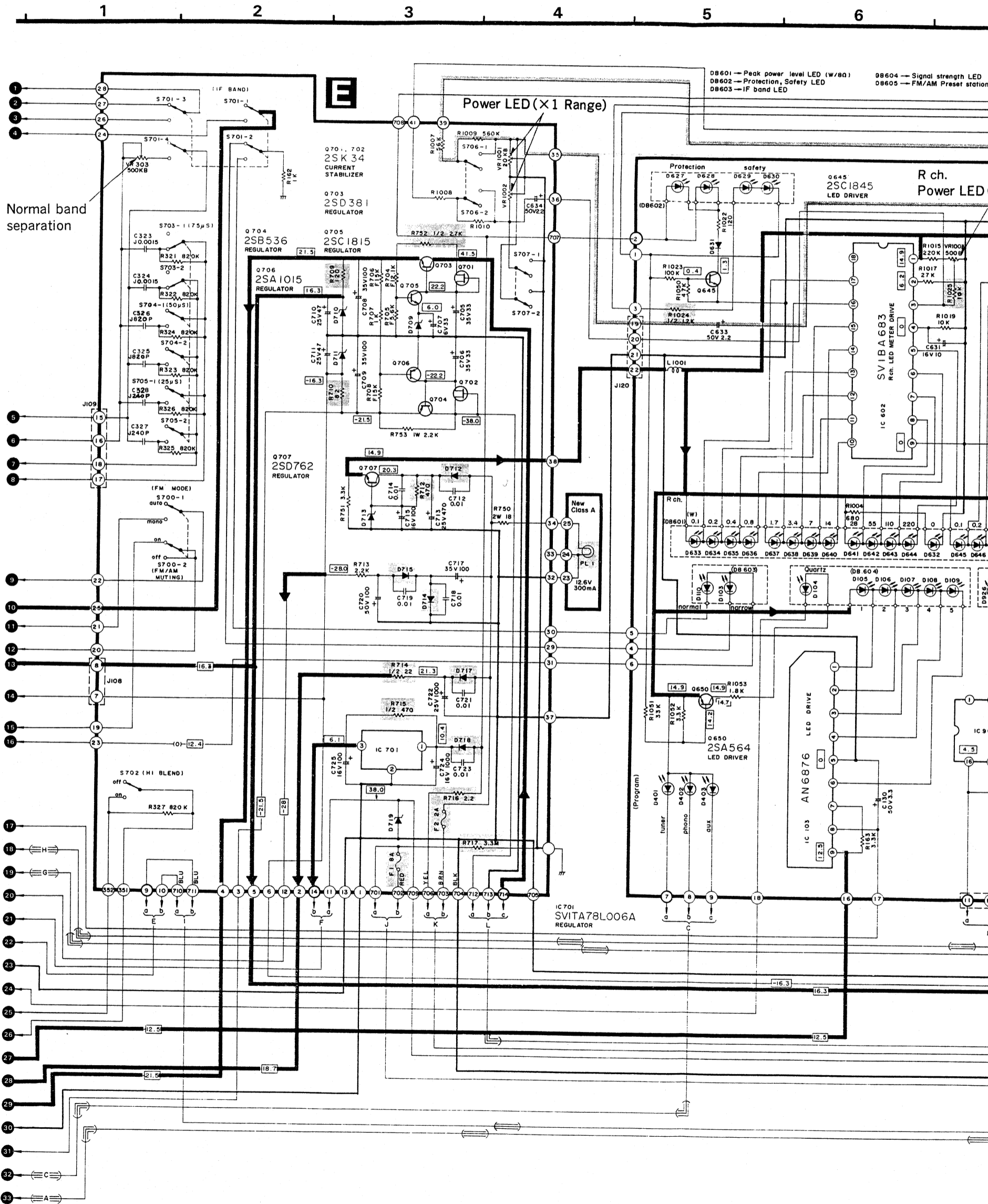
17 18 19 20 21 22



■ SCHEMATIC DIAGRAM (B) (E, F, G, H, I, J and K P.C.B.) ... MODEL

**SA-818**

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



Technics 1260

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