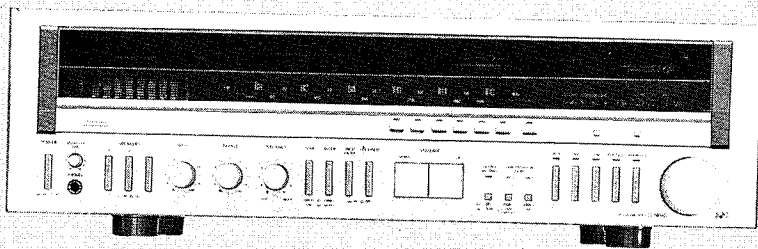


SERVICE MANUAL

DIGITAL QUARTZ SYNTHESIZER
DC STEREO RECEIVER

SANSUI 9900Z
8900ZDB
7900Z



• SPECIFICATIONS

◆ Audio section

Power output

<9900Z>

Min. RMS, both channels driven, from 20 to 20,000 Hz, with no more than 0.015 % total harmonic distortion.

160 watts per channel into 8 ohms

<8900ZDB>

Min. RMS, both channels driven, from 20 to 20,000 Hz, with no more than 0.02 % total harmonic distortion

125 watts per channel into 8 ohms

<7900Z>

Min. RMS, both channels driven, from 20 to 20,000 Hz, with no more than 0.02 % total harmonic distortion

100 watts per channel into 8 ohms

Load impedance 8 ohms

Total harmonic distortion

<9900Z> less than 0.015 % at or below rated min. RMS power output

<8900ZDB, 7900Z> less than 0.02 % at or below rated min. RMS power output

Intermodulation distortion (60 Hz : 7 kHz = 4 : 1 SMPTE method)

<9900Z> less than 0.015 % at rated power output

<8900ZDB, 7900Z> less than 0.02 % at rated power output

Frequency response (at 1 watt)

Overall (from AUX) 5 to 100,000 Hz, +0 dB, -3.0 dB

RIAA curve deviation (PHONO, 20 Hz to 20 kHz)

. +0.2 dB, -0.2 dB

Damping factor (20 Hz to 20 kHz, both channels driven)

. 40 into 8 ohms

Input sensitivity and impedance (at 1 kHz)

PHONO-1, 2 2.5 mV/47 kilohms

(Max. input capability: 200 mV at 1 kHz, less than 0.1 % total harmonic distortion)

TAPE-1, 2 PLAY, AUX

. 150 mV/47 kilohms

Output level (at 1 kHz)

TAPE-1, 2 REC. 150 mV/47 kilohms

Signal to noise ratio (short-circuit, A-network)

PHONO-1, 2 80 dB

AUX 100 dB

Channel separation (at 1 kHz)

PHONO-1, 2 50 dB

AUX 60 dB

Controls

BASS ±10 dB at 50 Hz

TREBLE ±10 dB at 10 kHz

HIGH FILTER -3 dB at 5 kHz (6 dB/oct)

LOUDNESS (VOLUME: -30 dB position)

. 8 dB at 50 Hz

. 6 dB at 10 kHz

AUDIO MUTING -20 dB

to be continued ▶

Sansui

SANSUI ELECTRIC CO., LTD.

(SPECIFICATION)

◆ FM section

Tuning range 88 to 108 MHz
 Usable sensitivity
 Mono IHF 10.3 dBf (1.8 μV)
 Stereo IHF 19 dBf
 50 dB quieting sensitivity
 Mono 14 dBf
 Stereo 37 dBf
 Signal to noise ratio (at 65 dBf)
 Mono 80 dB
 Stereo 76 dB
 Distortion (at 65 dBf)
 <9900Z>

Mono less than 0.08 % at 100 Hz
 less than 0.05 % at 1,000 Hz
 less than 0.08 % at 6,000 Hz
 Stereo less than 0.1 % at 100 Hz
 less than 0.07 % at 1,000 Hz
 less than 0.1 % at 6,000 Hz

<8900ZDB, 7900Z>

Mono less than 0.15 % at 100 Hz
 less than 0.1 % at 1,000 Hz
 less than 0.15 % at 6,000 Hz
 Stereo less than 0.25 % at 100 Hz
 less than 0.15 % at 1,000 Hz
 less than 0.25 % at 6,000 Hz

Alternate channel selectivity (at 400 kHz)

<9900Z>

WIDE 50 dB
 NARROW 75 dB

<8900ZDB, 7900Z>

. 60 dB
 Capture ratio 1.0 dB
 Image response ratio 80 dB
 Spurious response ratio
 85 dB

IF response ratio 80 dB
 Stereo separation 40 dB at 100 Hz
 45 dB at 1,000 Hz
 28 dB at 10,000 Hz
 Frequency response 30 to 15,000 Hz
 +0.3 dB, -1.0 dB

Hum and noise (at 65 dBf)

. 70 dB
 Dolby noise reduction effect
 10 dB <8900ZDB Only>

Antenna input impedance

. 300 ohms balanced
 75 ohms unbalanced

◆ AM section

<9900Z, 8900ZDB, 7900Z>

Tuning range 530 to 1,600 kHz
 Usable sensitivity (bar antenna)
 53 dB/m
 Selectivity (±10 kHz) 30 dB
 Signal to noise ratio 45 dB
 Distortion (at 30 % Modulation, 80 dB/m)
 less than 0.5 %
 Image response ratio 40 dB at 1,000 kHz
 IF response ratio 35 dB at 1,000 kHz

◆ Others

<9900Z>

Power requirements
 Power voltage 120, 220, 240 V
 (50/60 Hz)

For U.S.A. and Canada

. 120 V (60 Hz)

Power consumption

Rated consumption
 500 watts 630 VA

Dimensions 565 mm (22-1/4") W
 170 mm (6-3/4") H
 441 mm (17-3/8") D
 Weight 17.5 kg (38.6 lbs) net
 19.8 kg (43.7 lbs) packed

<8900ZDB>

Power requirements

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

Power consumption

Rated consumption
 450 watts 520 VA

Dimensions 565 mm (22-1/4") W
 170 mm (6-3/4") H
 408 mm (16-1/8") D

Weight 14.8 kg (32.6 lbs) net
 17.1 kg (37.7 lbs) packed

<7900Z>

Power requirements

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

For U.S.A. and Canada

. 120 V (60 Hz)

Power consumption

Rated consumption
 370 watts 460 VA

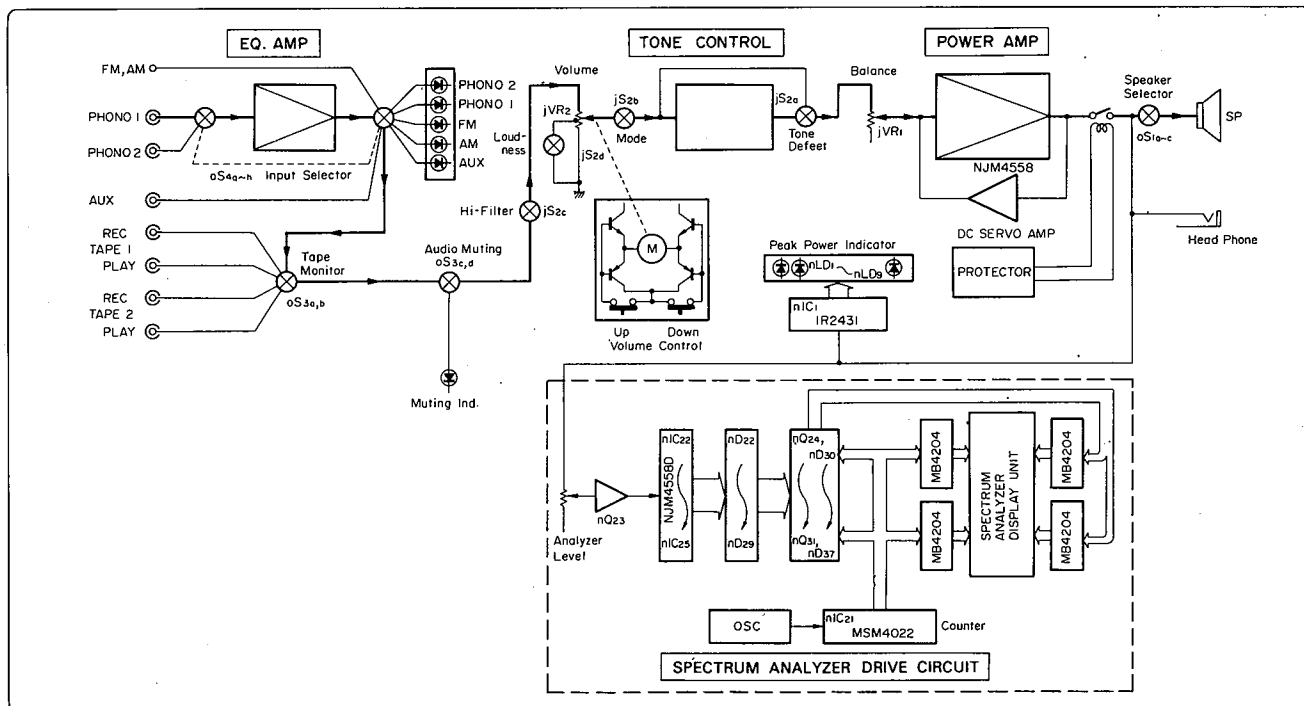
Dimensions 565 mm (22-1/4") W
 170 mm (6-3/4") H
 399 mm (15-3/4") D

Weight 13.6 kg (30.0 lbs) net
 16.0 kg (35.3 lbs) packed

* Design and specifications subject to changes without notice for improvements.

1. BLOCK DIAGRAM

1-1. Audio Section



SCHEMATIC DIAGRAM & PARTS LIST

SANSUI ELECTRIC CO., LTD.

Sansui

14-1 Izumi 2-Chome, Suginami-ku, TOKYO 168, JAPAN
TELEPHONE: (03) 323-1111/TELEX. 232-2076

PURE POWER DC STEREO RECEIVER

SANSUI 9900Z 8900ZDB 7900Z

Note:

This edition contains Parts List and Schematic Diagram only. Regular Service Manual will follow soon. Please use this issue for the time being, when servicing or ordering parts.

1. PARTS LIST

1-1. F-3296 Digitally Frequency Display Circuit Board

● 9900Z/8900ZDB

Parts No.	Stock No.	Description
● Transistor		
fQ51	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
fQ52	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
fQ53	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
fQ54	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
● IC		
fIC51	03604000	MSM4011
	03604100	TC4011P
fIC52	03604000	MSM4011
	03604100	TC4011P
● Diode		
fD51	03111600	1S2473D
fD52	03111600	1S2473D
fD53	03111600	1S2473D
● Transistor		
sQ51	03059500, 1	2SC945 R, Q
sQ52	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ53	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ54	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ55	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ56	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ57	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ58	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ59	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
sQ60	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
sQ61	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ62	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ63	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
sQ64	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
● IC		
sIC51	07225100	TD6301P
● Diode		
sD51~55	03111600	1S2473D
sPL51	00000100	Fluorescent Display Tube
sPL52	04007600	Pilot Lamp 8V 300 mA
sPL53	04006600	Pilot Lamp 8V 150 mA
sR101	07267200	RM6 5.6kΩ x 6 (Block Resistor)
sR102	07267400	RM10 5.6kΩ x 10 (Block Resistor)
sR103	07267300	RM8 5.6kΩ x 8 (Block Resistor)

● 7900Z

Parts No.	Stock No.	Description
● Transistor		
sQ51	03059500, 1	2SC945 R, Q
sQ52	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ53	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ54	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ55	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ56	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ57	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ58	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ59	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
sQ60	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
sQ61	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ62	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ63	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
sQ64	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
● IC		
sIC51	07225100	TD6301P
● Diode		
sD51~55	03111600	1S2473D
sPL51	00000100	Fluorescent Display Tube
sPL52	04007600	Pilot Lamp 8V 300 mA
sPL53	04006600	Pilot Lamp 8V 150 mA

1-2. F-3297 Preset Section Circuit Board

● 9900Z/8900ZDB/7900Z

Parts No.	Stock No.	Description
fLD101 ~ 106	07246200	Light Emitting Diode SEL1710K
fLD107	03193700	Light Emitting Diode SEL1110S
fS101	11320900	Push Switch, preset
fS102	11320900	Push Switch, preset
fS103	11320900	Push Switch, preset
fS104	11320900	Push Switch, preset
fS105	11320900	Push Switch, preset
fS106	11320900	Push Switch, preset
fS107	11320900	Push Switch, preset

1-3. F-3298 Analog Dial Display Circuit Board

● 9900Z/8900ZDB/7900Z

Parts No.	Stock No	Description
	07581700	LED Holder (13-POINT)
●Transistor		
fQ1	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
fQ2	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
fQ3	07194700, 1	2SA1015 Y, GR
fQ4	07197000, 1	2SA733A R, Q
	03059500, 1	2SC945 R, Q
fQ5	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
fQ6	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
fQ7	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
fQ8	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
●FET		
fFT1	03703402~5	2SK163 L1, L2, M1, M2
●IC		
fIC1	07225200	TC9140P
fIC2	07225000	TD6104P
fXO1	07237700	Quartz Element NC-18C (7.2 MHz)
●Diode		
fD1 ~ 5	03111600	1S2473D
fC1	00306800	1 μF 50V E.B.
fSP1	07261000	Buzzer PB-2711
●Transistor		
sQ1	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
sQ2	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
sQ3	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
sQ4	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
sQ5	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
sQ6	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
sQ7	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
sQ8	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
sQ9	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
sQ10	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
sQ11	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
sQ12	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
sQ13	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
●IC		
sIC1	03610500	TC4001BP
	03609500	MSM4001RS
●Diode		
sD1 ~ 4	03111600	1S2473D
sLD1~26	03193700	Light Emitting Diode SEL1110S

1-4. F-3299 Spectrum Analysis Display Circuit Board

● 9900Z/8900ZDB/7900Z

Parts No.	Stock No.	Description
●Transistor		
nQ21	07197001	2SA733A Q
	07194700, 1	2SA1015 Y, GR
nQ22	07197001	2SA733A Q
	07194700, 1	2SA1015 Y, GR
nQ23	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
nQ24	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
nQ25	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
nQ26	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
nQ27	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
nQ28	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
nQ29	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
nQ30	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
nQ31	03059501	2SC945 Q (9900Z, 8900ZDB Only)
	07194800, 1	2SC1815 Y, GR
●IC		
nIC21	07246400	MSM4022RS
nIC22	03607700	NJM4558D
nIC23	03607700	NJM4558D
nIC24	03607700	NJM4558D
nIC25	03607700	NJM4558D
nIC26	07246300	MB4204M
nIC27	07246300	MB4204M
nIC28	07246300	MB4204M
nIC29	07246300	MB4204M
nD21~37	03111600	1S2473D
nFL1	07237800	FL Display Unit FG64SA6
nPL1	04007600	Pilot Lamp 8V 300 mA

1-5. F-3301 Stereo Indicator Circuit Board

● 9900Z/8900ZDB/7900Z

Parts No.	Stock No.	Description
dLD1	03193700	Light Emitting Diode SEL1110S

1-6. F-3302 FM Mode Switch Circuit Board

● 9900Z/8900ZDB/7900Z

Parts No.	Stock No.	Description
	07581900	LED Holder
oS5	07242600	Push Switch

1-7. F-3303 Audio Muting Circuit Board

● 9900Z/8900ZDB/7900Z

Parts No.	Stock No.	Description
	07581900	LED Holder
nLD15	03193700	Light Emitting Diode SEL1110S

1-8. F-3304 Input Terminal Circuit Board

●9900Z/8900ZDB/7900Z

Parts No.	Stock No.	Description
	22006000	Terminal Board 2P
	22006500	Terminal Board 4P
	22006200	Terminal Board 4P

1-9. F-3305 EQ. Amp. & Input Terminal Circuit Board

●9900Z/8900ZDB/7900Z

Parts No.	Stock No.	Description
●IC		
iIC1	07197400	M5214L
iC6	00413200	0.016 μ F 100V F.C.
iC7	00414500	0.056 μ F 100V F.C.
iC9	00306000	3.3 μ F 25V E.B.
oS3	07242500	Push Switch
oS4	07242800	Push Switch

1-10. F-3306 Input Source Indicator Circuit Board

●9900Z/8900ZDB

Parts No.	Stock No.	Description
	07581900	LED Holder
nLD10 ~ 14	03193700	Light Emitting Diode SEL1110S

1-11. F-3307 Tone Control Circuit Board

●9900Z/8900ZDB

Parts No.	Stock No.	Description
●Transistor		
jQ1	07225400, 1	2SC2320L F, G
jQ2	07225400, 1	2SC2320L F, G
	07206800, 1	2SA952 M, L
jQ3	07254800, 1	2SA854 Q, R
	03033601, 2	2SB560MP E, F
	07206900, 1	2SC2001 M, L
jQ4	07254900, 1	2SC1741 Q, R
	03085201, 2	2SD438 E, F
	07206800, 1	2SA952 M, L
jQ5	07254800, 1	2SA854 Q, R
	03033601, 2	2SB560MP E, F
	07206900, 1	2SC2001 M, L
jQ6	07254900, 1	2SC1741 Q, R
	03085201, 2	2SD438 E, F
●Diode		
jD1 ~ 2	03103400	10D:1
jVR1	07242200, 1	Variable Resistor 150 k Ω (MN)
jVR3	07242300, 1	Variable Resistor 100 k Ω (B)
jVR4	07242300, 1	Variable Resistor 100 k Ω (B)
oS2	07243000	Push Switch

1-12. F-3308 Tone Control Circuit Board

●9900Z

Parts No.	Stock No.	Description
●Transistor		
kQ1	07246800, 1	2SC2773 O, Y
kQ2	07246600, 1	2SA1169 O, Y
kQ3	07246800, 1	2SC2773 O, Y
kQ4	07246600, 1	2SA1169 O, Y
kQ5	03067200, 1	2SC2238B O, Y
kQ6	03010700, 1	2SA968B O, Y
kQ7	03066800, 1	2SC2071 B, V
kQ8	03010300, 1	2SA939 B, V
kQ9	03010300, 1	2SA939 B, V
kQ10	03010300, 1	2SA939 B, V
kQ11	03066800, 1	2SC2071 B, V
kQ12	03067400, 1	2SC1845 F, E
kQ13	03067400, 1	2SC1845 F, E
kQ14	03064001, 2	2SC1904 B, V
●FET		
kFT1	07110000, 1	μ PA68H L, M
●IC		
kIC1	03607700	NJM4558D
●Diode		
kD5 ~ 7	03111600	1S2473D
kR1	00158700	10 Ω 5W N.I.R.
kR3	00091700	0.33 Ω 5W Ce.R.
kR4	00091700	0.33 Ω x 2 5W Ce.R.
kC3	00380500	1000pF 500V C.C.
kC10	00302500	10 μ F 6.3V E.B.
kC11	00305200	4.7 μ F 16V E.B.
kC14	00408600	0.1 μ F 100V M.C.
kVR1	10336300	Semi Variable Resistor 1 k Ω (B)

●8900ZDB

Parts No.	Stock No.	Description
●Transistor		
kQ1	07246900, 1	2SC2774 O, Y
kQ2	07246700, 1	2SA1170 O, Y
kQ5	03069301	2SC2238 Y
kQ6	03012401	2SA968 Y
kQ7	03066800, 1	2SC2071 B, V
kQ8	03010300, 1	2SA939 B, V
kQ9	03010300, 1	2SA939 B, V
kQ10	03010300, 1	2SA939 B, V
kQ11	03066800, 1	2SC2071 B, V
kQ12	03067400, 1	2SC1845 F, E
kQ13	03067400, 1	2SC1845 F, E
kQ14	03064001, 2	2SC1904 B, V
●FET		
kFT1	07110000, 1	μ PA68H L, M
●IC		
kIC1	03607700	NJM4558D
●Diode		
kD5 ~ 7	03111600	1S2473D
kR1	00158700	100 Ω 5W N.I.R.
kR3	00091700	0.33 Ω x 2 5W Ce.R.
kC3	00380500	1000pF 500V C.C.
kC10	00302500	10 μ F 6.3V E.B.
kC11	00305200	4.7 μ F 16V E.B.
kC14	00408600	0.1 μ F 100V M.C.
kVR1	10336300	Semi Variable Resistor 1 k Ω (B)

1-13. F-3300 Tuner Circuit Board

● 9900Z

Parts No.	Stock No.	Description
	07113200	FM Front End Pack FD216U18
● Transistor		
dQ1	03063401, 2	2SC1674 L, K
dQ2	03063401, 2	2SC1674 L, K
dQ3	03063401, 2	2SC1674 L, K
dQ5	07194800, 1	2SC1815 Y, GR
dQ6	07197001	2SA733A Q
	07194700, 1	2SA1015 Y, GR
dQ7	07197001	2SA733A Q
	07194700, 1	2SA1015 Y, GR
dQ8	07197001	2SA733A Q
	07194700, 1	2SA1015 Y, GR
dQ9	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
dQ10	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
dQ11	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
dQ12	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
dQ13	07197001	2SA733A Q
	07194700, 1	2SA1015 Y, GR
dQ14	07197001	2SA733A Q
	07194700, 1	2SA1015 Y, GR
dQ15	03059501 ~ 3	2SC945 Q, P, K
dQ16	03059501 ~ 3	2SC945 Q, P, K
dQ17	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
dQ18	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
dQ19	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
dQ20	07197001	2SA733A Q
	07194700, 1	2SA1015 Y, GR
dQ21	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
● IC		
dIC1	03605900	TA7302P
dIC2	03609300	HA11225
dIC3	03606800	HA11223W
dIC4	03609500	MSM4001RS
	03610500	TC4001BP
● Diode		
dD1 ~ 9	03117600	1S2473D
dC45	08450200	22 μF 6.3V E.B.
dCF1	07248600	Ceramic Filter
dL1	07196400	Low Pass Filter
dL2	07196400	Low Pass Filter
dT1	42359300	FM IF Coil
dT2	42362300	FM IF Coil
dT3	42362400	FM IF Coil
dVR1	07241200	Semi Variable Resistor 5 kΩ (B)
dVR2	07241600	Semi Variable Resistor 100 kΩ (B)
dVR3	07241200	Semi Variable Resistor 5 kΩ (B)
dVR4	07241200	Semi Variable Resistor 5 kΩ (B)
dVR5	07241300	Semi Variable Resistor 10 kΩ (B)
dS1	07251100	Slide Switch
● Transistor		
eQ3	07194700, 1	2SA1015 Y, GR
eQ5	03059501, 2	2SC945 Q, P
● IC		
eIC1	07237200	LA1245
● Varactor Diode		
eD1	07197200	KV1226
eTC1	12301000	Trimmer Capacitor 15 pF
eTC2	12301000	Trimmer Capacitor 15 pF

Parts No.	Stock No.	Description
eCF1	07254000	Ceramic Filter
eL1	46027100	AM OSC Coil
eL2	42306200	AM IF Coil
eVR1	07241300	Semi Variable Resistor 10 kΩ (B)

● 8900ZDB

Parts No.	Stock No.	Description
● Transistor		
eQ3	07194700, 1	2SA1015 Y, GR
eQ5	03059501, 2	2SC945 Q, P
● IC		
eIC1	07237200	LA1245
● Varactor Diode		
eD1	07197200	KV1226
eTC1	12301000	Trimmer Capacitor 15pF
eTC2	12301000	Trimmer Capacitor 15pF
eCF1	07254000	Ceramic Filter
eL1	46027100	AM OSC Coil
eL2	42306200	AM IF Coil (455 kHz)
eVR1	07241300	Semi Variable Resistor 10 kΩ (B)
	07113200	Front End Pack FD216U18
● Transistor		
dQ1	03063401, 2	2SC1674 L, K
dQ5	07194800, 1	2SC1815 Y, GR
dQ6	07197001	2SA733A Q
	07194700, 1	2SA1015 Y, GR
dQ7	07197001	2SA733A Q
	07194700, 1	2SA1015 Y, GR
dQ8	07197001	2SA733A Q
	07194700, 1	2SA1015 Y, GR
dQ9	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
dQ10	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
dQ11	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
dQ12	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
dQ13	07197001	2SA733A Q
	07194700, 1	2SA1015 Y, GR
dQ14	07197001	2SA733A Q
	07194700, 1	2SA1015 Y, GR
dQ15	03059501 ~ 3	2SC945 Q, P, K
dQ16	03059501 ~ 3	2SC945 Q, P, K
dQ17	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
dQ18	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
dQ19	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
dQ20	07197001	2SA733A Q
	07194700, 1	2SA1015 Y, GR
dQ21	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
● IC		
dIC1	03605900	TA7302P
dIC2	03609300	HA11225
dIC3	03606800	HA11223W
dIC4	03609500	MSM4001RS
	03610500	TC4001BP
● Diode		
dD1 ~ 9	03117600	1S2473D
dC45	08450200	22 μF 6.3V E.B.
dCF1	07264900	Ceramic Filter

Parts No.	Stock No.	Description
dL1	07196400	Low Pass Filter
dL2	07196400	Low Pass Filter
dT1	42359300	FM IF COIL (10.7 MHz)
dT2	42362300	FM IF COIL
dT3	42362400	FM IF COIL
dVR1	07241200	Semi Variable Resistor 5 k Ω (B)
dVR2	07241600	Semi Variable Resistor 100 k Ω (B)
dVR3	07241200	Semi Variable Resistor 5 k Ω (B)
dVR4	07241200	Semi Variable Resistor 5 k Ω (B)
dVR5	07241300	Semi Variable Resistor 10 k Ω (B)
dS1	07251100	Slide Switch

● 7900Z

Parts No.	Stock No.	Description
	07113200	FM Frontend Pack FD216U18

● Transistor

dQ1	03063401, 2	2SC1674 L, K
dQ4	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
dQ5	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
dQ6	07197001	2SA733A Q
	07194700, 1	2SA1015 Y, GR
dQ7	07197001	2SA733A Q
	07194700, 1	2SA1015 Y, GR
dQ8	07197001	2SA733A Q
	07194700, 1	2SA1015 Y, GR
dQ9	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
dQ10	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
dQ11	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
dQ12	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
dQ13	07197001	2SA733A Q
	07194700, 1	2SA1015 Y, GR
dQ15	03059501 ~ 3	2SC945 Q, P, K
dQ16	03059501 ~ 3	2SC945 Q, P, K
dQ19	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
dQ20	07197001	2SA733A Q
	07194700, 1	2SA1015 Y, GR
dQ21	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR

● IC

dIC1	03605900	TA7302P
dIC2	03609300	HA11225
dIC3	03606800	HA11223W
dIC4	03609500	MSM4001RS
	03610500	TC4001BP

● Diode

dD1 ~ 9	03117600	1S2473D
dC45	08450200	22 μ F 6.3V E.B.
dCF1	07264900	Ceramic Filter
dL1	07196400	Low Pass Filter
dL2	07196400	Low Pass Filter
dT1	42359300	FM IF Coil
dT2	42362300	FM IF Coil
dT3	42362400	FM IF Coil
dVR1	07241200	Semi Variable Resistor 5 k Ω (B)
dVR2	07241600	Semi Variable Resistor 100 k Ω (B)
dVR3	07241200	Semi Variable Resistor 5 k Ω (B)
dVR4	07241200	Semi Variable Resistor 5 k Ω (B)
dVR5	07241300	Semi Variable Resistor 10 k Ω (B)

Parts No.	Stock No.	Description
dS1	07251100	Slide Switch
● Transistor		
eQ1 ~ 4	07194800, 1	2SC1815 Y, GR
eQ5	03059501, 2	2SC945 Q, P
● IC		
eIC1	07237200	LA1245
eD1	07197200	Varactor Diode KV1226
● Diode		
eD3, 4	03117600	1S2473D
eTC1, 2	12301000	Trimmer Capacitor 15pF
eCF1	07254000	Ceramic Filter
eCF2	07265100	Ceramic Filter
eL1	46027100	AM OSC Coil
eL2	42306200	AM IF Coil 455 kHz
eVR1	07241300	Semi Variable Resistor 10 k Ω (B)
eVR2	07241500	Semi Variable Resistor 50 k Ω (B)

1-14. F-3309 Power Supply Circuit Board

● 9900Z

Parts No.	Stock No.	Description
● Transistor		
mQ1	03085201, 2	2SD438 E, F
mQ2	03084801, 2	2SD358 D, E
mQ3	03084302, 3	2SD381 L, K
mQ4	03084302, 3	2SD381 L, K
mQ5	03084302, 3	2SD381 L, K
● Diode		
mD1	03116700	SS-7
mD2	03116800	SS-7R
mD3	03117000	RB-152
● Zener Diode		
mDZ1	03172100	RD30F B
mDZ2	03172100	RD30F B
mDZ3	03164700	RD20E B
mDZ4	03164100	RD6.8E B
mDZ5	03163300	RD15E B
mDZ6	07181500	RD22E B
mR1	00105900	1 k Ω 5W C.R.
mR2	00194500	1.8 k Ω 3W N.I.R.
mR17	00181200	220 Ω 1W N.I.R.
mR18	00187500	18 k Ω 2W N.I.R.
mR19	00188900	33 Ω 2W N.I.R.
mC2	00380500	10000pF 500V C.C.
mC3	00380500	10000pF 500V C.C.
mC4	00380500	10000pF 500V C.C.
mC5	00380500	10000pF 500V C.C.
PC1	00386100	4700pF 150V C.C.
	00386500	4700pF 125V C.C.
pF1	04341000	Fuse 12A 125V (100V ~ 120V)
	04323000	Fuse 6.0A 125V (220V ~ 240V)

to be continued ▶

● 8900ZDB

Parts No.	Stock No.	Description
● Transistor		
mQ1	03085201, 2	2SD438 E, F
mQ2	03084801, 2	2SD358 D, E
mQ3	03084302, 3	2SD381 L, K
mQ4	03084302, 3	2SD381 L, K
mQ5	03084302, 3	2SD381 L, K
● Diode		
mD1	03113100	SS-5
mD2	03113200	SS-5R
mD3	03117000	RB-152
● Zener Diode		
mDZ1	03172100	RD30F B
mDZ2	03172100	RD30F B
mDZ3	03164700	RD20E B
mDZ4	03164100	RD6.8E B
mDZ5	03163300	RD15E B
mDZ6	07181500	RD22E B
mR1	00108400	820Ω 5W C.R.
mR2	00194500	1.8 kΩ 3W N.I.R.
mR17	00181200	220Ω 1W N.I.R.
mR18	00187500	18 kΩ 2W N.I.R.
mR19	00188900	33Ω 2W N.I.R.
mC2	00380500	10000pF 500V C.C.
mC3	00380500	10000pF 500V C.C.
mC4	00380500	10000pF 500V C.C.
mC5	00380500	10000pF 500V C.C.
pF1	04325900	Fuse 10A 125V (100V ~ 120V)
	04322900	Fuse 5.0A 125V (220V ~ 240V)

● 8900ZDB

Parts No.	Stock No.	Description
oS1	07242900	Push Switch

1-17. F-3312 Head Phone Jack Circuit Board

● 9900Z/8900ZDB

Parts No.	Stock No.	Description
nC3	00306800	1μF 50V E.B.
nVR1	07242400, 1	Variable Resistor 100 kΩ (B)
oJ1	07204100	Head Phone Jack
pR1	00187800	220Ω 2W N.I.R.

