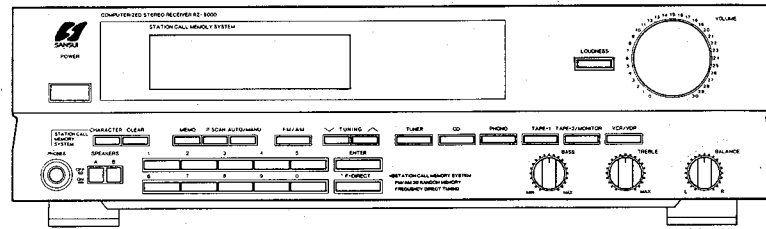




SERVICE MANUAL

RZ-1000 COMPUTERIZED STEREO RECEIVER



CAUTION

- Parts identified by the \triangle symbol on the schematic diagram and the parts list are critical for safety. Use only replacement parts that have critical characteristics recommended by the manufacturer.
- Make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the appliance to the customer.

SPECIFICATIONS

Audio section

Power output

Min. RMS, both channels driven, from 40 to 20,000 Hz with no more than 0.09% total harmonic distortion
32 watts per channel into 8 ohms

DIN

38 watts per channel into 8 ohms.

Total harmonic distortion less than 0.09% at or below rated min. RMS power output

Load impedance 4~16 ohms

Input sensitivity and impedance (1 kHz)

PHONO..... 2.5 mV/47 kohms
CD..... 200 mV/47 kohms
TAPE PLAY..... 150 mV/47 kohms

Frequency response (at 1 watt)

..... 10 to 70,000 Hz,
+1 dB, -3 dB

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

PHONO..... 73 dB
CD, TAPE PLAY..... 90 dB

Controls

BASS..... ± 8 dB at 50 Hz
TREBLE..... ± 7 dB at 10 kHz
LOUDNESS..... +10 dB at 50 Hz
..... +6 dB at 10 kHz
(VOLUME: -30 dB position)

FM section

Tuning range..... 88 to 108 MHz

Usable sensitivity

Mono IHF..... 13.2 dBf (2.5 μ V: T-100)

50 dB quieting sensitivity

Stereo..... 40 dBf

Signal to noise ratio (at 65 dBf)

Stereo..... 70 dB

Distortion (at 65 dBf)

Stereo..... less than 0.3% at 1,000 Hz

Stereo separation

..... 40 dB at 1,000 Hz

AM section

Tuning range..... 530 to 1,600 kHz

Usable sensitivity (Loop antenna)

..... 55 dB/m (562 μ V/m)

Signal to noise ratio

..... 40 dB

Others

Power requirements..... 120/220/240V
50/60 Hz

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

Power consumption..... 180 watts 220 VA Rated
280 watts Maximum

Dimensions..... 430 mm (16-15/16") W
125 mm (4-15/16") H
335 mm (13-1/4") D

Weight..... 6.6 kg (14.6 lbs) net
7.9 kg (17.4 lbs) packed

- * Design and specifications subject to changes without notice for improvements.
- * Due to local laws and regulations, this unit sold in some areas is not equipped with variable voltage selector.

RZ-1000

NOTICE

- The symbols, UL, CSA, EU, EG, ES, SS and XX <EXPORT> on the parts list and the schematic diagram mean followings respectively.

UL..... Manufactured for U.S.A market.
(Underwriters Laboratories approved model.)

CSA..... Manufactured for Canadian market.

EU..... Manufactured for European market.

EG..... Manufactured for F.R. Germany market.

ES..... Manufactured for Swiss market.

SS..... Manufactured for Saudi Arabia market.

XX..... Standard Version.

<EXPORT>

NON MARK..... Common Parts.

- Some printed circuit boards are not supplied assembled. To separate these in this service manual, the stock numbers are not indicated for these boards. However, stock numbers for individual parts are indicated.
- Since some capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors and resistors, which was issued on June 1987.

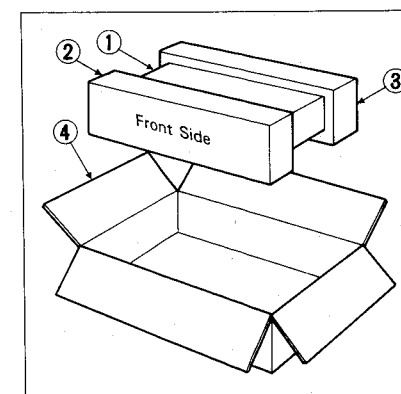
- Abbreviations in this service manual are as follows.

Abbreviations List

C.R.	: Carbon Resistor
S.R.	: Solid Resistor
Ce.R.	: Cement Resistor
M.R.	: Metal Film Resistor
F.R.	: Fusing Resistor
N.I.R.	: Non-Inflammable Resistor
A.R.	: Array 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.B.L.	: Low Leak Bi-Polar Electrolytic Capacitor
Ta.C.	: Tantalum Capacitor
F.C.	: Film Capacitor
M.P.	: Metalized Paper Capacitor
P.C.	: Polystyrene Capacitor
M.M.C.	: Metalized Mylar Capacitor
A.C.	: Array Capacitor
V.R.	: Variable Resistor
S.V.R.	: Semi Variable Resistor
SW.	: Switch
Chip R.	: Chip Resistor
Chip C.	: Chip Capacitor

1. PACKING LIST

Parts No.	Stock No.	Description
1	47859600	Vinyl Bag
2	84582400	Styrofoam Packing F (Front-side)
3	84584600	Styrofoam Packing R (Rear-side)
4	84582200	Carton Case



