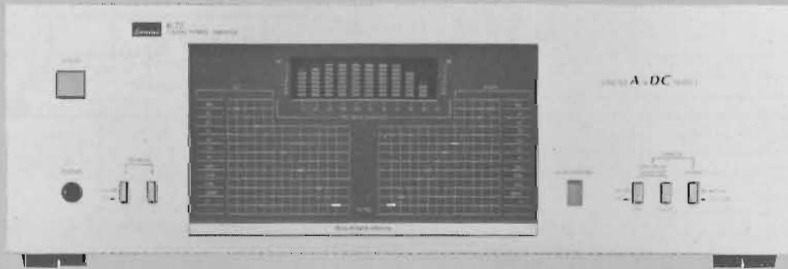


# SERVICE MANUAL

STEREO POWER AMPLIFIER

## SANSUI B-77



### SPECIFICATIONS

#### Power output

Min. RMS, both channels driven, from 20 to 20,000 Hz, with no more than 0.03 % total harmonic distortion  
60 watts per channel into 8 ohms

Load impedance . . . . . 8 ohms

Total harmonic distortion . . . . . less than 0.03 % at or below rated min. RMS power output

Frequency response (at 1 watt) . . . . . 5 to 70,000 Hz  
+0 dB, -2 dB

Input sensitivity and impedance (1 kHz, for rated power output)  
. . . . . 1 V/47 kilohms

Hum and noise (short-circuit, A-network)  
. . . . . 115 dB

#### Power requirements

Power voltage . . . . . 110 ~ 120, 220 ~ 240 V  
(50/60 Hz)

For U.S.A. & Canada . . . . . 120 V (60 Hz)

Power consumption . . . . . 255 watts Rated

350 watts Maximum

UL, CSA Model . . . . . 230 watts 275 VA Rated

Dimensions . . . . . 430 mm (16-15/16") W

148 mm (5-7/8") H

230 mm (9-1/16") D

Weight . . . . . 6.4 kg (14.1 lbs) net

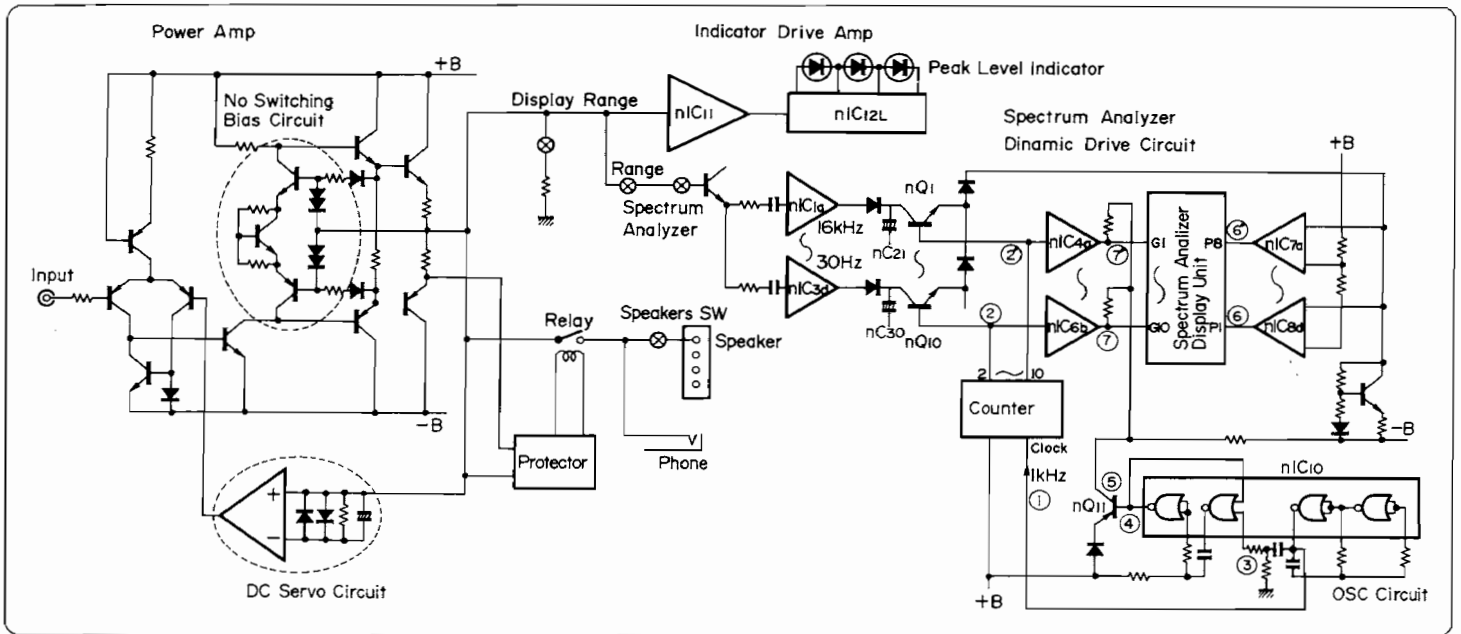
7.3 kg (16.1 lbs) packed

- \* Design and specifications subject to changes without notice for improvements.
- \* In order to simplify the explanation illustrations may sometimes differ from the originals.

**Sansui**

SANSUI ELECTRIC CO., LTD.