1-18. F-3313 Manual Tuning (Up/Down) Detector Circuit Board

● 9900Z/8900ZDB

Parts No.	Stock No.	Description
fPH51	07237400	Photo Coupler
fPH52	07237400	Photo Coupler

1-19. F-3314 Master Volume (Up/Down) Switch Circuit Board

● 9900Z/8900ZDB

Parts No.	Stock No.	Description
JS1	07246100	Push Switch
JS2	07246100	Push Switch

1-20. F-3316 Power Peak Indicator Circuit Board

● 9900Z/8900ZDB/7900Z

Parts No.	Stock No.	Description
	07581600	LED Holder (8-POINT)
● IC		
nIC1	07246000	IR2431
● Diode		
nD1	03103300	1N60
nLD1 ~ 9	03193700	Light Emitting Diode SEL1110S

1-21. F-3317 IF Output (AM Stereo) Circuit Board

● 9900Z/8900ZDB/7900Z

Parts No.	Stock No.	Description
	07257600	Terminal Board 1P, AM Stereo

1-22. F-3431 AM Channel Selector Circuit Board

● 9900Z/8900ZDB/7900Z

Parts No.	Stock No.	Description
fS1	11102800	Slide Switch

1-15. F-3310 Protector Circuit Board

● 9900Z/8900ZDB

Parts No.	Stock No.	Description
kR2	00158700	10Ω 5W N.I.R.
kR22	00188200	2.2Ω 2W N.I.R.
kL1	42903700	Peaking Coil
● Transistor		
IQ1	03010300	2SA939B
● IC		
IIC1	03609000	HA12002
● Diode		
ID1 ~ 5	03103400	10D-1
ID6	03111600	1S2473D
IPR1	03201300	Thermistor
IC3	00302900	220μF 6.3V E.B.
IRL1	11504300	Relay
IRL2	07198400	Relay
IRL3	07198400	Relay
IRL4	07198400	Relay (9900Z Only)
	07202900	Terminal Board 4P, speaker

1-16. F-3311 Speaker Selector Switch Circuit Board

● 9900Z

Parts No.	Stock No.	Description
oS1	07243100	Push Switch

1-23. F-3401 Speaker Terminal Circuit Board

● 7900Z

Parts No.	Stock No.	Description
	07183300	8P Terminal Board

1-24. F-3402 Head Phone Jack Circuit Board

● 7900Z

Parts No.	Stock No.	Description
nVR100	07242400, 1	Variable Resistor 100 kΩ (B)
oJ1	07204100	Head Phone Jack

1-25. F-3403 Speaker Selector Switch Circuit Board

● 7900Z

Parts No.	Stock No.	Description
oS1	07255300, 1	Push Switch

1-26. F-3405 Rectifier Circuit Board

● 7900Z

Parts No.	Stock No.	Description
●Diode		
mD1	03113100	SS-5
mD2	03113200	SS-5R
mC3	00380600	2200pF 500V C.C.
mC16	00380600	2200pF 500V C.C.
mC17	00380600	2200pF 500V C.C.
mC18	00380600	2200pF 500V C.C.
pC2		
	08302100	4700pF 125V C.C.
	00386100	4700pF 150V C.C.

1-27. F-3406 Driver Amp. Circuit Board

● 7900Z

Parts No.	Stock No.	Description
●Transistor		
kQ1 ~ 4	03067400, 1	2SC1845 F, E
kQ5, 6	03010900, 1	2SA992 F, E
kQ7	03010300, 1	2SA939 B, V
kQ8	03066800, 1	2SC2071 B, V
●IC		
kIC1	03607700	NJM4558D
●Diode		
kD1	03111800	1S1588
	03111600	1S2473D
kD2	03111800	1S1588
	03111600	1S2473D
kD3	03111800	1S1588
	03111600	1S2473D
kC14	00306200	4.7μF 25V E.B.
kC15	00305400	10μF 25V E.B.

1-28. F-2688 Dolby NR Circuit Board

● 8900ZDB

Parts No.	Stock No.	Description
●IC		
IC01	03603400	NE545B

Parts No.	Stock No.	Description
●Diode		
D01	03104000	1N34A
rD601	03103400	10D-1
L01	49002600	Inductor
VR01	10354300	Semi Variable Resistor 100 kΩ (B)

1-29. F-3407 Power Supply & Power Amp. Circuit Board

● 7900Z

Parts No.	Stock No.	Description
●Transistor		
kQ9	03067400, 1	2SC1845 F, E
kQ10	03067201	2SC2238B Y
kQ11	03010701	2SA968B Y
kQ12	07260200, 1	2SC2773LB O, Y
kQ13	07260100, 1	2SA1169LB O, Y
kR34	00191700	0.68Ω 2W N.I.R.
kR35	00191700	0.68Ω 2W N.I.R.
kR36	00191700	0.68Ω 2W N.I.R.
kR37	00191700	0.68Ω 2W N.I.R.
kR38	00185500	10Ω 2W N.I.R.
kR39	00186000	1Ω 2W N.I.R.
kR40	00190600	4.7Ω 2W N.I.R.
kL1	42903700	Peaking Coil
kVR1	10350700	Semi Variable Resistor 1 kΩ
●Transistor		
IQ1	03010900, 1	2SA992 F, E
●IC		
IIC1	03609000	HA12002
●Diode		
ID1	03111800	1S1588
	03111600	1S2473D
ID3	03103400	10D-1
IC3	00303800	330μF 10V E.B.
IRL1	07198400	Relay
●Transistor		
mQ1	03033601, 2	2SB560MP E, F
mQ2	03085201, 2	2SD438 E, F
mQ3	03083902, 3	2SD313AL E, F
mQ4	03083902, 3	2SD313AL E, F
mQ5	03085201, 2	2SD438 E, F
mQ6	03085201, 2	2SD438 E, F
mQ7	03084501, 2	2SD356 D, E
●Diode		
mD5	03117000	RB-152
mD9	03103400	10D-1
●Zener Diode		
mZD1	03164900	RD-22E B
mZD2	03163300	RD-15E B
mZD3	03164900	RD-22E B
mZD4	03165700	RD-33E B
mZD5	03164100	RD-6.8E B
mZD6	03163300	RD-15E B
mR3	00180800	1.8 kΩ 1W N.I.R.
mR15	00188900	33Ω 2W N.I.R.
mR18	00192000	820Ω 2W N.I.R.
mR27	00190700	56Ω 2W N.I.R.
mC4	00380600	2200pF 500V C.C.
mF1 ~ 3	07188400	Fuse 1A 250 V

1-30. F-3430 Manual Tuning (Up/Down) Switch Circuit Board

● 7900Z

Parts No.	Stock No.	Description
fS108	07246100	Push Switch
fS109	07246100	Push Switch

1-31. Other Parts

● 9900Z

Parts No.	Stock No.	Description
	07656310	Wood Bonnet
	07653120	Front Panel Ass'y
	07648800	Panel Side Frame
	07648900	Front Glass
	07580300	Push Knob, power
	07628000	Push Knob Guide
	11316500	Push Switch, power
	07646100	Knob, analyzer level
	07204100	Head Phone Jack
	07580300	Push Knob, speakers
	07581300	Push Knob Guide
	07615600	Knob, bass, treble, balance
	07580300	Push Knob, tone, mode, hi-filter, loudness
	07581300	Push Knob Guide
	07649810	Preset Knob Ass'y
	07652300	Push Knob, volume
	07578000	Indicator (Red)
	07580300	Push Knob, audio muting, tape mon. 1, 2
	07580900	Push Knob Guide
	07580300	Push Knob, input selector
	07652400	Push Knob Guide
	07646000	Knob, tuning
	07580900	Push Knob, FM IF band, FM mode/FM muting
	07580900	Push Knob Guide
	00000100	Fluorescent Display Unit
	54464600	Smoked Plate (A)
	07652700	Dial Back Plate
	07616100	Indicator (Red)
	07578200	Indicator (Amber)
	07600300	Indicator Film
	07646300	Indicator (9-point)
	07615800	Indicator (14-point)
	07654500	Indicator (4-point)
	07652500	Dial Scale
	07237800	Fluorescent Display Unit
	07616300	Smoked Plate
	07607300	Sansui Badge (B)
	55168210	Leg
	38004900	Power Supply Cord
	39104900	Strain Relief
	07217500	AC Outlet
	07202900	Speaker Terminal
	07257600	1P Input Terminal, AM stereo adaptor
	07563310	Battery Case Ass'y
	22006000	2P Input Terminal, phono-1
	22006200	4P Input Terminal, phono-2, aux
	22006500	4P Input Terminal, tape-1
	22006500	4P Input Terminal, tape-2
	07204800	AM Bar Antenna
	22103110	Antenna Terminal Board
	22301900	Ground Terminal
	04007600	Pilot Lamp 8 V 300 mA
	04006600	Pilot Lamp 8 V 150 mA
	07646200	Tuning Unit
	15002001	Power Transformer
	07255000	Fan
	07255100	Motor
	07651910	Fan Cover
mZ1	07254300	10000 μ F 100 V E.C.
mZ2	07254300	10000 μ F 100 V E.C.

● 8900ZDB

Parts No.	Stock No.	Description
	07656310	Wood Bonnet
	07653220	Front Panel Ass'y
	07648800	Panel Side Frame
	07648900	Front Glass
	07580300	Push Knob, power
	07628000	Push Knob Guide
	11316500	Push Switch, power
	07646100	Knob, analyzer level
	07204100	Head Phone Jack
	07580300	Push Knob, speakers
	07581300	Push Knob Guide
	07615600	Knob, bass, treble, balance
	07580300	Push Knob, tone, mode, hi-filter, loudness
	07581300	Push Knob Guide
	07649810	Preset Knob Ass'y
	07652300	Push Knob, volume
	07578000	Indicator (Red)
	07580100	Push Knob, audio muting, tape mon. 1, 2
	07580900	Push Knob Guide
	07580300	Push Knob, input selectors
	07652400	Push Knob Guide
	07646000	Knob, tuning
	07580100	Push Knob, dolby, FM mode/ FM tuning
	00000100	Fluorescent Display Unit
	54464600	Smoked Plate (A)
	07652700	Dial Back Plate
	07616100	Indicator (Red)
	07578200	Indicator (Amber)
	07600300	Indicator Film
	07646300	Indicator (9-point)
	07615800	Indicator (14-point)
	07654500	Indicator (4-point)
	07652500	Dial Scale
	07237800	Fluorescent Display Unit, spectrum analyzer
	07616300	Smoked Plate
	07607300	Sansui Badge
	55168210	Leg
	38004700	Power Supply Cord
	39106000	Strain Relief
	07202900	Speakers Terminal,
	07257600	1P Input Terminal, AM stereo adaptor
	22006000	2P Input Terminal, phono-1
	22006200	4P Input Terminal, phono-2, aux
	22006500	4P Input Terminal, tape 1
	22006500	4P Input Terminal, tape 2
	07563310	Battery Case Ass'y
	22103110	Antenna Terminal Board
	07204800	AM Bar Antenna
	22301900	Ground Terminal
	04007600	Pilot Lamp 8 V 300 mA
	04006600	Pilot Lamp 8 V 150 mA
	07646200	Tuning Unit
	04006600	Pilot Lamp 8 V 150 mA
	15002101	Power Transformer
mZ1	07254200	10000 μ F 80 V E.C.
mZ2	07254200	10000 μ F 80 V E.C.

● 7900Z

Parts No.	Stock No.	Description
	07720310	Wood Bonnet
	07653320	Front Panel Ass'y
	07648800	Panel Side Frame
	07648900	Front Glass
	07580300	Push Knob, power
	07628000	Push Knob Guide
	11316500	Push Switch, power
	07204100	Head Phone Jack
	07646100	Knob, analyzer level
	07580300	Push Knob, speaker
	07581300	Push Knob Guide
	07615600	Knob, bass, treble, balance
	07580300	Push Knob, tone, mode, hi-filter, loudness
	07581300	Push Knob Guide
	07652300	Push Knob, volume
	07649810	Preset Knob Ass'y
	07580100	Push Knob, audio muting, tape mon. 1, 2
	07580900	Push Knob Guide
	07580300	Push Knob, input selectors
	07652400	Push Knob Guide
	07652300	Push Knob, tuning
	07580100	Push Knob, tuning selector, FM mode/FM muting
	07580900	Push Knob Guide
	00000100	Fluorescent Display Unit
	54464600	Smoked Plate (A)
	07650910	Dial Back Plate
	07616100	Indicator (Red)
	07578000	Indicator (Red)
	07600300	Indicator Film
	07646300	Indicator (9-point)
	07615800	Indicator (14-point)
	07654500	Indicator (4-point)
	07652600	Dial Scale
	07237800	Fluorescent Display Unit, spectrum analyzer
	07705800	Smoked Plate
	07607300	Sansui Badge
	55168210	Leg
	38004700	Power Supply Cord
	39106000	Strain Relief
	07189600	AC Outlet
	07183300	Speaker Terminal
	07257600	1P Input Terminal
	07563310	Battery Case Ass'y
	07204800	AM Bar Antenna
	22103110	Antenna Terminal Board
	22006000	2P Input Terminal, phono-1
	22006200	4P Input Terminal, phono-2, aux
	22006500	4P Input Terminal, tape-1
	22006500	4P Input Terminal, tape-2
	22301500	Ground Terminal
	04007600	Pilot Lamp 8 V, 300 mA
	04006600	Pilot Lamp 8 V, 150 mA
	15002201	Power Transformer
mC19	07255200	8200 μ F 71V E.C.
mC20	07255200	8200 μ F 71V E.C.

1-32. Packing Materials

● 9900Z

Parts No.	Stock No.	Description
	07654200	Carton Case
	07654100	Styrofoam Packing
	91167420	Vinyl Cover

● 8900ZDB

Parts No.	Stock No.	Description
	07663300	Carton Case
	07654100	Styrofoam Packing
	91167420	Vinyl Cover

● 7900Z

Parts No.	Stock No.	Description
	07663400	Carton Case
	07654100	Styrofoam Packing
	91167420	Vinyl Bag

1-33. Accessory Parts

● 9900Z

Stock No.	Description
38201200	FM Antenna
07577400	Operating Instruction

● 8900ZDB

Stock No.	Description
07577500	Operating Instruction
38201200	FM Antenna

● 7900Z

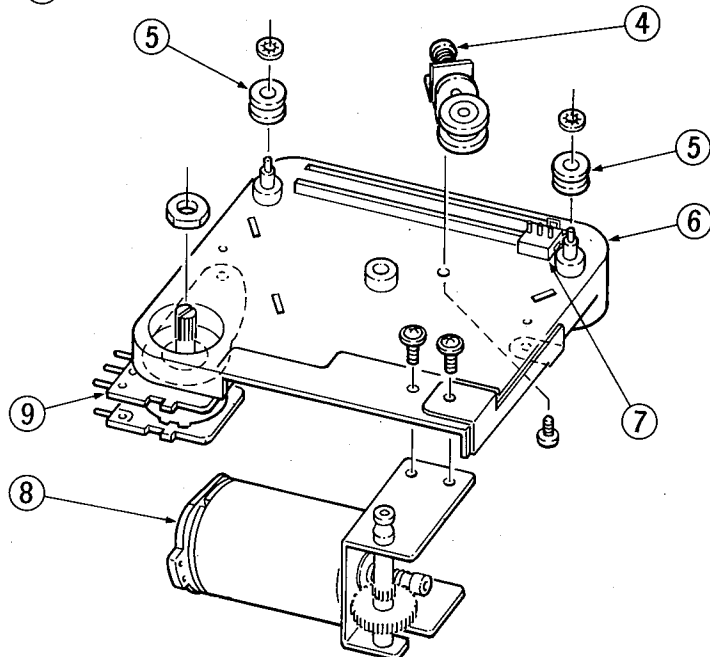
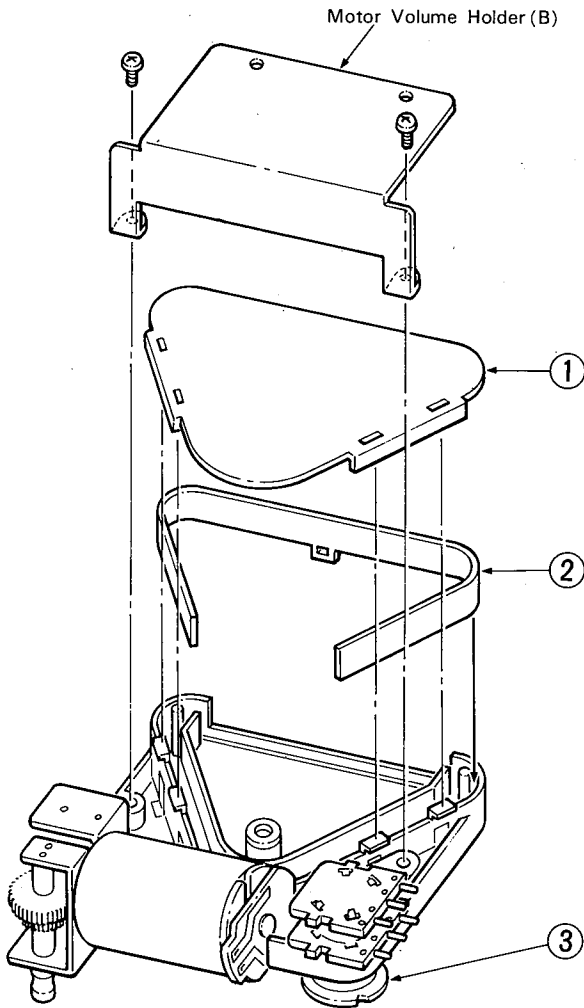
Stock No.	Description
38201200	FM Antenna
07577600	Operating Instruction

2. Exploded View of Motor Volume Control Mechanism & Parts List

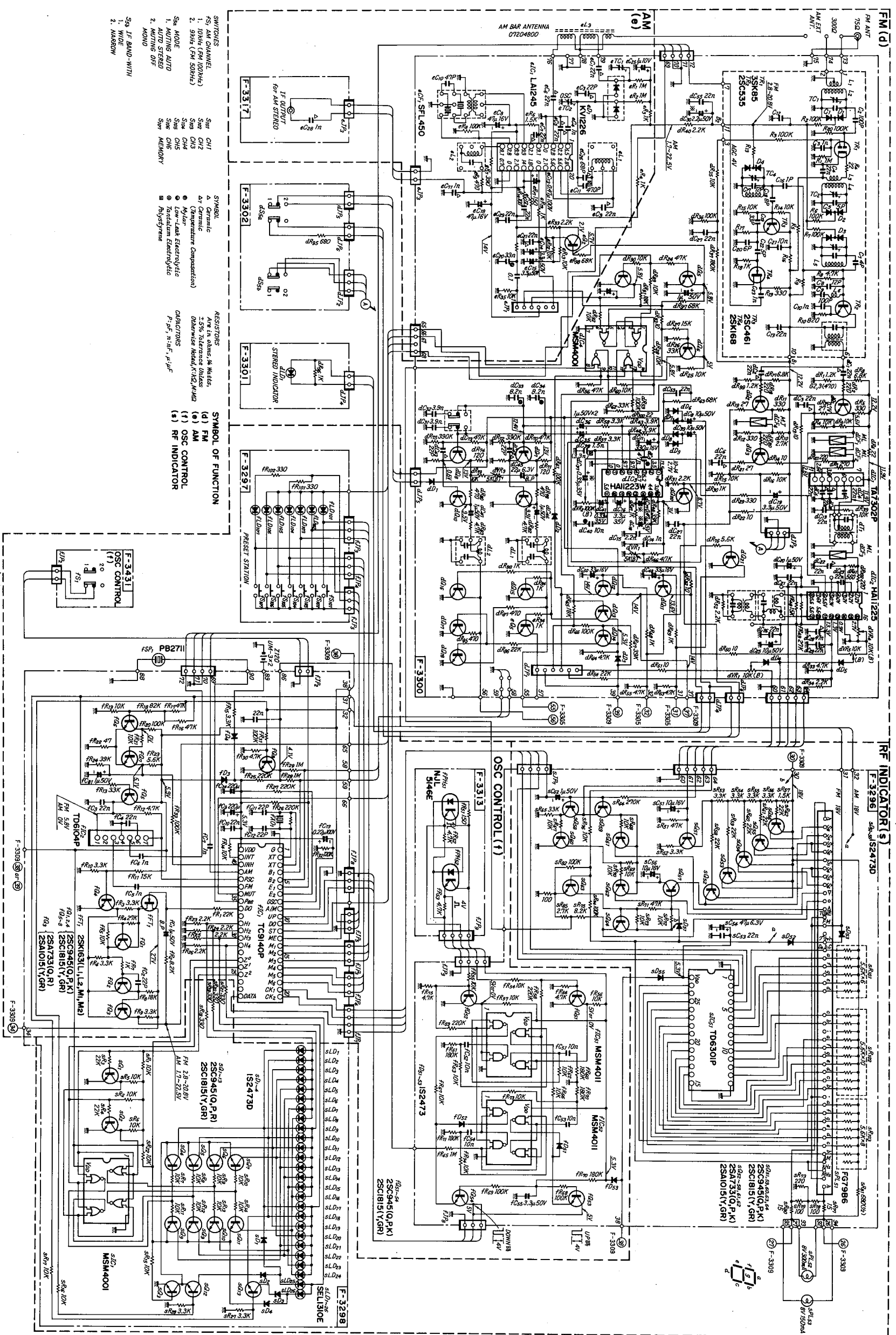
• 9900Z/8900ZDB/7900Z

• Parts List

Parts No.	Stock No.	Description
1	07600400	Housing Cover
2	07600300	Indicator Film
3	07600500	Pulley D-17
4	07600910	Tension Ass'y
5	07233400	Pulley (Small)
6	07600210	Housing
7	07600600	Film Guide
8	07234000	Motor Unit (B)
9	07242100	Variable Resistor 150k Ω (B) x 2



3. SCHEMATIC DIAGRAM 3-1. 9900Z Tuner Section



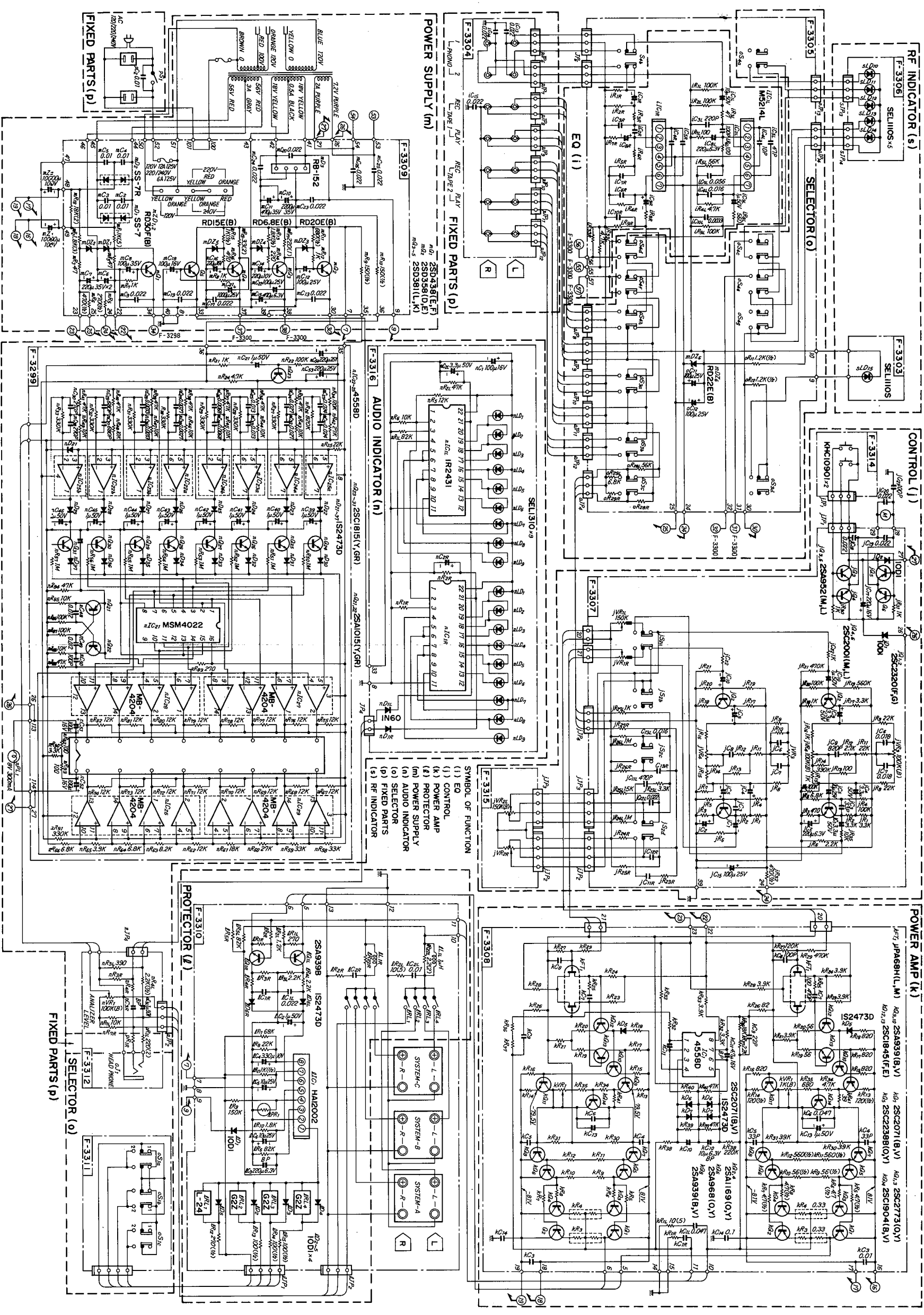
SYMBOLS
1. 10Hz (FM 100Hz)
2. 9kHz (FM 90Hz)
3. 50Hz (FM 500Hz)
4. 100Hz (FM 1000Hz)
5. 1kHz (FM 10000Hz)
6. 10kHz (FM 100000Hz)
7. 100kHz (FM 1000000Hz)
8. 1MHz (FM 10000000Hz)
9. 10MHz (FM 100000000Hz)
10. 100MHz (FM 1000000000Hz)
11. 1GHz (FM 10000000000Hz)
12. 10GHz (FM 100000000000Hz)
13. 100GHz (FM 1000000000000Hz)
14. 1THz (FM 10000000000000Hz)

RESISTORS
A: 1% tolerance
B: 5% tolerance
C: 10% tolerance
D: 20% tolerance
E: 30% tolerance
F: 40% tolerance
G: 50% tolerance
H: 60% tolerance
J: 70% tolerance
K: 80% tolerance
L: 90% tolerance
M: 100% tolerance
N: 200% tolerance
P: 300% tolerance
Q: 400% tolerance
R: 500% tolerance
S: 600% tolerance
T: 700% tolerance
U: 800% tolerance
V: 900% tolerance
W: 1000% tolerance
X: 2000% tolerance
Y: 3000% tolerance
Z: 4000% tolerance

CAPACITORS
P: 1% tolerance
Q: 2% tolerance
R: 3% tolerance
S: 4% tolerance
T: 5% tolerance
U: 10% tolerance
V: 20% tolerance
W: 30% tolerance
X: 40% tolerance
Y: 50% tolerance
Z: 60% tolerance
AA: 70% tolerance
AB: 80% tolerance
AC: 90% tolerance
AD: 100% tolerance
AE: 200% tolerance
AF: 300% tolerance
AG: 400% tolerance
AH: 500% tolerance
AI: 600% tolerance
AJ: 700% tolerance
AK: 800% tolerance
AL: 900% tolerance
AM: 1000% tolerance
AN: 2000% tolerance
AO: 3000% tolerance
AP: 4000% tolerance

SYMBOL OF FUNCTION
(d) FM
(e) AM
(f) OSC CONTROL
(s) RF INDICATOR

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• Design and specifications subject to change without notice for improvement.
• 仕様及び仕様値は、任意に一変を要するに付、予めご了承ください。

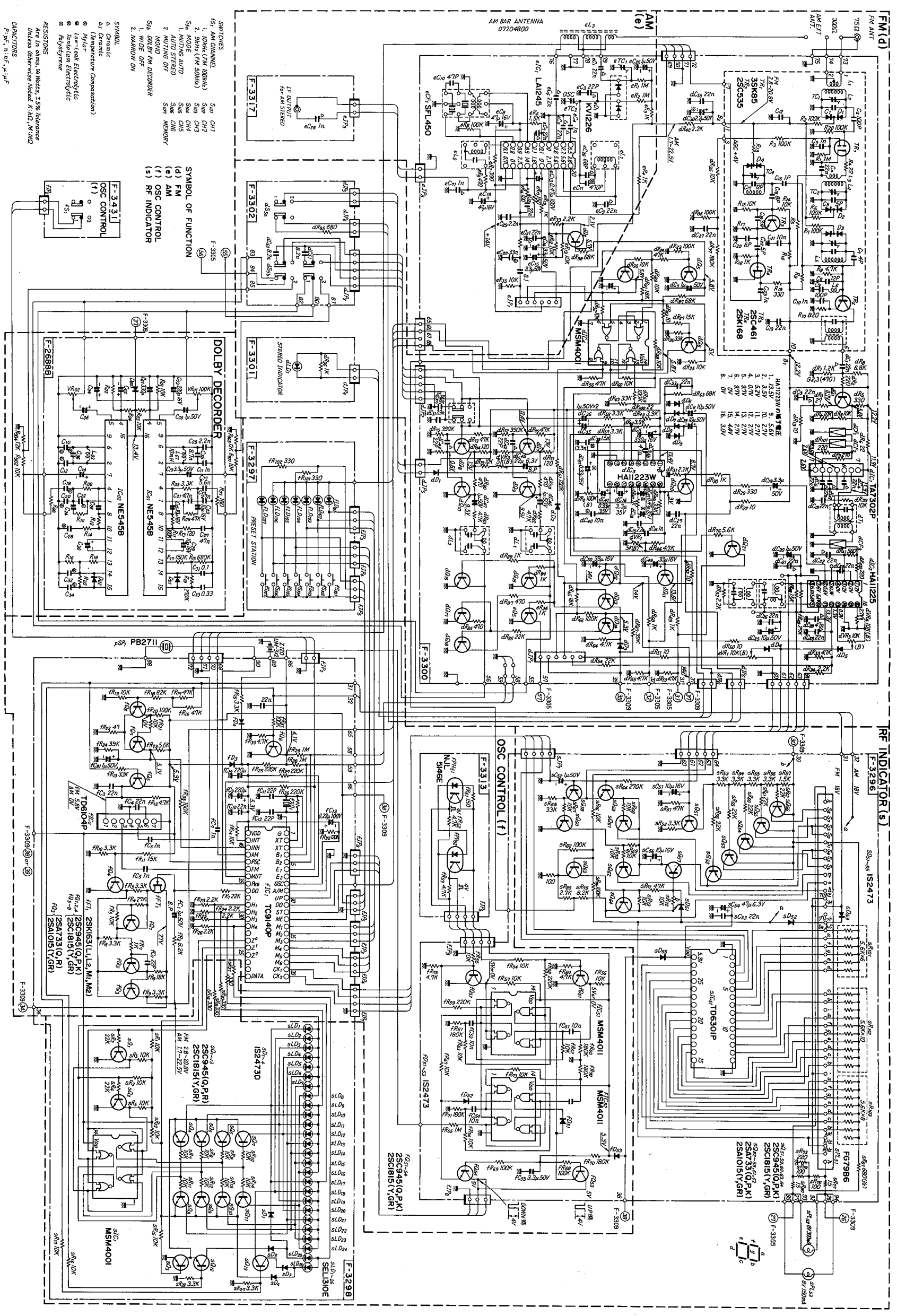


La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.

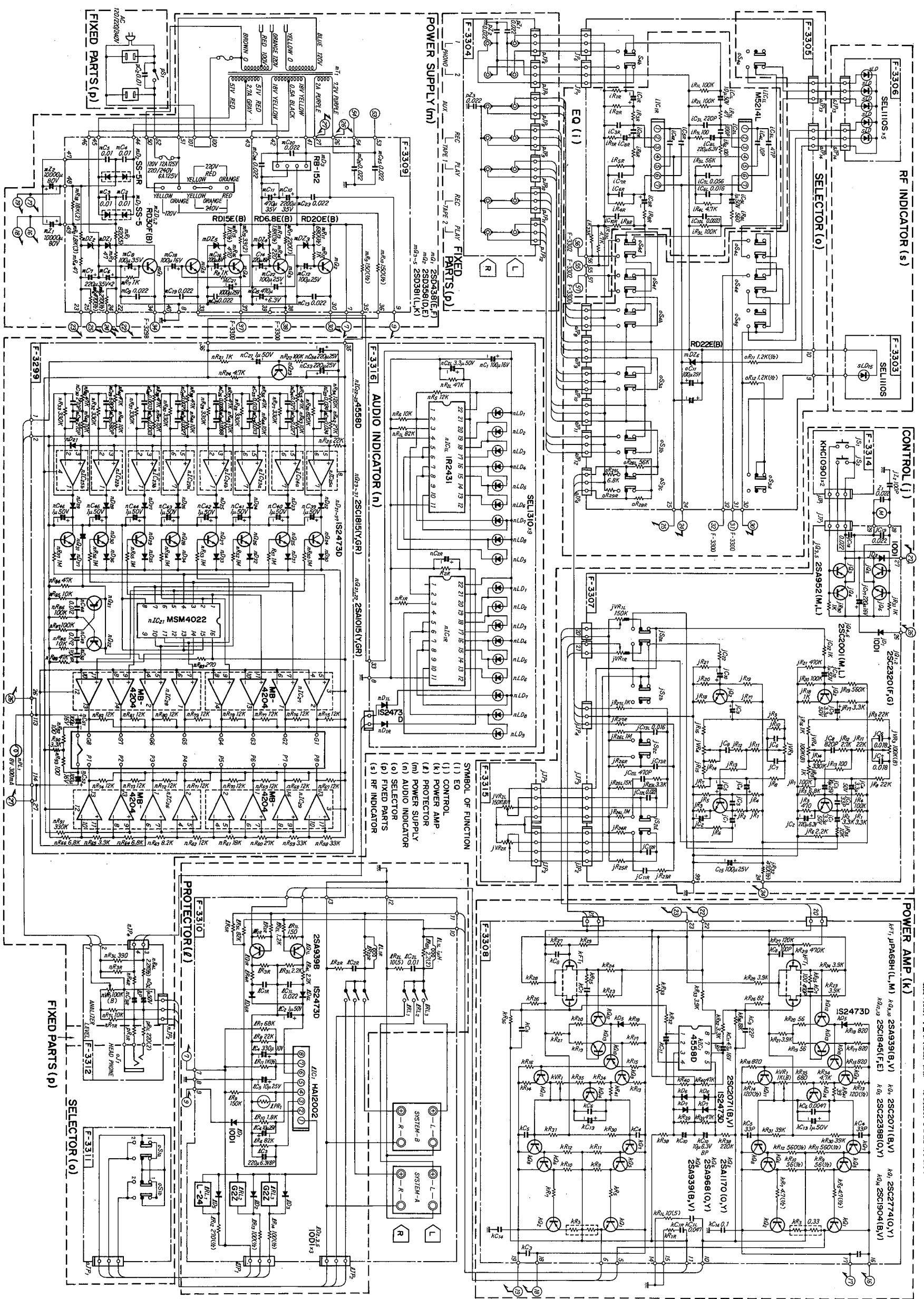
Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.