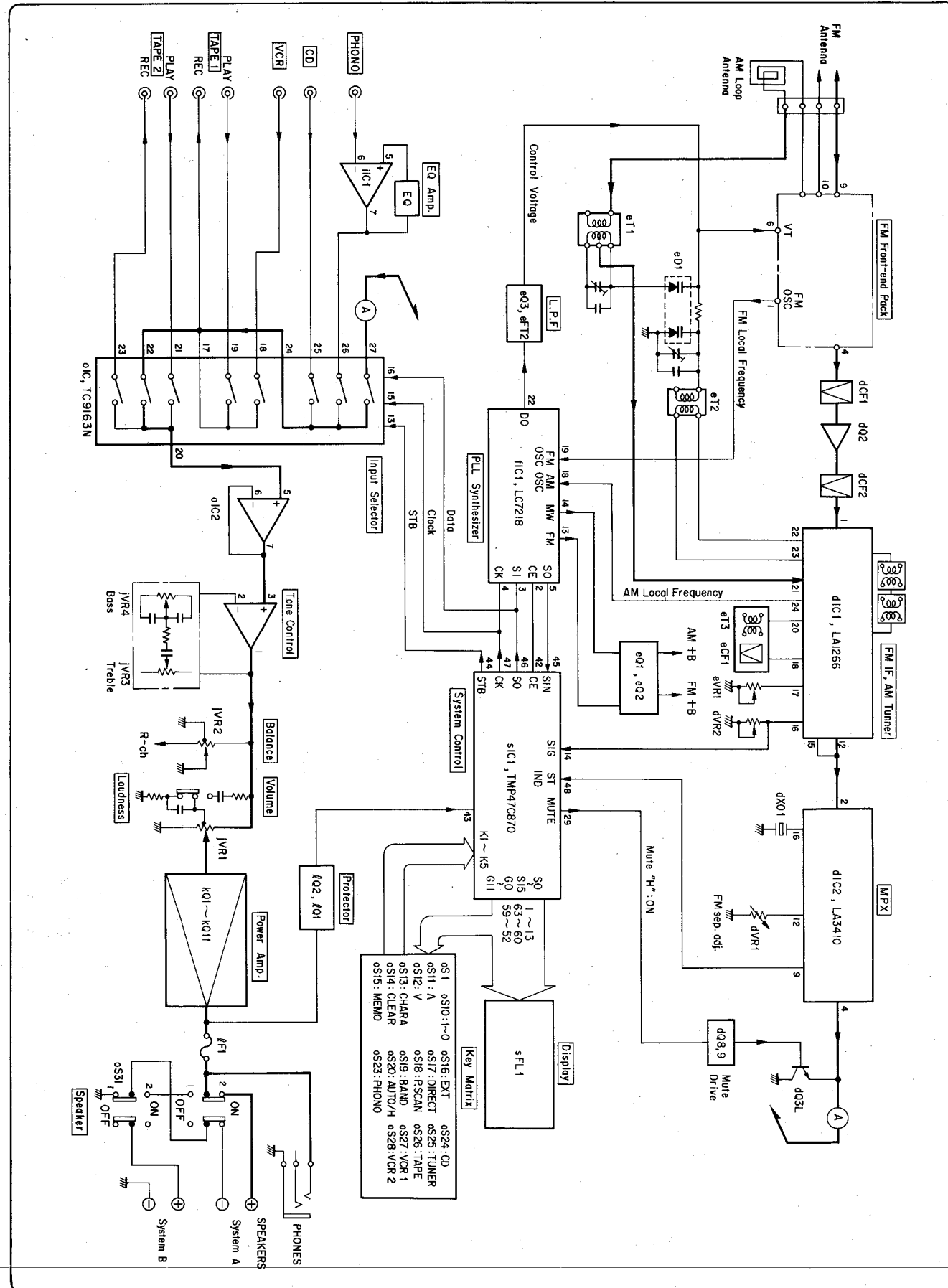
2. ACCESSORY LIST

Stock No.	Description
83041000	AM Loop Antenna
48489800	Antenna Plug (EU•ES•EG)
46051700	FM Antenna
84529800	AM Antenna Holder
84453900	RZ-3000/1000 Operating Instruction (*E•F•S)
84454000	RZ-3000/1000 Operating Instruction (*G•I•Sw)

*Note:

E•F•S: English•French and Spanish Version
G•I•Sw: German•Italian and Swedish Version

3. BLOCK DIAGRAM



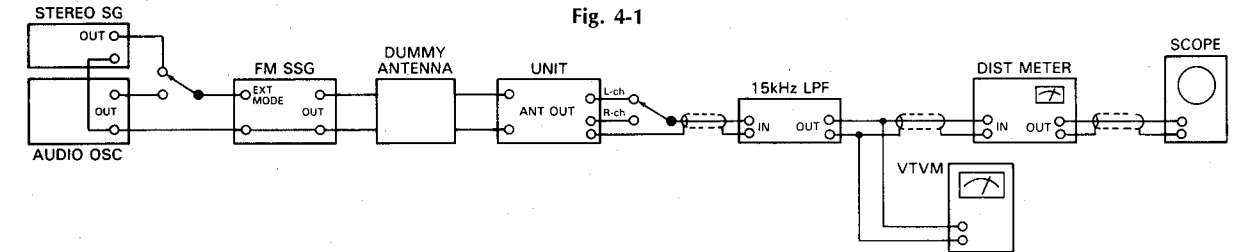
4. ADJUSTMENT

4-1. Bias Adjustment of Power Amp. (See Parts Location F-6007 on page 8 and F-6001 on page 7)

- Note:** 1. Master Volume Minimum
 2. Room Temperature 18°C ~ 28°C (65°F ~ 83°F)
 3. For this adjustment, run the unit for more than 5 minutes after the power is switched ON.
 4. Before turning ON power switch, set kVR1 on F-6007 to center position.

STEP	SUBJECT	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1.	Bias Current Adj. L-CH	Between Point(A) & Point(B) <Between emitters of power transistor (kQ12 & kQ13), F-6001>, DC Volt Meter	kVR1, L-CH (F-6007)	DC 8.5~9.5mV	•This bias value is converted from current value to voltage by ohms law.
2.	Bias Current Adj. R-CH	Between Point(C) & Point(D) <Between emitters of power transistor (kQ12 & kQ13), F-6001>, DC Volt Meter	kVR1, R-CH (F-6007)	DC 8.5~9.5mV	

4-2. FM Adjustment (See Parts Location F-6001 on page 7)



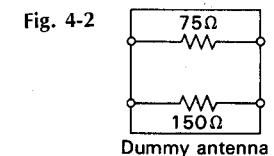
1) FM IF & Reference Frequency Adjustment

- Note:** 1. SELECTOR FM
 2. FM MUTING/MODE OFF/MONO

STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS	
		FROM	TO					
1.	Reference Frequency Adj.	No Input (Tune to 98MHz)	—	Between Point(E) (Pin 1 of Front-end, F-6001) & Ground, Freq. counter	fTC1 (F-6001)	108.7MHz ± 100Hz		
2.	Discriminator Coil Adj.	1	98MHz ANT Input 65dBf (59.8dB), 1kHz (100% MOD.), FM SSG	ANT Terminal 300Ω	Between Point(F) & Point(G) (Across dR17, F-6001), DC Volt Meter	dT1 (F-6001)	DC 0V ± 30mV	•Repeat procedures as stated in subject 1 & 2.
		2	Same as above	Same as above	REC OUT L or R-CH, Dist Meter & Scope	dT2 (F-6001)	Min. THD	

◆ Technical Hint for FM Adjustment

There are two kind in indication of FM SSG output attenuator.
 1. Attenuator with marking of 75Ω open open indication type.
 2. Attenuator with marking of 75Ω load or close load or close indication type.
 FM SSG output level in this FM adjustment are described as open indication type.
 To feed FM signal, a dummy antenna circuit as Fig. 3-1 must be connected between FM SSG output and ANT terminal (300Ω) of the unit.



• The following table shows relations among FM SG attenuator indication (dB), available power ratio (dBf) and antenna terminal voltage (dB/μV) in each indication type.

	FM SG Attenuator Indication	Available Power Ratio	Antenna Terminal Voltage
Open indication type	0 dB 66 dB	-0.8 dBf 65.2 dBf	-6 dB/μV 60 dB/μV
Load or close indication type	0 dB 60 dB	5.2 dBf 65.2 dBf	0 dB/μV 60 dB/μV

5. PARTS LIST OF BOARD

5-1. F-6001 Main Board <Stock No. 01118301 = XX·SS/01118302 = UL·CSA/01118305 = EU·ES/01118308 = EG>