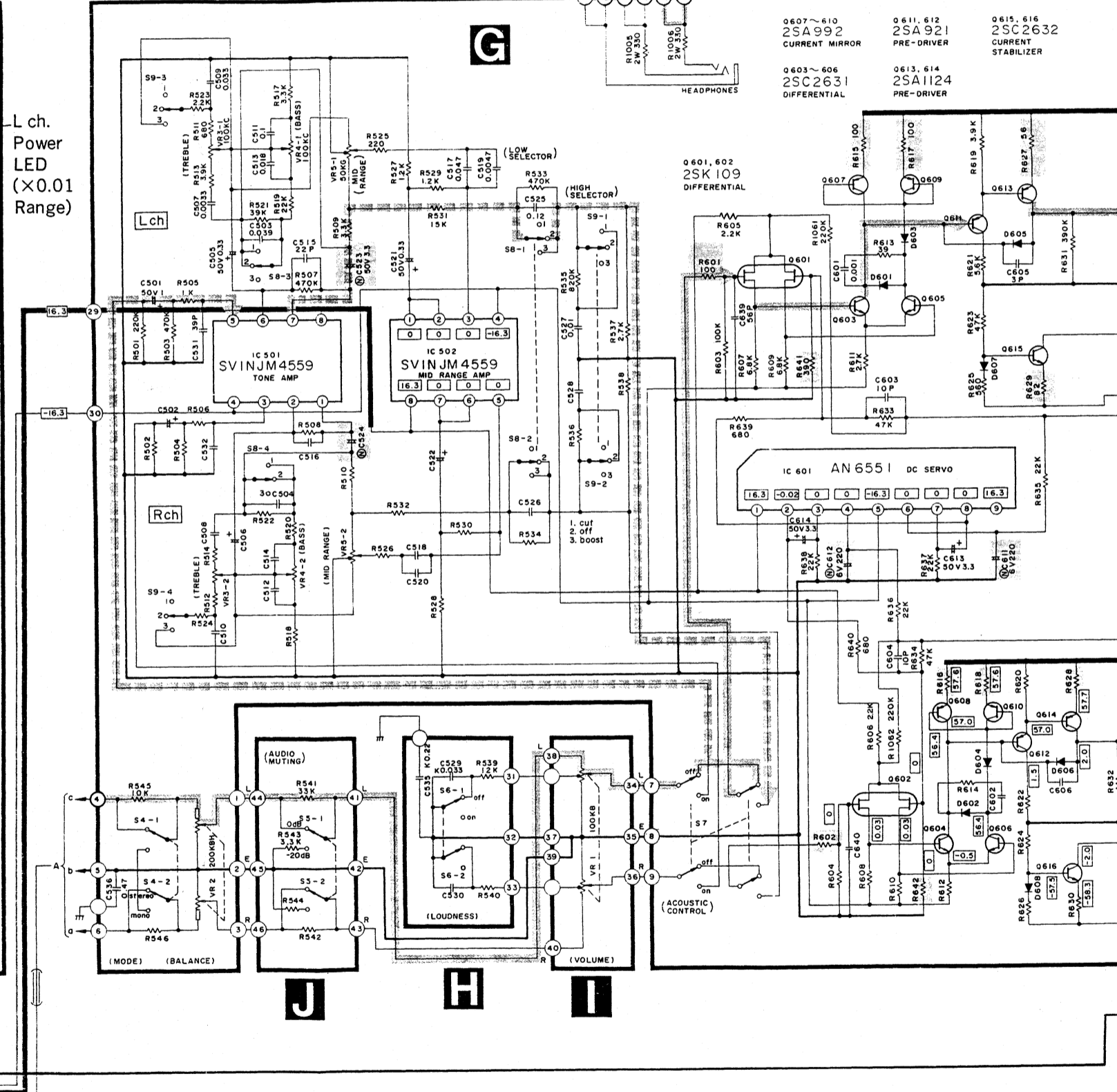
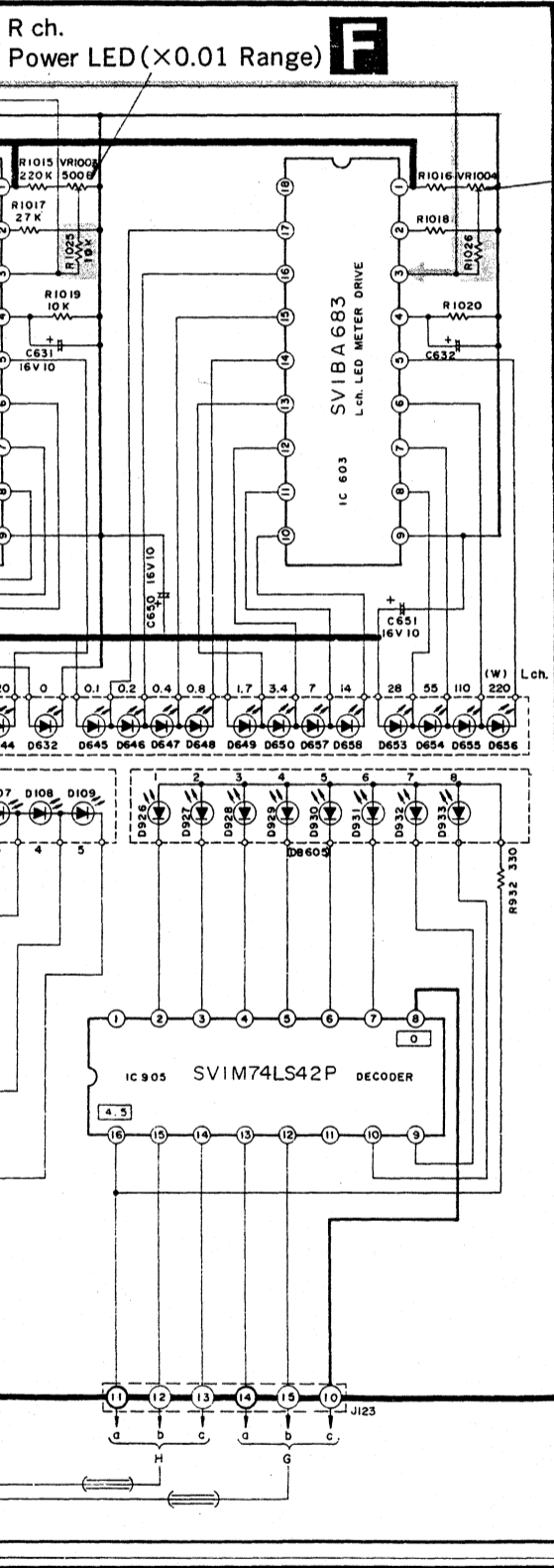
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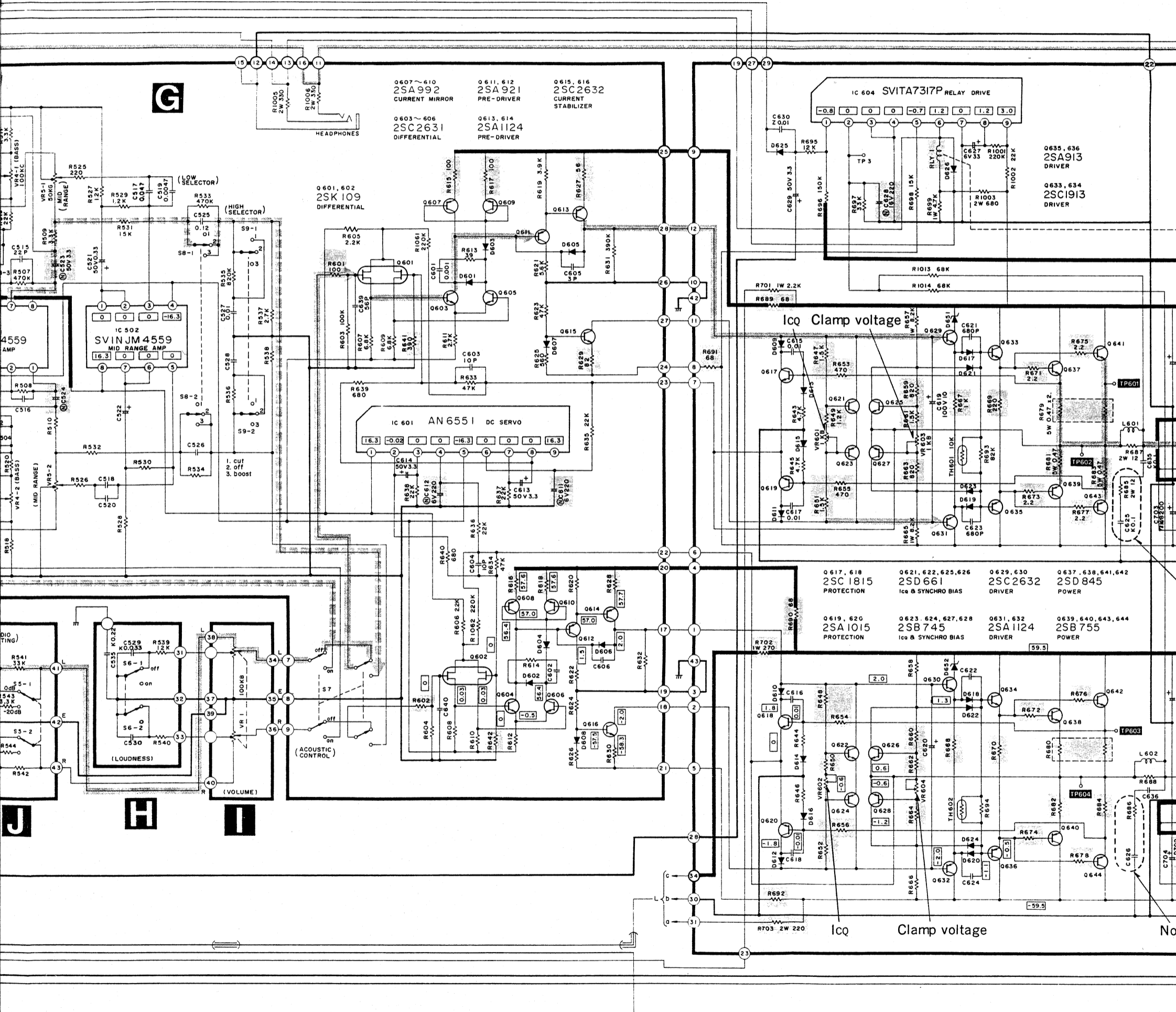
D8604 → Signal strength LED  
D8605 → FM/AM Preset station LED