Änderung und specifications subject to change without notice for improvement.

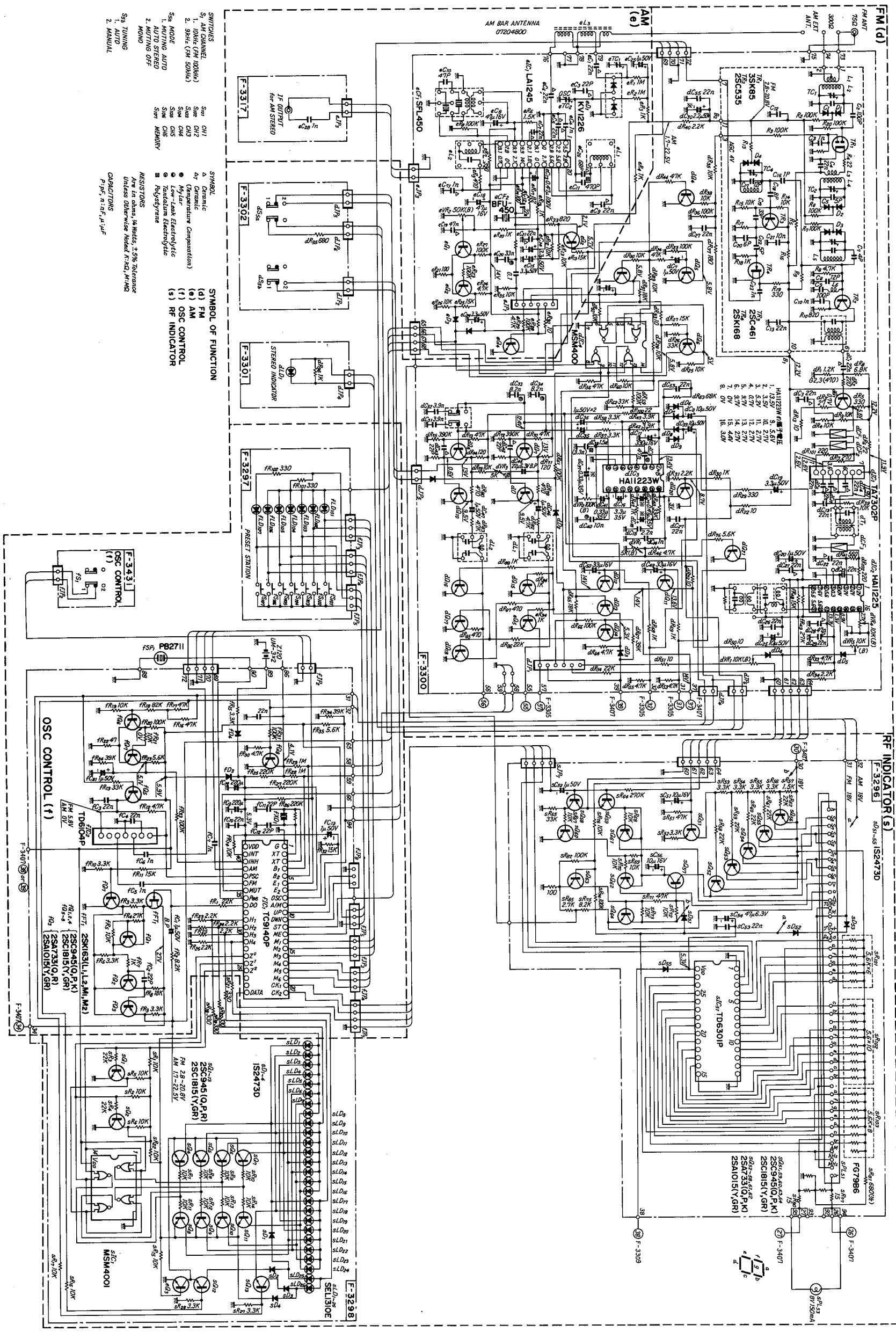
改訂(変更)予 留 意 仕 事 一 概 無 効 迄 止 之 事 予 留 意 仕 事 一 概 無 効 迄 止 之 事



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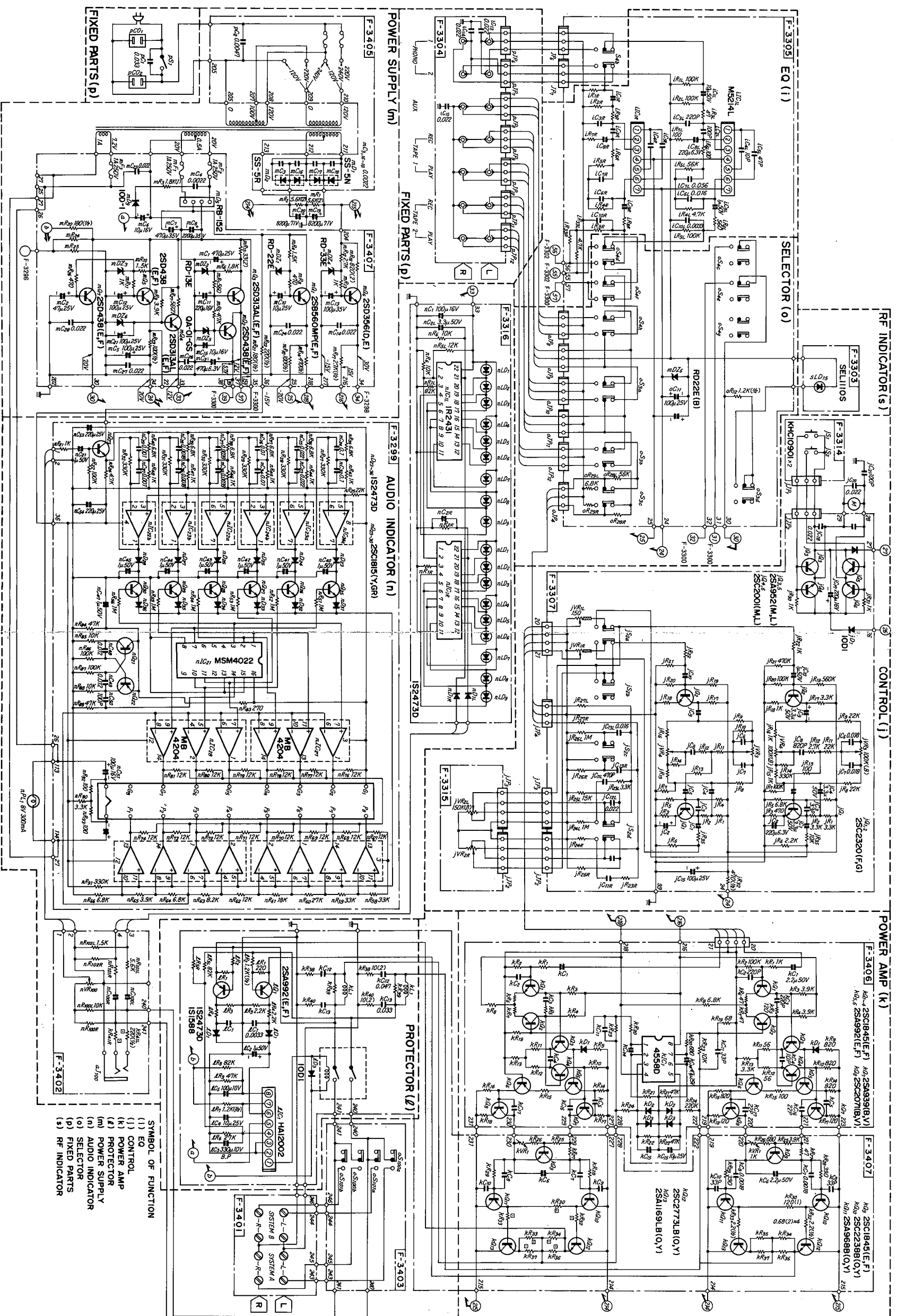


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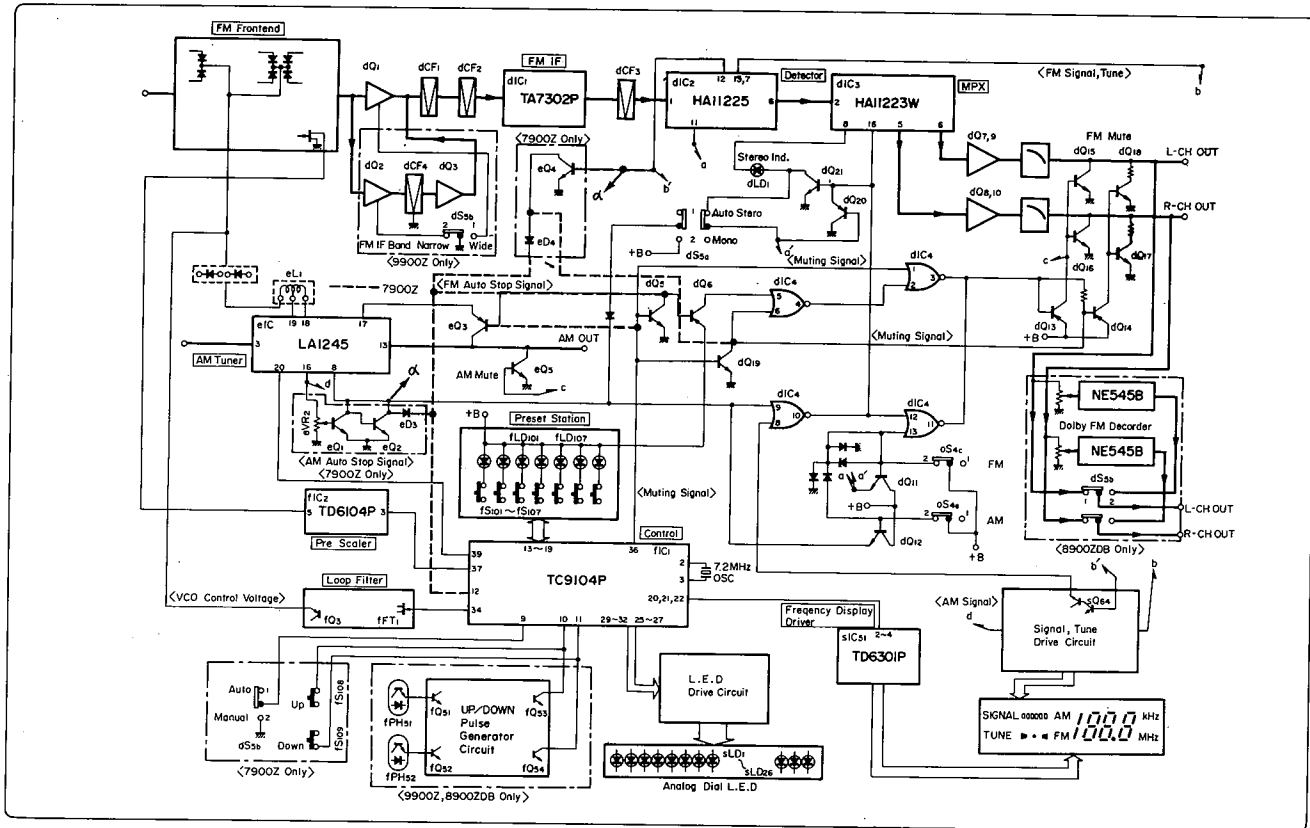
- SYMBOLS**
- SWITCHES
 1. 100k (CM 100k)
 2. 9k (CM 50k)
- SW MODE
 1. AUTOMATIC
 2. MANUAL
- SYMBOL OF FUNCTION
 (d) FM
 (e) AM
 (f) OSC CONTROL
 (s) RF INDICATOR
- RESISTORS**
 Are in ohms, 1k = 1,000, 10k = 10,000, 100k = 100,000, 1M = 1,000,000
 Unless otherwise noted, K = 10³, M = 10⁶
- CAPACITORS**
 P, n, μ, μF

1. A presentation of the specifications and circuit modifications are provided for series of modifications eventually.
 2. A presentation of the specifications and circuit modifications are provided for series of modifications eventually.
 3. Design and specifications subject to change without notice for improvement.
 4. 変更の通知、予告なく、仕様の一変を要する場合があります。



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 • Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.
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 • 変更のため、予告なく変更、仕様の一端を変更することがあります。

1-2. Tuner Section



2. OPERATIONS

A static-mode digital tuning system has been used for the tuner sections of Model 9900Z, 8900ZDB, and 7900Z. The system comprises a Pre-scaler IC/TD6104P, PLL synthesizer control IC/TC9140P and a digital display driver IC/TD6301P.

2-1. Main Function

A. Function of Tuning Selection

- 1) In 9900Z and 8900ZDB, a rotary encoder is adopted to realize a novel manual tuning system, in which the conventional analog tuning system and digital tuning system are used together.
- 2) In 7900Z, one-step/one-push, manual tuning, fast forward manual tuning, and automatic search tuning can be made by depressing the AUTO/MANUAL selection switch and the UP/DOWN key which are joined with each other.
- 3) The memory can write-in or read-out six FM broadcasting stations and six AM broadcasting station, respectively, by pushing the MEMORY key (fS101) and the PRESET keys (fS102-fS107).

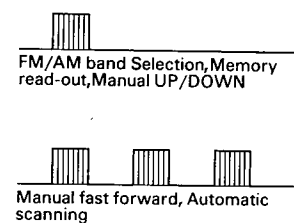
B. Display of Received Frequency

The received frequency can be displayed in two methods, simultaneously: analog dial display by LEDs and digital display by IC/TD6301P.

C. Others

Upon the operations of the PRESET keys, FM/AM band selection, and scanning, an approx. 2.5 kHz pulse signal (as shown in Fig. 2-1) is outputted for a fixed period from the terminal "Pee" of TC9140P, so as to produce an operation-confirming pitch sound from the buzzer (fSP1).

Fig. 2-1



2-2. Operation of Manual Tuning in 9900Z and 8900ZDB

In 9900Z and 8900ZDB, the manual tuning is performed by the use of a rotary encoder including two photo-couplers, without depressing the UP/DOWN key.

The photo-couplers and a reflector mounted on the tuning knob detect whether the tuning knob is being rotated clockwise to increase (UP) the frequency or counterclockwise to decrease (DOWN) the frequency to be received.

The two photo-couplers fPH51 and fPH52 detect the respective positions with a phase difference of 90 degrees. Fig. 2-2 (a) shows a mutual relationship between two output pulses of fPH51 and fPH52, when the tuning knob is being clockwise; (b) shows a mutual relationship between two output pulses of fPH51 and fPH52, when the tuning knob is being rotated counterclockwise. The two output pulses are converted into an UP or DOWN pulse signal, respectively, through a pulse generator circuit as shown in Fig. 2-3, and next fed to the terminal UP or DOWN of TC9140P in order to increase (UP) or decrease (DOWN) the frequency to be received.

A. UP-Pulse Generation in FM Mode (Clockwise Rotation of Tuning Knob) (See Figs. 2-2 (a), 2-3, and 2-4.)

When the tuning knob is rotated clockwise, the photo-couplers fPH51 and fPH52 output the pulses as shown by Fig. 2-2 (a). The output pulses (A) and (B) from fPH51 and fPH52 are inverted through fQ51 and fQ52, respectively.

The inverted output pulses (C) and (D) are waveform-shaped through IC1a and IC1b (inverters) and then outputted from the output gate of Pin No. 10 of IC1a and the output gate of Pin No. 4 of IC1b respectively, as two inverted output pulses (E) and (F).

The inverted output pulse (E) from IC1a and the differentiated pulse (H) of the inverted output pulse (F) from IC1b are inputted to IC1d, and a pulse (I) is outputted from the output gate of Pin No. 11 of IC1d.

The inverted output pulse (F) from IC1b and the differentiated pulse (G) of the inverted output pulse (E) from IC1a are inputted to IC1c; however in this case, no pulse is outputted from the output gate of Pin No. 3 of IC1c but a constant H-level (in voltage) output signal (J) is kept outputted.

Next, in FM mode, since a constant H-level voltage is applied to the input gate of Pin No. 9 of IC2a and the input gate of Pin No. 6 of IC2b, the inverted output pulse (K) of the pulse (E) is outputted from the output gate of Pin No. 10 of IC2a, and the inverted output pulse (L) of the pulse (F) is outputted from the output gate of Pin No. 4 of IC2b.

The inverted output pulse (K) from IC2a and the differentiated pulse (N) of the inverted output pulse (L) from IC2b are inputted to IC2d, and a pulse (P) is outputted from the output gate of Pin No. 11 of IC2d.

This pulse (P) from IC2d and the output pulse (I) from IC1d are combined into an UP pulse (Q).

The UP pulse (Q) is next current-amplified through fQ53 and inputted to the terminal UP of TC9140P (fIC1) to increase (UP) the frequency to be received.

Further, the inverted output pulse (L) from IC2b and the differentiated pulse (M) of the inverted output pulse (K) from IC2a are inputted to IC2c; however, in this case no pulse is outputted from the output gate of Pin No. 3 of IC2c but a constant H-level output signal (O) is kept outputted.

B. DOWN-Pulse Generation in FM Mode (Counterclockwise Rotation of Tuning Knob) (See Figs. 2-2 (b), 2-3, and 2-4.)

When the tuning knob is rotated counterclockwise, the photo-couplers fPH51 and fPH52 output the pulses as shown by Fig. 2-2 (b). In this case, the output pulse from fPH52 leads the output pulse from fPH51 by a phase angle of 90 degrees.

Therefore, there is a difference of 180 degrees in phase between the output pulse from fPH52 when the tuning knob is rotated counterclockwise and the one when rotated clockwise against that of the output pulse from fPH51. As a result, the inverted output pulses (E) and (F) are outputted from IC1a and IC2b respectively. The inverted output pulse (F) from IC1b and the differentiated pulse (G) of the inverted output pulse (E) from IC1a are inputted to IC1c, and a pulse (I) is outputted from the output gate of Pin No. 3 of IC1c.

The inverted output pulse (E) from IC1a and the differentiated pulse (H) of the inverted output pulse (F) from IC1b are inputted to IC1d, however, in this case, no pulse is outputted from the output gate of Pin No. 11 of IC1d but a constant H-level output signal (J) is kept outputted.

Next, the inverted output pulses (K) and (L) of both pulses (E) and (F) are outputted from the output gates of Pin Nos. 10 and 4 of IC2a and IC2b, respectively.

The inverted output pulse (L) from IC2b and the differentiated pulse (M) of the inverted output pulse (K) from IC2a are inputted to IC2c, and a pulse (O) is outputted from the output gate of Pin No. 3 of IC2c.

This pulse (O) from IC2c and the output pulse (I) from IC1c are combined into a DOWN pulse (R). The DOWN pulse (R) is next current-amplified through fQ54 and inputted to the terminal DOWN of TC9140P (fIC1) to decrease (DOWN) the frequency to be received.

Further, no pulse is outputted from the output gate of Pin No. 11 of IC2d but a constant H-level output signal (P) is kept outputted.

C. UP- and DOWN-Pulse Generation in AM Mode

In AM mode, since the input gates of Pin Nos. 9 and 6 of IC2a and IC2b are in a constant L-level signal in voltage, the output gates of Pin Nos. 10 and 4 of IC2a and IC2b are also in a constant H-level state in voltage, respectively, regardless of the input conditions of the input gates of Pin Nos. 8 and 5 of IC1b and IC2b.

Therefore, a constant H-level signal is inputted to the input gates of Pin Nos. 2 and 12 of IC2c and IC2d, respectively; however, since a capacitor C is connected to the other input gates of Pin Nos. 1 and 13 of IC2c and IC2d respectively, the H-level signal is not inputted but a L-level signal is inputted to the input gates of Pin Nos. 1 and 13.

Accordingly, the output gates of Pin Nos. 3 and 11 of IC2c and IC2d are in a H-level signal in voltage without outputting the UP and DOWN pulses.

In other words, when the tuning knob is rotated clockwise in AM mode, the UP pulse is the output pulse (I) from IC1d, and when the tuning knob is rotated counterclockwise, the DOWN pulse is the output pulse (I) from IC1c.

That is to say, the number of the UP or DOWN pulses in AM mode is half of that in FM mode. This UP pulse (I) or DOWN pulse (I) is inputted to the terminal UP or DOWN of TC9140P (fIC1) to increase (UP) or decrease (DOWN) the frequency to be received.

When the UP or DOWN pulse is inputted to the terminal UP or DOWN of TC9140P, the frequency to be received changes by 100 kHz (50 kHz in Europe) per pulse in receiving FM frequency or by 10 kHz (9 kHz in Europe) per pulse in receiving AM frequency. In addition, the pulse width of the UP or DOWN pulse can be determined by a time constant of the capacitor C and the resistor R provided in the respective differentiator circuits.

2-3. Muting Operation

In selecting AM/FM band, when depressing the manual UP/DOWN key (the tuning knob in 9900Z and 8900ZDB), or when performing the automatic search operation, the mute signal from the mute output terminal of Pin No. 36 of the PLL synthesizer control IC/TC9140P (fIC1) changes to H-level in voltage to begin the muting operation.

This mute signal controls the tuner output in FM/AM mode by turning dQ16 ~ dQ18 ON or OFF in FM mode and eQ5 in AM mode.

In FM stereo mode, the mute signal from Pin No. 12 of the decoder IC/HA11225 (dIC2) is used for the muting operation, in addition to the mute signal from fIC1. However, only the mute signal from fIC1 is used for the muting operation in monophonic FM broadcasting and AM modes.

Fig. 2-2 fPH51/fPH52 Output Pulse

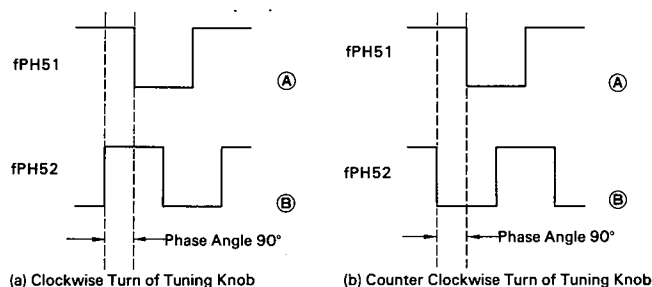


Fig. 2-3 UP/DOWN Pulse Generator Circuit

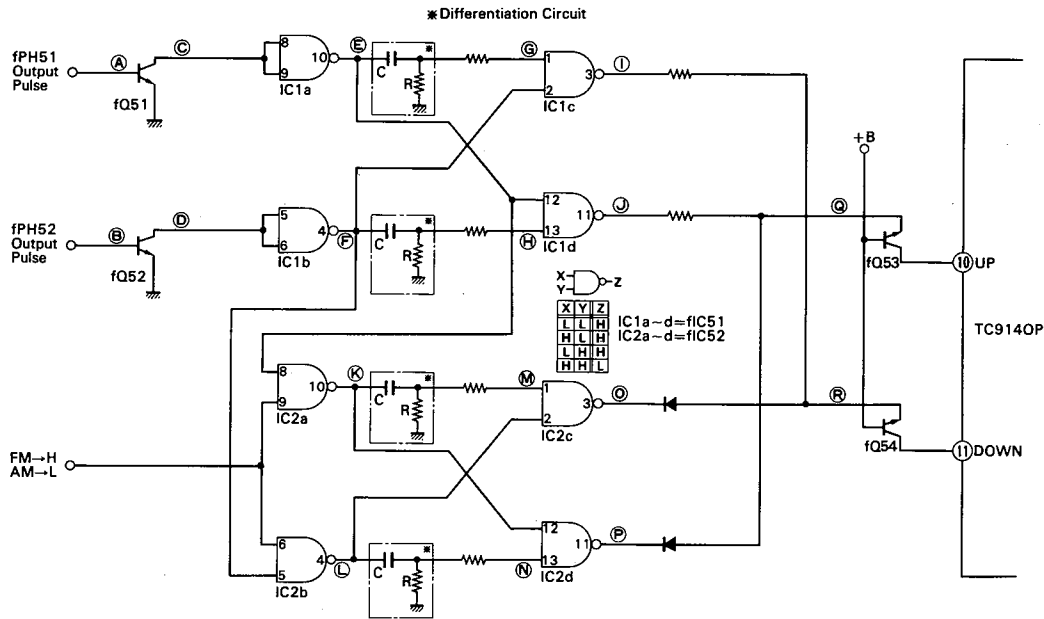
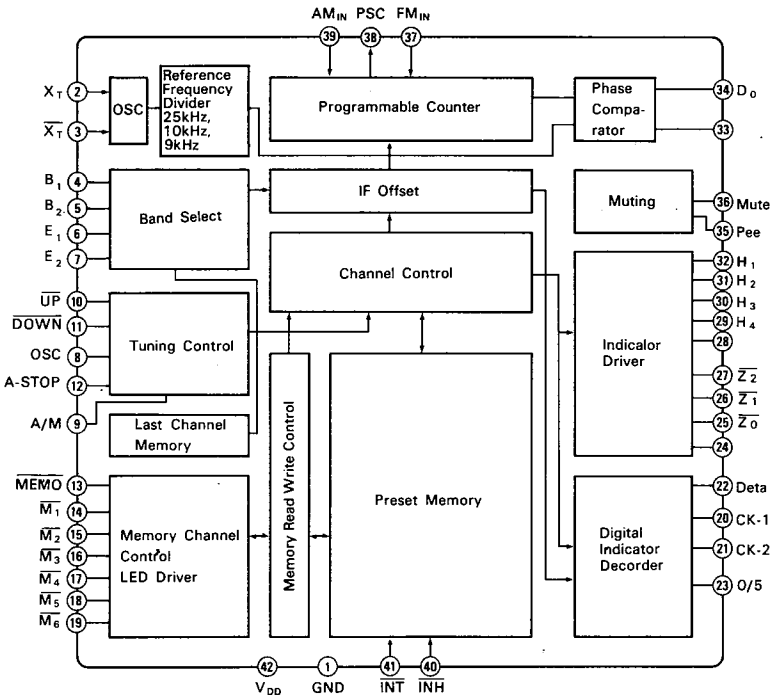


Fig. 2-4 Timing Chart of UP/DOWN Pulse Generation

MEASURING POINT	A)CLOCKWISE TURN OF TUNING KNOB (UP Pulse Generation)	B)COUNTERCLOCKWISE TURN OF TUNING KNOB (DOWN Pulse Generation)	REMARKS
E	[Timing diagram showing a series of pulses]	[Timing diagram showing a series of pulses]	
F	[Timing diagram showing a series of pulses]	[Timing diagram showing a series of pulses]	
K	[Timing diagram showing a series of pulses]	[Timing diagram showing a series of pulses]	FM Mode Only
L	[Timing diagram showing a series of pulses]	[Timing diagram showing a series of pulses]	FM Mode Only
G	[Timing diagram showing a series of pulses]	[Timing diagram showing a series of pulses]	
H	[Timing diagram showing a series of pulses]	[Timing diagram showing a series of pulses]	
M	[Timing diagram showing a series of pulses]	[Timing diagram showing a series of pulses]	FM Mode Only
N	[Timing diagram showing a series of pulses]	[Timing diagram showing a series of pulses]	FM Mode Only
O	[Timing diagram showing a series of pulses]	[Timing diagram showing a series of pulses]	
P	[Timing diagram showing a series of pulses]	[Timing diagram showing a series of pulses]	
I	[Timing diagram showing a series of pulses]	[Timing diagram showing a series of pulses]	Output Signal for DOWN Tuning on AM Mode
J	[Timing diagram showing a series of pulses]	[Timing diagram showing a series of pulses]	Output Signal for UP Tuning on AM Mode
Q	[Timing diagram showing a series of pulses]	[Timing diagram showing a series of pulses]	Output Signal for UP Tuning on FM Mode
R	[Timing diagram showing a series of pulses]	[Timing diagram showing a series of pulses]	Output Signal for DOWN Tuning on FM Mode

3. INTERIOR BLOCK DIAGRAM OF IC

• TC9140P (PLL Synthesizer Control IC)

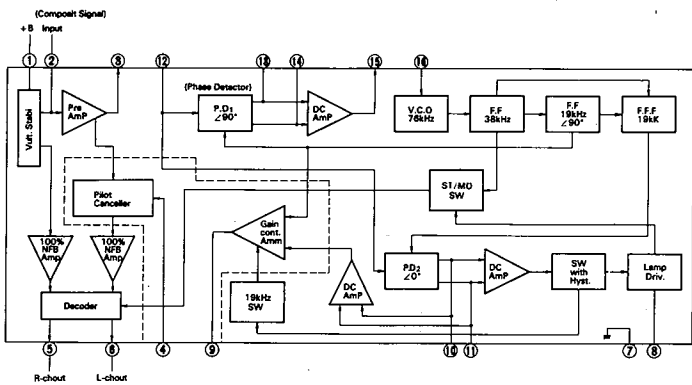


• Terminal Functions of TC9140P

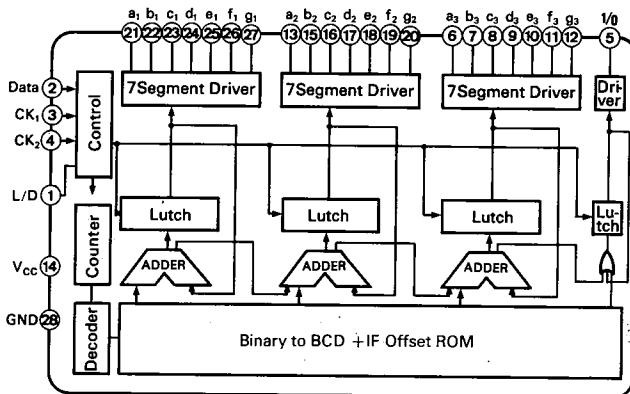
Pin No.	Symbols on substrate	Functions															
2, 3	X _T X _T	Terminals to connect a quartz oscillator for generating a reference frequency.															
4, 5	B ₁ B ₂	Terminals to input a signal for switching FM/AM band and a signal for selecting the IF fine tuning in FM receiving. <table border="1" style="margin-left: 20px;"> <tr> <td>B₁</td> <td>B₂</td> <td>Mode</td> </tr> <tr> <td>0</td> <td>0</td> <td>AM</td> </tr> <tr> <td>1</td> <td>0</td> <td>FM (10.7MHz - 50K)</td> </tr> <tr> <td>0</td> <td>1</td> <td>FM (10.7MHz + 50K)</td> </tr> <tr> <td>1</td> <td>1</td> <td>FM (10.7MHz)</td> </tr> </table>	B ₁	B ₂	Mode	0	0	AM	1	0	FM (10.7MHz - 50K)	0	1	FM (10.7MHz + 50K)	1	1	FM (10.7MHz)
B ₁	B ₂	Mode															
0	0	AM															
1	0	FM (10.7MHz - 50K)															
0	1	FM (10.7MHz + 50K)															
1	1	FM (10.7MHz)															
6, 7	E ₁ E ₂	Terminals to input a signal for selecting destinations of Japan, USA, and Europe. <table border="1" style="margin-left: 20px;"> <tr> <td>E₁</td> <td>E₂</td> <td>Mode</td> </tr> <tr> <td>0</td> <td>0</td> <td>—</td> </tr> <tr> <td>1</td> <td>0</td> <td>Japan</td> </tr> <tr> <td>0</td> <td>1</td> <td>USA</td> </tr> <tr> <td>1</td> <td>1</td> <td>Europe</td> </tr> </table> <p>* Inputs of terminals E₁ and E₂ are read and latched in INH = L state and in FM/AM switching.</p>	E ₁	E ₂	Mode	0	0	—	1	0	Japan	0	1	USA	1	1	Europe
E ₁	E ₂	Mode															
0	0	—															
1	0	Japan															
0	1	USA															
1	1	Europe															
8	OSC	Terminal to connect capacitor and resistor for the oscillator for determining the speed of automatic search operation. The automatic store-release in the preset memory unit and the conversion period to fast forwarding in manual selection of broadcasting stations are determined according to this oscillation frequency.															
9	A/M	Terminal to input a signal for switching the manual operation to automatic search operation or vice versa in the UP/DOWN tuning mode. "H": Automatic, "L": Manual															
10, 11	UP DOWN	Terminals to input a signal from the tuning key. <p>* In manual operation: When the key is kept depressed for 0.3 sec or more in one-step/one-push step feeding, the operation changes to fast forwarding; when the key is released, the operation stops at the next stop. In this case, even if there is a station on the way, the station is neglected.</p> <p>* In automatic search operation (7900Z): When the key is depressed once, the automatic search operation starts and stops automatically after having selected the desired station.</p> <p>* A pull-up resistance is provided therein.</p>															