# 1. BLOCK DIAGRAM



# 2. BLOCK DIAGRAM OF IC

## 2-1. MSM4017

Fig. 2-1

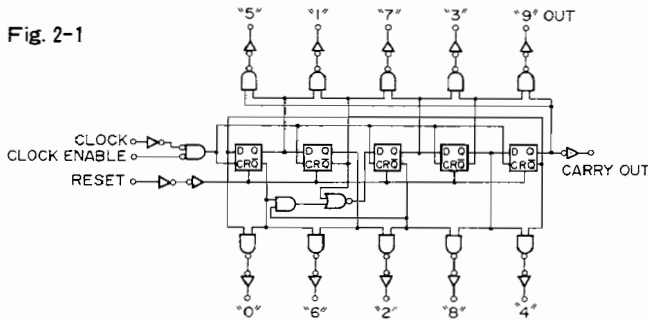


Fig. 2-2

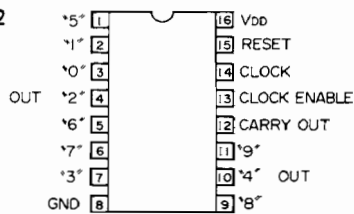
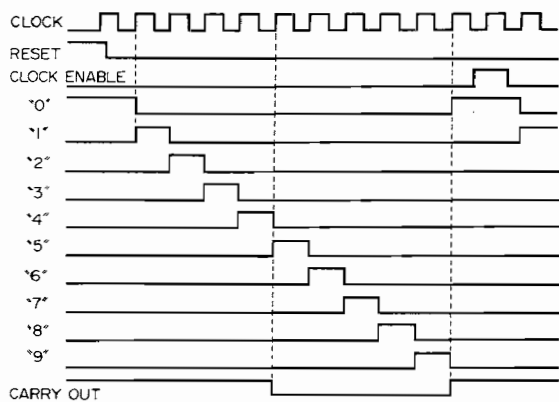
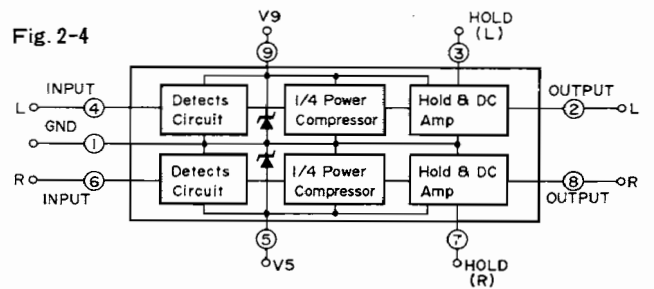