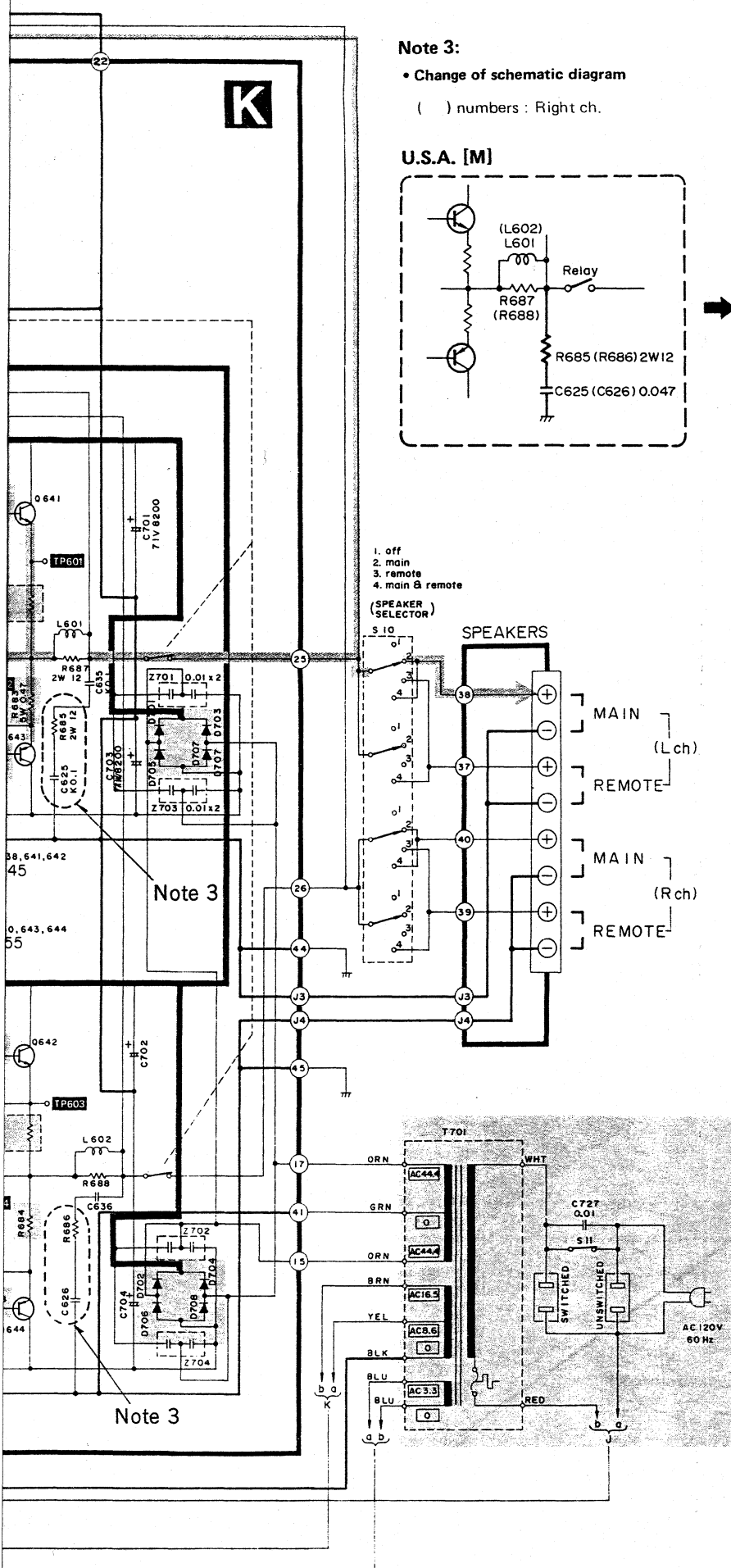
R ch.  
Power LED (X0.01 Range) **F**

L ch.  
Power LED  
(X0.01 Range)