Pin No.	Symbols on substrate	Functions
12	A-STOP	Terminal to input a signal for performing the automatic search stop. When a "H" level signal is applied to this terminal during automatic search operation, the scanning operation stops. (7900Z Only)
13	MEMO	Terminal to input a signal for storing data in the preset memory unit. Input/output terminal in which a LED driver is provided. <p>* When depressing the MEMO key, the MEMO lamp comes on. Next, when any desired memory No. key is depressed, the data on receiving frequency is written into the memory unit and the MEMO lamp goes off.</p> <p>* When the MEMO key is depressed and the memory No. key is not depressed, the frequency data is released automatically.</p>
14 ~ 19	M ₁ ~ M ₆	Terminals to input a signal for designating memory addresses. Input/output terminals in which a LED driver is provided. <p>* Terminals M₁ to M₆ designate the addresses of FM memory unit in FM receiving and the addresses of AM memory unit in AM receiving.</p> <p>* When depressing the MEMO key and any desired station key of M₁ to M₆, the data is written into the memory unit.</p> <p>* When depressing any desired station key of M₁ to M₆, the data is read out.</p>
20, 21, 22, 23	CK-1, CK-2, Data, 0/5	Terminals to output the data for displaying the received frequency digitally and a timing signal. <p>The data fed to the driver TD6301P for displaying a static frequency and the timing signal are outputted once only when the frequency is updated in such case as when the power supply is tuned on, the UP/DOWN key is depressed, the automatic scanning operation is made, the data are read out of the memory unit, or FM/AM is switched. In the ordinary receiving state, this terminal is fixed to a "L" level.</p> <p>* Data: Binary coded frequency data and receiving band.</p> <p>* CK-1, CK-2: Initialize and transfer clock signals.</p> <p>* 0/5: For displaying 50 kHz during FM receiving in Europe.</p>
25 ~ 27	Z ₀ ~ Z ₂	Terminal to output a signal for driving the LEDs for displaying the linear scale on a received frequency. The LEDs are driven in push-pull connection with the terminals H ₁ to H ₂ . 18 points at its maximum.
29 ~ 32	H ₄ ~ H ₁	Terminals to output a signal for driving the LEDs for displaying the linear scale on a received frequency. The LEDs are driven in push-pull connection with the terminals Z ₀ to Z ₂ .
34	D ₀	Terminal to output a signal from a phase comparator. This terminal can be used for FM and AM, separately.
35	Pee	Terminal to output a signal for generating a sound "Pee" to confirm that the key is depressed correctly.
36	Mute	Terminal to output the muting signal. The terminal is kept in "L" level in ordinary state, and in "H" level in muting.
37	FM _{IN}	Terminal to input a signal from the FM programmable counter. An amplifier is provided in the input.
38	PSC	Terminal to output a signal for controlling the Prescaler IC of TD6104P.
39	AM _{IN}	Terminal to input a signal from the AM programmable counter. An amplifier is provided in the input.
40	INH	Terminal to input a signal of inhibit. Ordinary operation in "H" level; inhibit operation in "L" level.
41	INT	Terminal to input an initialize signal. This terminal changes to H level in the ordinary operation and to L level in the initialize operation.
1, 42	GND, V _{DD}	Power supply terminals. 5V ± 0.5V

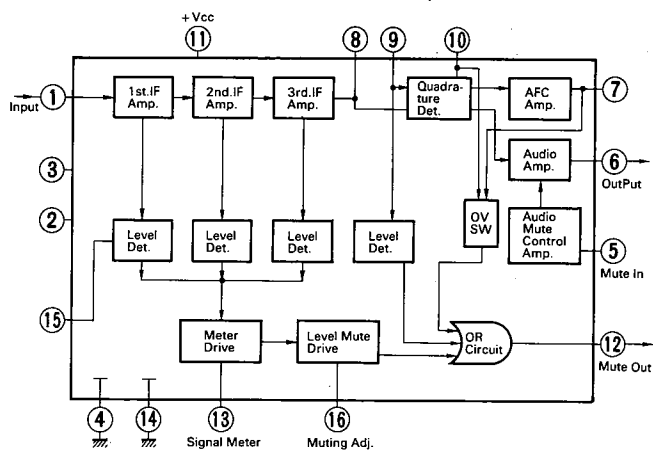
• HA11223W (MPX IC)



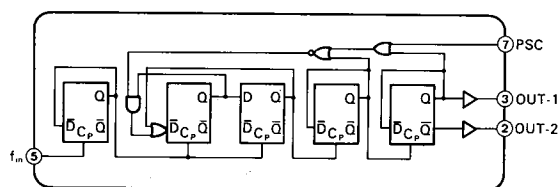
• TD6301P (7 Segment Decoder IC)



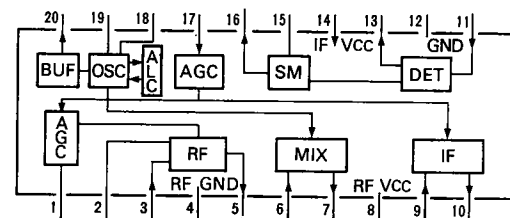
• HA11225 (Quadrature Detector IC)



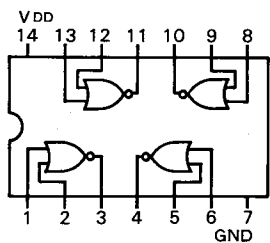
• TD6104P (Pre Scaler IC)



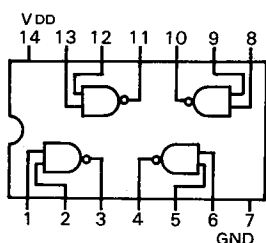
• LA1245 (AM Tuner IC)



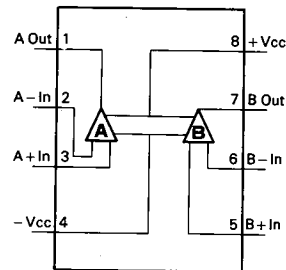
• MSM4001RS/TC4001BP (NOR1 ~ 4)



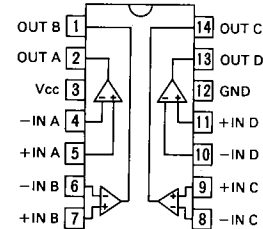
• MSM4011RS/TC4011P (NAND1 ~ 4)



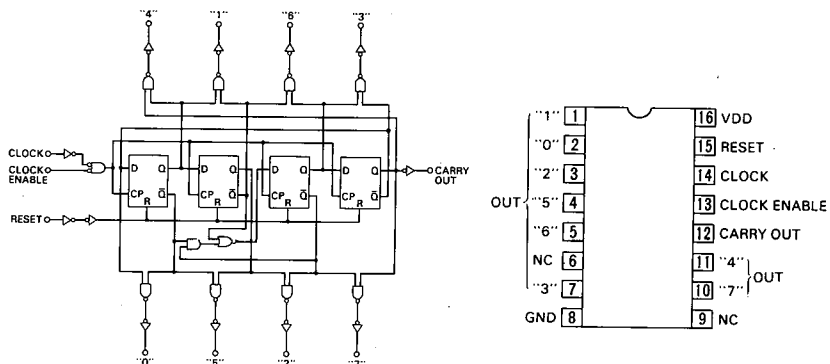
• NJM4558D (Operation Amp. IC)



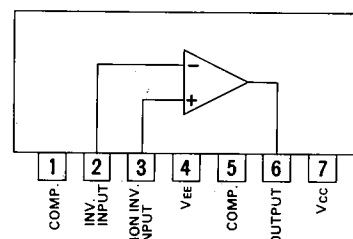
• MB4204M (Comparator IC)



• MSM4022RS (Divide-by-8 Counter/Driver IC)



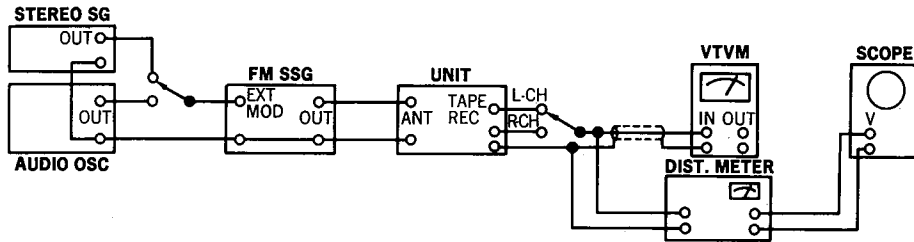
• M5214L (Audio Amp. IC)



4. ADJUSTMENTS (See Top View on Page 18, 19 & 20)

1. FM Adjustment (See Fig. 4-1 & Fig. 4-2)

- Note. 1. SELECTOR FM
 2. FM MODE/FM MUTING Switch Off
 3. FM IF BAND Switch Wide (9900Z Only)



(1) FM IF, RF Adjustment

STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	IF Coil Adj.	98 MHz ANT Input 25 dBf (19.8 dB) 1 kHz (100% MOD) FM SSG	ANT Terminal 300Ω	SIGNAL Indicator	dVR5 (F-3300)	Make 3 lamps lighting	
				Lead Wire of sR52 (F-3296)	dT1 (F-3300)	Max. Reading	
2.	Discriminator Coil Adj.	98 MHz ANT Input 65 dBf (59.8 dB) 1 kHz (100% MOD) FM SSG	Same as above	REC OUT L-ch or R-ch Dist Meter	dT2, dT3 (F-3300)	Min. THD	
3.	SIGNAL Indicator Adj.	98 MHz ANT Input 20 dBf (14.8 dB) 1 kHz (100% MOD) FM SSG	Same as above	SIGNAL Indicator	dVR5 (F-3300)	Make 3 lamps lighting	SIGNAL□□□□
				Same as above	dVR5	Make every 8 lamps lighting	SIGNAL□□□□□□□□

(2) FM STEREO Adjustment (See Fig. 4-1 & Fig. 4-3)

- Note: 1. SELECTOR FM
 2. FM MODE/FM MUTING Switch On

STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	PLL VCO Adj.	98 MHz ANT Input 65 dBf (59.8 dB) FM SSG Pilot 19 kHz (9% MOD) R (or L) Mode 1 kHz + Pilot (100% MOD) STEREO SG	ANT Terminal 300Ω	FM STEREO Indicator	dVR1 (F-3300)	Light indicator	Adjust the VR within center of lighting level
	PLL VCO Adj. In case of Freq. Counter	98 MHz ANT Input 65 dBf (59.8 dB) FM SSG (No MOD)	Same as above	Lead Wire of dR46 (F-3300) Freq. Counter	dVR1 (F-3300)	76 kHz ± 60 Hz	
2.	PILOT Cancel Adj.	98 MHz ANT Input 65 dBf (59.8 dB) FM SSG Pilot 19 kHz (9% MOD)	Same as above	Lead Wire of dR82 (L-CH) (F-3300) dR83 (R-CH) (F-3300) DC Volt Meter	dVR2 (F-3300)	Min. Reading	Confirm Both Channel
	PILOT Cancel Adj. In case of Dist Meter	98 MHz ANT Input 65 dBf (59.8 dB) FM SSG Pilot 19 kHz (9% MOD) L-ch or R-ch Mode 1 kHz + Pilot (100% MOD)	Same as above	Same as above Dist Meter	dVR2 (F-3300)	Min. THD	

STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
3.	Distortion Adj. In case of SG STEREO	98 MHz ANT Input 65 dBf (59.8 dB) FM SSG Pilot 19 kHz (9% MOD) L Mode 1 kHz + Pilot (100% MOD)	Same as above	REC OUT L-ch	dT1 (F-3300)	Min. THD	
4.	Separation Adj.	98 MHz ANT Input 65 dBf (59.8 dB) FM SSG Pilot 19 kHz (9% MOD) L Mode 1 kHz + Pilot (100% MOD) STEREO SG	Same as above	REC OUT L-ch Connect VTVM & Scope		Max. Output	Read the output level of REC OUT
				REC OUT R-ch Connect VTVM & Scope	dVr3 (F-3300)	Min. Output (Confirm output level should be less than -40 dB of L-ch output level)	Confirm R-ch → L-ch
5.	Muting level Adj.	98 MHz ANT Input 15 dBf (9.8 dB) FM SSG Pilot 19 kHz (9% MOD) Sub 1 kHz + Pilot (100% MOD) STEREO SG	Same as above	STEREO Indicator	dVr4 (F-3300)	STEREO Indicator turns on or Output signal comes out	
6.	DOLBY FM Adj. (8900ZDB Only)	98 MHz ANT Input 65 dBf (59.8 dB) 100 Hz (100% MOD) FM SSG	Same as above	REC OUT L-ch VTVM	VR01 (F-2688)	Output level 560 mV	DOLBY FM DECODER Switch --- ON VTVM (100kΩ/V)
				REC OUT R-ch VTVM	VR02 (F-2688)	Same as above	

Fig. 4-1

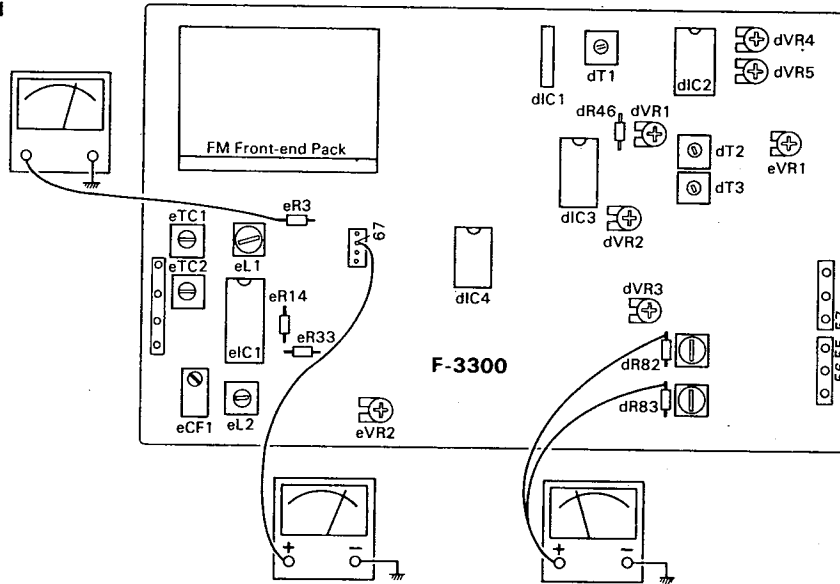


Fig. 4-2

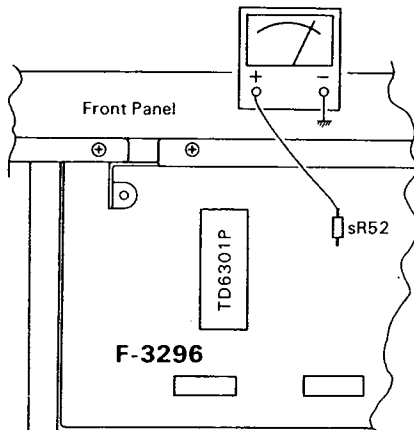
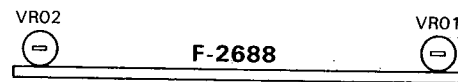
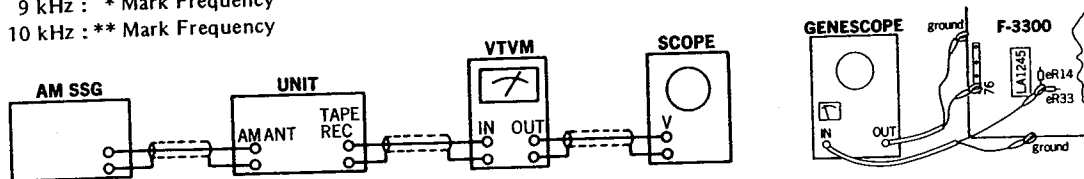



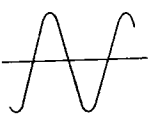
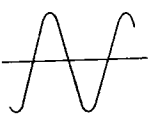
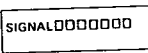
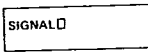
Fig. 4-3



2. AM IF Adjustment & Dial Calibration (See Fig. 4-1 on Page 8)

- Note: 1. SELECTOR AM
 2. AM 9 kHz/10 kHz Selection Switch (Rear Panel)
 9 kHz : * Mark Frequency
 10 kHz : ** Mark Frequency



STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	IF Coil Adj.	Output 60 dB Genescope	Terminal No. 76 (F-3300)	Lead Wire of eR33 (F-3300)	eCF1 eL2 (F-3300)	Max. IF Waveform	
2.	AFC Voltage Adj. *522 kHz (**520 kHz)	No Input	—	Display Indication	Tuning Knob	*522 kHz (**520 kHz)	
		Same as above	—	Lead Wire of eR3 (F-3300) DC Volt Meter	eL1 (F-3300)	1.7V ±1V	
	AFC Voltage Adj. *1602 kHz (**1600 kHz)	Same as above	—	Display Indication	Tuning Knob	*1602 kHz (**1600 kHz)	
		Same as above	—	Lead Wire of eR3 (F-3300) DC Volt Meter	eTC2 (F-3300)	22.5V ±2V	
3.	*603 kHz (**600 kHz) RF Adj.	*603 kHz (**600 kHz) ANT Input 50 dB 400 Hz (30% MOD) AM SSG	ANT Terminal	REC OUT L-ch or R-ch VTVM & Scope	Bar Antenna	Max. Output	
	*1404 kHz (**1400 kHz) RF Adj.	*1404 kHz (**1400 kHz) ANT Input 50 dB 400 Hz (30% MOD) AM SSG	Same as above	Same as above	eTC1 (F-3300)	Max. Output	
4.	SIGNAL Indicator Adj.	*999 kHz (**1000 kHz) ANT Input 70 dB 400 Hz (30% MOD) AM SSG	Same as above	SIGNAL Indicator	eVR1 (F-3300)	Make 7 lamps lighting	
		No Input	—	Same as above	eVR1 (F-3300)	Make only 1 lamp lighting	
5.	Auto Search Level Adj. (7900Z Only)	*999 kHz (**1000 kHz) ANT Input 70 dB 400 Hz (30% MOD) AM SSG	ANT Terminal	Terminal No. 67 (F-3300) DC Volt Meter	eVR2 (F-3300)	DC 3.6 ~ 4V	Voltage change from L to H level

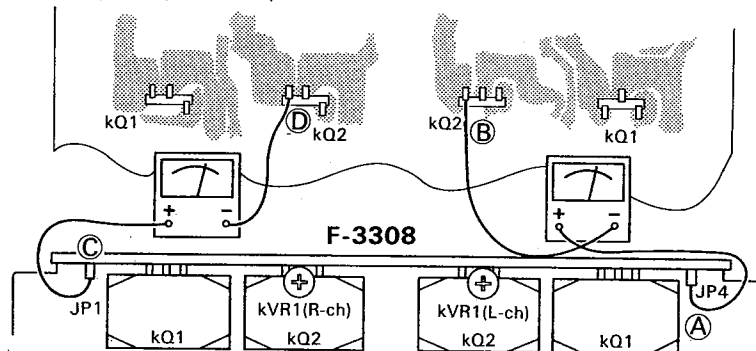
• Abbreviations	
Equipment	Others
AM FM Generator Oscilloscope Genescope	Antenna ANT.
AM Standard Signal Generator AM SSG	Modulation MOD.
FM Standard Signal Generator FM SSG	Total Harmonic Distortion T.H.D.
FM Stereo Generator Stereo SG	
Oscilloscope Scope	
Audio Oscillator Audio Osc.	
Distortion Meter Dist. Meter	

3. Bias Current Adjustment (See Fig. 4-4 & Top View on Page 18, 19 & 20)

- Note: 1. Master Volume Minimum
 2. Room Temperature . . . 18°C ~ 28°C (65°F ~ 85°F)
 3. For Adjustment, run the unit for more than 5 minutes after the power is switched on.

STEP	SUBJECT	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1.	Bias Current Adj. L-ch	<ul style="list-style-type: none"> 9900Z/8900ZDB Between JP4 & emitter terminal kQ2 on F-3308 (As shown (A) & (B) in Fig. 4-4) 	kVR1 (L-ch) (F-3308)	DC 2mV	<ul style="list-style-type: none"> Before turning ON power switch, turn jVR2 fully counter-clockwise. This bias current value into voltage by Ohms law.
		<ul style="list-style-type: none"> 7900Z Between emitter terminals kQ12 & kQ13 on F-3407 (As shown (E) & (F) Top of View on page 20) 	kVR1 (L-ch) (F-3407)		
2.	Bias Current Adj. R-ch	<ul style="list-style-type: none"> 9900Z/8900ZDB Between JP1 & emitter terminal kQ2 on F-3308 (As shown (C) & (D) in Fig. 4-4) 	kVR1 (R-ch) (F-3308)	DC 2mV	
		<ul style="list-style-type: none"> 7900Z Between emitter terminals kQ12 & kQ13 on F-3407 (As shown (G) & (H) Top of View on page 20) 	kVR1 (R-ch) (F-3407)		

Fig. 4-4 (9900Z, 8900ZDB)



◆ Selection Intermediate Frequencies (FM)

- When the intermediate frequency (shown by color) of the ceramic filter is changed, rewire between the terminal No. 58 or 59 (F-3300) and the point (A) or (B) (F-3298) in accordance with table 1.
- Unify the color marks of FM ceramic filters (dCF1, dCF2, dCF3 and dCF4 (9900Z Only)) on the F-3300 with same color.
- In 9900Z, when the FM ceramic filter is replaced with new ceramic filter set (dCF1 ~ dCF4/Stock No. 07248600), use a ceramic filter marked with J the dCF4 only.

• Table 1

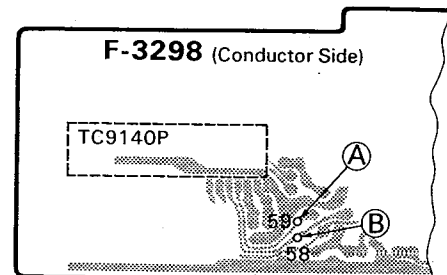
CHANGE OF COLOURING (Intermediate Frequency)		WIRING
FROM	TO	
WHITE (10.750 MHz)	RED (10.700 MHz)	Remove a wire between Terminal No. 58 or 59 (F-3300) and Point (A) (F-3298).
	BLACK (10.650 MHz)	Change a connection of Point (A) to Point (B) (F-3298).
RED (10.700 MHz)	WHITE (10.750 MHz)	Connect a wire of 10 inch between Terminal No. 59 and Point (A) (F-3298).
	BLACK (10.650 MHz)	Connect a wire of 10 inch between Terminal No. 58 and Point (B) (F-3298).
BLACK (10.650 MHz)	WHITE (10.750 MHz)	Change a connection of Point (B) to Point (A) (F-3298).
	RED (10.700 MHz)	Remove a wire between Terminal No. 58 or 59 (F-3300) and Point (B) (F-3298).

◆ Note on Photo-couplers Replacement

- Unify the ranks of photo-couplers (fPH51, fPH52) on the F-3313 with same color.
- When the rank (shown by color) of the photo-coupler is changed, replace the Resistor (fR51) as shown on the table 2.

• Table 2

Photo Coupler (fPH51, fPH52)		Resistor (fR51)	
Coupling	Rankings	Value (Ω)	Stock No.
BLUE	A	330	00233200
GREEN	B	180	00229000
ORANGE	C	100	00224800
WHITE	D	82	00239300

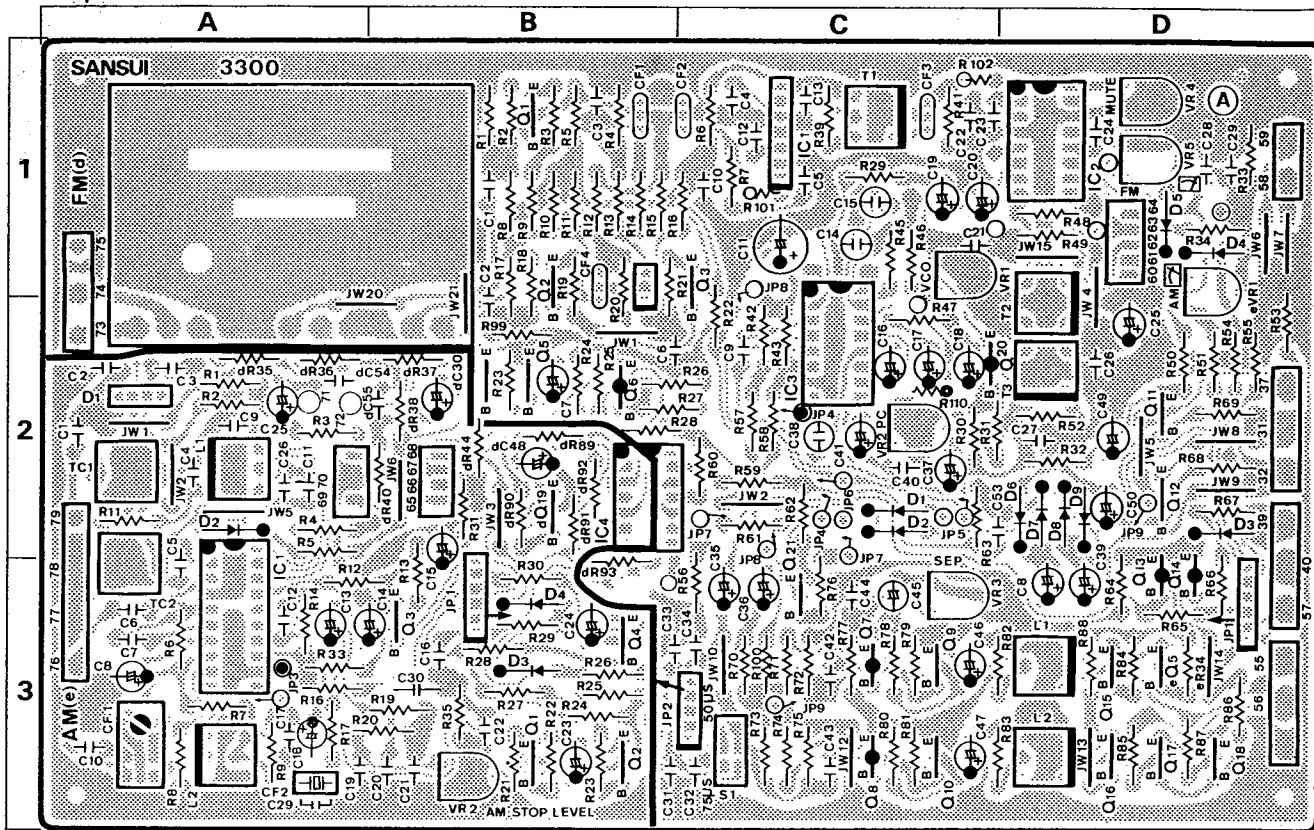


5. PARTS LOCATION & PARTS LIST

•Since some of capacitors and resistors are omitted from parts lists in this Service Manual, refer to the Common Parts List for capacitors & resistors which was appended previously to each Sansui Manual.