Fig. 2-3



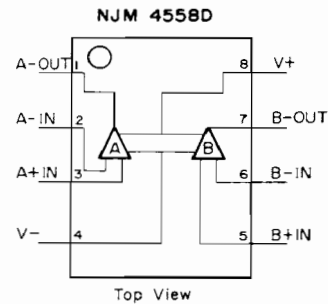
## 2-2. TA7318P

Fig. 2-4



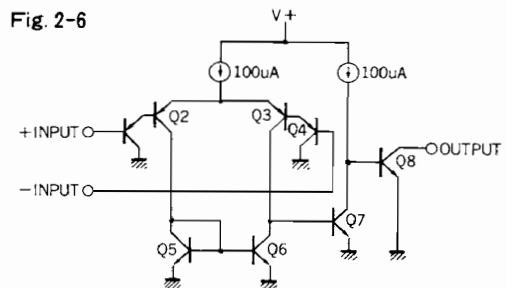
## 2-3. NJM4558

Fig. 2-5



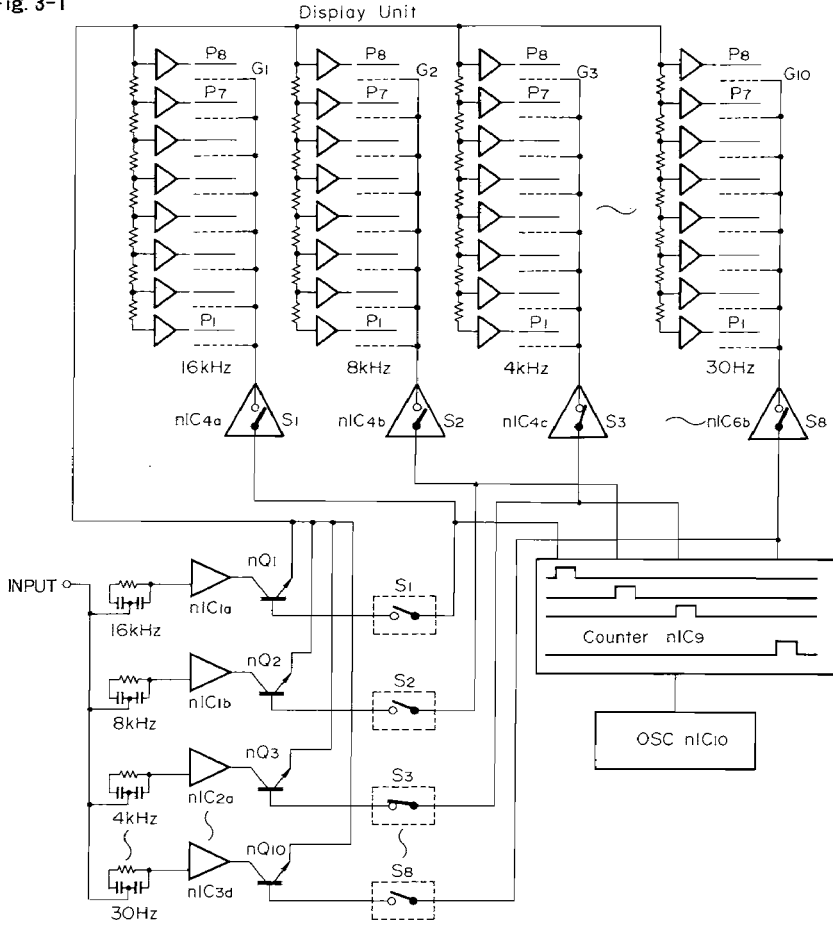
## 2-4. NJM2901N

Fig. 2-6



### 3. OPERATION OF SPECTRUM ANALYZER

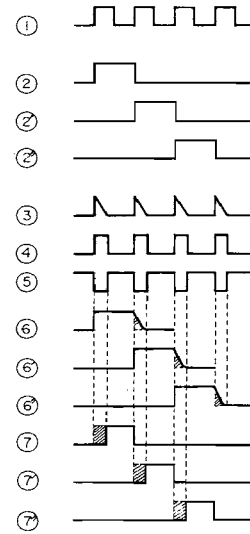
Fig. 3-1



**\* Blanking Timing Chart**

Numbers of the wave-forms shown in Fig. 3-2 correspond to those which show the positions in the Block Diagram.

Fig. 3-2



#### 3-1. Basic Operation

Fig. 3-1 shows a basic circuit configuration of the spectrum analyzer. An audio output is first divided into eight frequency bands through the eight filters and, next, is dynamic-driven by the counter in order to light up the corresponding display tubes.

To explain the dynamic drive in more detail, if the audio output includes, for instance, a frequency of 4 kHz, the output pulse generated from the counter turns ON the transistor nQ<sub>3</sub> and, thereby, a voltage is applied to the plates of all the display tubes. In addition, the pulse which turns ON the transistor nQ<sub>3</sub> also turns ON the nIC<sub>4</sub> and, thereby, another voltage is also applied to the grids G<sub>3</sub> of the display tubes for displaying 4 kHz. Since two voltages are applied to both the plates and grids of the display tubes for displaying 4 kHz, it follows that the display tubes for 4 kHz turn ON in proportion to an audio output level of 4 kHz.

In other words, it may be possible to consider that the pulses generated from the counter can close both the switches connected in series to the plates and grids of the eight display tubes at the same time, at a cycle of 1 kHz, beginning from the display tubes for 16 kHz to those for 