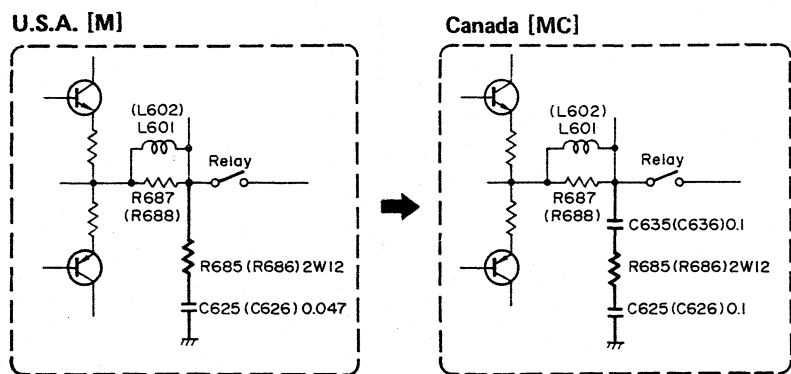
**G**







**Note 3:**  
 • Change of schematic diagram  
 ( ) numbers : Right ch.



**Notes 2:**

1. S4-1, S4-2 : Mode switch in "stereo" position. (stereo ↔ mono)
2. S5-1, S5-2 : Audio muting switch in "0 dB" position. (0 dB ↔ -20 dB)
3. S6-1, S6-2 : Loudness switch in "off" position.
4. S7 : Acoustic control switch in "off" position.
5. S8-1 ~ S8-4 : Acoustic low selector switch in "off" position. (① low cut ↔ ② off ↔ ③ low boost)
6. S9-1 ~ S9-4 : Acoustic high selector switch in "off" position. (① high cut ↔ ② off ↔ ③ high boost)
7. S10 : Speaker selector switch in "main" position. (① off ↔ ② main ↔ ③ remote ↔ ④ main & remote)
8. S11 : Power source switch in "on" position.
9. S700-1, S700-2 : FM-AM muting/FM mode switch in "on/FM auto" position. (on/FM auto/ ↔ off/FM mono)
10. S701-1 ~ S701-4 : FM IF band selector switch in "normal" position. (normal ↔ narrow)
11. S702 : FM high-blend switch in "off" position.
12. S703 ~ S705 : FM de-emphasis selector switch in "75μs" position. (S703 : 75μs S704 : 50μs S705 : 25μs)
13. S706-1, S706-2 : Power display range selector switch in "X1" position.
14. S707-1, S707-2 : Power display switch in "on" position.

**IMPORTANT SAFETY NOTICE**

The shaded area on this schematic diagram incorporates special features important for safety. When servicing it is essential that only manufacturer's specified parts be used for the critical components in the shaded areas of the schematic.

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

AN217P SVIM74LS42P SVITC5067BP SVIμPCI167C SVIμPCI161C	SVITA78L006A	2SB745, 2SB755 2SD845	MA151K
AN6552 SVIμPB553C	2SB709, 2SC2295 2SC2404, 2SD601 2SC2778	2SD661	MA151A
AN6876	2SA564, 2SA921 2SA992, 2SA1015 2SA1124 2SC928, 2SC945 2SC1815, 2SC1845 2SC2631, 2SC2632 2SC1684	2SK34	LN217RP, LN317GP LN417YP
SVITA7317P SVITA7322P	SVINJM4559	2SB536, 2SD381	SVDMZ
AN6551	SVIμPD1704CL	2SA913, 2SC1913 2SD762	3SK74
D103, 104, 105, 106 107, 110	D108, 109	D401, 402, 403	D601, 602, 603, 604 609, 610, 611, 612 625, 631
D605, 606, 613, 614 615, 616	D607, 608	D617, 618, 619, 620 621, 622, 623, 624	D626
D627, 628, 641, 642 643, 644, 653, 654 655, 656	D629, 630, 632, 633 634, 635, 636, 645 646, 647, 648	D637, 638, 639, 640 649, 650, 657, 658	D651, 652
D701, 702, 703, 704 705, 706, 707, 708	D712, 714, 715, 717 718	D713	D719
D926, 927, 928, 929 930, 931, 932, 933			