Parts No.	Stock No.	Description	Parts No.	Stock No.	Description
dZ1	49316500	FM Frontend Pack (XX·UL·CSA·SS)	eC10~12	48426900	22000pF 25V C.C.
	49316600	FM Frontend Pack (EU·ES·EG)	eC16	48426900	22000pF 25V C.C.
•Transistor			eC17	48666200	0.01 μ F 50V C.C.
dQ1	46834300	DTC144ES	eC20, 21	48426900	22000pF 25V C.C.
dQ2	46393201	2SC2786	eC23	48663800	1000pF 50V C.C.
dQ3	46540801	2SC2878	eC24	48103500	2.2 μ F 50V E.B.
	or 46604301	2SC3327	eTC1, 2	46095700	30pF Trimmer Capacitor
dQ4~7	46834300	DTC144ES	or 46162900	30 pF Trimmer Capacitor	
dQ8	46834200	DTA144ES	eCF1	48865700	BFCFL-450 Ceramic Filter
dQ9	46367101	2SC2603	eL1	83020300	39 μ H Coil
	or 48058801	2SC1740S	eT1	48528900	AM ANT Coil
dQ10, 11	46834300	DTC144ES	eT2	83005700	AM OSC Coil
•IC			eT3	83013400	AM IF Coil
dIC1	48715100	LA1266	eVR1	83007500	100k Ω S.V.R., AM Auto Stop Level Adj.
dIC2	48491000	LA3410A	•IC		
dXO1	83000200	Quartz Element	fiC1	49317500	LC7218
•Diode			fxO1	83004400	Quartz Element
dD1~9	46464100	1SS133	ftC1	46095700	30pF Trimmer Capacitor
dC4~8	48426900	22000pF 25V C.C.	or 46162900	30pF Trimmer Capacitor	
dC9	48103300	0.68 μ F 50V E.B.	fl1	83042600	10 μ H Inductor
dC11	48662600	100pF 50V C.C.	•IC		
dC12, 13	48102400	4.7 μ F 25V E.B.	ilC1	46078900	M5218L
dC18	48663100	270pF 50V C.C.	iC2	48663000	220pF 50V C.C.
dC27	48426900	22000pF 25V C.C.	•Transistor		
dCF1, 2	83000000	Ceramic Filter SFE10.7MS2 (XX·SS·UL·CSA)	kQ7	03067401	2SC1845
	48064800	Ceramic Filter SFE10.7MS3GH (EU·ES·EG)	Δ kQ12	48577901	2SC3853
dL1	83043200	Inductor 100 μ H	Δ kQ13	48577801	2SA1489
dT1	83005900	FM IF Coil	Δ kr34, 35	46542200	0.2 Ω 2W Ce.R.
dT2	83006000	FM IF Coil	•Transistor		
dT3	46202400	CH Filter (EG)	IQ1	48863701	2SC2857
Δ dR9	46227800	10 Ω 1/2W N.I.R.	or 48863901	2SC1473	
Δ dR19	46228200	22 Ω 1/2W N.I.R.	IQ2	46367001	2SA1115
dVR1	83007600	200k Ω S.V.R., FM Stereo Sep. Adj.	or 48058601	2SA933S	
dVR2	83007600	200k Ω S.V.R., FM Muting Level Adj.	•Zener Diode		
•Transistor			IDZ2	48551900	MTZ4.7CT-77
eQ1, 2	46367001	2SA1115	Δ IF1	83049000	Fuse 4A
or 48058601	2SA933S		•Transistor		
eQ3	46367101	2SC2603	Δ mQ1	48581701	2SD438
or 48058801	2SC1740S		Δ mQ2	03083901	2SD313HP
•FET			mQ3	46367101	2SC2603
eFT2	46643501	2SK163-K2	or 48058801	2SC1740S	
or 46643502	2SK163-L1		Δ mQ4	48064001	2SA1284
or 46643601	2SK117-Y		Δ mQ5	48064001	2SA1284
or 46643602	2SK117-GR		•Diode		
•Diode			Δ mD1	83024700	1N4003
eD1	46146300	KV1236Z2 (Variable Capacitance)	Δ mD2	83024700	1N4003
eD2, 3	46464100	1SS133	Δ mD3	83024700	1N4003
			Δ mD4	83024700	1N4003
			Δ mD5	83002100	KBU4D

2) FM STEREO Adjustment

Note: 1. SELECTOR FM 2. FM MUTING/MODE AUTO

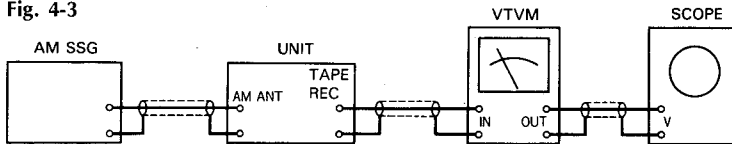
STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	Separation Adj.	98MHz ANT Input 65dBf (59.8dB), FM SSG, Pilot 19kHz (9% MOD.), R or L MODE 1kHz+Pilot (100% MOD.), STEREO SG.	ANT Terminal 300Ω	REC OUT L-CH, VTVM & SCOPE REC OUT R-CH, VTVM & SCOPE	dVR1 (F-6001)	Max. Separation	Confirm R→LCH
2.	Muting Level Adj.	98MHz ANT Input 20dBf (14.8dB), FM SSG, Pilot 19kHz (9% MOD.), L or R MODE 1kHz+Pilot (100% MOD.), STEREO SG.	Same as above	Stereo indicator or OUTPUT (L-CH or R-CH), VTVM & SCOPE	dVR2 (F-6001)	Stereo indicator turns On or Output Signal comes out	


4-3. AM Adjustment (See Parts Location F-6001 on page 7)

1) AM IF Adjustment & Tuning Adjustment

Note: 1. SELECTOR AM
2. Connect

Fig. 4-3



STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	IF Coil Adj.	1400kHz (9kHz step) or 1404kHz (10kHz step) ANT Input 55dB 400Hz (30% MOD.), AM SSG	ANT Terminal	REC OUT L or R-CH, VTVM & SCOPE	eT3 (F-6001)	Max, Waveform	
2.	531kHz (9kHz step) or 530kHz (10kHz step) Tuning Adj.	No Input	---	Between PointⓈ (collector of eQ3) & GND, DC Volt Meter	eT2 (F-6001)	DC 1V	•Repeat procedures as stated in subject 2 & 3.
3.	1602kHz (9kHz step) or 1710kHz (10kHz step) Tuning Adj.	No Input	---	Same as above	eTC2 (F-6001)	DC 8V (9kHz step) DC 10V (10kHz step)	
4.	603kHz (9kHz step) or 600kHz (10kHz step) RF Adj.	603kHz (or 600kHz) ANT Input 0dB 400Hz (30% MOD.), AM SSG	ANT Terminal	REC OUT L-CH or R-CH, VTVM & Scope	eT1 (F-6001)	Max. Output	
5.	1404kHz (9kHz step) or 1400kHz (10kHz step) RF Adj.	1400kHz (or 1400kHz) ANT Input 30dB 400Hz (30% MOD.), AM SSG	Same as above	Same as above	eTC1 (F-6001)	Max. Output	
6.	Auto Stop Level Adj.	999kHz (9kHz step) or 1000kHz (10kHz step) ANT Input 65dB 400Hz (30% MOD.), AM SSG	Same as above	PointⓈ (Pin 8 of d1C1), DC Volt Meter	eVR1 (F-6001)	Low Level (0V)	

* Notice when the frequency-step of AM broadcasting is set to 9kHz or 10kHz by the AM channel (9kHz/10kHz) selection switch. Set the AM channel selection switch (oS30) on the F-6001 board in the following sequence.

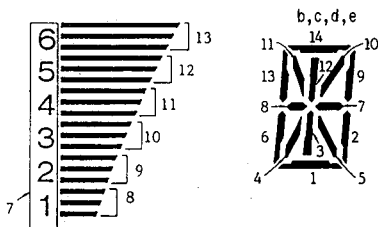
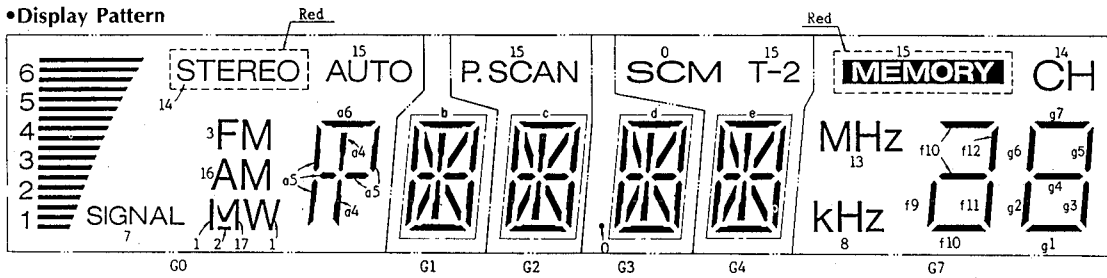
1. Pull out the power supply cord from the power outlet.
2. Remove the bonnet.
3. Short the Pin 64 of s1C1 (TMP47C870N) on the F-6003 board and ground for more than thirty seconds.
4. Set the AM channel selection switch (oS30) on the F-6001 board to proper position.