30 Hz one by one. And, if an audio signal is input to the filter of a frequency band, the display tubes which correspond to its frequency band keep turning ON only while both the switches connected in series to the plates and grids of the corresponding display tubes are closed. However, since both the switches are dynamic-driven at a frequency of 1 kHz, the display tubes look as if they continuously stay ON without any blinking.

#### 3-2. Blanking Operation

In addition, five ICs as comparator of nIC<sub>4</sub>, nIC<sub>5</sub>, nIC<sub>6</sub> and nIC<sub>8</sub> connected with grid of display tube has function of open-collector which produces a switching ON and OFF by input level.

Accordingly, the wave-forms of the output pulses should look like the ones ⑥, ⑦, and ⑧ shown in Fig. 3-2. The hatched parts of these pulses are not included in the actual output pulses. If these hatched parts of the output pulses were applied to the plates of the display tubes, the display tubes would grow dim in cooperation with the timing pulses for the succeeding band which are applied to the grids of the display tubes.

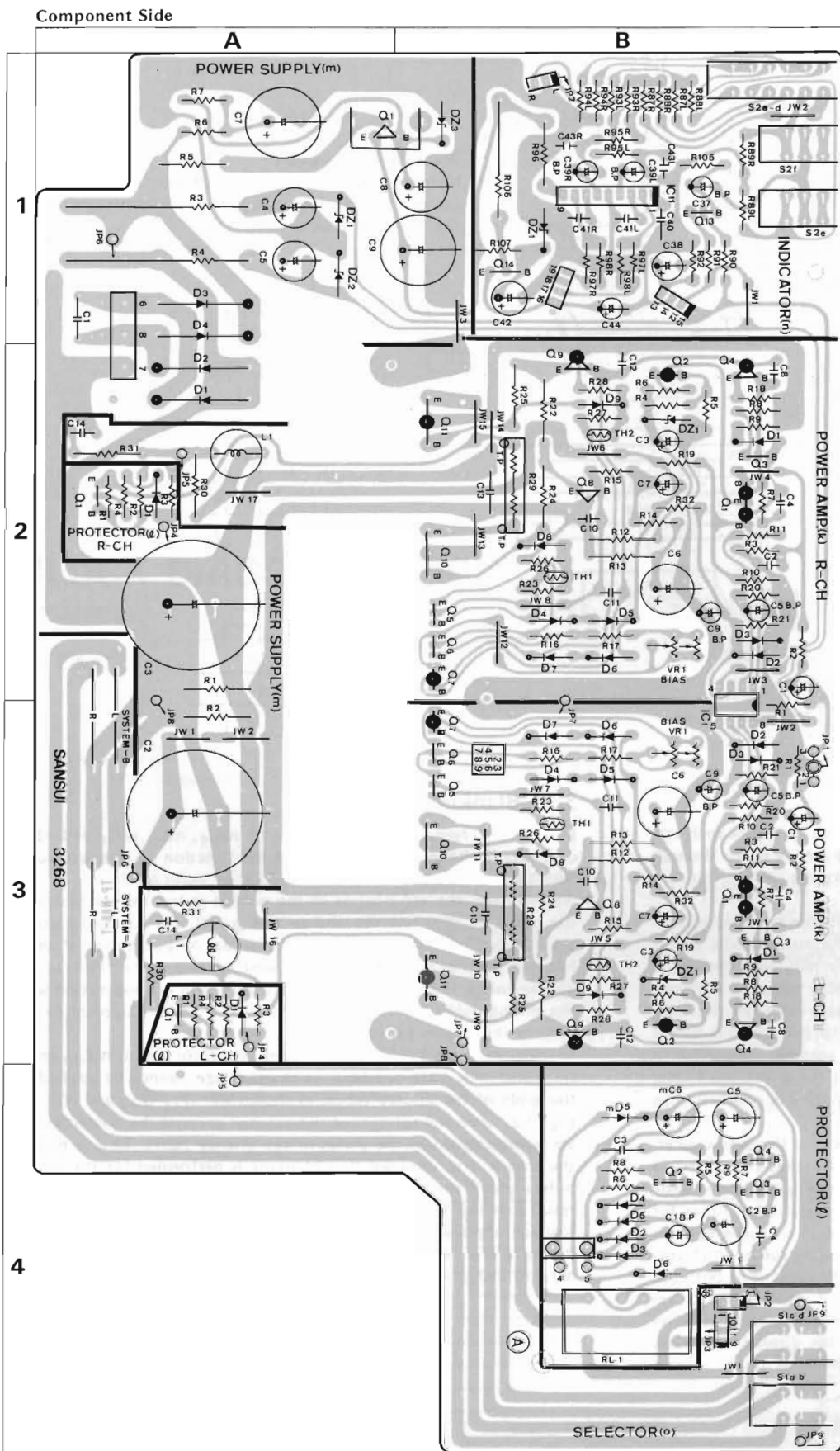
In order to prevent this, a one-shot multivibrator circuit nIC<sub>10</sub> and a transistor nQ<sub>11</sub> are provided so that voltage cannot be applied to the grids of the display tubes, as shown by ⑦, ⑦, and ⑦ in Fig. 3-2, when the voltages of the hatched parts of the output pulses are being applied to the plates of the display tubes. That is to say, the circuit is so designed that blanking is performed for the timing pulses which are applied to the grids of the display tubes, with the result that the display tubes can light up correctly and clearly.