5-1. F-3300 Tuner Circuit Board

Component Side (Stock No. 00612601 = 9900Z/00618001 = 8900ZDB/00620701 = 7900Z)



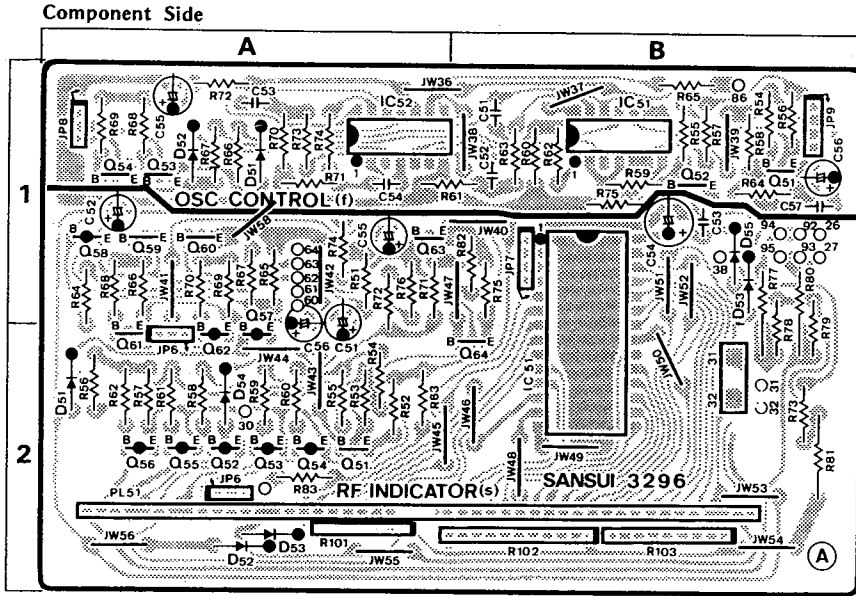
Parts List

Parts No.	Stock No.	Description	Parts No.	Stock No.	Description
	07113200	FM Front-end Pack RD236U13	dQ21	03059501	2SC945 Q
•Transistor				07194800, 1	2SC1815 Y, GR
dQ1	03063401, 2	2SC1674 L, K	•IC		
dQ2	03063401, 2	2SC1674 L, K (9900Z)	dIC1	03605900	TA7302P
dQ3	03063401, 2	2SC1674 L, K (9900Z)	dIC2	03609300	HA11225
dQ4	03059501	2SC945 Q	dIC3	03606800	HA11223W
	07194800	2SC1815 Y, GR (7900Z)	dIC4	03609500	MSM4001RS
dQ5	07194800, 1	2SC1815 Y, GR		03610500	TC4001BP
dQ6	07197001	2SA733A Q	•Diode		
	07194700, 1	2SA1015 Y, GR	dD1 ~ 9	03117600	1S2473D
dQ7	07197001	2SA733A Q	dC45	08450200	22μF 6.3V E.B.
	07194700, 1	2SA1015 Y, GR	dCF1 ~ 4	07248600	Ceramic Filter Set (9900Z)
dQ8	07197001	2SA733A Q	dCF1 ~ 3	07264900	Ceramic Filter (8900ZDB/7900Z)
	07194700, 1	2SA1015 Y, GR	dL1	07196400	Low Pass Filter
dQ9	03059501	2SC945 Q	dL2	07196400	Low Pass Filter
	07194800, 1	2SC1815 Y, GR	dT1	42359300	FM IF Coil
dQ10	03059501	2SC945 Q	dT2	42362300	FM IF Coil
	07194800, 1	2SC1815 Y, GR	dT3	42362400	FM IF Coil
dQ11	03059501	2SC945 Q	dVR1	07241200	Semi Variable Resistor 5kΩ (B), VCO adj.
	07194800, 1	2SC1815 Y, GR	dVR2	07241600	Semi Variable Resistor 100kΩ (B), pilot cancel adj.
dQ12	03059501	2SC945 Q	dVR3	07241200	Semi Variable Resistor 5kΩ (B), SEP adj.
	07194800, 1	2SC1815 Y, GR	dVR4	07241200	Semi Variable Resistor 5kΩ (B), muting adj.
dQ13	07197001	2SA733A Q	dVR5	07241300	Semi Variable Resistor 10kΩ (B), FM signal adj.
	07194700, 1	2SA1015 Y, GR	ds1	07251100	Slide Switch, de-emphasis
dQ14	07197001	2SA733A Q			
	07194700, 1	2SA1015 Y, GR			
dQ15	03059501~3	2SC945 Q, P, K			
dQ16	03059501~3	2SC945 Q, P, K			
dQ17	03059501	2SC945 Q			
	07194800, 1	2SC1815 Y, GR			
dQ18	03059501	2SC945 Q			
	07194800, 1	2SC1815 Y, GR			
dQ19	03059501	2SC945 Q			
	07194800, 1	2SC1815 Y, GR			
dQ20	07197001	2SA733A Q			
	07194700, 1	2SA1015 Y, GR			

Parts No.	Stock No.	Description
●Transistor		
eQ1 ~ 4	07194800, 1	2SC1815 Y, GR (7900Z)
eQ3	07194700, 1	2SA1015 Y, GR
eQ5	03059501, 2	2SC945 Q, P
●IC		
eIC1	07237200	LA1245
●Varactor Diode		
eD1	07197200	KV1226
●Diode		
eD3, 4	03117600	1S2473D (7900Z)

Parts No.	Stock No.	Description
eTC1, 2	12301000	Trimmer Capacitor 15pF
eCF1	07254000	Ceramic Filter
eCF2	07265100	Ceramic Filter (7900Z)
eL1	46027100	AM OSC Coil
eL2	42306200	AM IF Coil 455 kHz
eVR1	07241300	Semi Variable Resistor 10kΩ (B), AM signal adj.
eVR2	07241500	Semi Variable Resistor 50kΩ (B), AM auto search level adj. (7900Z)

5-2. F-3296 Digitally Frequency Display Circuit Board (Stock No. 00614401 = 9900Z, 8900ZDB/00621801 = 7900Z)



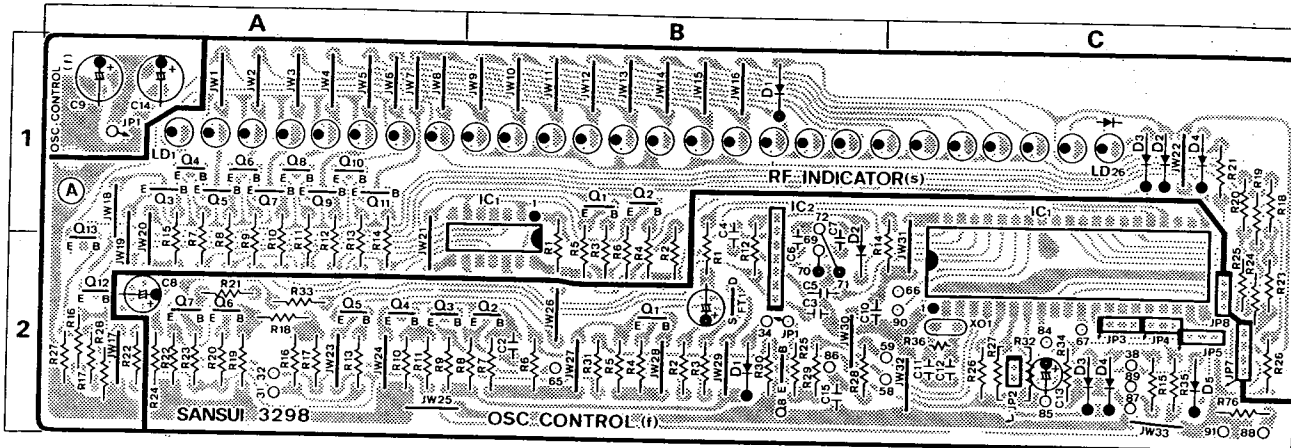
Parts List

Parts No.	Stock No.	Description
●Transistor		
sQ51	03059500, 1	2SC945 R, Q
sQ52	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ53	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ54	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ55	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ56	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ57	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ58	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ59	07194800, 1	2SA1015 Y, GR
	03059500, 1	2SC945 R, Q
sQ60	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
sQ61	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ62	07194700, 1	2SA1015 Y, GR
	07197000, 1	2SA733A R, Q
sQ63	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
sQ64	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
●IC		
sIC51	07225100	TD6301P
●Diode		
sD51~55	03111600	1S2473D

Parts No.	Stock No.	Description
sPL51	00000100	Fluorescent Display Tube
sPL52	04007600	Pilot Lamp 8V 300mA
sPL53	04006600	Pilot Lamp 8V 150mA
sR101	07267200	RM65.6kΩ x 6 (Block Resistor)
sR102	07267400	RM105.6kΩ x 10 (Block Resistor)
sR103	07267300	RM85.6kΩ x 8 (Block Resistor)
<9900Z, 8900ZDB Only>		
●Transistor		
fQ51	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
fQ52	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
fQ53	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
fQ54	07194800, 1	2SC1815 Y, GR
	03059500, 1	2SC945 R, Q
●IC		
fIC51	03604000	MSM4011
	03604100	TC4011P
fIC52	03604000	MSM4011
	03604100	TC4011P
●Diode		
fD51	03111600	1S2473D
fD52	03111600	1S2473D
fD53	03111600	1S2473D

5-3. F-3298 Analog Dial Display Circuit Board (Stock No. 00614601 = 9900Z, 8900ZDB/00622001 = 7900Z)

Component Side



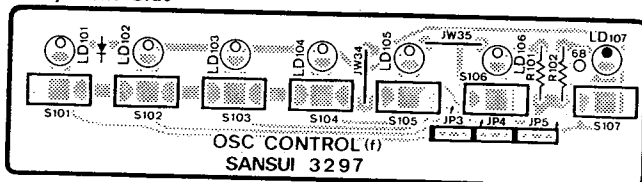
Parts List

Parts No.	Stock No	Description
	07581700	LED Holder (13-Point)
●Transistor		
fQ1	07194800, 1	2SC1815 Y,GR
	03059500, 1	2SC945 R,Q
fQ2	07194800, 1	2SC1815 Y,GR
	03059500, 1	2SC945 R,Q
fQ3	07194700, 1	2SA1015 Y,GR
	07197000, 1	2SA733A R,Q
fQ4	03059500, 1	2SC945 R,Q
fQ5	07194800, 1	2SC1815 Y,GR
	03059500, 1	2SC945 R,Q
fQ6	07194800, 1	2SC1815 Y,GR
	03059500, 1	2SC945 R,Q
fQ7	07194800, 1	2SC1815 Y,GR
	03059500, 1	2SC945 R,Q
fQ8	07194800, 1	2SC1815 Y,GR
	03059500, 1	2SC945 R,Q
●FET		
fFT1	03703402 ~ 5	2SK163 L1, L2, M1, M2
●IC		
fIC1	07225200	TC9140P
fIC2	07225000	TD6104P
fXO1	07237700	Quartz Element NC-18C (7.2 MHz)
●Diode		
fD1 ~ 5	03111600	1S2473D
fC1	00306800	1 μF 50V E.B.
fSP1	07261000	Buzzer PB-2711

Parts No.	Stock No.	Description
●Transistor		
sQ1	07194800, 1	2SC1815 Y,GR
	03059500, 1	2SC945 R,Q
sQ2	07194800, 1	2SC1815 Y,GR
	03059500, 1	2SC945 R,Q
sQ3	07194800, 1	2SC1815 Y,GR
	03059500, 1	2SC945 R,Q
sQ4	07194800, 1	2SC1815 Y,GR
	03059500, 1	2SC945 R,Q
sQ5	07194800, 1	2SC1815 Y,GR
	03059500, 1	2SC945 R,Q
sQ6	07194800, 1	2SC1815 Y,GR
	03059500, 1	2SC945 R,Q
sQ7	07194800, 1	2SC1815 Y,GR
	03059500, 1	2SC945 R,Q
sQ8	07194800, 1	2SC1815 Y,GR
	03059500, 1	2SC945 R,Q
sQ9	07194800, 1	2SC1815 Y,GR
	03059500, 1	2SC945 R,Q
sQ10	07194800, 1	2SC1815 Y,GR
	03059500, 1	2SC945 R,Q
sQ11	07194800, 1	2SC1815 Y,GR
	03059500, 1	2SC945 R,Q
sQ12	07194800, 1	2SC1815 Y,GR
	03059500, 1	2SC945 R,Q
sQ13	07194800, 1	2SC1815 Y,GR
	03059500, 1	2SC945 R,Q
●IC		
sIC1	03610500	TC4001BP
	03609500	MSM4001RS
●Diode		
sD1 ~ 4	03111600	1S2473D
sLD1~26	03193700	Light Emitting Diode SEL1110S

5-4. F-3297 Preset Section Circuit Board (Stock No. 00614501 = 9900Z, 8900ZDB/00621901 = 7900Z)

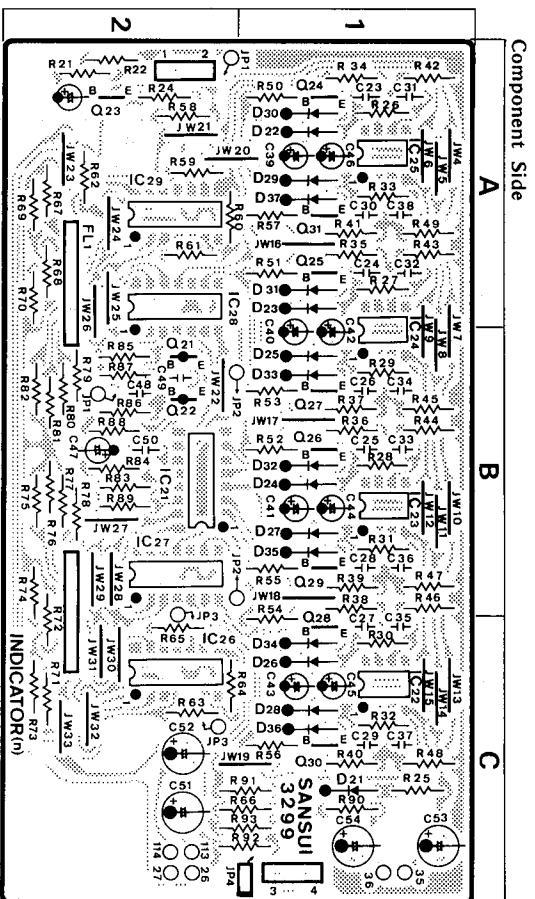
Component Side



Parts List

Parts No.	Stock No.	Description
fLD101 ~ 106	07246200	Light Emitting Diode SEL1710K
fLD107	03193700	Light Emitting Diode SEL1110S
fS101	11320900	Push Switch
fS102	11320900	Push Switch
fS103	11320900	Push Switch
fS104	11320900	Push Switch
fS105	11320900	Push Switch
fS106	11320900	Push Switch
fS107	11320900	Push Switch

5-5. F-3299 Spectrum Analysis Display Circuit Board (Stock No. 00614701 = 9900Z, 8900ZDB/00622101 = 7900Z)



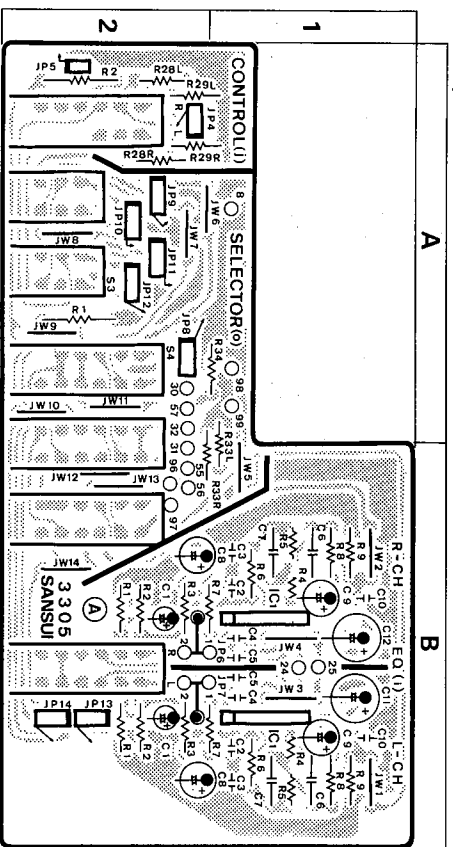
Parts No.	Stock No.	Description
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Parts No.	Stock No.	Description
•Transistor		
NO21	07197001	2SA1733A Q
	07194700, 1	2SA1015 Y, GR
NO22	07197001	2SA1733A Q
	07194700, 1	2SA1015 Y, GR
NO23	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
NO24	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
NO25	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
NO26	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
NO27	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
NO28	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
NO29	07194800, 1	2SC1815 Y, GR

Parts No.	Stock No.	Description
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NO30	03059501	2SC945 Q
	07194800, 1	2SC1815 Y, GR
NO31	07194800, 1	2SC1815 Y, GR

5-6. F-3305 EQ. Amp. & Input Terminal Circuit Board (Stock No. 00613101 = 9900Z, 8900ZDB/00621301 = 7900Z)



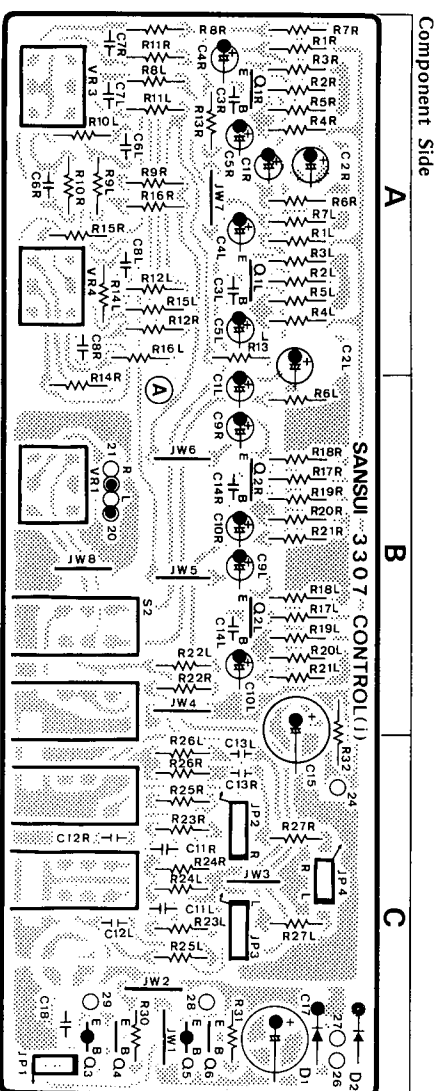
Parts No.	Stock No.	Description
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•IC	07197400	MS214L
IC6	00413200	0.01µF 100V P.C.
IC7	00414500	0.05µF 100V P.C.
IC9	00306000	3.3µF 25V E.B.

Parts No.	Stock No.	Description
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OS3	07242500	Push Switch, tape mon.
OS4	07242800	Push Switch, input selector

5-7. F-3307 Tone Control Circuit Board (Stock No. 00613301 = 9900Z, 8900ZDB)



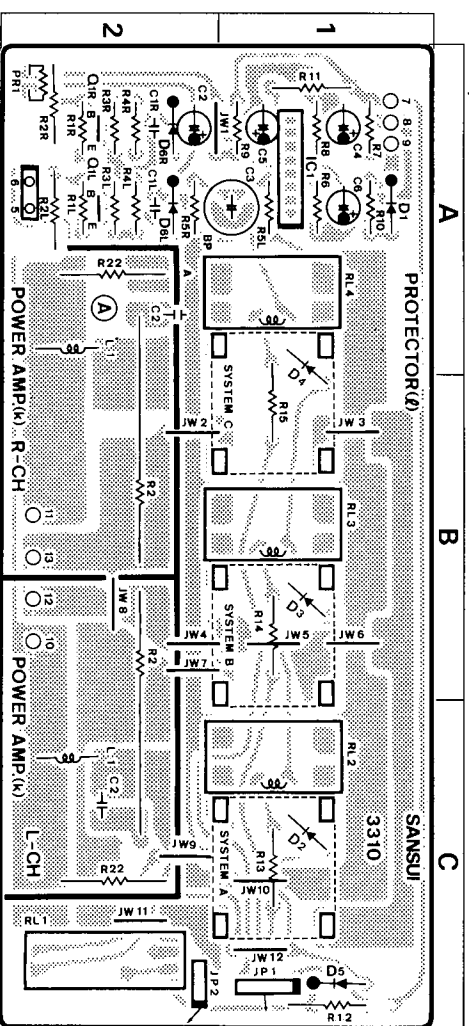
Parts No.	Stock No.	Description
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•Transistor		
JO1	07225400, 1	2SC320L F, G
	07225400, 1	2SC320L F, G
JO2	07206800, 1	2SA952 M, L
	07254800, 1	2SA854 O, R
JO3	03033601, 2	2SB60MP E, F
	07206900, 1	2SC2001 M, L
	07254900, 1	2SC1741 Q, R
JO4	03085201, 2	2SD438 E, F
	07206800, 1	2SA952 M, L
	07254800, 1	2SA854 O, R
JO5	03033601, 2	2SB60MP E, F
	07206900, 1	2SC2001 M, L
	07254900, 1	2SC1741 Q, R
JO6	03085201, 2	2SD438 E, F

Parts No.	Stock No.	Description
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•Diode		
JD1 ~ 2	03103400	10D-1
JVR1	07242200, 1	Variable Resistor 150kΩ (MIN), balance
JVR3	07242300, 1	Variable Resistor 100kΩ (B), treble
JVR4	07242300, 1	Variable Resistor 100kΩ (B), bass
JS2	07243000	Push Switch, defeat, mode, loudness, hi-filter

5-8. F-3310 Protector Circuit Board (Stock No. 00613601 = 9900Z/00619001 = 8900ZDB)



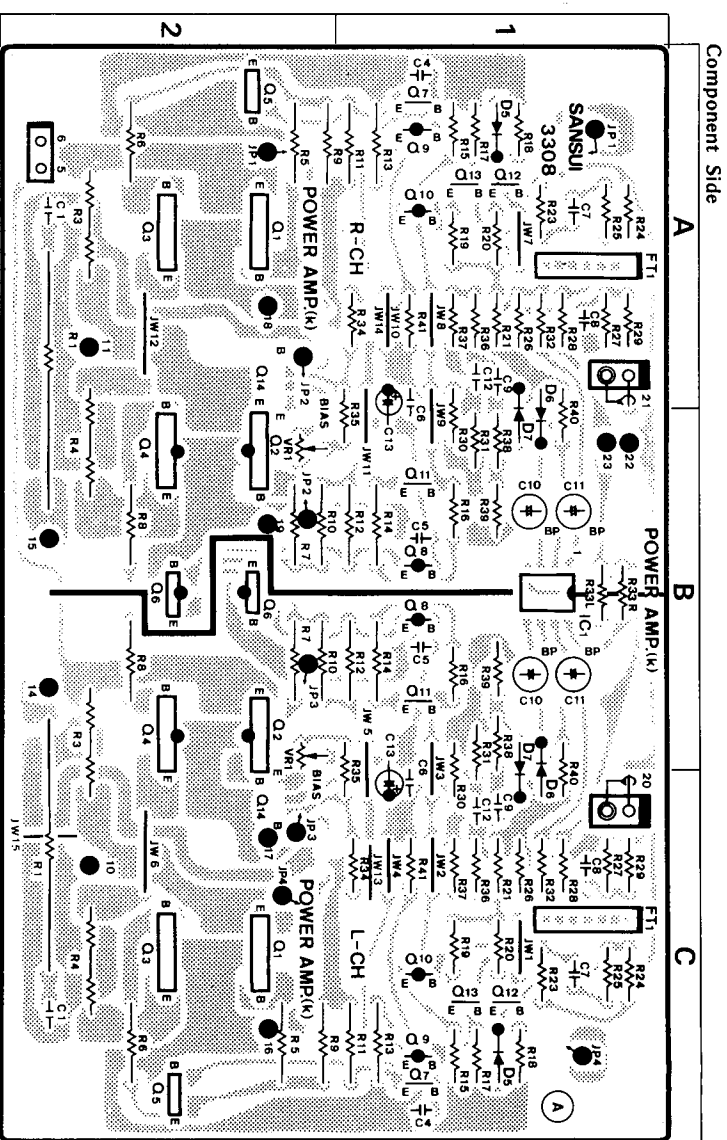
Parts No.	Stock No.	Description
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KR2	00158700	10Ω 5W N.I.R.
KR22	00198200	2.2Ω 2W N.I.R.
KL1	42903700	Peaking Coil

Parts No.	Stock No.	Description
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•Transistor		
JD1	03010300	2SA939B
•IC		
IC1	03609000	HA12002
•Diode		
ID1 ~ 5	03103400	10D-1
IC3	00302900	220µF 6.3V E.B.
IRL1	11504300	Relay
IRL2	07198400	Relay
IRL3	07198400	Relay
IRL4	07198400	Relay (9900Z)
	07202900	4P Terminal Board, speaker

5-9. F-3308 Power Amp. Circuit Board (Stock No. 00613401 = 9900Z/00618801 = 8900ZDB)

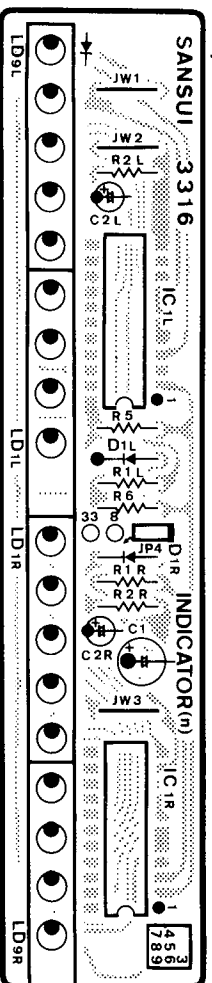


Component Side

Parts No.	Stock No.	Description
●Transistor		
K01	07246800, 1	2SC2773 O, Y (8900Z)
	07246800, 1	2SC2774 O, Y (8900ZDB)
K02	07246800, 1	2SA1169 O, Y (9900Z)
	07246700, 1	2SA1170 O, Y (8900ZDB)
K03	07246800, 1	2SC2773 O, Y (8900Z)
K04	07246800, 1	2SA1169 O, Y (9900Z)
K05	03067200, 1	2SC2388 O, Y (9900Z)
	03069301	2SC2388 Y (8900ZDB)
K06	03010700, 1	2SA9688 O, Y (9900Z)
	03012401	2SA968 Y (8900ZDB)
K07	03066800, 1	2SC2071 B, Y
K08	03010300, 1	2SA939 B, Y
K09	03010300, 1	2SA939 B, V
K010	03010300, 1	2SA939 B, V
K011	03066800, 1	2SC2071 B, Y
K012	03067400, 1	2SC1845 F, E
K013	03067400, 1	2SC1845 F, E
K014	03064001, 2	2SC1904 B, V

Parts No.	Stock No.	Description
●FET		
KFT1	07110000, 1	μPA68H L, M
●IC		
KIC1	03607700	NJM4558D
●Diode		
KD5 ~ 7	03111600	1S2473D
KR1	00158700	10Ω 5W N.I.R.
KR3	00091700	0.33Ω 5W C.R.
KR4	00091700	0.33Ω x 2 5W C.R. (8900Z)
KC3	00380500	10000pF 500V C.C.
KC10	00302500	10μF 6.3V E.B.
KC11	00305200	4.7μF 16V E.B.
KC14	00408600	0.1μF 100V M.C.
KVR1	10336300	Semi Variable Resistor 1kΩ (B), bias current adj.

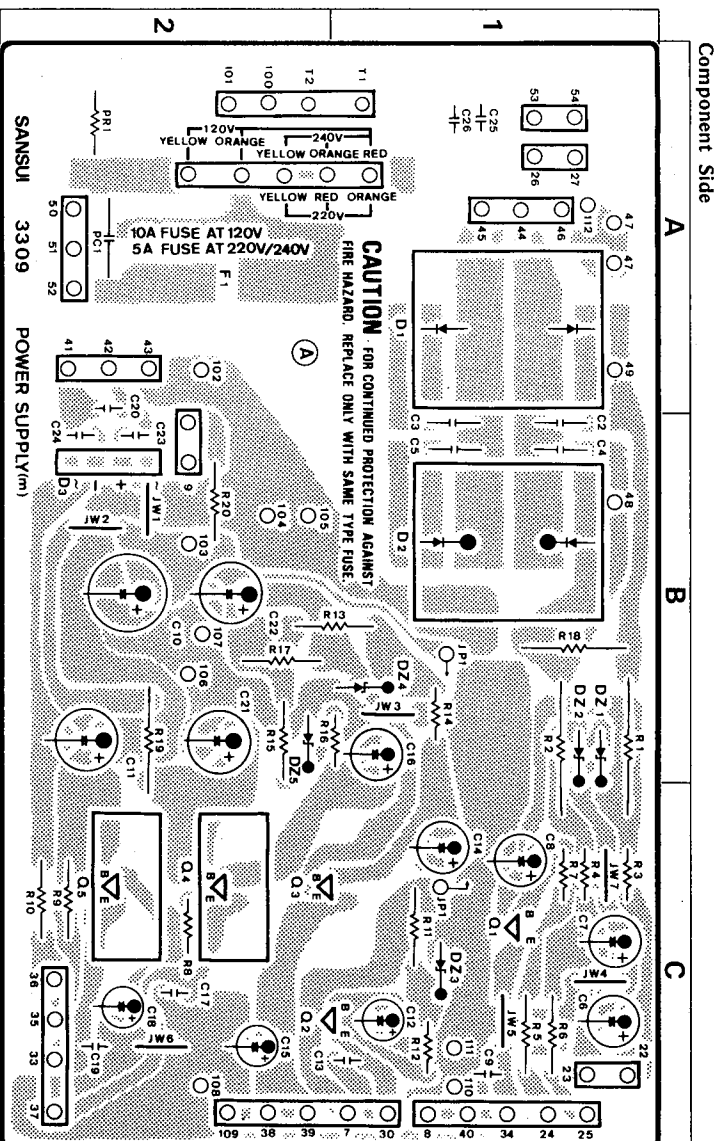
5-10. F-3316 Power Peak Indicator Circuit Board (Stock No. 00614201 = 9900Z/8900ZDB/00621701 = 7900Z)



Component Side

Parts No.	Stock No.	Description
●Transistor		
K01	07246800, 1	2SC2773 O, Y (8900Z)
	07246800, 1	2SC2774 O, Y (8900ZDB)
K02	07246800, 1	2SA1169 O, Y (9900Z)
	07246700, 1	2SA1170 O, Y (8900ZDB)
K03	07246800, 1	2SC2773 O, Y (8900Z)
K04	07246800, 1	2SA1169 O, Y (9900Z)
K05	03067200, 1	2SC2388 O, Y (9900Z)
	03069301	2SC2388 Y (8900ZDB)
K06	03010700, 1	2SA9688 O, Y (9900Z)
	03012401	2SA968 Y (8900ZDB)
K07	03066800, 1	2SC2071 B, Y
K08	03010300, 1	2SA939 B, Y
K09	03010300, 1	2SA939 B, V
K010	03010300, 1	2SA939 B, V
K011	03066800, 1	2SC2071 B, Y
K012	03067400, 1	2SC1845 F, E
K013	03067400, 1	2SC1845 F, E
K014	03064001, 2	2SC1904 B, V

5-11. F-3309 Power Supply Circuit Board (Stock No. 00613501 = 9900Z/00618901 = 8900ZDB)



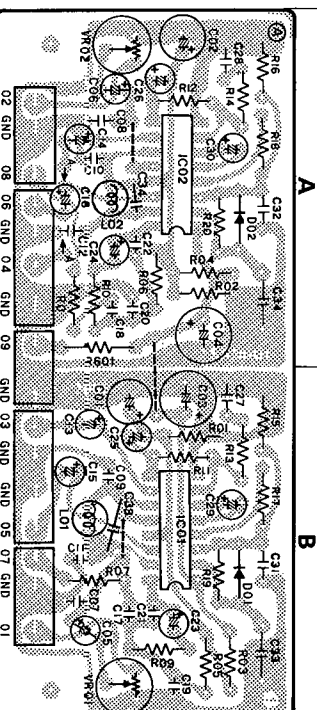
Component Side

Parts No.	Stock No.	Description
●Transistor		
mQ1	03085201, 2	2SD438 E, F
mQ2	03084801, 2	2SD358 D, E
mQ3	03084302, 3	2SD381 L, K
mQ4	03084302, 3	2SD381 L, K
mQ5	03084302, 3	2SD381 L, K
●Diode		
<8900Z>		
md1	03116700	SS-7
md2	03116800	SS-7R
md3	03117000	RB-152
<9900ZDB>		
md1	03113100	SS-5
md2	03113200	SS-5R
md3	03117000	RB-152

Parts No.	Stock No.	Description
●Zener Diode		
mdZ1	03172100	RD30F-B
mdZ2	03172100	RD30F-B
mdZ3	03164700	RD20E-B
mdZ4	03164100	RD6.8E-B
mdZ5	03163300	RD15E-B

Parts No.	Stock No.	Description
<8900ZDB>		
pf1	04325900	Fuse 10A 125V (120V)
	04322900	Fuse 5.0A 125V (220V ~ 240V)

5-12. F-2688 DOLBY NR Circuit Board (Stock No. 76601701 = 8900ZDB)

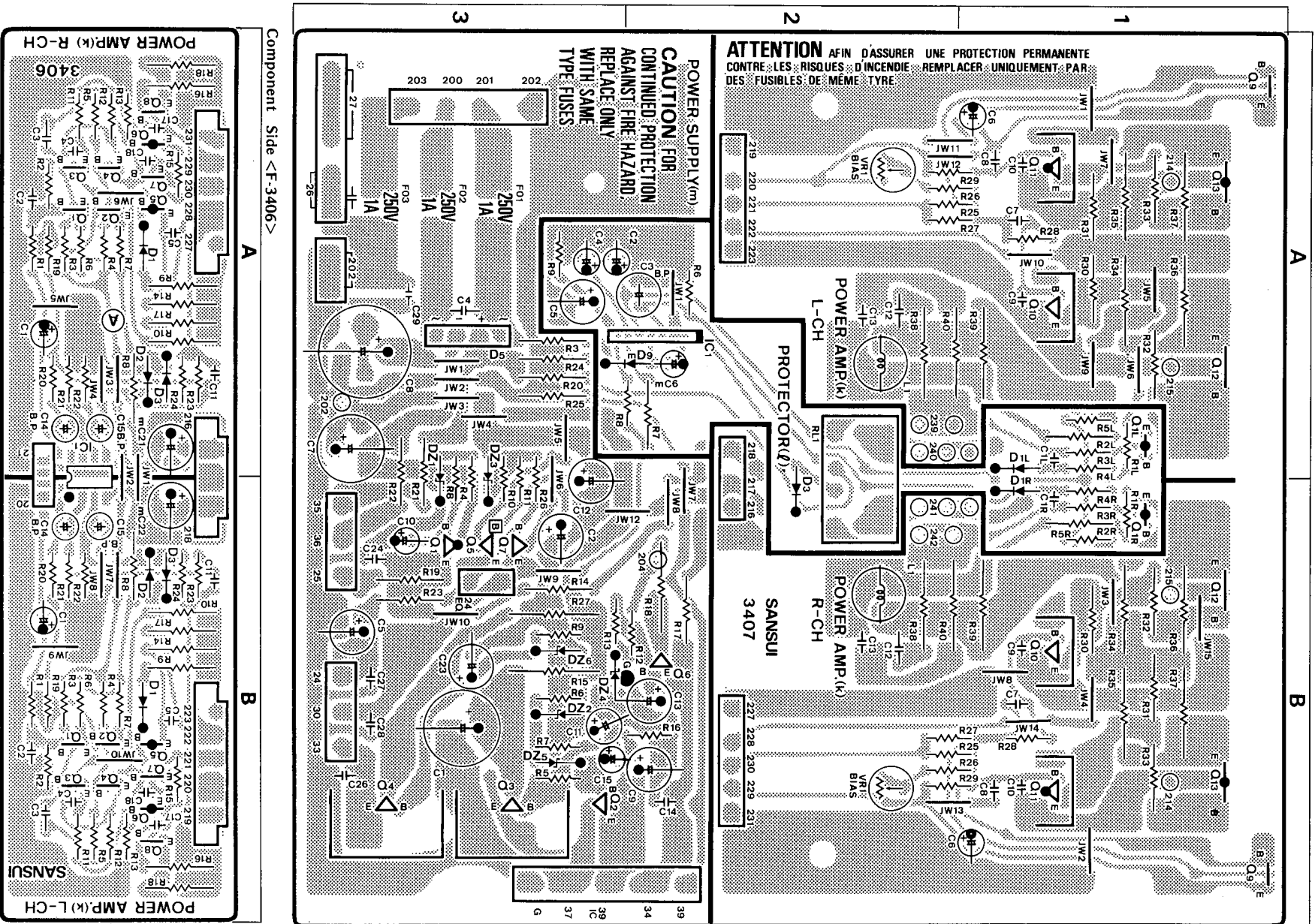


Conductor Side

Parts No.	Stock No.	Description
●IC		
IC01	03603400	NE545B
●Diode		
D01	03104000	1N34A
rD601	03103400	10D-1
VR01	49002000	Inductor 10mH
	10354300	Semi Variable Resistor 100 kΩ (B)

5-13. F-3407 Power Supply & F-3406 Power Amp. Circuit Board (Stock No. 00622701 = 7900Z)

- Note: The printed circuit boards F-3406 and F-3407 are not provided separately. Therefore, both circuit board are supplied together even when you order one of these.