5-6. F-6007 Power Amp. Board <Stock No. 01119001 = XX·UL·CSA·SS/01119005 = EU·EG·ES>

Parts No.	Stock No.	Description	Parts No.	Stock No.	Description
•Transistor			ΔkR11	46230200	1kΩ 1/2W N.I.R.
kQ1	46367001	2SA1115	ΔkR12	46229200	150Ω 1/2W N.I.R.
	or 46392001	2SA1175	ΔkR16	46230200	1kΩ 1/2W N.I.R.
kQ2	48577701	2SA1349	ΔkR19	46228500	39Ω 1/2W N.I.R.
kQ3	46728301	2SC2705	ΔkR20	46229200	150Ω 1/2W N.I.R.
	or 48113001	2SC2229	ΔkR21	46230200	1kΩ 1/2W N.I.R.
kQ4	46728301	2SC2705	ΔkR23, 24	46228400	33Ω 1/2W N.I.R.
	or 48113001	2SC2229	ΔkR29	46230200	1kΩ 1/2W N.I.R.
kQ5	03064001	2SC1904	ΔkR30	46229100	120Ω 1/2W N.I.R.
	or 46128101	2SC2911	ΔkR32, 33	46227400	4.7Ω 1/2W N.I.R.
kQ6	03007901	2SA899	•Diode		
	or 46128001	2SA1209	kD1	46464100	1SS133
kQ8	48061801	2SC3244	kVR1	48078600	1kΩ S.V.R., Bias Current Adj.
kQ9	48064001	2SA1284			
kQ10	48061801	2SC3244 (EU·ES·EG)			
kQ11	48064001	2SA1284 (EU·ES·EG)			

6. DISPLAY PATTERN AND PIN ASSINGMENT OF CP3023 FL DISPLAY

•Display Pattern



◆ Pin Assignment

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Assignment	F	P0	P16	P17	P1	P2	P3	P4	P5	P6	P7	P8	P9

Pin No.	14	15	16	17	18	19	20	21	22	23	24	25	26
Assignment	P10	P11	P12	P13	P14	P15	G0	G1	G2	G3	G4	G7	F

Grid \ Anode	G0	G1	G2	G3	G4	G7
P0	MW			.(dot)	SCM	
P1	LW, MW	b1	c1	d1	e1	g1
P2	LW	b2	c2	d2	e2	g2
P3	FM	b3	c3	d3	e3	g3
P4	a4	b4	c4	d4	e4	g4
P5	a5	b4	c4	d4	e4	g4
P6	a6	b4	c4	d4	e4	g4
P7	SIGNAL 123456	b7	c7	d7	e7	g7

Grid \ Anode	G0	G1	G2	G3	G4	G7
P8	Sig. 1	b8	c8	d8	e8	kHz
P9	Sig. 2	b9	c9	d9	e9	f9
P10	Sig. 3	b10	c10	d10	e10	f10
P11	Sig. 4	b11	c11	d11	e11	f11
P12	Sig. 5	b12	c12	d12	e12	f12
P13	Sig. 6	b13	c13	d13	e13	MHz
P14	STEREO	b14	c14	d14	e14	CH
P15	AUTO		P.SCAN		T-2 (TAPE2)	MEMORY

< F-6001 >

Parts No.	Stock No.	Description
•Zener Diode		
mDZ1	48552900	MTZ6.8AT-77
mDZ2	48555300	MTZ13CT-77
mDZ3	48555100	MTZ13AT-77
mDZ4	48552100	MTZ5.1BT-77
	or 48552200	MTZ5.1CT-77
mDZ5	48558000	MTZ30BT-77
	or 48558100	MTZ30CT-77
△mR1	46249700	220Ω 1/2W N.I.R.
△mR4	46623700	33Ω 2W N.I.R.
△mR100	46227400	4.7Ω 1/2W N.I.R.
△mR101	46227800	10Ω 1/2W N.I.R.
mC8, 9	08300400	3300μF 50V E.C.
mC10, 11	08680400	0.01μF 500V C.C.
•Transistor		
oQ1	46540801	2SC2878
	or 46604301	2SC3327
oQ2	46367101	2SC2603
	or 48058801	2SC1740S
oQ3	46834200	DTA144ES
•IC		
oIC1	49312200	TC9163N
oIC2	46147700	M5218L
oC1	48660200	47pF 50V C.C.
oC2	48659400	22pF 50V C.C.
oC3	48660200	47pF 50V C.C.
oC4	48659400	22pF 50V C.C.
oC5	48663000	220pF 50V C.C.
oS30	83045800	Slide SW., AM 9k/10k (XX•SS)
△pF1	83021600	Fuse 1.5A (XX•SS)
△	83021900	Fuse 3A (UL•CSA)
△	83024000	Fuse 3.15A (EU•ES•EG)
△pF2	83021600	Fuse 1.5A (XX•SS)
qZ11	48528400	2P Pin Jack Terminal, PHONO
qZ12	48528300	6P Pin Jack Terminal, TAPE-1•CD
qZ13	48528200	4P Pin Jack Terminal, TAPE-2
qZ14	48987400	2P Pin Jack Terminal, VCR/VDP
qZ10	49299700	4P Antenna Terminal (XX•UL•CSA•SS)
	49320400	2P Antenna Terminal (EU•ES•EG)
qZ16	46947500	8P Speaker Terminal

5-2. F-6002 SPEAKER IMPEDANCE Switch Board

Parts No.	Stock No.	Description
oS32	49338500	Side SW., SPEAKER IMPEDANCE
△pF3	83023500	Fuse 3A (ES)

5-3. F-6003 Tuner Control and Operating Switch Board <Stock No. 01118601 >

Parts No.	Stock No.	Description
•Diode		
oD1~11	46464100	1SS133
oS1	83003000	Push SW., 1 (Preset)
oS2	83003000	Push SW., 2 (Preset)
oS3	83003000	Push SW., 3 (Preset)
oS4	83003000	Push SW., 4 (Preset)
oS5	83003000	Push SW., 5 (Preset)
oS6	83003000	Push SW., 6 (Preset)
oS7	83003000	Push SW., 7 (Preset)

< F-6003 >

Parts No.	Stock No.	Description
oS8	83003000	Push SW., 8 (Preset)
oS9	83003000	Push SW., 9 (Preset)
oS10	83003000	Push SW., 0 (Preset)
oS11	83003000	Push SW., Λ (TUNING)
oS12	83003000	Push SW., V (TUNING)
oS13	83003000	Push SW., CHARACTER
oS14	83003000	Push SW., CLEAR
oS15	83003000	Push SW., MEMO
oS16	83003000	Push SW., ENTER
oS17	83003000	Push SW., F.DIRECT
oS18	83003000	Push SW., P.SCAN
oS19	83003000	Push SW., BAND
oS20	83003000	Push SW., AUTO
oS23	83003000	Push SW., PHONO
oS24	83003000	Push SW., CD
oS25	83003000	Push SW., TUNER
oS26	83003000	Push SW., TAPE-1
oS27	83003000	Push SW., TAPE-2
oS28	83003000	Push SW., VCR/VDP
•Transistor		
sQ1, 2	48223100	DTC114TS
sQ4~6	46719900	DTC124ES
sQ7	46367101	2SC2603
	or 48058801	2SC1740S
sQ8	48223100	DTC114TS
sQ9	46834300	DTC144ES
•IC		
slC1	49317400	TMP47C870N
sXO1	48241600	Ceramic OSC Element
•Diode		
sD1~5	46464100	1SS133
sFL1	49317100	FL. Display Tube CP3023
sR10, 11	48773600	10kΩX8 A.R.
sC4	49299400	0.47μF 5.5V E.C.