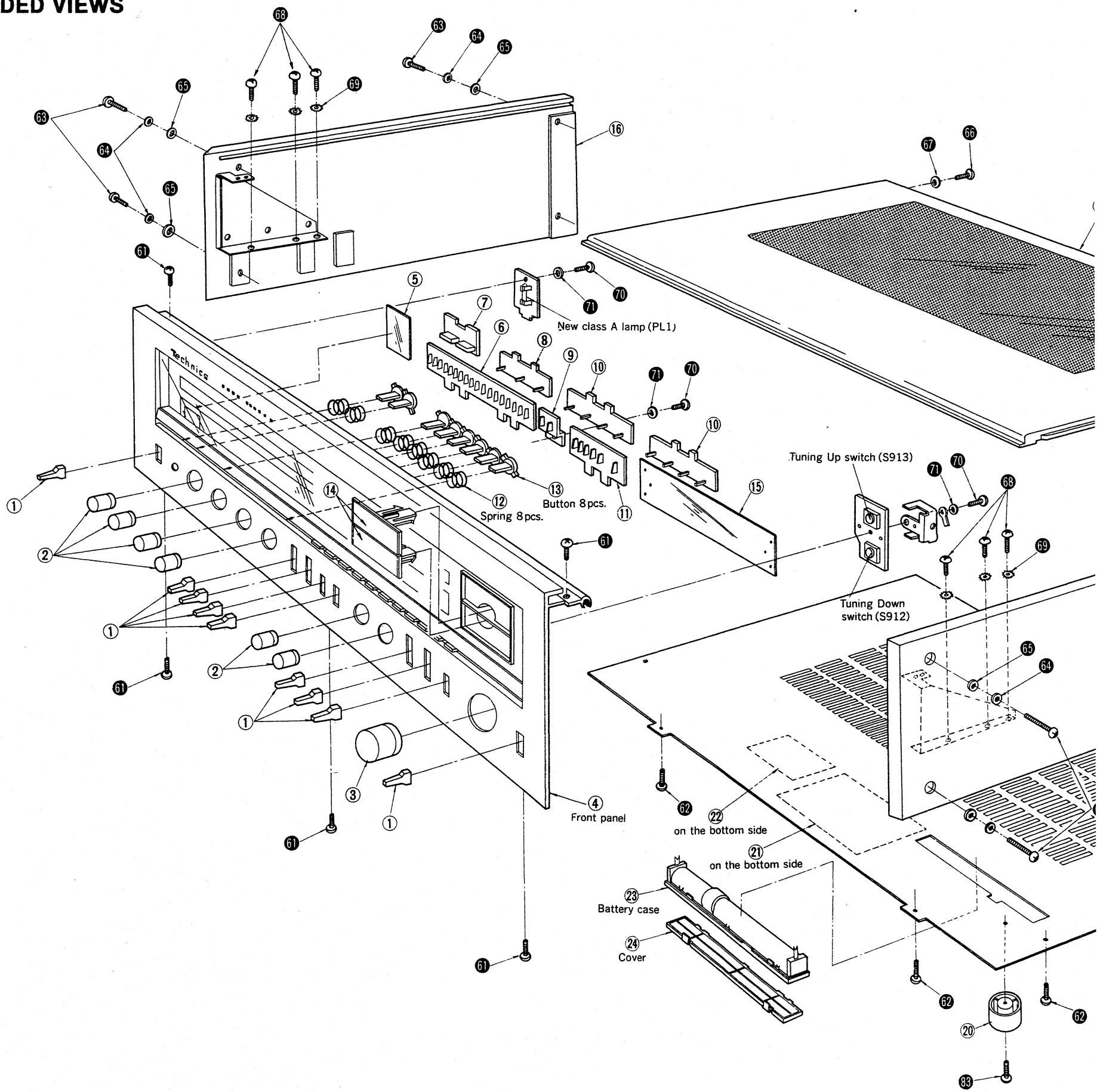
**DIODES**

D103, 104, 105, 106 107, 110	LN217RP	LED (Red)
D108, 109	LN317GP	LED (Green)
D401, 402, 403	LN217RP	LED (Red)
D601, 602, 603, 604 609, 610, 611, 612 625, 631	MA150	
D605, 606, 613, 614 615, 616	MA162A	
D607, 608	MA27B	
D617, 618, 619, 620 621, 622, 623, 624	2-0A99	
D626	SVDSRIK2	
D627, 628, 641, 642 643, 644, 653, 654 655, 656	LN217RP	LED (Red)
D629, 630, 632, 633 634, 635, 636, 645 646, 647, 648	LN317GP	LED (Green)
D637, 638, 639, 640 649, 650, 657, 658	LN417YP	LED (Yellow)
D651, 652	SVDMZ303A	3V Zener
D701, 702, 703, 704 705, 706, 707, 708	SVDS3V20	
D709	SVDMZ306	6V Zener
D710, 711	SVDMZ316	16V Zener
D712, 714, 715, 717 718	SVDSRIK2	
D713	SVDMZ314	14V Zener
D719	SVDMZ336	36V Zener
D926, 927, 928, 929 930, 931, 932, 933	LN217RP	LED (Red)