Component Side <F-3407>

Component Side <F-3406>

Parts List

Part No.	Stock No.	Description
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<F-3406 Section>

•Transistor

KO1 ~ 4	03067400, 1	2SC1845 E, F
KO5, 6	03010900, 1	2SA992 E, F
KO7	03010300, 1	2SA939 B, V
KO8	03066800, 1	2SC2071 B, V

•IC

KIC1	03607700	NUM4558D
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•Diode

KD1	03111800	1S1588
	03111600	1S2473D
	03111800	1S1588
KD2	03111600	1S2473D
	03111800	1S1588
KD3	03111600	1S2473D
KC14	00306200	4.7µF 25V E,B.
KC15	00305400	10µF 25V E,B.

<F-3407 Section>

•Transistor

KO9	03067400, 1	2SC1845 E, F
KO10	03067201	2SC2238B Y
KO11	03010701	2SA9688 Y
KO12	07260200, 1	2SC2773LB O, Y
KO13	07260100, 1	2SA1169LB O, Y
KR34	00191700	0.68Ω 2W N.I.R.
KR35	00191700	0.68Ω 2W N.I.R.
KR36	00191700	0.68Ω 2W N.I.R.
KR37	00191700	0.68Ω 2W N.I.R.
KR38	00185500	10Ω 2W N.I.R.
KR39	00186000	1Ω 2W N.I.R.
KR40	00190600	4.7Ω 2W N.I.R.
KL1	42903700	Peaking Coil
KVR1	10350700	Semi Variable Resistor 1kΩ (B), bias current adj.

•Transistor

IO1	03010900, 1	2SA992 E, F
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Part No.	Stock No.	Description
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•IC

IIIC1	03609000	HA12002
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•Diode

ID1	03111800	1S1588
ID3	03111600	1S2473D
	03103400	10D-1
IC3	00303800	330µF 10V E,B.
IRL1	07198400	Relay

•Transistor

mO1	03033601, 2	2SB560MP E, F
mO2	03085201, 2	2SD438 E, F
mO3	03083902, 3	2SD313AL E, F
mO4	03083902, 3	2SD313AL E, F
mO5	03085201, 2	2SD438 E, F
mO6	03085201, 2	2SD438 E, F
mO7	03084501, 2	2SD356 D, E

•Diode

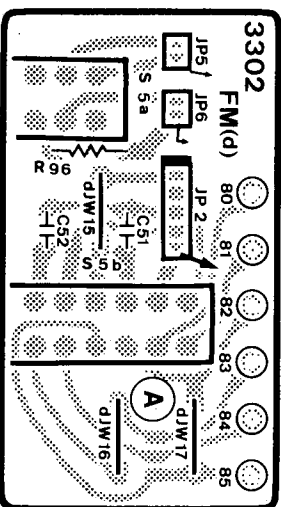
mD5	03117000	RB-152
mD9	03103400	10D-1

•Zener Diode

mZD1	03164900	RD-22E-B
mZD2	03163300	RD-15E-B
mZD3	03164900	RD-22E-B
mZD4	03165700	RD-33E-B
mZD5	03164100	RD-6.8E-B
mZD6	03163300	RD-15E-B
mR3	00180800	1.8kΩ 1W N.I.R.
mR15	00188900	33Ω 2W N.I.R.
mR18	00192000	820Ω 2W N.I.R.
mR27	00190700	56Ω 2W N.I.R.
mC4	00380600	2200µF 500V C.C.
mF1 ~ 3	07188400	Fuse 1A 250 V

5-14. F-3302 FM Mode Switch Circuit Board (9900Z/8900ZDB/7900Z)

- Note: The circuit boards, F-3302, F-3301, F-3303, F-3304, F-3306, F-3317, F-3431, F-3311, F-3312, F-3313, F-3314, F-3401, F-3402, F-3403, F-3405, & F-3430 are not supplied as the assembled. However, the individual parts on the circuit board are provided by orders.



Component Side

Parts List

Part No.	Stock No.	Description
DS5	07242600	Push Switch

5-15. F-3301 FM Stereo Indicator Circuit Board
(9900Z/8900ZDB/7900Z)

Parts List	Stock No.	Description
nLD1	03193700	Light Emitting Diode SEL1110S

5-16. F-3303 Audio Muting Circuit Board
(9900Z/8900ZDB/7900Z)

Parts List	Stock No.	Description
nLD15	03193700	Light Emitting Diode SEL1110S

5-17. F-3304 Input Terminal Circuit Board
(9900Z/8900ZDB/7900Z)

Parts List	Stock No.	Description
nLD10	03193700	Light Emitting Diode SEL1110S

5-18. F-3306 Input Source Indicator Circuit Board
(9900Z/8900ZDB)

Parts List	Stock No.	Description
nLD10	03193700	Light Emitting Diode SEL1110S

5-19. F-3317 IF Output (AM Stereo) Circuit Board
(9900Z/8900ZDB/7900Z)

Parts List	Stock No.	Description
IS1	11102800	Slide Switch

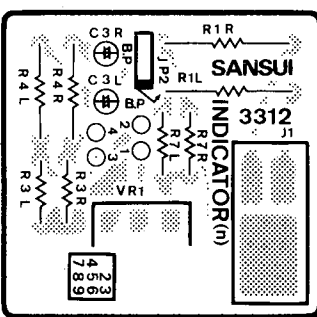
5-20. F-3431 AM Channel Selector Circuit Board
(9900Z/8900ZDB/7900Z)

Parts List	Stock No.	Description
IS1	11102800	Slide Switch

5-21. F-3311 Speaker Selector Switch Circuit Board
(9900Z/8900ZDB)

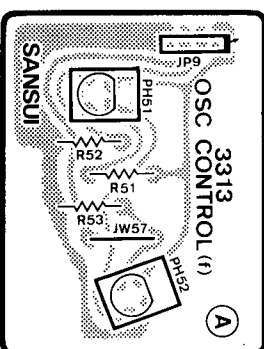
Parts List	Stock No.	Description
<9900Z>	07243100	Push Switch
os1	07242900	Push Switch

5-22. F-3312 Head Phone Jack Circuit Board
(9900Z/8900ZDB)



Parts List	Stock No.	Description
nC3	00306800	1µF 50V E.B.
nV/R1	07242400, 1	Variable Resistor 100kΩ (B), analyzer level
oJ1	07204100	Head Phone Jack
PR1	00187800	220Ω 2W N.I.R.

5-23. F-3313 Manual Tuning (Up/Down) Detector Circuit Board (9900Z/8900ZDB)



Parts List	Stock No.	Description
PH51	07237400	Photo Coupler
PH52	07237400	Photo Coupler

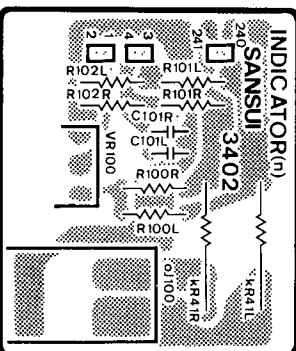
5-24. F-3314 Master Volume (Up/Down) Switch Circuit Board (9900Z/8900ZDB)

Parts List	Stock No.	Description
IS1	07246100	Push Switch
IS2	07246100	Push Switch

5-25. F-3401 Speaker Terminal Circuit Board (7900Z)

Parts List	Stock No.	Description
PC2	00386100	4700pF 150V C.C.

5-26. F-3402 Head Phone Jack Circuit Board (7900Z)

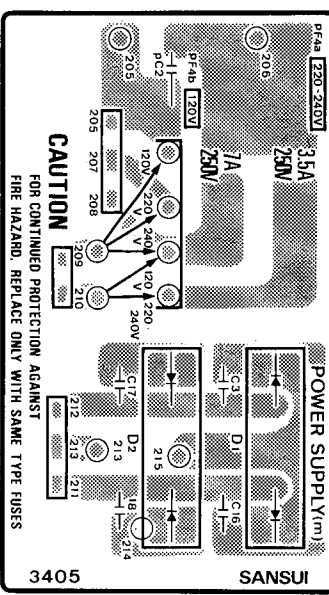


Parts List	Stock No.	Description
nV/R100	07242400, 1	Variable Resistor 100kΩ (B), analyzer level
oJ1	07204100	Head Phone Jack

5-27. F-3403 Speaker Selector Switch Circuit Board (7900Z)

Parts List	Stock No.	Description
os1	07255300, 1	Push Switch

5-28. F-3405 Rectifier Circuit Board (7900Z)



Parts List	Stock No.	Description
Diode		
mD1	03113100	SS-5
mD2	03113200	SS-5R
mC3	00380600	2200pF 500V C.C.
mC16	00380600	2200pF 500V C.C.
mC17	00380600	2200pF 500V C.C.
mC18	00380600	2200pF 500V C.C.
PC2	00386100	4700pF 150V C.C.

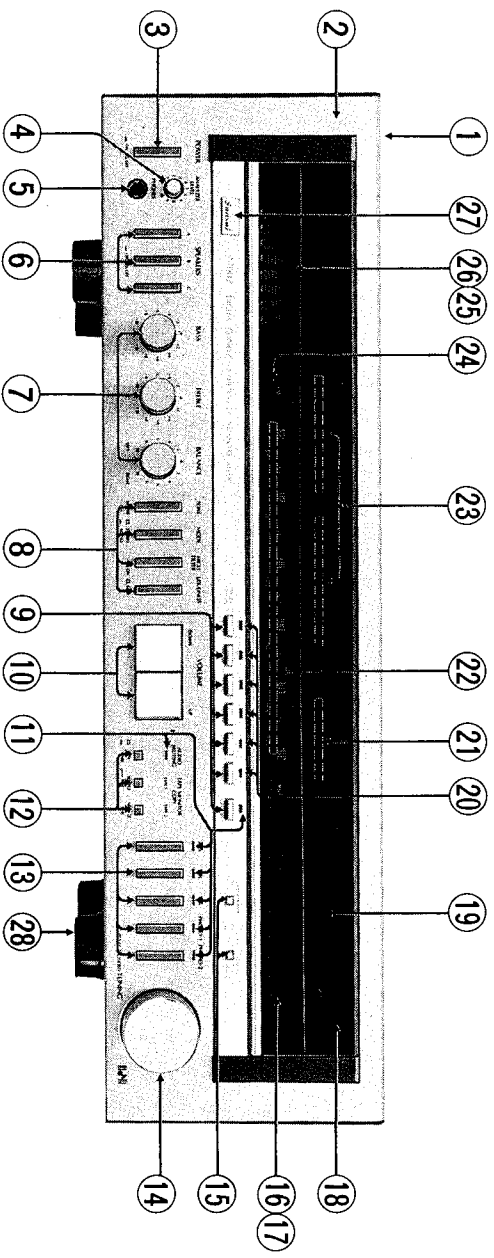
5-29. F-3430 Manual Tuning (Up/Down) Switch Circuit Board (7900Z)

Parts List	Stock No.	Description
fS108	07246100	Push Switch
fS109	07246100	Push Switch

- 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-Inductance 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. Metallized Paper Capacitor
- P.C. Polystyrene Capacitor
- G.C. Gimmic Capacitor

6. OTHER PARTS

6-1. Front View <9900Z>



Parts List <Front View>

Parts No.	Stock No.	Description
1	07656310	Wood Bonnet
2	07653120	Front Panel Ass'y
	07648800	Panel Side Frame
	07648900	Front Glass
3	07580300	Push Knob, power
	07628000	Push Knob Guide
4	07646100	Knob, analyzer level
5	07204100	Head Phone Jack
6	07580300	Push Knob, speakers
	07581300	Push Knob Guide
7	07615600	Knob, bass, treble, balance
8	07580300	Push Knob, tone, mode, hi-filter, loudness
	07581300	Push Knob Guide
9	07649810	Preset Knob Ass'y
10	07652300	Push Knob Ass'y, volume
11	07578000	Indicator (Red)
12	07580100	Push Knob, audio muting, tape mon. 1, 2
	07580900	Push Knob Guide
13	07580300	Push Knob, input selector
	07652400	Push Knob Guide
14	07646000	Knob, tuning
15	07580100	Push Knob, FM IF band, FM mode/FM muting
	07580900	Push Knob Guide
16	00000100	Fluorescent Display Unit
17	54464600	Smoked Plate (A)
18	07652700	Dial Back Plate
19	07616100	Indicator (Red)
20	07578200	Indicator (Amber)
21	07600300	Indicator Film
22	07646300	Indicator (9-point)
23	07615800	Indicator (14-point)
	07654500	Indicator (4-point)
24	07662500	Dial Scale
25	07237800	Fluorescent Display Unit, spectrum analyzer
26	07616300	Smoked Plate
27	07607300	Sansui Badge (B)
28	55168210	Leg

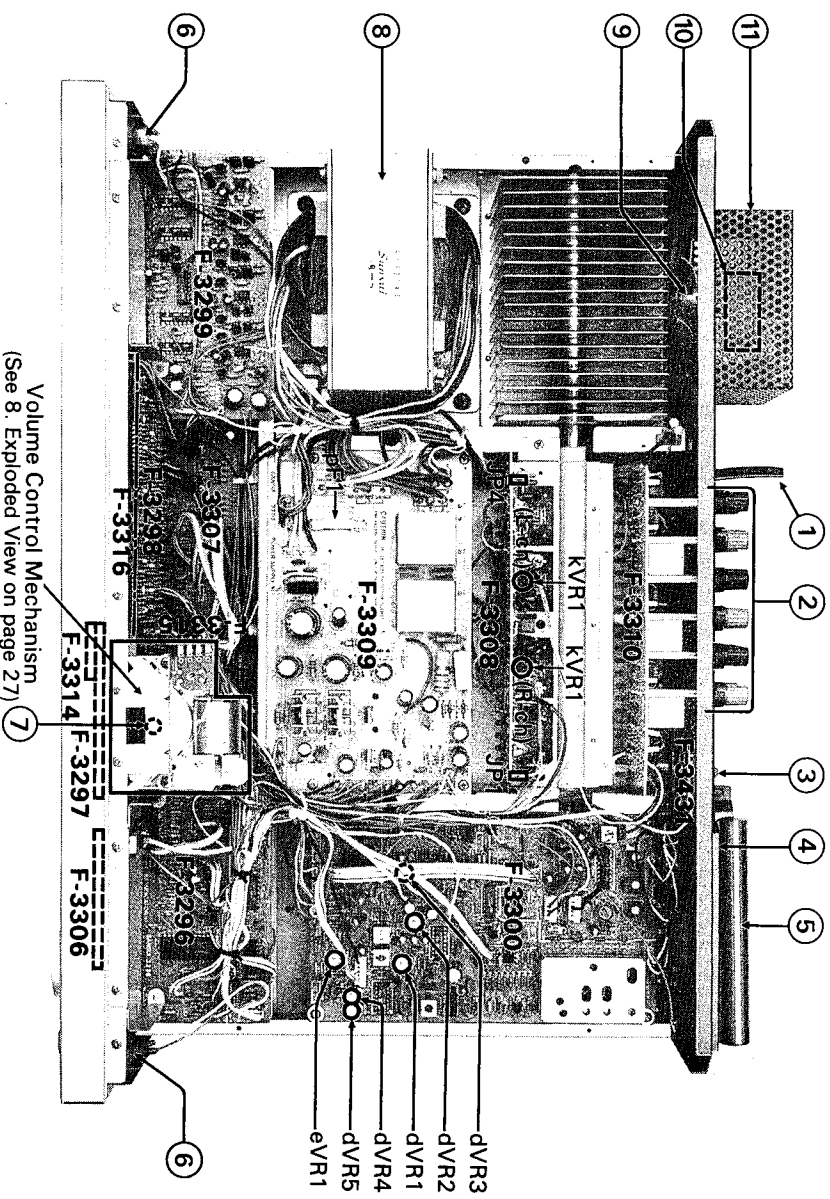
Parts List <Top View>

Parts No.	Stock No.	Description
1	38004900	Power Supply Cord
2	07202900	Speaker Terminal
3	11102800	Slide Switch, AM channel selector
4	07563310	Battery Case Ass'y
5	07204800	AM Bar Antenna
6	04007600	Pilot Lamp 8V 300mA
7	04006600	Pilot Lamp 8V 150mA
8	15002001	Power Transformer
9	07255900	Fan
10	07255100	Motor
11	07651910	Fan Cover
	04341000	Fuse 12A 125V (120V)
	04323000	Fuse 6A 125V (220V ~ 240V)

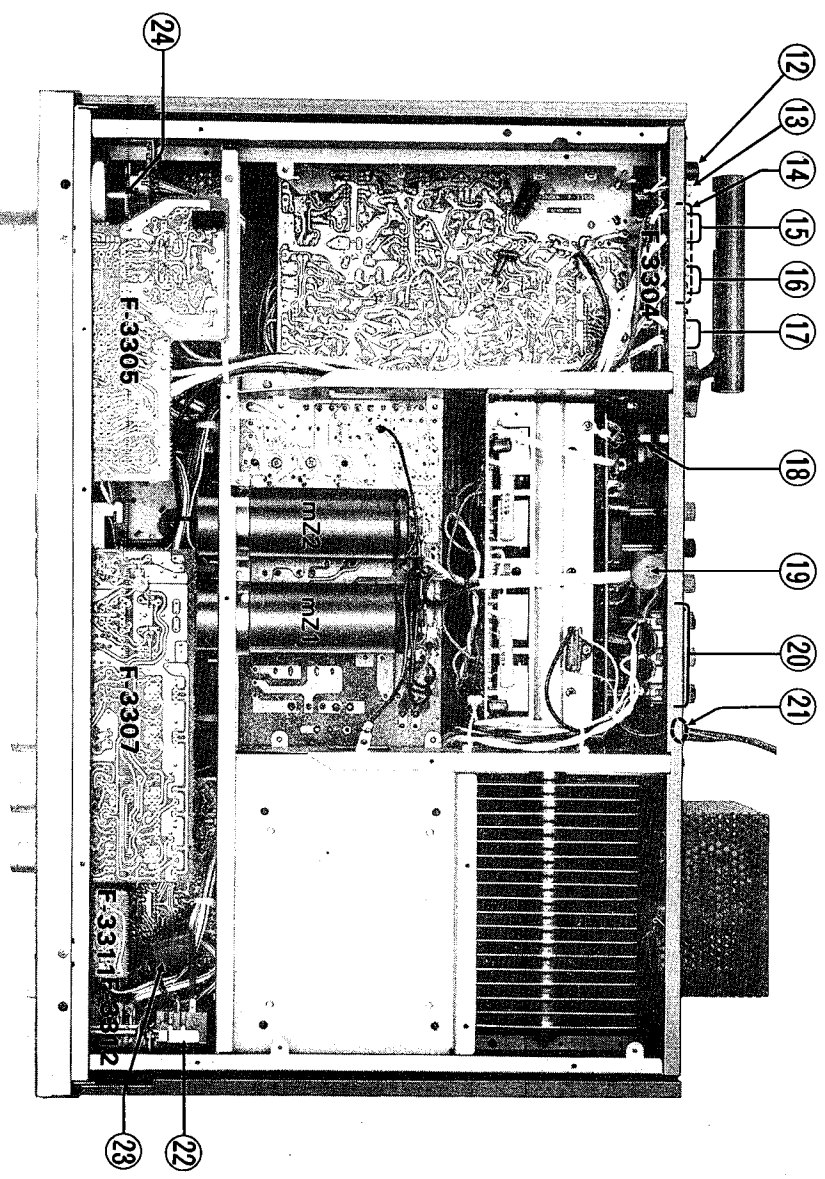
Parts List <Bottom View>

Parts No.	Stock No.	Description
12	22301900	Ground Terminal
13	22006000	2P Input Terminal Board, phono 1
14	22103110	Antenna Terminal Board
15	22006200	4P Input Terminal, phono 2, aux
16	22006500	4P Input Terminal Board, tape 1
17	22006500	4P Input Terminal Board, tape 2
18	07257600	1P Input Terminal, AM stereo adaptor
19	00386100	0.0047μF 150V C.C.
20	07217500	AC Outlet
21	39104900	Strain Relief
22	11316500	Push Switch, power
23	07269400	0.033μF 300V M.C.
24	07646200	Tuning Unit
	mZ1, 2	07254300 10000μF 100V E.C.

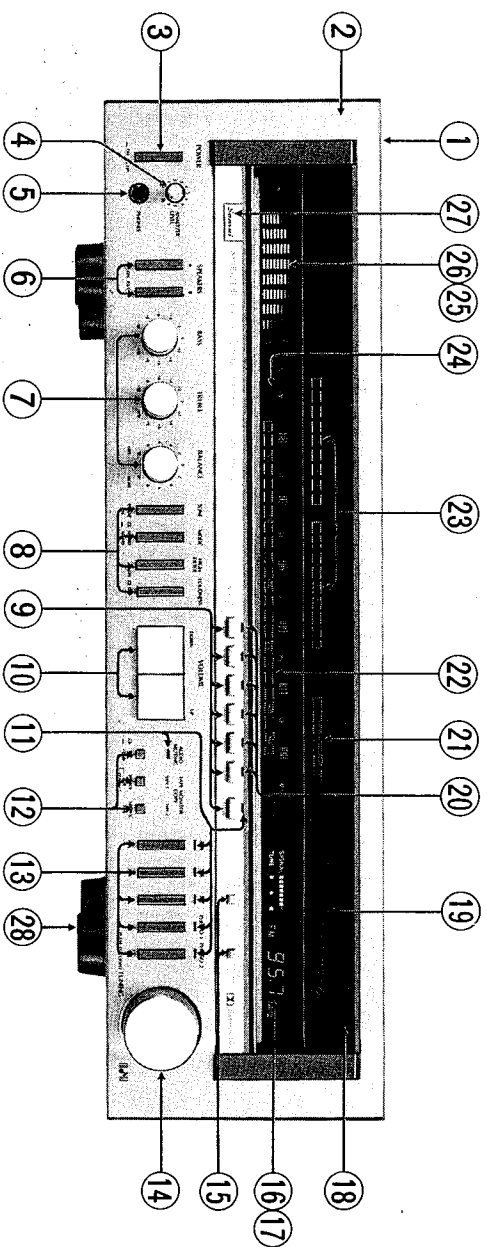
6-2. Top View <9900Z>



6-3. Bottom View <9900Z>



6-4. Front View <8900ZDB>



Parts List <Front View>

Parts No.	Stock No.	Description
1	07656310	Wood Bonnet
2	07653220	Front Panel Ass'y.
	07648800	Panel Side Frame
	07648900	Front Glass
3	07580300	Push Knob, power
	07628000	Push Knob Guide
	11316500	Push Switch, power
	07646100	Knob, analyzer level
4	07204100	Head Phone Jack
5	07580300	Push Knob, speakers
6	07581300	Push Knob Guide
7	07615600	Knob, bass, treble, balance
8	07580300	Push Knob, tone, mode, hi-filter, loudness
9	07581300	Push Knob Ass'y
10	07649810	Push Knob Ass'y, volume
11	07578000	Indicator (Red)
12	07580100	Push Knob, audio muting, tape mon. 1, 2
13	07580900	Push Knob Guide
14	07580300	Push Knob, input selectors
15	07646000	Knob, tuning
	07580100	Push Knob, dolby, FM mode/ FM muting
16	00000100	Fluorescent Display Unit
17	54464600	Smoked Plate (A)
18	07652800	Dial Back Plate
19	07616100	Indicator (Red)
20	07578200	Indicator (Amber)
21	07600300	Indicator Film
22	07646300	Indicator (9-point)
23	07615800	Indicator (14-point)
24	07654500	Indicator (4-point)
25	07652500	Dial Scale
	07237800	Fluorescent Display Unit, spectrum analyzer
26	07616300	Smoked Plate
27	07607300	Sansui Badge (B)
28	55168210	Leg

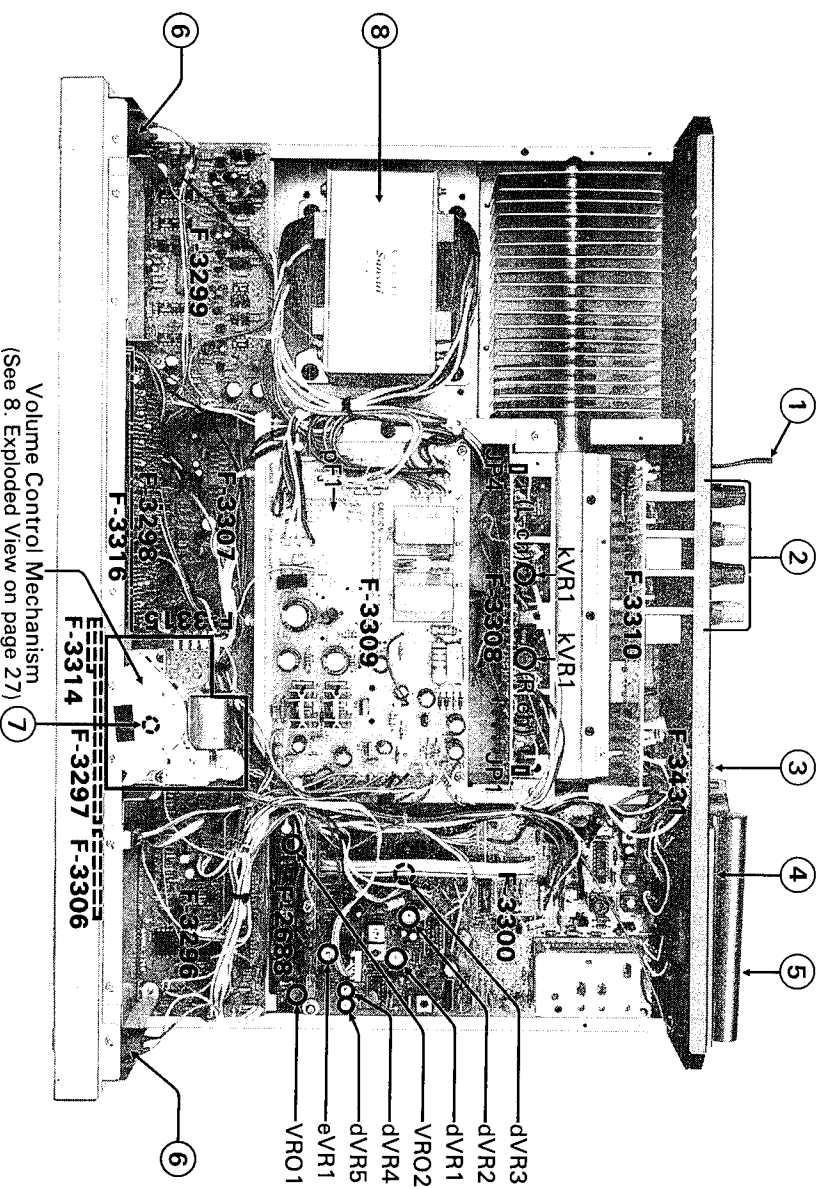
Parts List <Top View>

Parts No.	Stock No.	Description
1	38004700	Power Supply Cord
2	07202900	Speaker Terminal
3	11102800	Slide Switch, AM channel selector
4	07563310	Battery Case Ass'y
5	07204800	AM Bar Antenna
6	04007600	Pilot Lamp 8V 300mA
7	04006600	Pilot Lamp 8V 150mA
8	15002101	Power Transformer
	04325900	Fuse 10A 125V (120V)
	04322900	Fuse 5A 125V (220V ~ 240V)

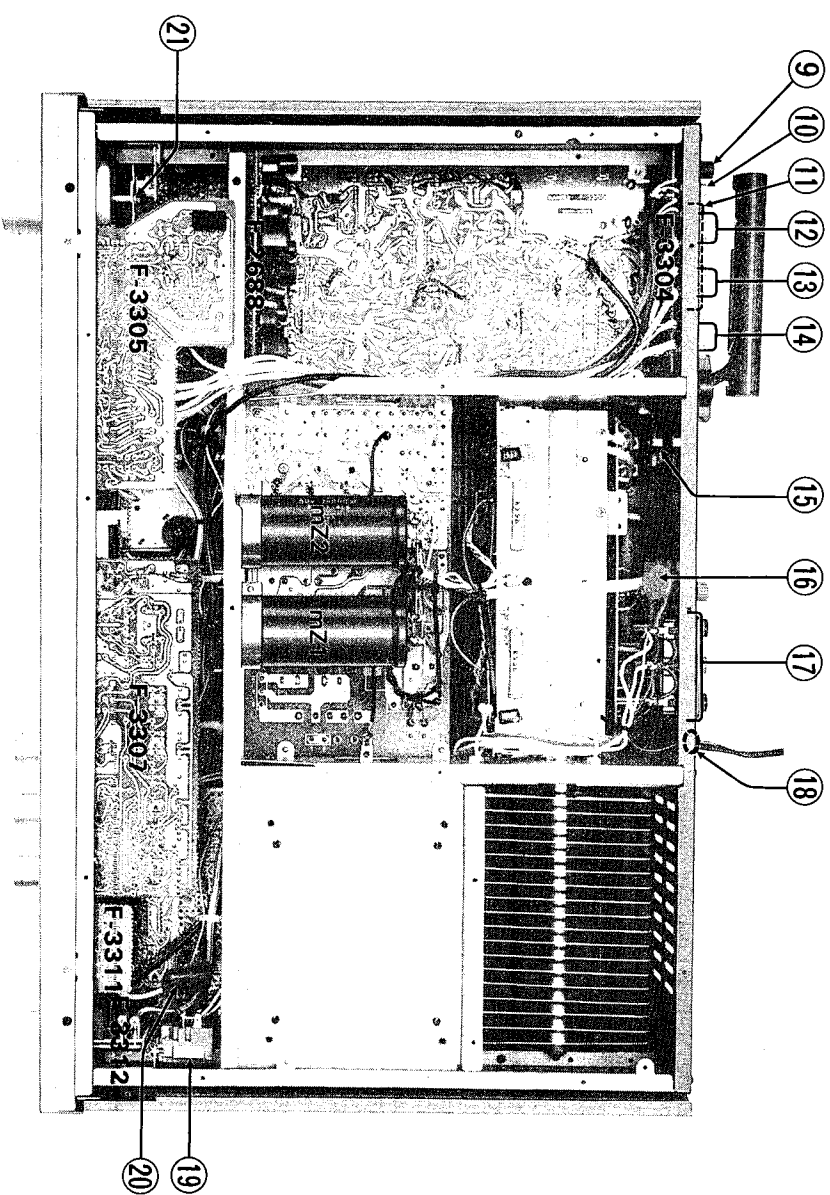
Parts List <Bottom View>

Parts No.	Stock No.	Description
9	22301900	Ground Terminal
10	22006000	2P Input Terminal Board, phono 1
11	22103110	Antenna Terminal Board
12	22006200	4P Input Terminal Board, phono 2, aux
13	22006500	4P Input Terminal Board, tape 1
14	22006500	4P Input Terminal Board, tape 2
15	07257600	1P Input Terminal, AM stereo adaptor
16	00386100	0.047µF 150V M.C.
17	07217500	AC Outlet
18	39104900	Strain Relief
19	11316500	Push Switch, power
20	07269400	0.033µF 300V M.C.
21	07646200	Tuning Unit
	mZ1, 2	07254200 10000µF 80V E.C.