5-4. F-6004 SPEAKERS Switch Board

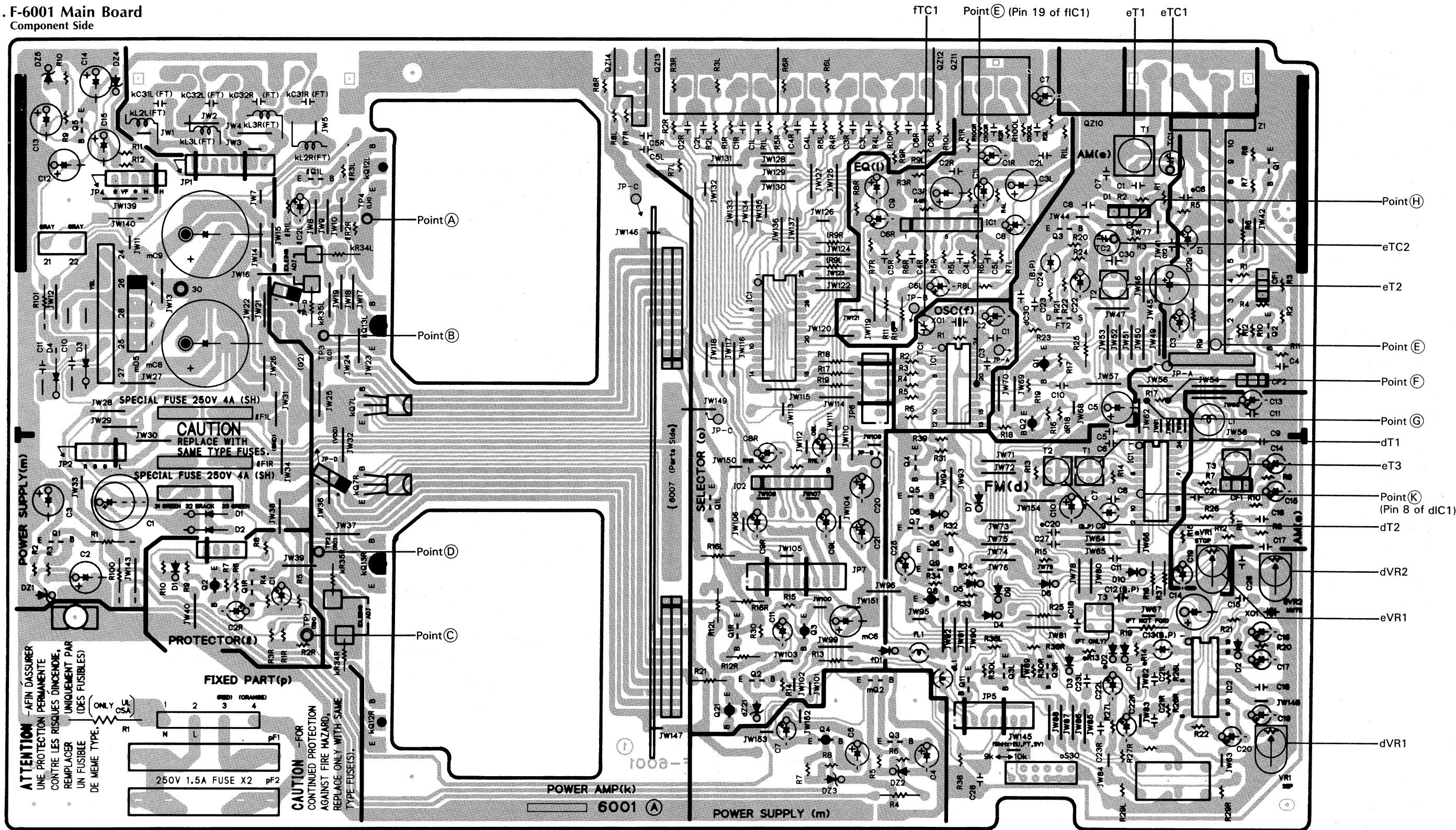
Parts No.	Stock No.	Description
kL1	83020100	Inductor
△kR39, 40	46227800	10Ω 1/2W N.I.R.
△kR41	46229400	220Ω 1/2W N.I.R.
oS31	83045900	Push SW., SPEAKERS
qZ15	46579600	Jack, PHONES

5-5. F-6006 Master and Tone Control Volume Board

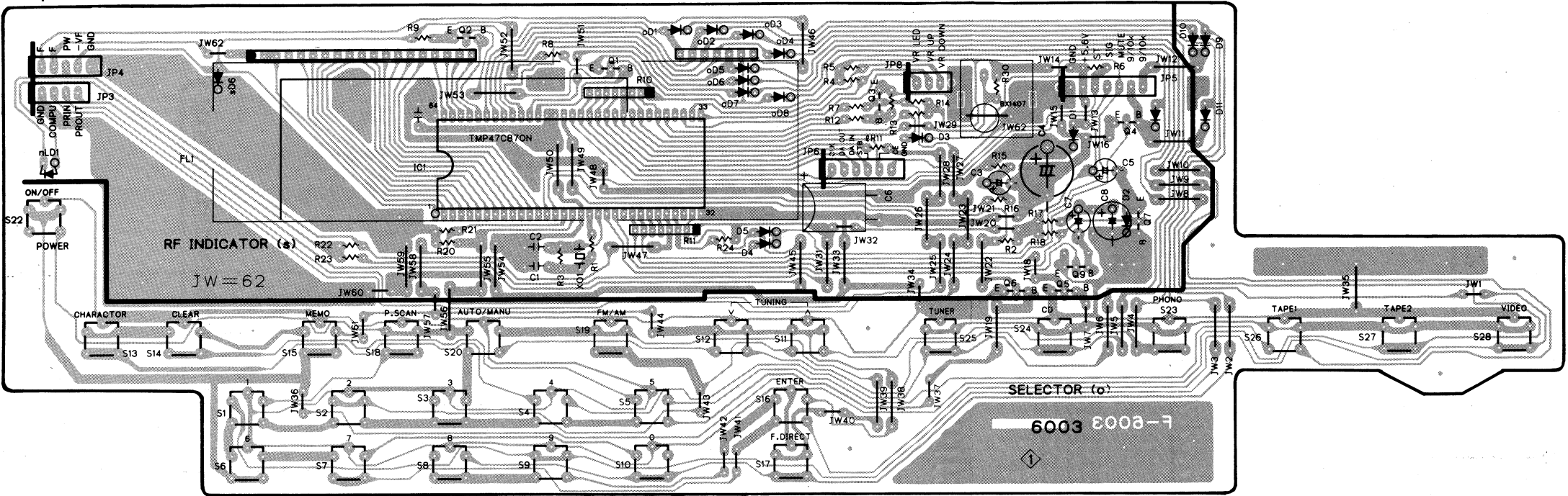
Parts No.	Stock No.	Description
•IC		
jIC1	46673800	M5218P
jC4	48660200	47pF 50V C.C.
jC9	48663400	470pF 50V C.C.
△jR21	46229000	100Ω 1/2W N.I.R.
jVR1	49322100	150kΩ (B)x2 V.R., Master
jVR2	83013000	250kΩ V.R., BALANCE
jVR3	83012800	50kΩ (C) V.R., TREBLE
jVR4	83012800	50kΩ (C) V.R., BASS
jS1	83046700	Push SW., LOUDNESS

7. PARTS LOCATION ON BOARD

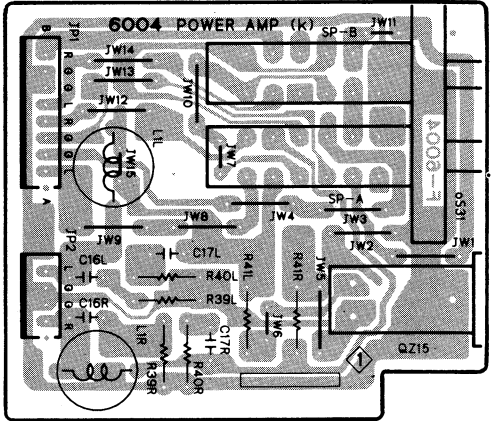
7-1. F-6001 Main Board Component Side



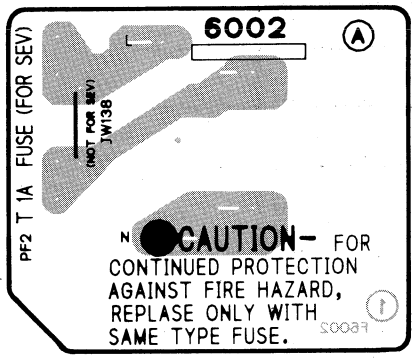
7-2. F-6003 Tuner Control and Display Board
Component Side