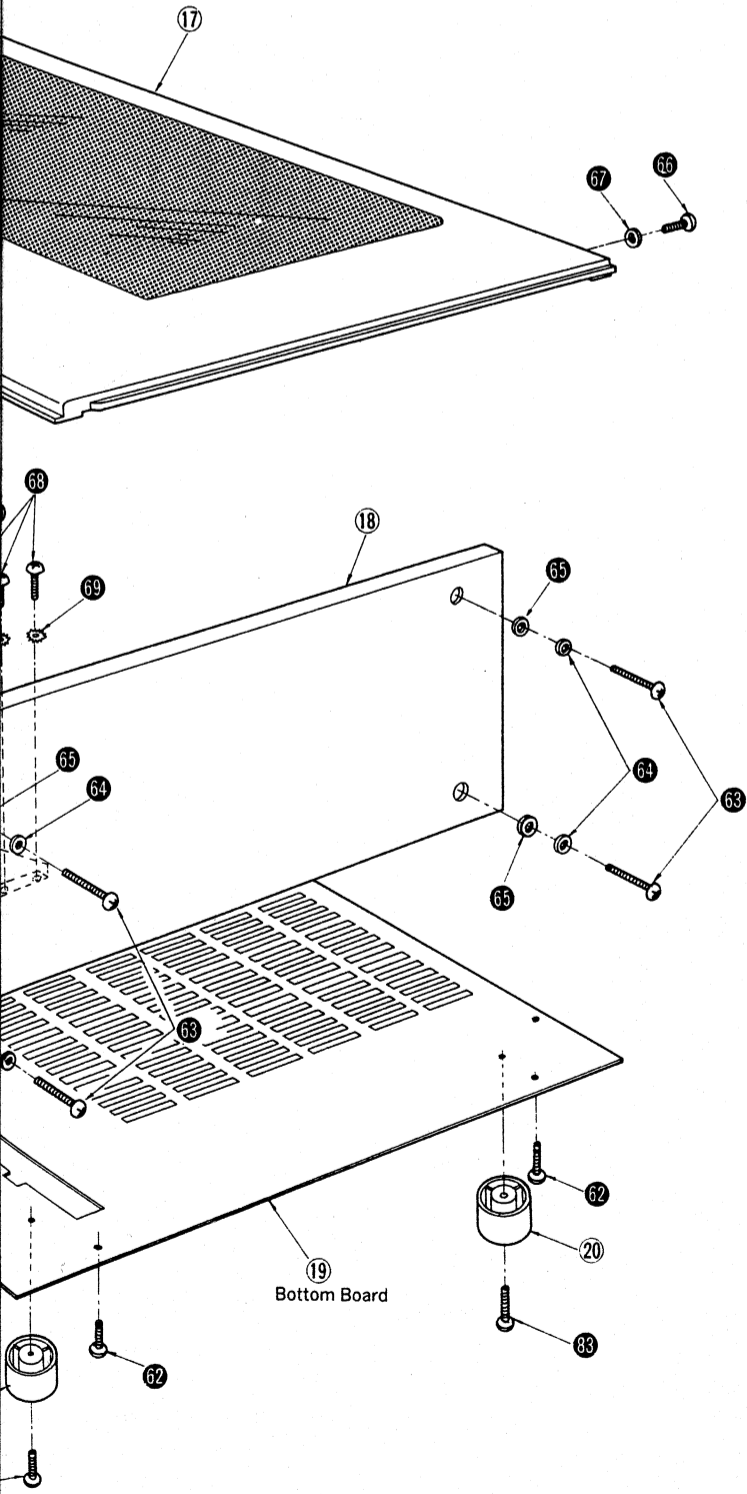


# SA-818

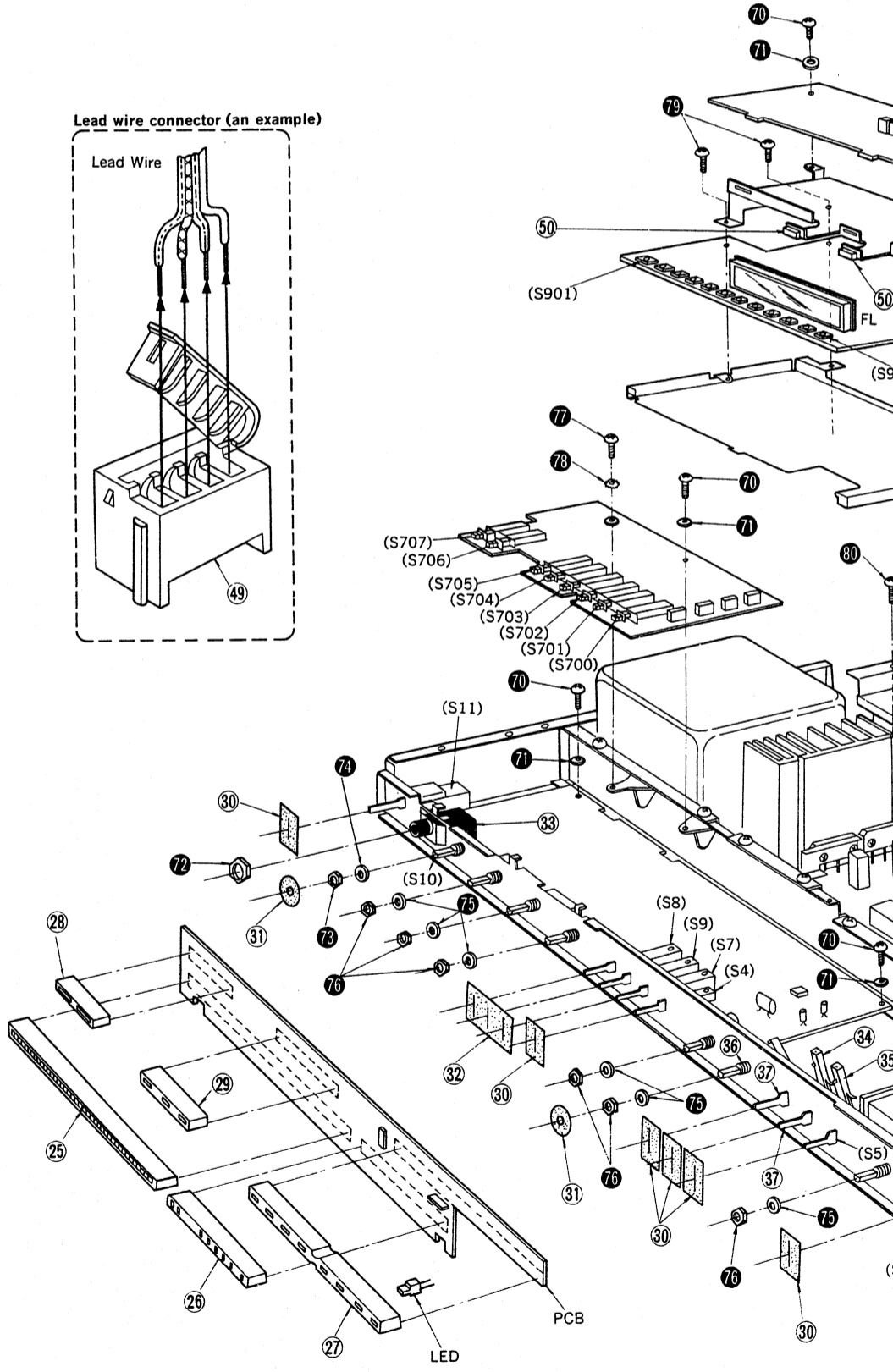
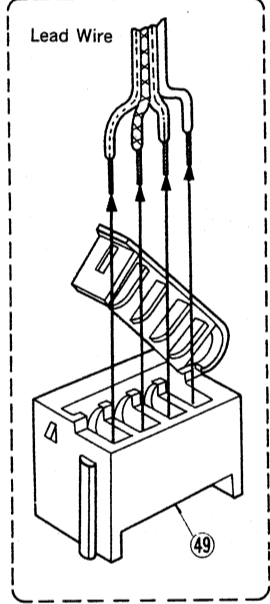
## EXPLODED VIEWS