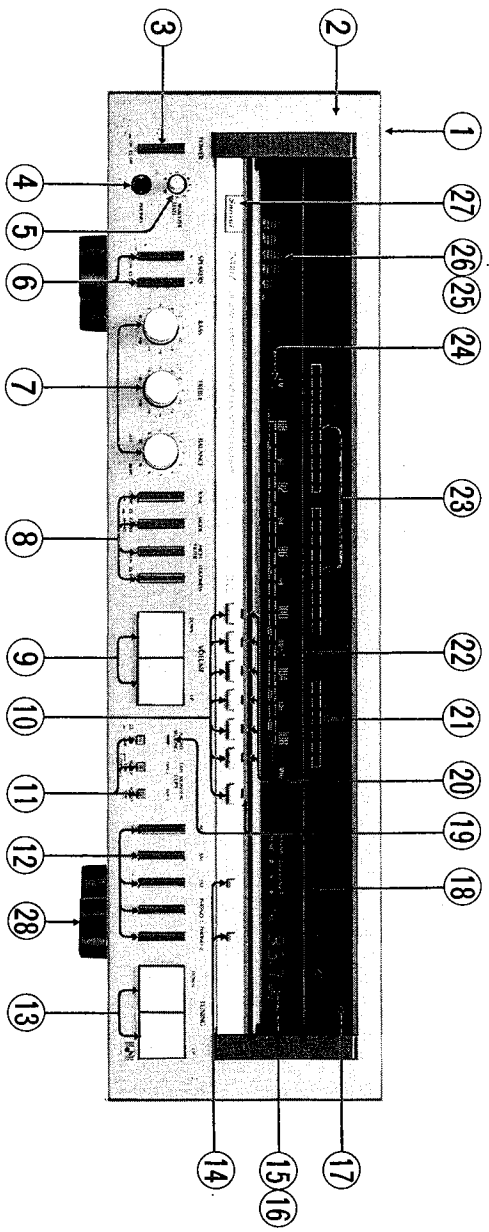
6-5. Top View <8900ZDB>



6-6. Bottom View <8900ZDB>



6-7. Front View <7900Z>



Parts List <Front View>

Parts No.	Stock No.	Description
1	07720310	Wood Bonnet
2	07653320	Front Panel Ass'y
	07648800	Panel Side Frame
	07648900	Front Glass
3	07580300	Push Knob, power
	07628000	Push Knob Guide
4	07204100	Head Phone Jack
	07646100	Knob, analyzer level
5	07580300	Push Knob, speaker
	07581300	Knob, bass, treble, balance
7	07615600	Push Knob, tone, mode, hi-filter, loudness
8	07580300	Push Knob Guide
9	07581300	Push Knob Guide
	07652300	Push Knob Ass'y, volume
10	07649810	Preset Knob Ass'y
11	07580100	Push Knob, audio muting, tape mon. 1, 2
	07580900	Push Knob Guide
12	07580300	Push Knob, input selectors
	07652400	Push Knob Guide
13	07652300	Push Knob Ass'y, tuning
14	07580100	Push Knob, tuning selector, FM, mode/FM muting
	07580900	Push Knob Guide
15	00000100	Fluorescent Display Unit
	54464600	Smoked Plate (A)
16	07652900	Dial Back Plate
17	07616100	Indicator (Red)
18	07578000	Indicator (Red)
19	07578200	Indicator (Amber)
20	07600300	Indicator Film
21	07646300	Indicator (9-point)
22	07615800	Indicator (14-point)
23	07654500	Indicator (4-point)
24	07652600	Dial Scale
25	07237800	Fluorescent Display Unit, spectrum analyzer
26	07705800	Smoked Plate
27	07607300	Sansui Badge (B)
28	55168210	Leg

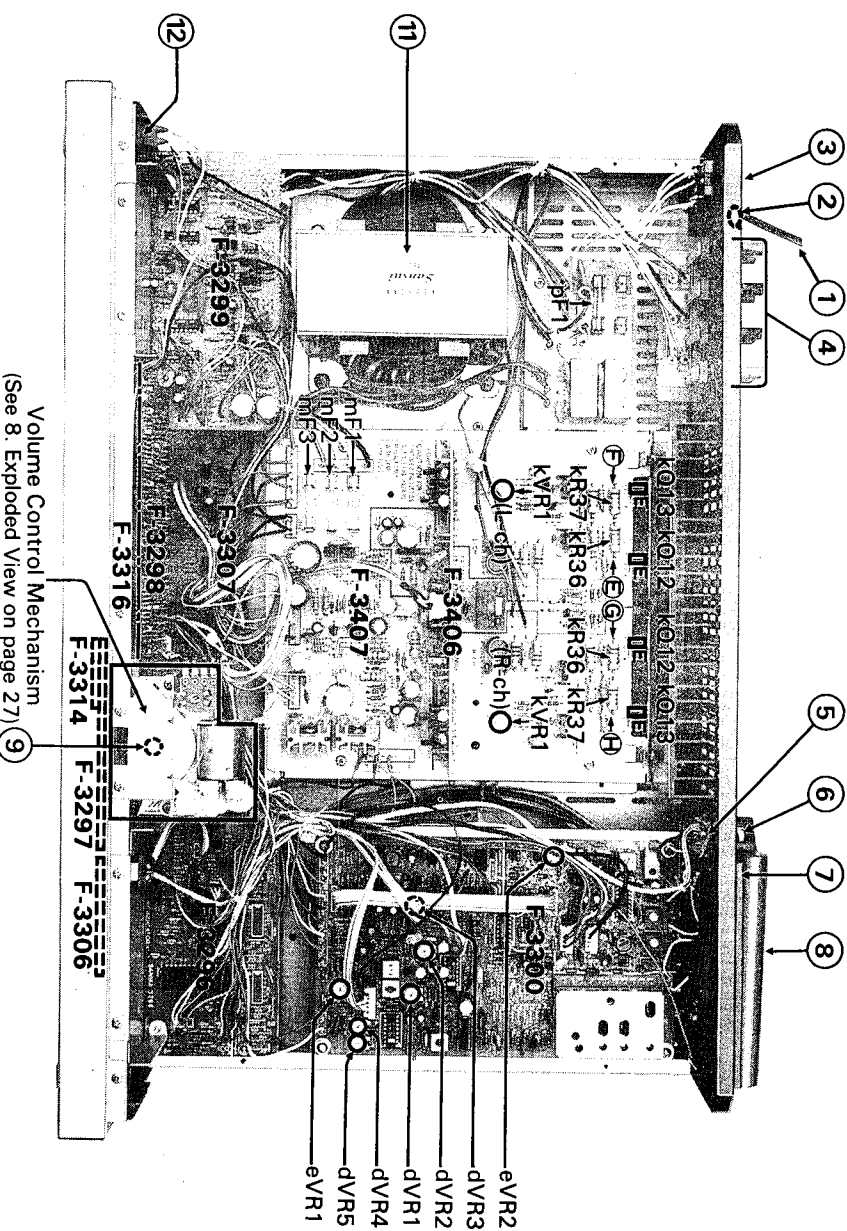
Parts List <Top View>

Parts No.	Stock No.	Description
1	38004700	Power Supply
2	39106000	Strain Relief
3	07189600	AC Outlet
4	07183300	Speaker Terminal
5	07257600	1P Input Terminal, AM stereo adaptor
6	11102800	Slide Switch, AM channel selector
7	07563310	Battery Case Ass'y
8	07204800	AM Bar Antenna
9	04006600	Pilot Lamp 8V 150mA
10	04007600	Pilot Lamp 8V 300mA
11	15002201	Power Transformer
	mF1 ~	Fuse 1A 250V
	mF3	Fuse 7A 250V (120V)
	pF1	Fuse 3.5A 250V (220V ~ 240V)
		Fuse 188900

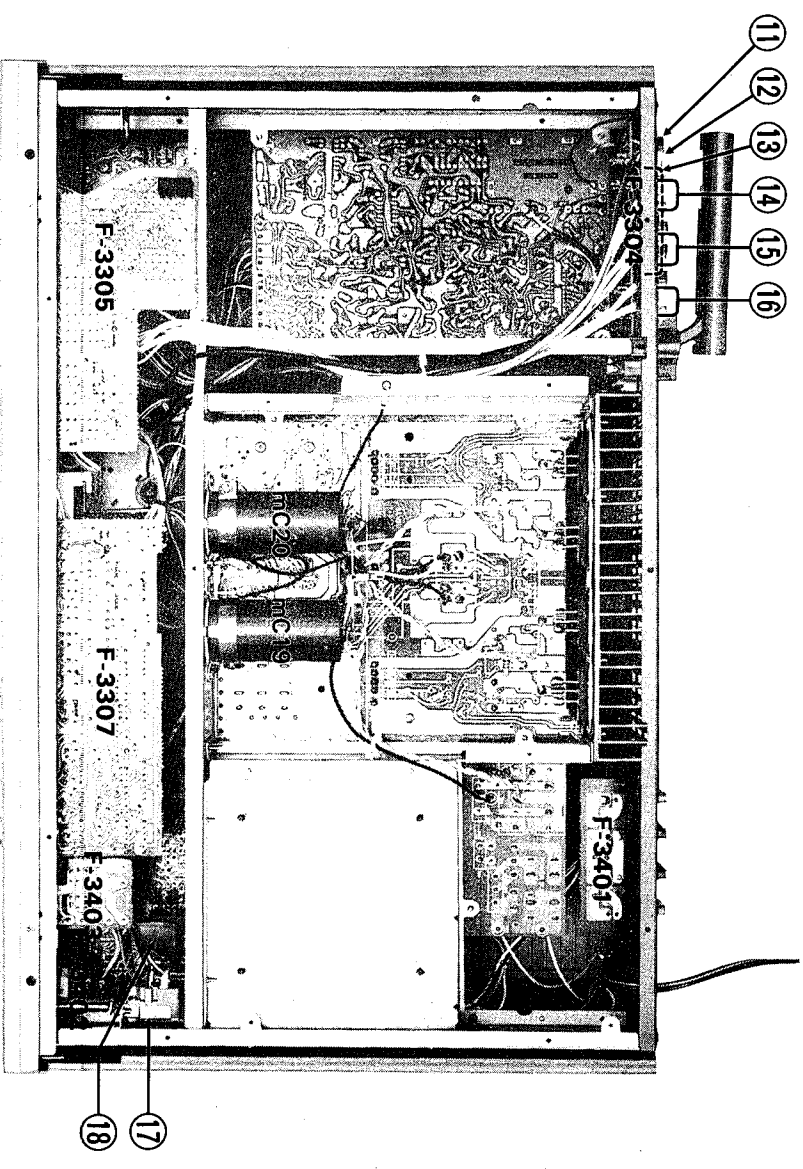
Parts List <Bottom View>

Parts No.	Stock No.	Description
11	22301500	Ground Terminal
12	22006000	2P Input Terminal Board, phono 1
13	22103110	Antenna Terminal Board
14	22006200	4P Input Terminal, phono 2, aux
15	11006500	4P Input Terminal Board, tape 1
16	22006500	4P Input Terminal Board, tape 2
17	11316500	Push Switch, power
18	07269400	0.033µF 300V M.C.
	mC19, 20	8200µF 71V E.C.

6-8. Top View <7900Z>

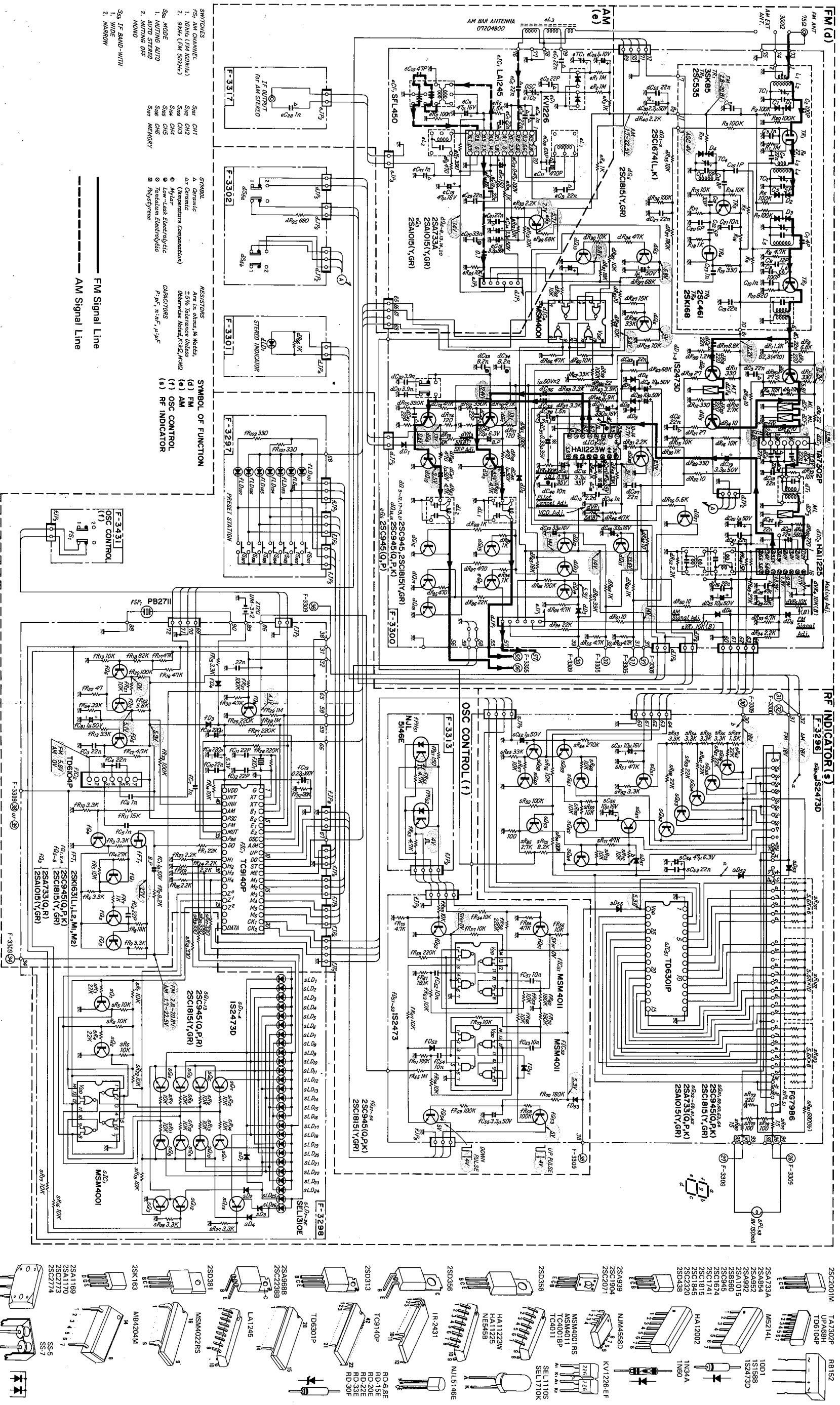


6-9. Bottom View <7900Z>



La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
 Änderungen der Daten und der technischen Spezifikationen sind ohne Vorwarnung vorbehalten.
 Design and specifications subject to change without notice for improvement.

7. SCHEMATIC DIAGRAM 7-1. 9900Z Tuner Section



SWITCHES
 1. 9900Z (FM 100Hz)
 2. 9900Z (FM 50Hz)
 3. 9900Z (FM 50Hz)
 4. 9900Z (FM 50Hz)
 5. 9900Z (FM 50Hz)
 6. 9900Z (FM 50Hz)
 7. 9900Z (FM 50Hz)
 8. 9900Z (FM 50Hz)
 9. 9900Z (FM 50Hz)
 10. 9900Z (FM 50Hz)
 11. 9900Z (FM 50Hz)
 12. 9900Z (FM 50Hz)
 13. 9900Z (FM 50Hz)
 14. 9900Z (FM 50Hz)
 15. 9900Z (FM 50Hz)
 16. 9900Z (FM 50Hz)
 17. 9900Z (FM 50Hz)
 18. 9900Z (FM 50Hz)
 19. 9900Z (FM 50Hz)
 20. 9900Z (FM 50Hz)
 21. 9900Z (FM 50Hz)
 22. 9900Z (FM 50Hz)
 23. 9900Z (FM 50Hz)
 24. 9900Z (FM 50Hz)
 25. 9900Z (FM 50Hz)
 26. 9900Z (FM 50Hz)
 27. 9900Z (FM 50Hz)
 28. 9900Z (FM 50Hz)
 29. 9900Z (FM 50Hz)
 30. 9900Z (FM 50Hz)
 31. 9900Z (FM 50Hz)
 32. 9900Z (FM 50Hz)
 33. 9900Z (FM 50Hz)
 34. 9900Z (FM 50Hz)
 35. 9900Z (FM 50Hz)
 36. 9900Z (FM 50Hz)
 37. 9900Z (FM 50Hz)
 38. 9900Z (FM 50Hz)
 39. 9900Z (FM 50Hz)
 40. 9900Z (FM 50Hz)
 41. 9900Z (FM 50Hz)
 42. 9900Z (FM 50Hz)
 43. 9900Z (FM 50Hz)
 44. 9900Z (FM 50Hz)
 45. 9900Z (FM 50Hz)
 46. 9900Z (FM 50Hz)
 47. 9900Z (FM 50Hz)
 48. 9900Z (FM 50Hz)
 49. 9900Z (FM 50Hz)
 50. 9900Z (FM 50Hz)

SYMBOL OF FUNCTION
 (d) FM
 (e) AM
 (s) OSC CONTROL
 (t) RF INDICATOR

RESISTORS
 1. 100Ω
 2. 1K
 3. 10K
 4. 100K
 5. 1M
 6. 10M
 7. 100M
 8. 1G
 9. 10G
 10. 100G
 11. 1T
 12. 10T
 13. 100T
 14. 1G
 15. 10G
 16. 100G
 17. 1T
 18. 10T
 19. 100T
 20. 1G
 21. 10G
 22. 100G
 23. 1T
 24. 10T
 25. 100T
 26. 1G
 27. 10G
 28. 100G
 29. 1T
 30. 10T
 31. 100T
 32. 1G
 33. 10G
 34. 100G
 35. 1T
 36. 10T
 37. 100T
 38. 1G
 39. 10G
 40. 100G
 41. 1T
 42. 10T
 43. 100T
 44. 1G
 45. 10G
 46. 100G
 47. 1T
 48. 10T
 49. 100T
 50. 1G
 51. 10G
 52. 100G
 53. 1T
 54. 10T
 55. 100T
 56. 1G
 57. 10G
 58. 100G
 59. 1T
 60. 10T
 61. 100T
 62. 1G
 63. 10G
 64. 100G
 65. 1T
 66. 10T
 67. 100T
 68. 1G
 69. 10G
 70. 100G
 71. 1T
 72. 10T
 73. 100T
 74. 1G
 75. 10G
 76. 100G
 77. 1T
 78. 10T
 79. 100T
 80. 1G
 81. 10G
 82. 100G
 83. 1T
 84. 10T
 85. 100T
 86. 1G
 87. 10G
 88. 100G
 89. 1T
 90. 10T
 91. 100T
 92. 1G
 93. 10G
 94. 100G
 95. 1T
 96. 10T
 97. 100T
 98. 1G
 99. 10G
 100. 100G

CAPACITORS
 1. 100pF
 2. 1nF
 3. 10nF
 4. 100nF
 5. 1μF
 6. 10μF
 7. 100μF
 8. 1mF
 9. 10mF
 10. 100mF
 11. 1F
 12. 10F
 13. 100F
 14. 1mF
 15. 10mF
 16. 100mF
 17. 1F
 18. 10F
 19. 100F
 20. 1mF
 21. 10mF
 22. 100mF
 23. 1F
 24. 10F
 25. 100F
 26. 1mF
 27. 10mF
 28. 100mF
 29. 1F
 30. 10F
 31. 100F
 32. 1mF
 33. 10mF
 34. 100mF
 35. 1F
 36. 10F
 37. 100F
 38. 1mF
 39. 10mF
 40. 100mF
 41. 1F
 42. 10F
 43. 100F
 44. 1mF
 45. 10mF
 46. 100mF
 47. 1F
 48. 10F
 49. 100F
 50. 1mF
 51. 10mF
 52. 100mF
 53. 1F
 54. 10F
 55. 100F
 56. 1mF
 57. 10mF
 58. 100mF
 59. 1F
 60. 10F
 61. 100F
 62. 1mF
 63. 10mF
 64. 100mF
 65. 1F
 66. 10F
 67. 100F
 68. 1mF
 69. 10mF
 70. 100mF
 71. 1F
 72. 10F
 73. 100F
 74. 1mF
 75. 10mF
 76. 100mF
 77. 1F
 78. 10F
 79. 100F
 80. 1mF
 81. 10mF
 82. 100mF
 83. 1F
 84. 10F
 85. 100F
 86. 1mF
 87. 10mF
 88. 100mF
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 90. 10F
 91. 100F
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 94. 100mF
 95. 1F
 96. 10F
 97. 100F
 98. 1mF
 99. 10mF
 100. 100mF

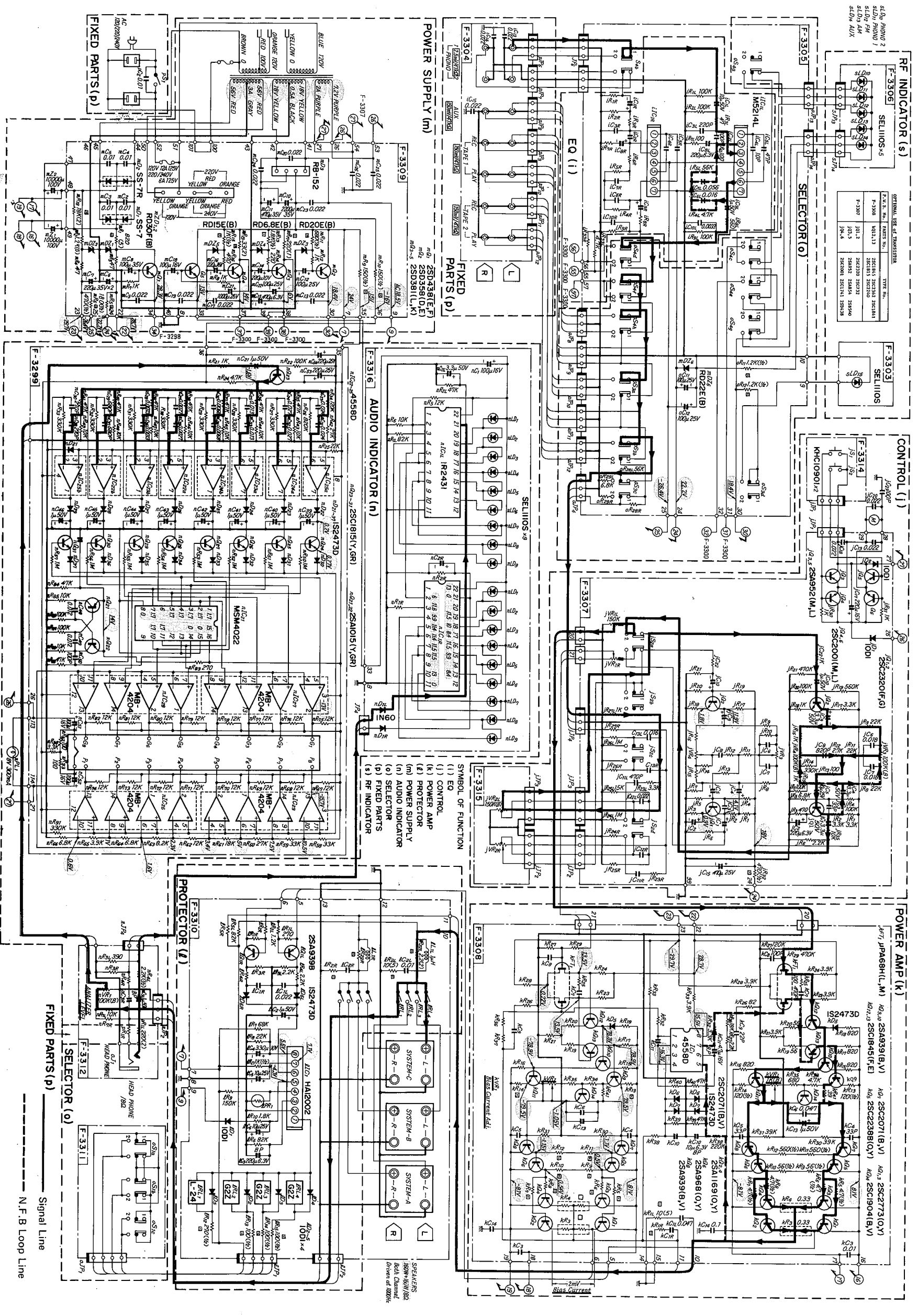
FM Signal Line
 AM Signal Line

SYMBOL OF FUNCTION
 (d) FM
 (e) AM
 (s) OSC CONTROL
 (t) RF INDICATOR

RESISTORS
 1. 100Ω
 2. 1K
 3. 10K
 4. 100K
 5. 1M
 6. 10M
 7. 100M
 8. 1G
 9. 10G
 10. 100G
 11. 1T
 12. 10T
 13. 100T
 14. 1G
 15. 10G
 16. 100G
 17. 1T
 18. 10T
 19. 100T
 20. 1G
 21. 10G
 22. 100G
 23. 1T
 24. 10T
 25. 100T
 26. 1G
 27. 10G
 28. 100G
 29. 1T
 30. 10T
 31. 100T
 32. 1G
 33. 10G
 34. 100G
 35. 1T
 36. 10T
 37. 100T
 38. 1G
 39. 10G
 40. 100G
 41. 1T
 42. 10T
 43. 100T
 44. 1G
 45. 10G
 46. 100G
 47. 1T
 48. 10T
 49. 100T
 50. 1G
 51. 10G
 52. 100G
 53. 1T
 54. 10T
 55. 100T
 56. 1G
 57. 10G
 58. 100G
 59. 1T
 60. 10T
 61. 100T
 62. 1G
 63. 10G
 64. 100G
 65. 1T
 66. 10T
 67. 100T
 68. 1G
 69. 10G
 70. 100G
 71. 1T
 72. 10T
 73. 100T
 74. 1G
 75. 10G
 76. 100G
 77. 1T
 78. 10T
 79. 100T
 80. 1G
 81. 10G
 82. 100G
 83. 1T
 84. 10T
 85. 100T
 86. 1G
 87. 10G
 88. 100G
 89. 1T
 90. 10T
 91. 100T
 92. 1G
 93. 10G
 94. 100G
 95. 1T
 96. 10T
 97. 100T
 98. 1G
 99. 10G
 100. 100G

CAPACITORS
 1. 100pF
 2. 1nF
 3. 10nF
 4. 100nF
 5. 1μF
 6. 10μF
 7. 100μF
 8. 1mF
 9. 10mF
 10. 100mF
 11. 1F
 12. 10F
 13. 100F
 14. 1mF
 15. 10mF
 16. 100mF
 17. 1F
 18. 10F
 19. 100F
 20. 1mF
 21. 10mF
 22. 100mF
 23. 1F
 24. 10F
 25. 100F
 26. 1mF
 27. 10mF
 28. 100mF
 29. 1F
 30. 10F
 31. 100F
 32. 1mF
 33. 10mF
 34. 100mF
 35. 1F
 36. 10F
 37. 100F
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 85. 100F
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 87. 10mF
 88. 100mF
 89. 1F
 90. 10F
 91. 100F
 92. 1mF
 93. 10mF
 94. 100mF
 95. 1F
 96. 10F
 97. 100F
 98. 1mF
 99. 10mF
 100. 100mF

7-2. 9900Z Audio Section

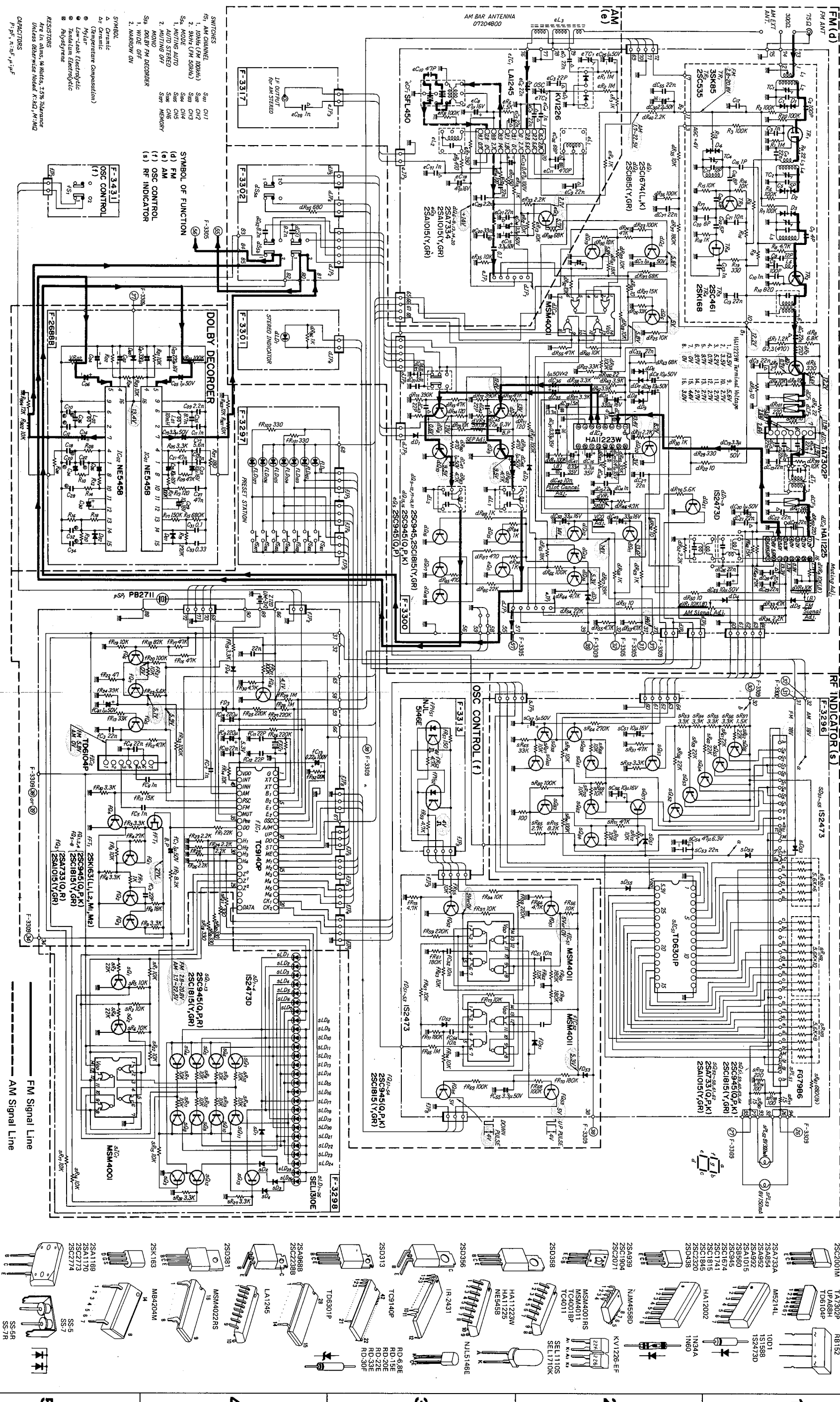


A B C D E F G H

La presentation et les specifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
 Design and specifications subject to change without notice for improvement.