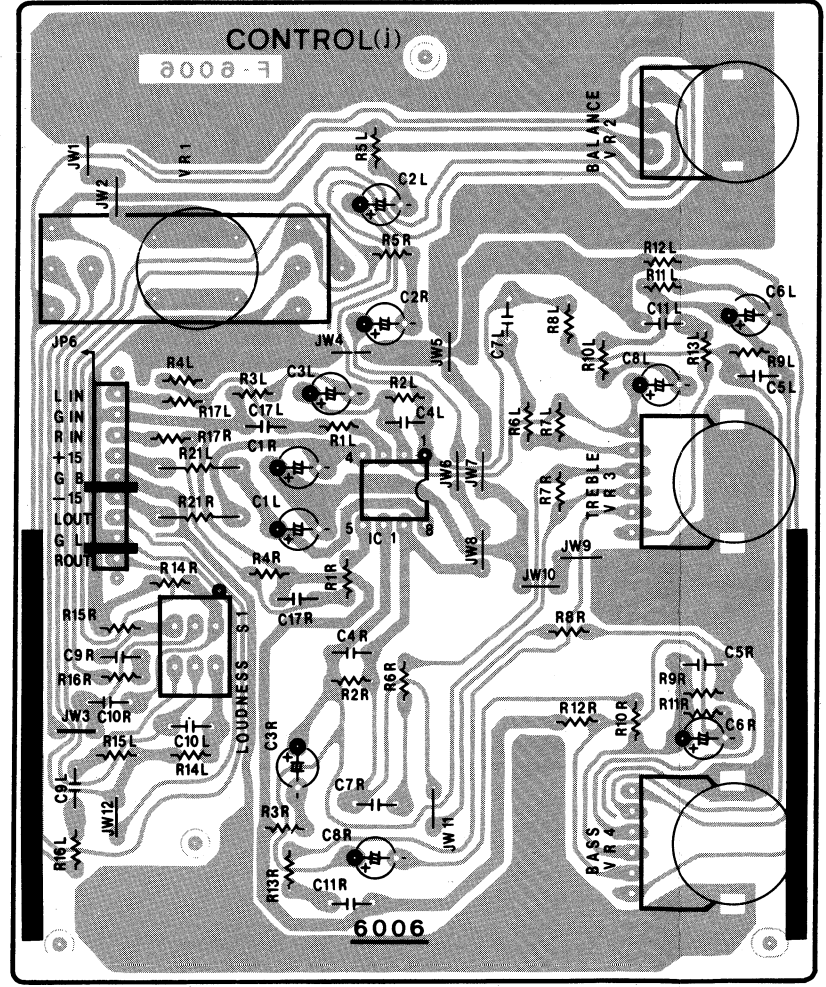
7-3. F-6004 SPEAKERS Switch Board
Component Side



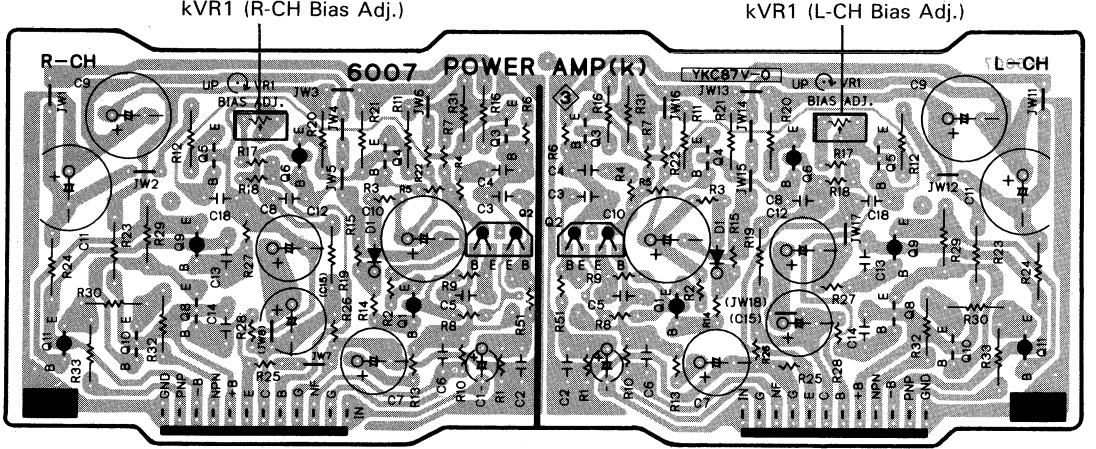
7-4. F-6002 SPEAKER IMPEDANCE
Switch Board
Component Side



7-5. F-6006 Master and Tone Control Volume Board
Component Side

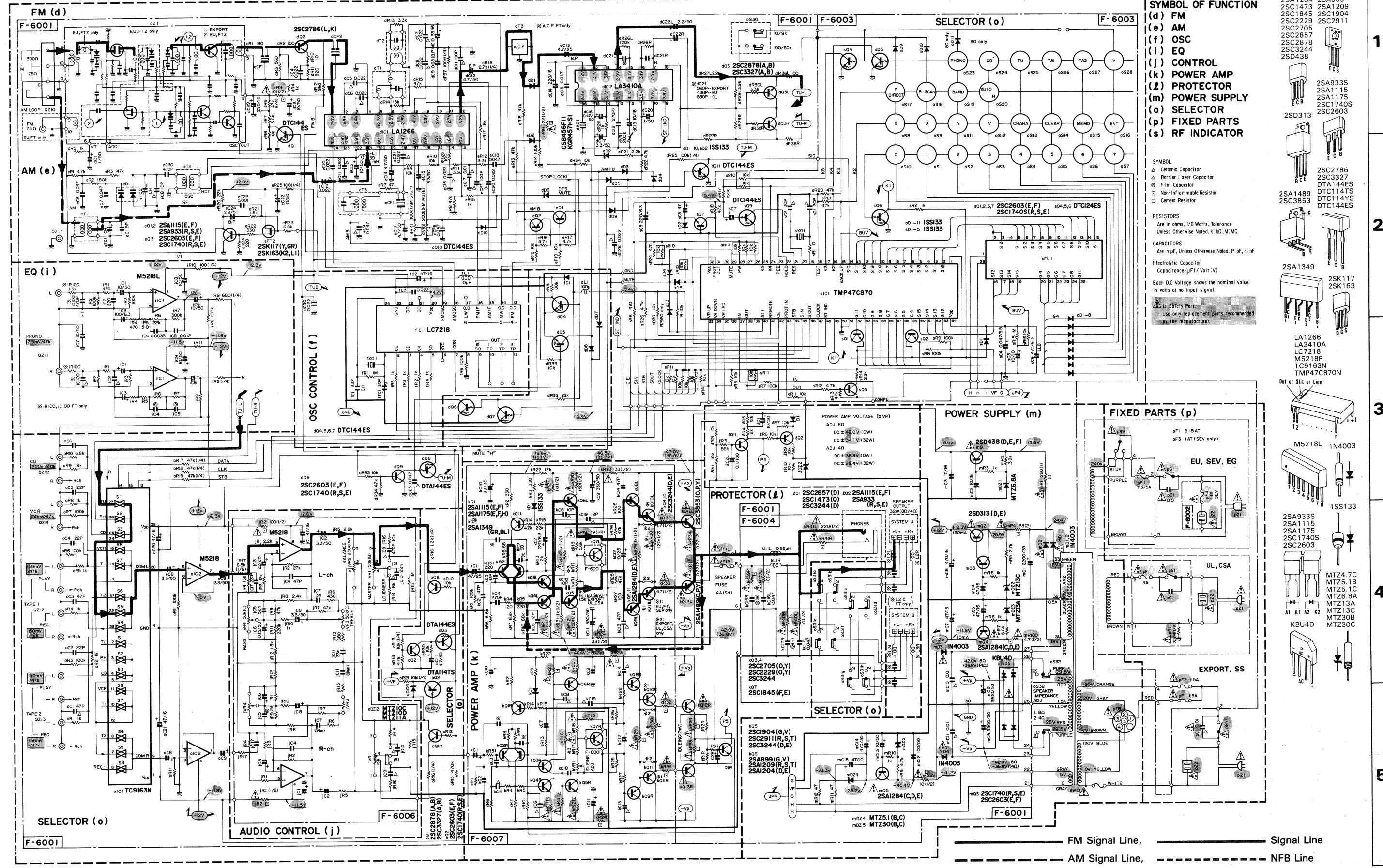


7-6. F-6007 Power Amp. Board
Component Side



8. SCHEMATIC DIAGRAM

• Design and specifications subject to change without notice for improvement.
 • 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.