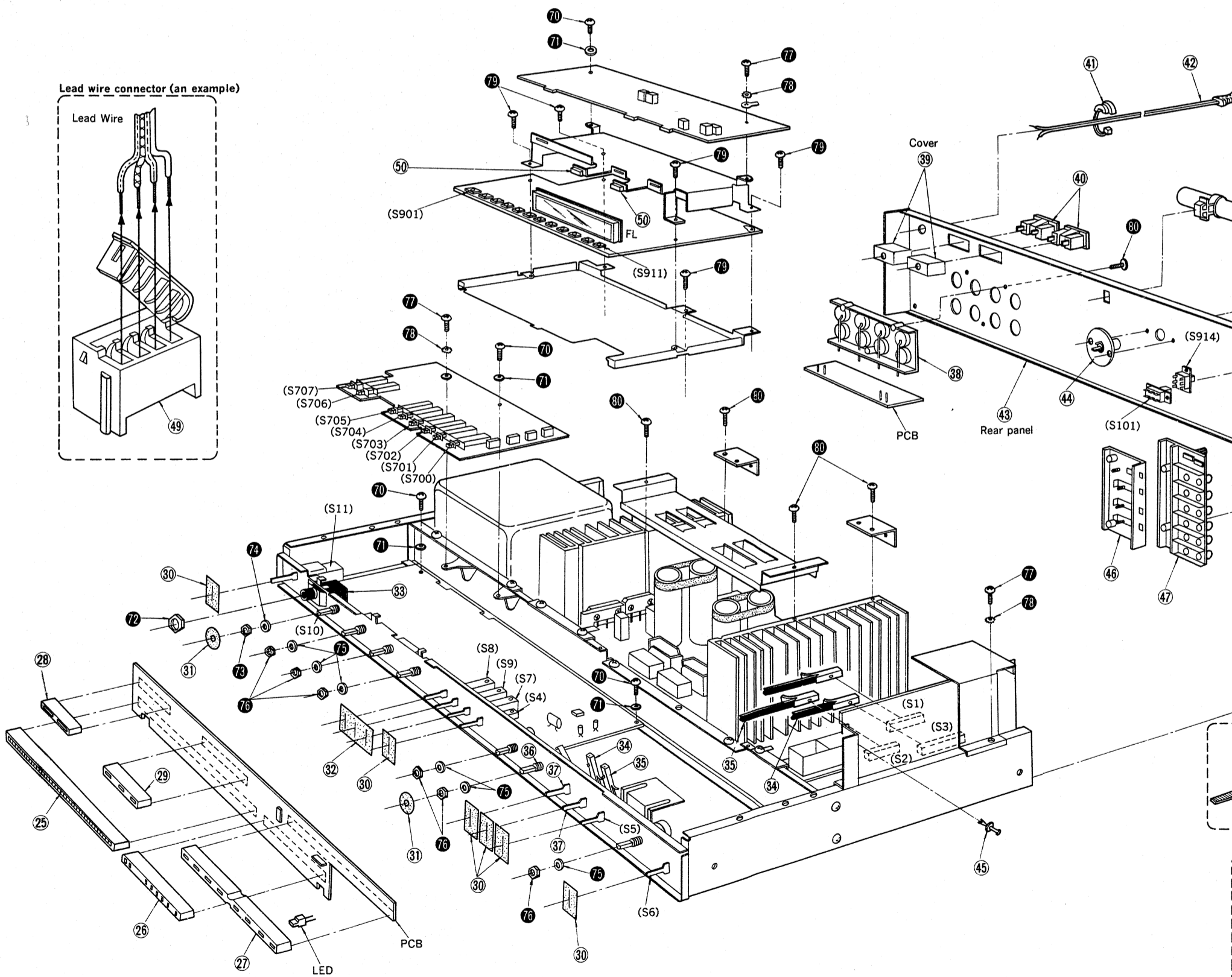
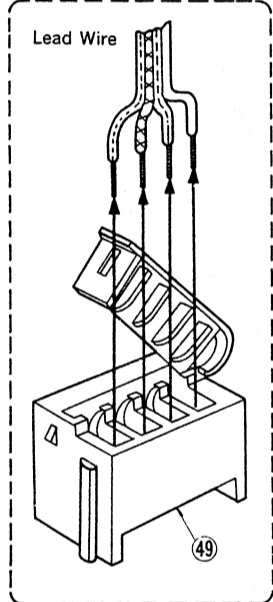
**SA-818 SA-818**



Lead wire connector (an example)



Lead wire connector (an example)



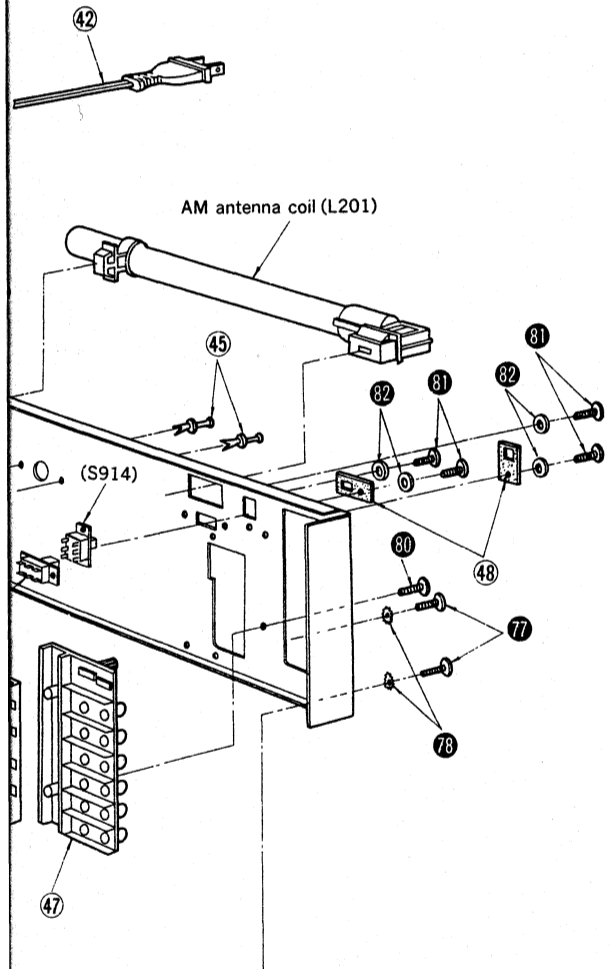
# SA-818 SA-818

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

- Notes:** 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.  
 2.  $\Delta$  indicates that only parts specified by the manufacturer be used for safety.  
 3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

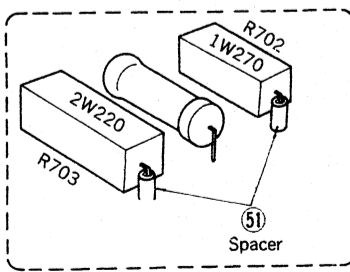
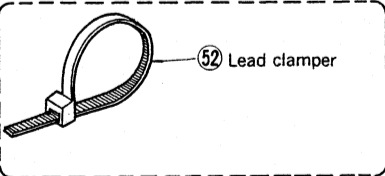
**Areas**

- \* [M] is available in U.S.A.
- \* [MC] is available in Canada.