Voltage applied to plate of the display tube maintains same level during a few seconds by influence of base carrier storage effect of nQ<sub>1</sub> to nQ<sub>10</sub> even though these transistors are in cut-off state.

# 4. PARTS LOCATION & PARTS LIST

## 4-1. F-3268 Power Amp Circuit Board (Stock No. 07085501)

• Since some of capacitors and resistors are omitted from parts lists in this Service Manual, refer to the new Common Parts List for capacitors & resistors.

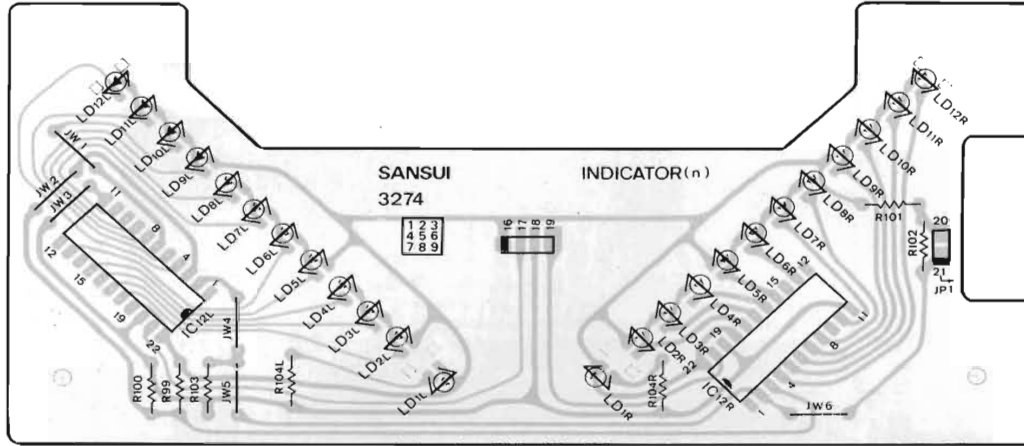


### Parts List

Parts No.	Stock No.	Description
<b>• Transistor</b>		
IQ1	07194800	2SC1815 Y
kQ1	03602900	2SA798 F
mQ1	03083902	2SD313AL E
IQ2	07194800	2SC1815 Y
kQ2	03010900	2SA992 F
kQ3	03067400	2SC1845 F
IQ3	07194800	2SC1815 Y
kQ4	03064001	2SC1904 B
IQ4	07194800	2SC1815 Y
kQ5	03067400	2SC1845 F
kQ6	03067400	2SC1845 F
kQ7	03010900	2SA992 F
kQ8	03084801	2SD358 D
kQ9	03033101	2SB528 D
kQ10	03069800	2SC2579LB2 D
kQ11	03012900	2SA1104LB2 O
nQ13	07194800	2SC1815 Y
nQ14	03083902	2SD313
<b>• IC</b>		
kIC1	03607700	NJM4558 D
nIC11	03610000	TA7318P
<b>• Diode</b>		
mD1	03115300	30D2
ID1	07176400	1S2473HS
kD1	07176400	1S2473HS
ID2	03104000	1N34A
kD2	07176400	1S2473HS
mD2	03115300	30D2
mD3	03115300	30D2
kD3	07176400	1S2473HS
ID3	03104000	1N34A
mD4	03115300	30D2
kD4	07176400	1S2473HS
ID4	03104000	1N34A
ID5	03104000	1N34A
mD5	03117700	10E2
kD5	07176400	1S2473HS
kD6	07176400	1S2473HS
ID6	03117700	10E2
kD7	07176400	1S2473HS
kD8	07176400	1S2473HS
kD9	07176400	1S2473HS
<b>• Thermistor</b>		
kTH1	03201500	112102-02
kTH2	03201500	112102-02
<b>• Zener Diode</b>		
mDZ1	03163100	RD13E B
kDZ1	07181300	RD20E B
mDZ2	03163300	RD15E B
mDZ3	03165200	RD24E C
nDZ1	03163100	RD13E
mR1	00183900	5.6kΩ 1W N.I.R.
mR2	00183900	5.6kΩ 1W N.I.R.
mR3	00063100	820Ω 7W Ce.R.
mR4	00063100	820Ω 7W Ce.R.
mR5	00190100	47Ω 2W N.I.R.
kR29	00091700	0.33Ω x 2 2W Ce.R.
kR31	00179000	100Ω 1W N.I.R.
nR106	00058800	680Ω 5W Ce.R.
mC1	08680400	10000pF 500V C.C.
IC1	08451700	1μF 50V E.B.
mC2	08301800	6800μF 63V E.C.
IC2	08460100	100μF 6.3V E.B.
IC3	00348300	0.22μF 125V M.P.
mC3	08301800	6800μF 63V E.C.
kC5	08450900	4.7μF 16V E.B.
kC9	08451700	1μF 50V E.B.
kC13	08680400	10000pF 500V C.C.
nC37	08451700	1μF 50V E.B.
nC39	08451700	1μF 50V E.B.
kL1	42102900	1.5μH RF Coil
kVR1	10370400	1kΩB Bias Current Adjust Volume
<b>• Switch</b>		
oS1	07210500	Speakers Switch
oS2	07210400	Display Range Switch
<b>• Relay</b>		
IRL1	07198400	Relay
		22902400 4P Output Terminal, system B
		22902500 4P Output Terminal, system A

4-2. F-3274 Peak Level Indicator Circuit Board (Stock No. 07085901)

Component Side



• Abbreviations

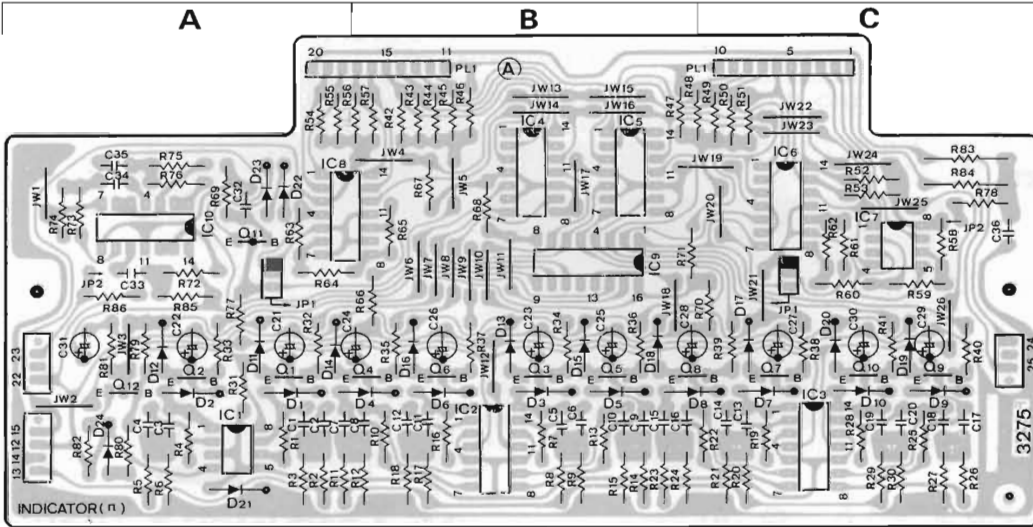
C.R.	Carbon Resistor
S.R.	Solid Resistor
Ce.R.	Cement Resistor
M.R.	Metal Film Resistor
F.R.	Fusing Resistor
N.I.R.	Non-Inflammable Resistor
C.C.	Ceramic Capacitor
C.T.	Ceramic Capacitor, Temperature Compensation
E.C.	Electrolytic Capacitor
E.L.	Low Leak Electrolytic Capacitor
E.B.	Bi-Polar Electrolytic Capacitor
E.BL.	Low Leak Bi-Polar Electrolytic Capacitor
Ta.C.	Tantalum Capacitor
F.C.	Film Capacitor
M.P.	Metalized Paper Capacitor
P.C.	Polystyrene Capacitor
G.C.	Gimmick Capacitor

Parts List

Parts No.	Stock No.	Description	Parts No.	Stock No.	Description	Parts No.	Stock No.	Description
•IC			nLD5	07209100	SEL1310E	•Cds		
nIC12	07209200	IR2406G	nLD6	07209100	SEL1310E	nPH1	07207500	P-1201
•LED			nLD7	07209100	SEL1310E		07581700	LED Holder
nLD1	07209100	SEL1310E	nLD8	07209100	SEL1310E			
nLD2	07209100	SEL1310E	nLD9	07209100	SEL1310E			
nLD3	07209100	SEL1310E	nLD10	07209100	SEL1310E			
nLD4	07209100	SEL1310E	nLD11	07209100	SEL1310E			
			nLD12	07209100	SEL1310E			

4-3. F-3275 Spectrum Analyzer Circuit Board (Stock No. 07086101)