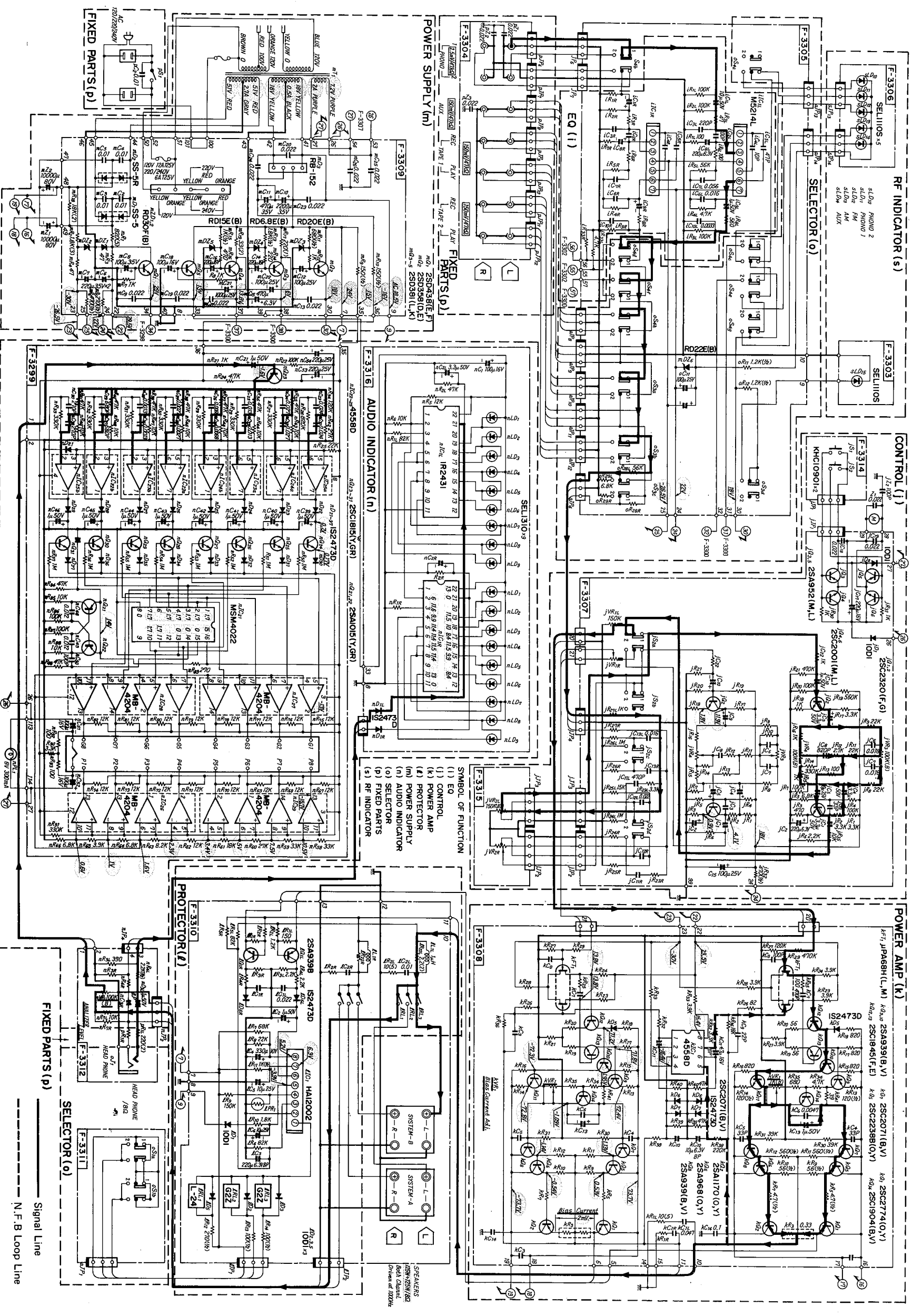
All presentation of the specifications and the modifications are previous par suites of amendments eventuelles.
Alle Änderungen der technischen Zeichnungen sind vorherige Par Suites von Änderungen vorbehalten.
Design and specifications subject to change without notice for improvement.

7-3. 8900ZDB Tuner Section



- SWITCHES**
- SW1: 1. 100K (CM 100K)
 - SW2: 2. 90K (CM 50K)
 - SW3: 3. 90K (CM 50K)
 - SW4: 4. 90K (CM 50K)
 - SW5: 5. 90K (CM 50K)
 - SW6: 6. 90K (CM 50K)
 - SW7: 7. 90K (CM 50K)
 - SW8: 8. 90K (CM 50K)
 - SW9: 9. 90K (CM 50K)
 - SW10: 10. 90K (CM 50K)
 - SW11: 11. 90K (CM 50K)
 - SW12: 12. 90K (CM 50K)
 - SW13: 13. 90K (CM 50K)
 - SW14: 14. 90K (CM 50K)
 - SW15: 15. 90K (CM 50K)
- RESISTORS**
- Are in ohms, k, M, unless 3% tolerance unless otherwise noted. K: 10³, M: 10⁶
- CHARACTERS**
- F: 10⁶, R: 10³, 10⁰, 10⁻¹, 10⁻²

7-4. 8900ZDB Audio Section



A

B

C

D

E

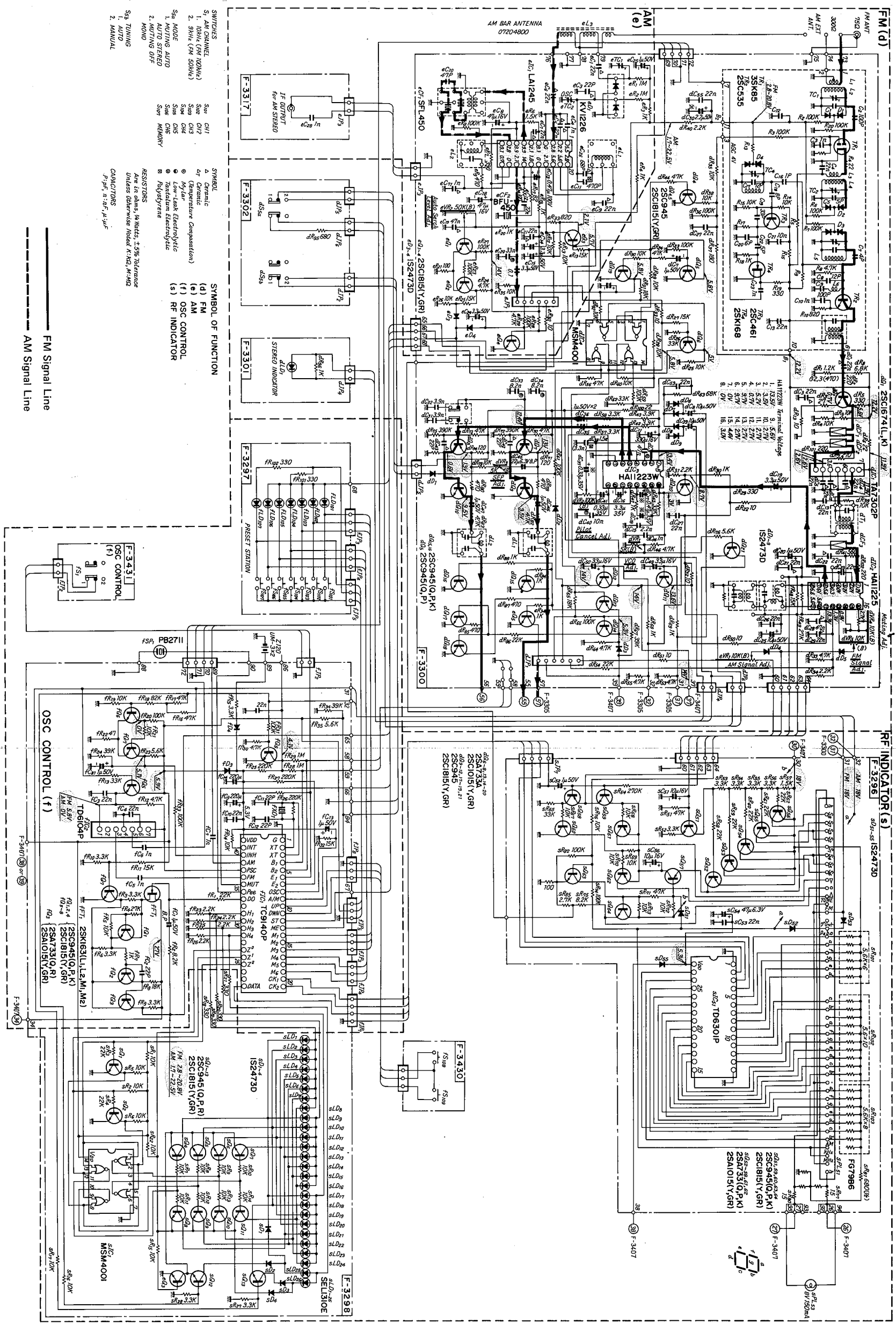
F

G

H

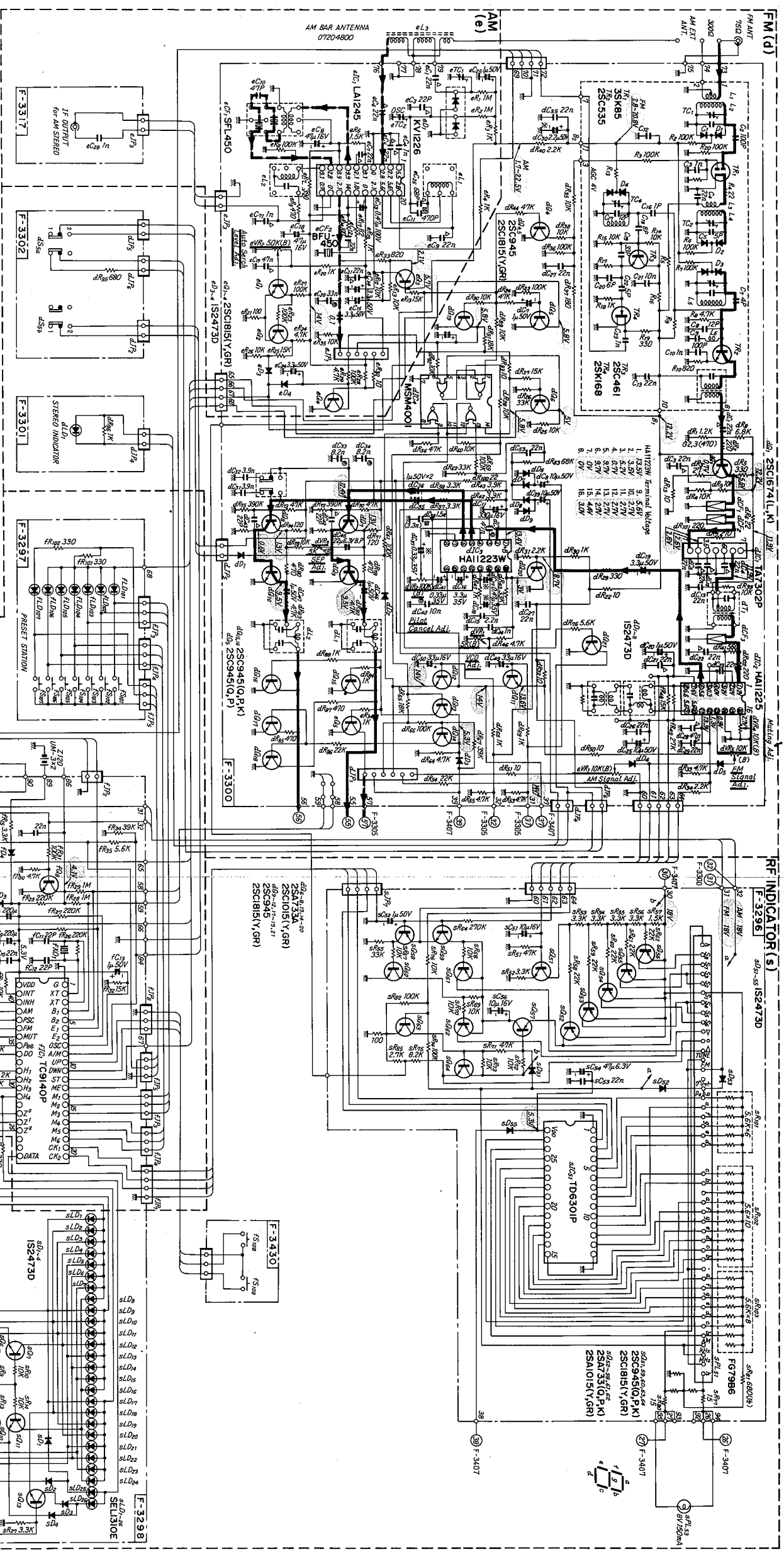
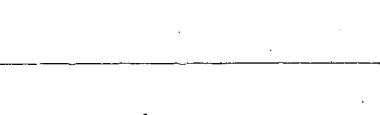
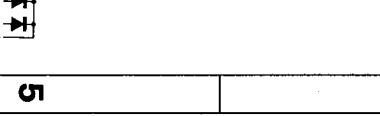
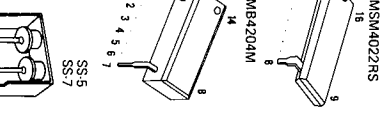
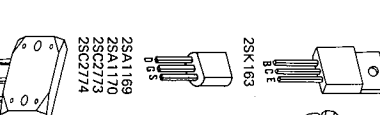
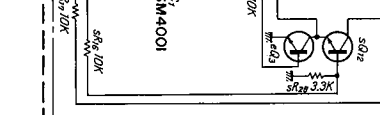
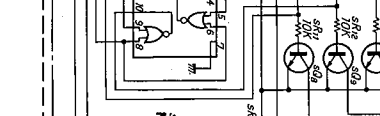
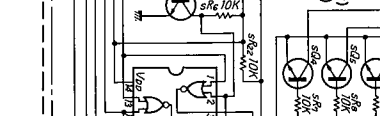
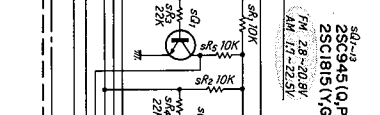
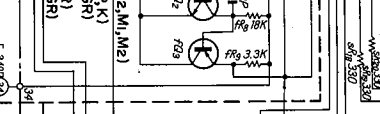
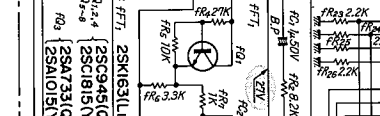
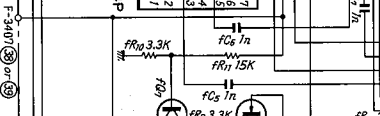
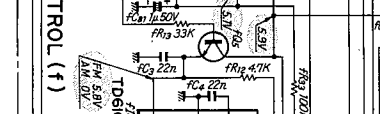
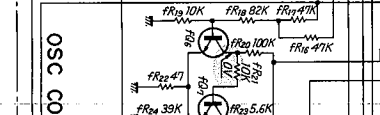
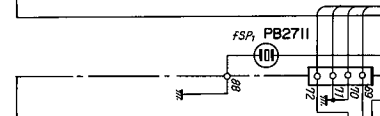
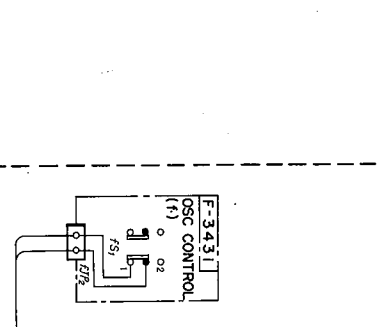
- SWITCHES & CONTROLS**
- POWER P-51
 - PHONO 1 F-3305
 - PHONO 2 F-3307
 - FM F-3307
 - AM F-3307
 - REC F-3307
 - PLAY F-3307
 - AUX F-3307
 - TAPE 1 F-3307
 - TAPE 2 F-3307
 - AUDIO MUTING F-3307
 - RF INDICATOR F-3307
 - SELECTOR F-3307
 - FIXED PARTS F-3307
 - PROTECTOR F-3307
 - POWER AMP F-3307
 - EQ F-3307
 - CONTROL F-3307
 - RF INDICATOR F-3307

7-5. 7900Z Tuner Section



- SWITCHES**
- S1, AM CHANNEL
 - 2, 3MHz (FM 100kHz)
 - 3, 5MHz (FM 50kHz)
 - S2, MODE
 - 1, AUTO
 - 2, MANUAL
- SYMBOLS**
- 4, Ceramic
 - 5, Mylar
 - 6, Low-leakage Electrolytic
 - 7, Electrolytic
 - 8, Polyester
- RESISTORS**
- Are in ohms, k=Kilohms, M=Megohms
 Unless otherwise noted K=K, M=M, W=W
- CAPACITORS**
- P=Picofarad, n=Nanofarad, u=Microfarad

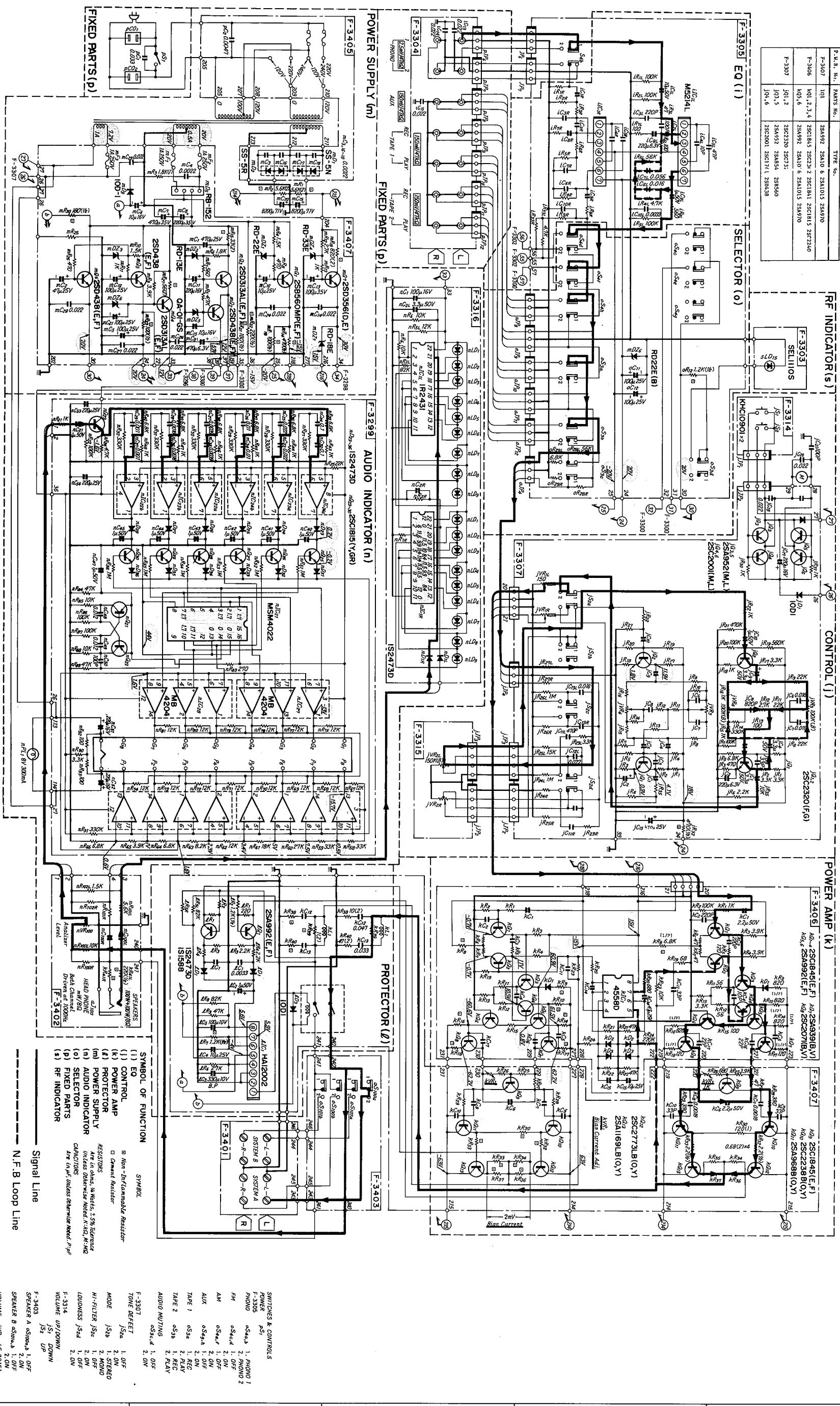
FM Signal Line
 AM Signal Line



- Component List:**
- 2SC201M
 - TA7302P
 - UP48H
 - TD6104P
 - RB152
 - 25A733A
 - MS214L
 - 10D1
 - 1S1588
 - 1S2473D
 - 25A993
 - 25A1015
 - 25S950
 - 25S945
 - 25C1614
 - 25C1741
 - 25C1815
 - 25C230
 - 25S438
 - HA112002
 - 1N34A
 - 1N60
 - NJM4588D
 - 25A939
 - 25C1904
 - 25C2071
 - 25S388
 - 25S356
 - IR-2431
 - HA11223W
 - HA11225
 - NE5458
 - NLS148E
 - 25C313
 - TC9140P
 - RD-68E
 - RD-105
 - RD-22E
 - RD-33E
 - RD-30F
 - 25A9888
 - 25C2288
 - 25S981
 - MSM4022RS
 - LA1245
 - TD6301P
 - 25A1189
 - 25A1179
 - 25C2773
 - 25C2774
 - 25K163
 - MB4204M
 - SS-5
 - SS-7R
 - SS-5R
 - SS-7R

OPTIONAL USE OF TRANSISTOR

PART NO.	TYPE NO.
F-3407	25A992 28A10 28A1015 28A970
F-3408	28C18A5 28C23 2 28C18A1 28C1815 28C2740
F-3409	KQ5, 6 28A992 28A10 28A1015 28A970
F-3307	301, 2 28C2730 28C073
F-3305	303, 5 28A932 28A854 28B560
F-3404	304, 6 28C2001 28C171 28B318



SYMBOL OF FUNCTION

(1) EQ	(I) CONTROL
(K) POWER AMP	(J) PROTECTOR
(M) POWER SUPPLY	(h) AUDIO INDICATOR
(O) SELECTOR	(P) FIXED PARTS
(S) RF INDICATOR	

SYMBOL

□	Non-Inductance Resistor
○	Control Resistor
Δ	RESISTORS
	Are in ohms, % tolerance, ±% tolerance
	Unless otherwise noted: R=1%2, M=1%
	CAPACITORS
	Are in μF, unless otherwise noted; P=PF

SWITCHES & CONTROLS

POWER	PS1	2. ON
PHONO	PS2	2. ON
FM	PS3	2. ON
AM	PS4	2. ON
AUX	PS5	2. ON
TAPE 1	PS6	2. ON
TAPE 2	PS7	2. ON
PLAY	PS8	2. ON
AUDIO MUTING	PS9	2. ON
	PS10	2. ON

TONE DEFLECT

F-3307	J5a	1. OFF
	J5b	2. ON

MODE

J5c	1. STEREO
J5d	2. MONO

HI-FILTER

J5e	1. OFF
J5f	2. ON

LOUDNESS

J5g	1. OFF
J5h	2. ON

VOLUME UP/DOWN

J5i	UP
J5j	DOWN

SPEAKER

F-3403	A	1. OFF
	B	2. ON

Signal Line

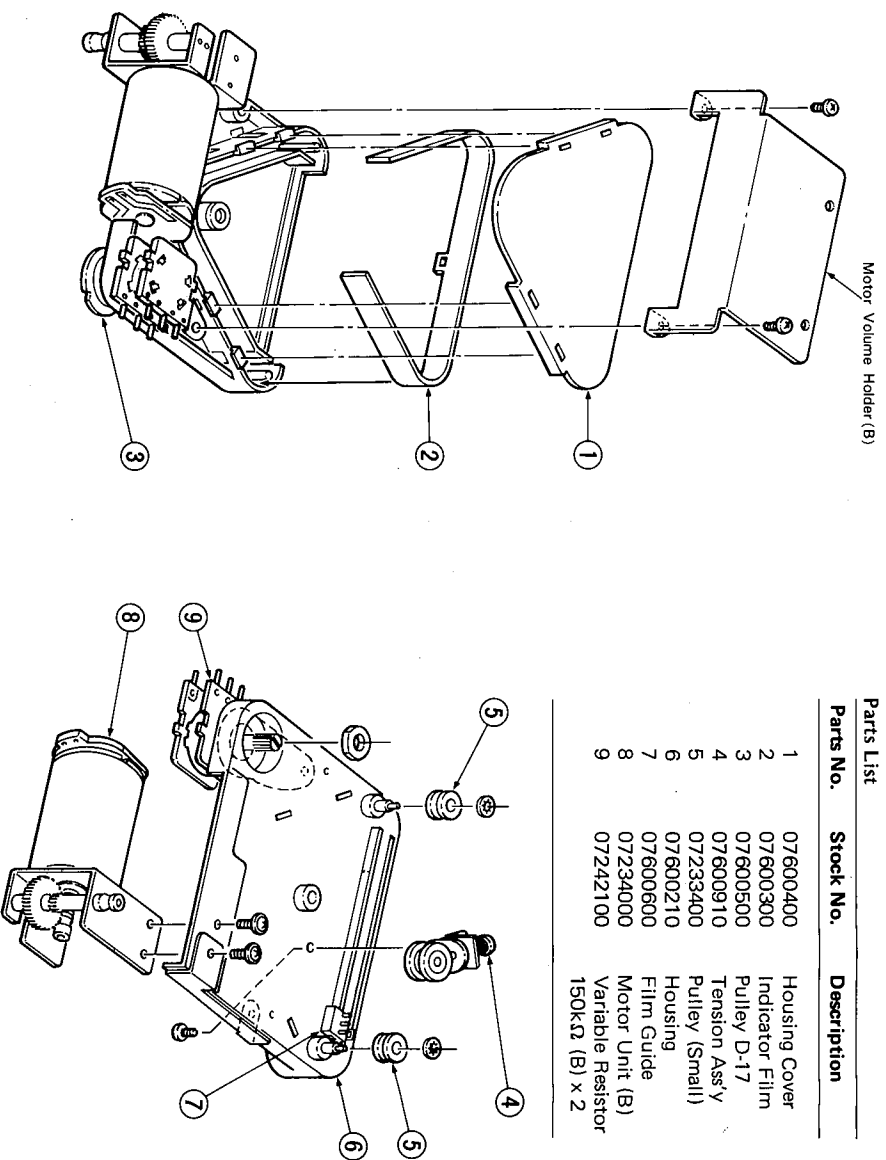
N, F, B Loop Line

ANALYZER LEVEL

F-3307, F-3305, F-3309, F-3307, F-3309, F-3307, F-3309

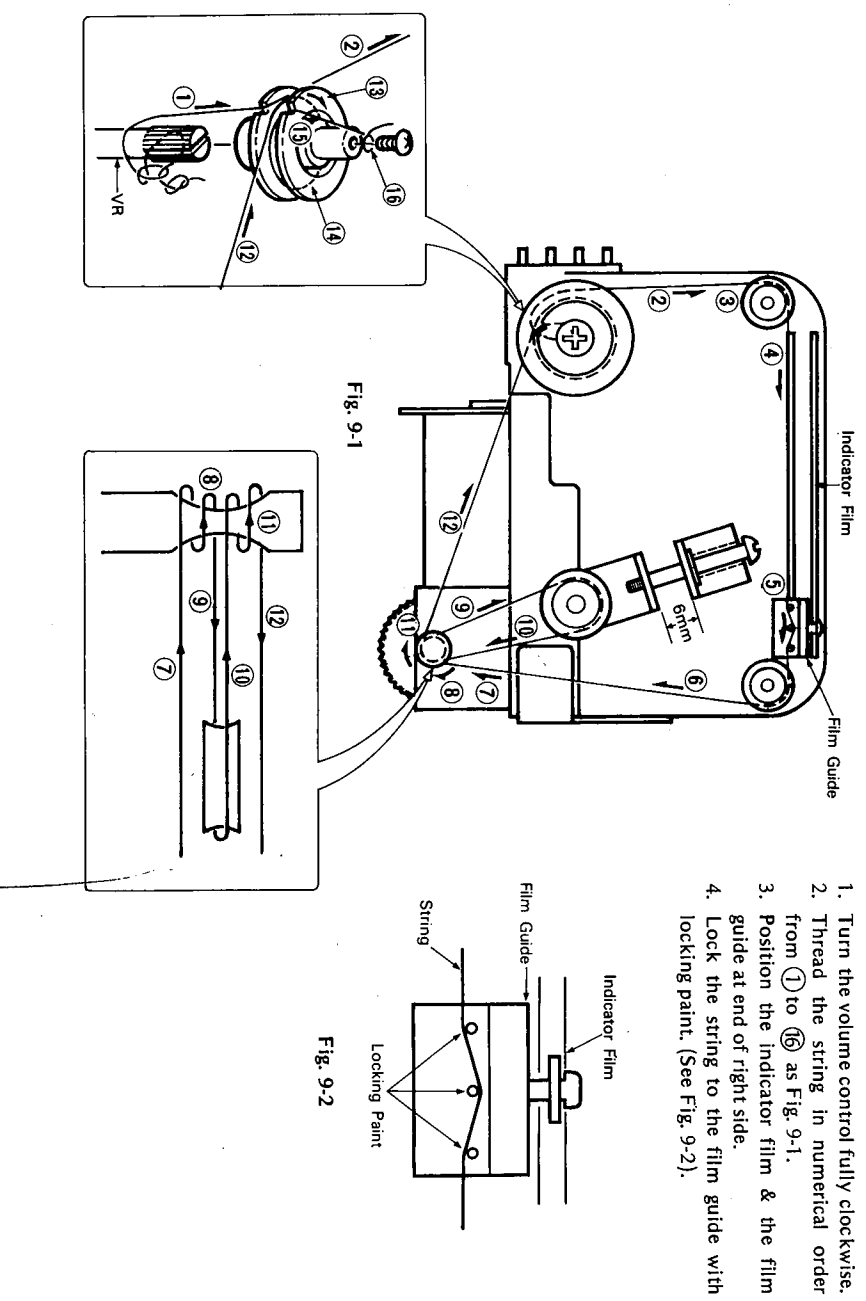
La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles. Änderungen, die den technischen Fortschritt dienen, bleiben vorbehalten. Design and specifications subject to change without notice for improvement.

8. EXPLODED VIEW OF VOLUME CONTROL MECHANISM



Parts List		
Parts No.	Stock No.	Description
1	07600400	Housing Cover
2	07600300	Indicator Film
3	07600500	Pulley D-17
4	07600910	Tension Ass'y
5	07233400	Pulley (Small)
6	07600210	Housing
7	07600600	Film Guide
8	07234000	Motor Unit (B)
9	07242100	Variable Resistor 150K Ω (B) x 2

9. THREADING OF VOLUME CONTROL



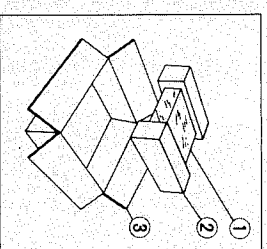
1. Turn the volume control fully clockwise.
2. Thread the string in numerical order from ① to ⑫ as Fig. 9-1.
3. Position the indicator film & the film guide at end of right side.
4. Lock the string to the film guide with locking paint. (See Fig. 9-2).

10. PACKING LIST

<9900Z>		
Parts No.	Stock No.	Description
1	91167420	Vinyl Bag
2	07654100	Styrofoam Packing
3	07654200	Carton Case

<8900ZDB>		
Parts No.	Stock No.	Description
1	91167420	Vinyl Bag
2	07654100	Styrofoam Packing
3	07653300	Carton Case

<7900Z>		
Parts No.	Stock No.	Description
1	91167420	Vinyl Bag
2	07654100	Styrofoam Packing
3	07653400	Carton Case



11. ACCESSORY PARTS LIST

<9900Z>		
Stock No.	Description	
38201200	FM Antenna	
07577400	Operating Instruction	

<8900ZDB>		
Stock No.	Description	
38201200	FM Antenna	
07577500	Operating Instruction	

<7900Z>		
Stock No.	Description	
38201200	FM Antenna	
07577600	Operating Instruction	

• Note:
Notice when the user moves from 10 kHz (100 kHz) to 9 kHz (50 kHz) steps area, or vice versa, in AM (FM) broadcasting frequency.

When the frequency-step of AM broadcasting is set to 10 kHz or 9 kHz (in EUROPE) by sliding the AM channel (9 kHz/10 kHz) selection switch (FS1) installed on the rear panel, the frequency-step of FM broadcasting is also switched automatically to 100 kHz or 50 kHz (in EUROPE).

Turn power switch OFF, when AM Channel Selection Switch (FS1) is set to 9 or 10 kHz.

Switch (FS1)	AM	FM
Set 10 kHz	10 kHz Frequency Step	100 kHz Frequency Step
Set 9 kHz	9 kHz Frequency Step	50 kHz Frequency Step

Sansui

SANSUI ELECTRIC COMPANY LTD.:
1250 Valley Brook Ave. Lyndhurst, N.J. 07071 U.S.A.
SANSUI ELECTRONICS CORPORATION:
3036 Kopaake St. Honolulu, Hawaii 96819 U.S.A.
SANSUI ELECTRONICS (U.K.) LTD.:
Unit 10A, Lyon Industrial Estate, Rockware Avenue, Greenford, Middx UB6, OAA, England
SANSUI ELECTRONICS G.M.B.H.:

14-1, Izumi 2-chome, Suginami-ku, Tokyo 168 Japan PHONE: (03) 323-1111/TELEX: 232-2076
1250 Valley Brook Ave. Lyndhurst, N.J. 07071 U.S.A.
333 West Alondra Blvd. Gardena, California 90247 U.S.A.
3036 Kopaake St. Honolulu, Hawaii 96819 U.S.A.
Unit 10A, Lyon Industrial Estate, Rockware Avenue, Greenford, Middx UB6, OAA, England
Arabella center, 6 Frankfurt AM Main, Lyoner Strasse 44-48, West Germany

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