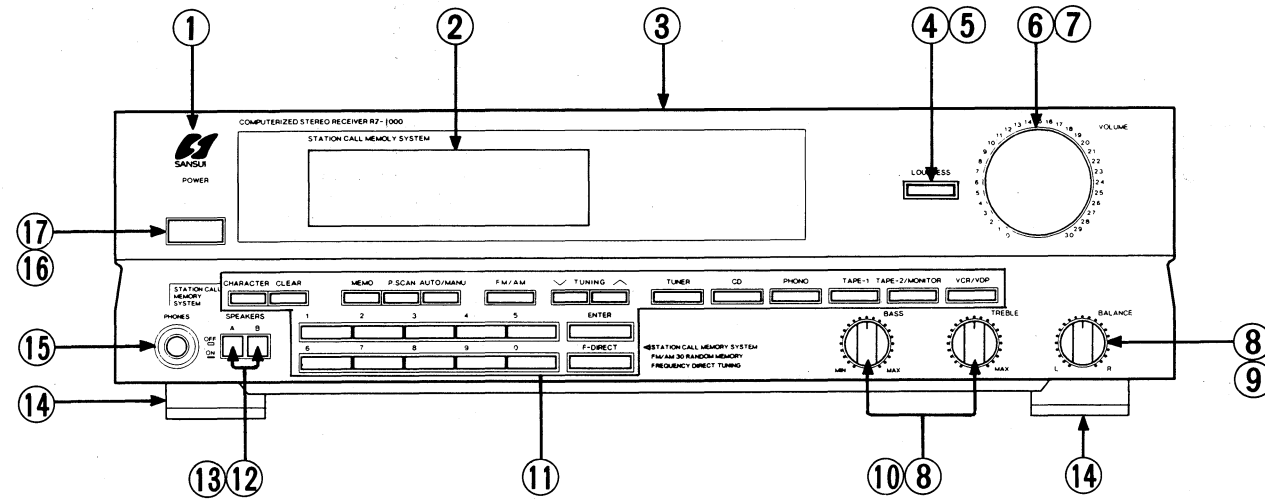
- SYMBOL OF FUNCTION**
- (d) FM
 - (e) AM
 - (f) OSC
 - (i) EQ
 - (j) CONTROL
 - (k) POWER AMP
 - (l) PROTECTOR
 - (m) POWER SUPPLY
 - (o) SELECTOR
 - (p) FIXED PARTS
 - (s) RF INDICATOR
- RESISTORS**
 Are in ohms, 1/6 Watts, Tolerance Unless Otherwise Noted: k, M, MQ
- CAPACITORS**
 Are in μ F, Unless Otherwise Noted. P: pF, n: nF
- Electrolytic Capacitor
 Capacitance (μ F) / Volt (V)
- Each D.C. Voltage shows the nominal value in volts at no input signal.
- Safety Part**
 Use only replacement parts recommended by the manufacturer.

- 2SA1284
- 2SC1473
- 2SC1845
- 2SC2229
- 2SC2705
- 2SC2857
- 2SC2878
- 2SC3244
- 2SD438
- 2SA933S
- 2SA1115
- 2SA1175
- 2SC1740S
- 2SC2603
- 2SD313
- 2SC2786
- 2SC3327
- DTA144ES
- 2SA1489
- 2SC3853
- DTA144TS
- DTC114YS
- DTA144ES
- 2SA1349
- 2SK117
- 2SK163
- LA1266
- LA3410A
- LC7218
- M5218P
- TC9163N
- TMP47C870N
- IN4003
- 1N4003
- ISS133
- 2SA933S
- 2SA1115
- 2SA1175
- 2SC1740S
- 2SC2603
- MT24.7C
- MT25.1B
- MT25.1C
- MT26.8A
- MT213A
- MT213C
- MT230B
- MT230C
- KBU4D

FM Signal Line, AM Signal Line, NFB Line, Signal Line

9. OTHER PARTS

•Front View



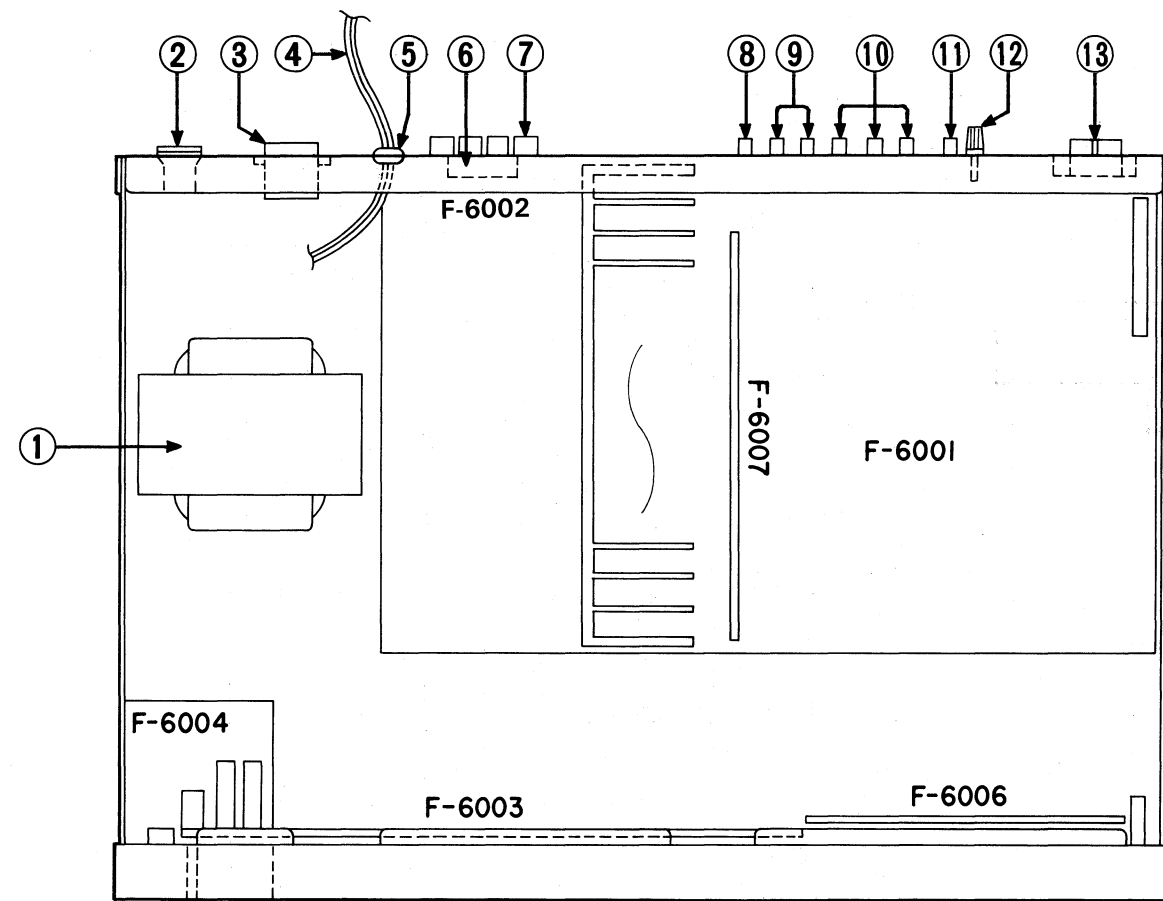
Parts List <Front View>

Parts No.	Stock No.	Description
1	37502601	Front Panel Ass'y
2	49317100	CP-3023 FL. Display Tube
3	84578500	Bonnet
4	84580300	Push Knob, LOUDNESS
5	83046700	Push SW., LOUDNESS
6	84586900	Knob, MASTER
7	49322100	150kΩ (B)x2V.R., MASTER
8	84580100	Knob, BALANCE·TREBLE·BASS
9	83013000	250kΩ V.R., BALANCE
10	83012800	50kΩ (C)x2 V.R., TREBLE·BASS
11	83003000	Push SW., Operation
12	84580000	Push Knob, SPEAKERS
13	83045900	Push SW., SPEAKERS
14	84526700	Leg
15	46579600	Jack, PHONES
16	84579700	Knob, POWER
△ 17	83049200	Push SW., POWER