Component Side

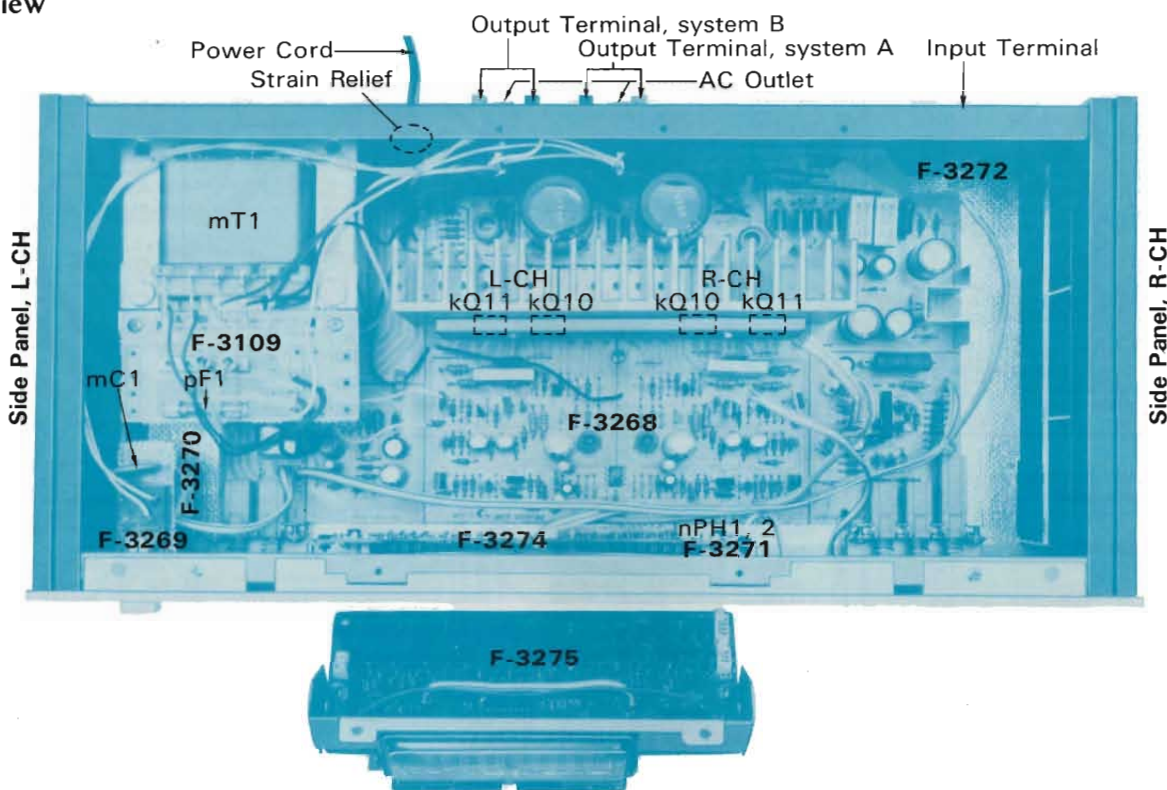


Parts List

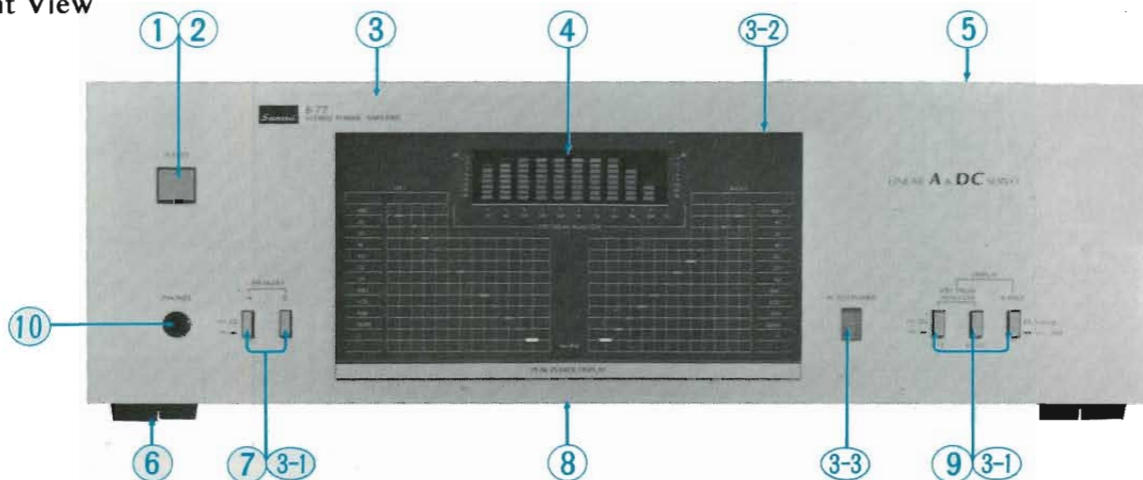
Parts No.	Stock No.	Description	Parts No.	Stock No.	Description	Parts No.	Stock No.	Description
•Transistor			nIC9	07205400	MSM4017RS	nD20	07176400	1S2473HS
nQ1	07194800	2SC1815 Y	nIC10	03610500	TC4001BP	nD21	07176400	1S2473HS
nQ2	07194800	2SC1815 Y	•Diode			nD22	07176400	1S2473HS
nQ3	07194800	2SC1815 Y	nD1	07176400	1S2473HS	nD23	07176400	1S2473HS
nQ4	07194800	2SC1815 Y	nD2	07176400	1S2473HS	nD24	07176400	1S2473HS
nQ5	07194800	2SC1815 Y	nD3	07176400	1S2473HS	nPL1	07203400	Spectrum Analyzer
nQ6	07194800	2SC1815 Y	nD4	07176400	1S2473HS	nC7	07214800	0.0015μF C.C.
nQ7	07194800	2SC1815 Y	nD5	07176400	1S2473HS	nC8	07214800	0.0015μF C.C.
nQ8	07194800	2SC1815 Y	nD6	07176400	1S2473HS	nC9	07215200	0.0033μF C.C.
nQ9	07194800	2SC1815 Y	nD7	07176400	1S2473HS	nC10	07215200	0.0033μF C.C.
nQ10	07194800	2SC1815 Y	nD8	07176400	1S2473HS	nC11	07215600	0.0068μF C.C.
nQ11	07194700	2SA1015 Y	nD9	07176400	1S2473HS	nC12	07215600	0.0068μF C.C.
nQ12	07194800	2SC1815 Y	nD10	07176400	1S2473HS	nC13	07215900	0.012μF C.C.
•IC			nD11	07176400	1S2473HS	nC14	07215900	0.012μF C.C.
nIC1	03607700	NJM4558D	nD12	07176400	1S2473HS	nC15	07216300	0.027μF C.C.
nIC2	07205200	2902	nD13	07176400	1S2473HS	nC16	07216300	0.027μF C.C.
nIC3	07205200	2902	nD14	07176400	1S2473HS	nC17	07216100	0.018μF C.C.
nIC4	07205300	NJM2901N	nD15	07176400	1S2473HS	nC18	07216100	0.018μF C.C.
nIC5	07205300	NJM2901N	nD16	07176400	1S2473HS	nC19	07216500	0.039μF C.C.
nIC6	07205300	NJM2901N	nD17	07176400	1S2473HS	nC20	07216500	0.039μF C.C.
nIC7	03607700	NJM4558D	nD18	07176400	1S2473HS			
nIC8	07205300	NJM2901N	nD19	07176400	1S2473HS			