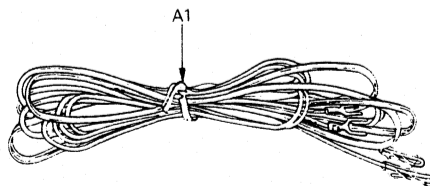


Ref. No.	Part No.	Part Name & Description
<b>CABINET and CHASSIS PARTS</b>		
1	SBD29	Knob, Lever Switches
2	SBN887-3	Knob, Tone Control/Balance/Selector
3	SBN885-5	Knob, Volume Control
4	SYW281	Panel, Front Ass'y
5	SDE255	Filter, New Class A Badge Light
6	SGL93	Light Guide, Power Level Indicator
7	SGL87	Light Guide, Protection/Safety Indicator
8	SGL89	Light Guide, Program Indicator
9	SGL95	Light Guide, IF Band Indicator
10	SGL91	Light Guide, Preset Station Indicator
11	SGL97	Light Guide, Signal Strength Indicator
12	SUS123-1	Spring, Push Switches
13	SBC205-3	Button, Push Switches
14	SBC275	Button, Tuning Up/Down Switch
15	SDU29	Filter, Display Window
16	SYK953	Side Panel, Left Ass'y
17	SYK951	Top Panel, Ass'y
18	SYK963	Side Panel, Right Ass'y
19	SKU8610	Bottom Board
20	SKX219-1	Foot
21	SQX4733	Label, Battery Caution
22	SQX4435-2	Label, Bottom Board Caution
23	SYE697	Case, Battery Ass'y
24	SJB9001	Cover, Battery Case
25	SHG1557	Bracket, Power Level Indicator LED
26	SHG1559	Bracket, IF Band/Signal Strength LED
27	SHG1561	Bracket, Preset Station Indicator LED
28	SHG1565	Bracket, Protection/Safety Indicator LED
29	SHG1563	Bracket, Program Indicator LED
30	SHS2425	Fiber, Lever Switches
31	SHS6045	Fiber, Speaker/Selector
32	SHS2429	Fiber, Lever Switches
33	XCJ6P21B-A1	Jack, Headphones
34	ESA30227B	Wire, Remote Control, Rec Mode
35	ESA30225B	Wire, Remote Control, Tape Monitor
36	ESA3362B	Remote Control, With Wire, Selector Switch
37	ESA2268	Remote Control, Rec Mode/Tape Monitor
38	SJF4813	Terminal, Speakers
39	SMX13-1	Cover, AC Outlet
40	$\Delta$ SJS466-2	Socket, AC Outlet
41	SFHK040L	Bushing, AC Cord
42	$\Delta$ RJA9Y	AC Cord
43	SGP2330A	Rear Panel
44	SJFA3101-1	Terminal, 4ch. MPX Output
45	SHR401-1	Latch, Terminal M'tg
46	SJF4419-2	Terminal, Antenna
47	SJF8023-2	Terminal, Input
48	SHR5073-1	Stopper, FM Antenna/Allocation Selector

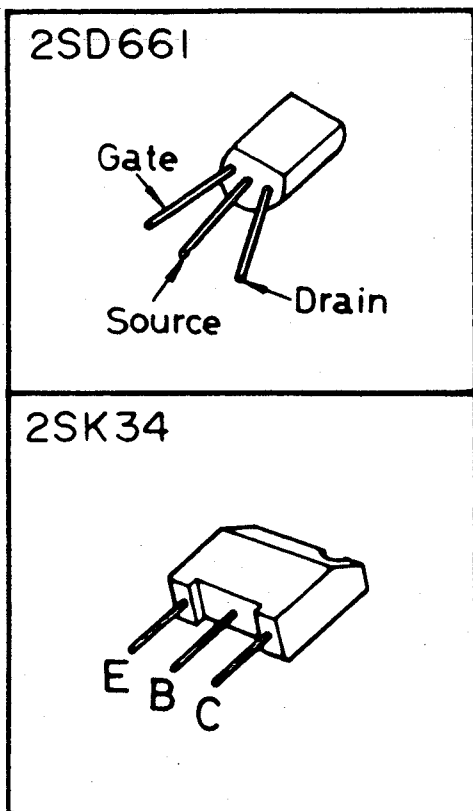
Ref. No.	Part No.	Part Name & Description
49	SJS5627	Connector, Lead Wire, 6 pin
	SJS5421	Connector, Lead Wire, 4 pin
	SJS5327	Connector, Lead Wire, 3 pin
50	SHG1529	Cushion, FL, Rubber
51	SMX51	Spacer, Resistor (R702, 703)
52	SHR301	Lead Clamper
<b>SCREWS, NUTS and WASHERS</b>		
①	XTB3+8BFZ	Screw, Tapping, $\oplus$ 3 x 8 (Front Panel)
②	XTB3+8BFN	Screw, Tapping, $\oplus$ 3 x 8 (Bottom Board)
③	XSN4+25BVS	Screw, $\oplus$ 4 x 25 (Side Panel)
④	XWA4BFZ	Washer, Spring, $\phi$ 4
⑤	XWG4FZ	Washer, Plain, $\phi$ 4
⑥	XTV3+8BFZ	Screw, Tapping, $\oplus$ 3 x 8 (Top Panel)
⑦	XWG3FZ	Washer, Plain, $\phi$ 3
⑧	XTB4+10BFN	Screw, Tapping, $\oplus$ 4 x 10 (Side Panel)
⑨	XWC4C	Washer, External Toothed Lock, $\phi$ 4
⑩	XTV3+10BFN	Screw, Tapping, $\oplus$ 3 x 10 (P.C.B.)
⑪	XWG3	Washer, Plain, $\phi$ 3
⑫	XNS12	Nut, M12 (Headphone Jack)
⑬	XNS9	Nut, M9 (Speaker Selector)
⑭	XWV9	Washer, Spring, $\phi$ 9
⑮	XWV8	Washer, Spring, $\phi$ 8
⑯	XNS8	Nut, M8 (Volume/Balance/Tone/Selector)
⑰	XTB3+8BFZ	Screw, Tapping, $\oplus$ 3 x 8 (P.C.B.)
⑱	XWC3B	Washer, External Toothed Lock, $\phi$ 3
⑲	XTB3+8BFN	Screw, Tapping, $\oplus$ 3 x 8 (Shield Cover)
⑳	XTB3+10BFZ	Screw, Tapping, $\oplus$ 3 x 10 (Chassis)
㉑	XSN3+6BVS	Screw, $\oplus$ 3 x 6 (FM Antenna/Allocation)
㉒	XWA3BFZ	Washer, Spring, $\phi$ 3
㉓	XTB3+14BFN	Screw, Tapping, $\oplus$ 3 x 14 (Feet)
<b>ACCESSORY</b>		
A1	SSA267	Cord, FM Indoor Antenna
<b>PACKING PARTS</b>		
P1	SPP655	Polyethylene Bag
P2	SPS2765	Pad, Left Side
P3	SPS2767	Pad, Right Side
P4 [M] only	SPG2635	Carton Box
P4 [MC] only	SPG2637	Carton Box
P5 [M] only	SQF10447-1	Instructions Book, Printed Matter
P5 [MC] only	SQF10449	Instructions Book, Printed Matter



• Accessory



## Correction of the Terminal Guides on page 41



Change