# 5. OTHER PARTS

## 5-1. Top View



## 5-2. Front View



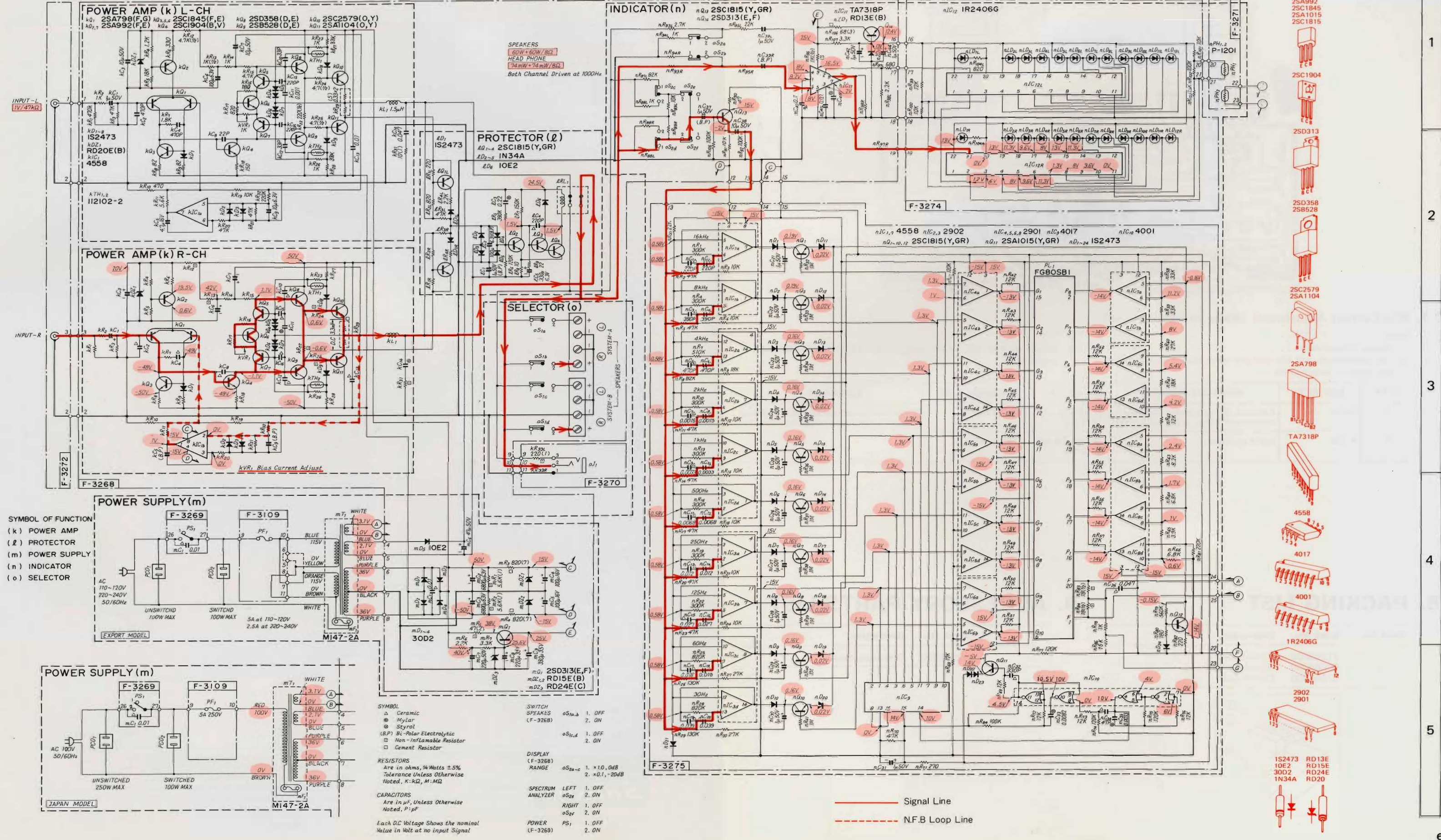
Parts List<Top View>

Parts No.	Stock No.	Description
kQ10	03069800	2SC2579LB2-D
kQ11	03012900	2SA1104LB2-O
kR33L, R	00181200	220Ω 1W N.I.R. (Head Phone Jack)
mC1	00386000	10000pF 150V C.C.
mT1	15000301	Power Transformer
pF1	07189100	5A AC Fuse (AC 100V)
	0432250	AC Fuse 2.5A 220V (AC 220V)
mPH1, 2	07327100	Cds, Auto Dimmer
	38004701	Power Cord
	39106000	Strain Relief
	22902500	Output Terminal, system A
	22902400	Output Terminal, system B
	07189600	AC Outlet
	22007000	Input Terminal
	54578000	Side Panel, L-CH
	54578100	Side Panel, R-CH

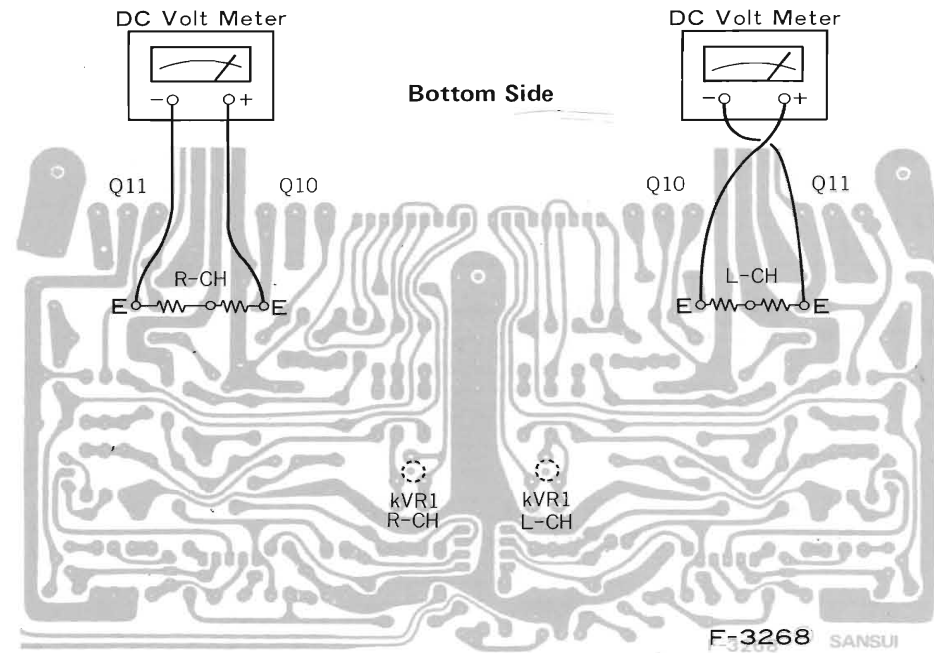
Parts List<Front View>

Parts No.	Stock No.	Description
1	11323500	Power Switch
2	53195000	Power Switch Knob
3	07586400	Front Panel Ass'y
3-1	07553900	Push Switch Knob
3-2	07587000	Front Glass
3-3	07587100	Lens (Auto Dimmer)
4	07588800	Meter Scale Ass'y
5	57272400	Bonnet
6	55074500	Leg
7	07210500	Speakers Switch
8	50664210	Bottom Plate
9	07210400	Display Switch
10	24306000	Head Phone Jack

# 6. SCHEMATIC DIAGRAM



## 7. ADJUSTMENTS



### 7-1. Bias Current Adjustment (Refer to figure above)

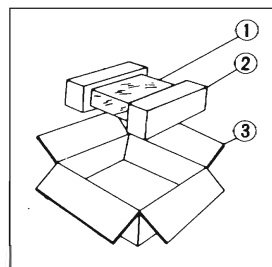
Note:

1. Room Temperature . . . . . 18°C ~ 38°C
2. For adjustment, run the unit for more than 3 minutes after the power is switched on.
3. Before turning ON power switch, turn kVR1 on F-3268 fully counterwise.

STEP	SUBJECT	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1.	L-CH	Connect DC volt meter between emitters of kQ <sub>10</sub> , kQ <sub>11</sub> on F-3268	kVR1 (L-CH) F-3268	DC 3 mV	This bias current adjustment converts current value into voltage by ohms law.
2.	R-CH	Same as above	kVR1 (R-CH) F-3268	DC 3 mV	

## 8. PACKING LIST

Parts No.	Stock No.	Description
1	91263800	Vinyl Cover
2	90284000	Styrofoam Packing
3	07586200	Carton Case



## 9. ACCESSORY PARTS LIST

Stock No.	Description
07576600	Operating Instruction



SANSUI ELECTRONICS CORPORATION: 1250 Valley Brook Ave. Lyndhurst, N.J. 07071 U.S.A.  
 333 West Alondra Blvd. Gardena, California 90247 U.S.A.  
 3036 Koapaka St. Honolulu, Hawaii 96819 U.S.A.

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SM160

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# 6. SCHEMATIC DIAGRAM