Parts List <Top View>

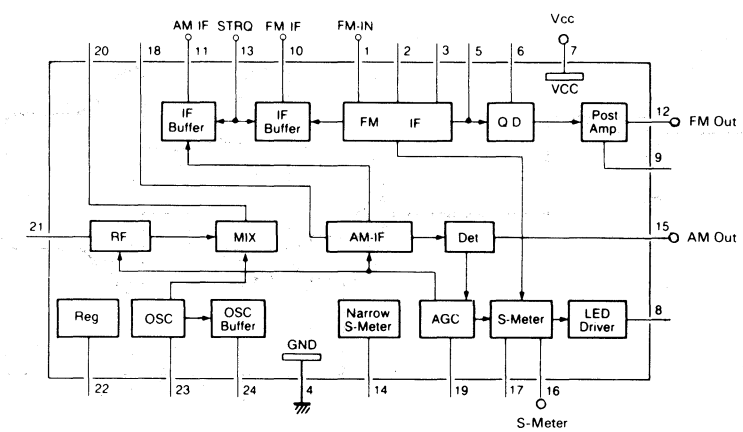
Parts No.	Stock No.	Description
△ 1	83046509	Power Transformer (XX·SS)
△ 2	83046502	Power Transformer (UL·CSA)
△ 3	83046505	Power Transformer (EU·EG·ES)
△ 4	83004100	AC Outlet (XX·SS)
△ 5	83002200	AC Outlet (UL·CSA)
△ 6	83002500	AC Outlet (EU·EG·ES)
△ 7	48175200	Voltage Selector (XX)
△ 8	07204700	Slide SW., Voltage Selector (EU·EG·ES)
△ 9	83000400	Power Supply Cord (XX)
△ 10	83034900	Power Supply Cord (SS)
△ 11	83000500	Power Supply Cord (UL·CSA)
△ 12	83000600	Power Supply Cord (EU·EG·ES)
△ 13	39106000	Strain Relief (XX)
△ 14	48913500	Strain Relief (SS·EU·EG·ES)
△ 15	39104900	Strain Relief (UL·CSA)
△ 16	49338500	Slide SW., SPEAKER IMPEDANCE SELECTOR
△ 17	46947500	8P Sepaker Terminal
△ 18	48987400	2P Pin Jack Terminal, VCR/VDP
△ 19	48528200	4P Pin Jack Terminal, TAPE-2
△ 20	48528300	6P Pin Jack Terminal, TAPE-1·CD
△ 21	48528400	2P Pin Jack Terminal, PHONO
△ 22	84528300	Ground Terminal
△ 23	49299700	4P Antenna Terminal (XX·UL·CSA·SS)
△ 24	49320400	2P Antenna Terminal (EU·ES·EG)

•Top View

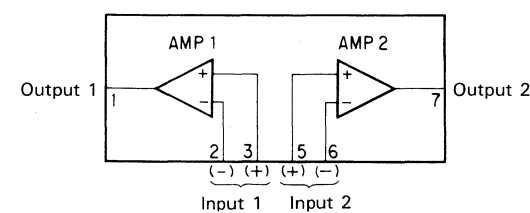


10. INTERIOR BLOCK DIAGRAM & TERMINAL FUNCTION OF IC

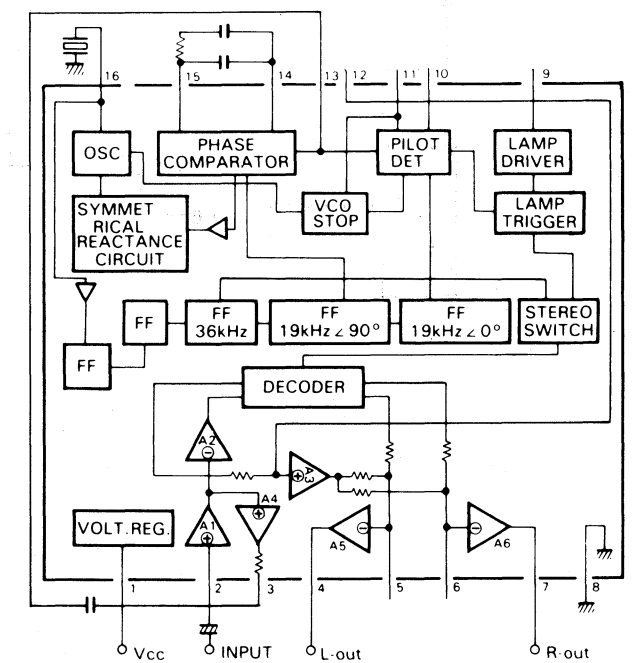
•LA 1266 (FM-IF, AM-RF·MIX·IF)



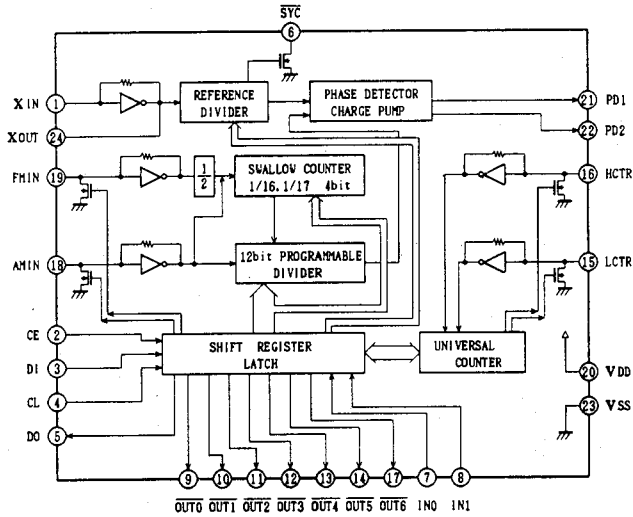
•M5218L, M5218P (Operational Amp.)



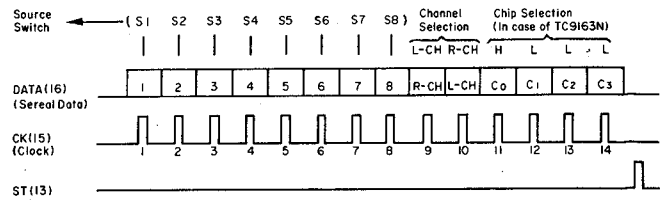
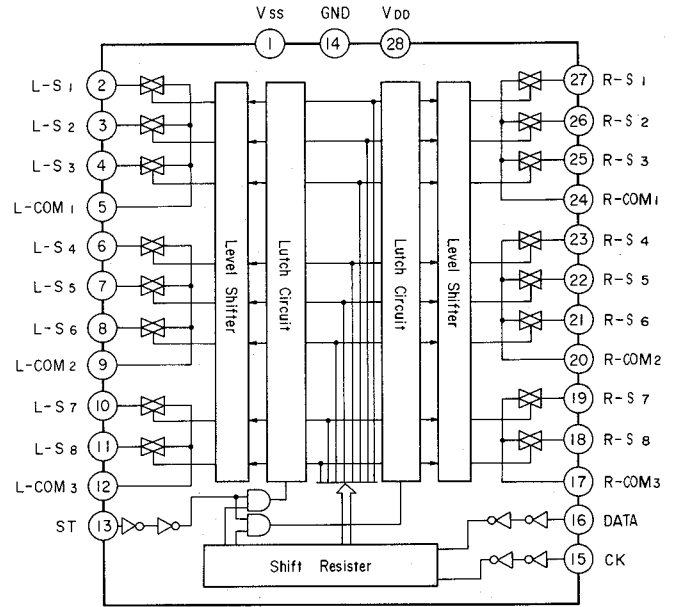
•LA3410 (MPX)



•LC7218 (PLL Synthesizer)



•TC9163N (Analog Switch)



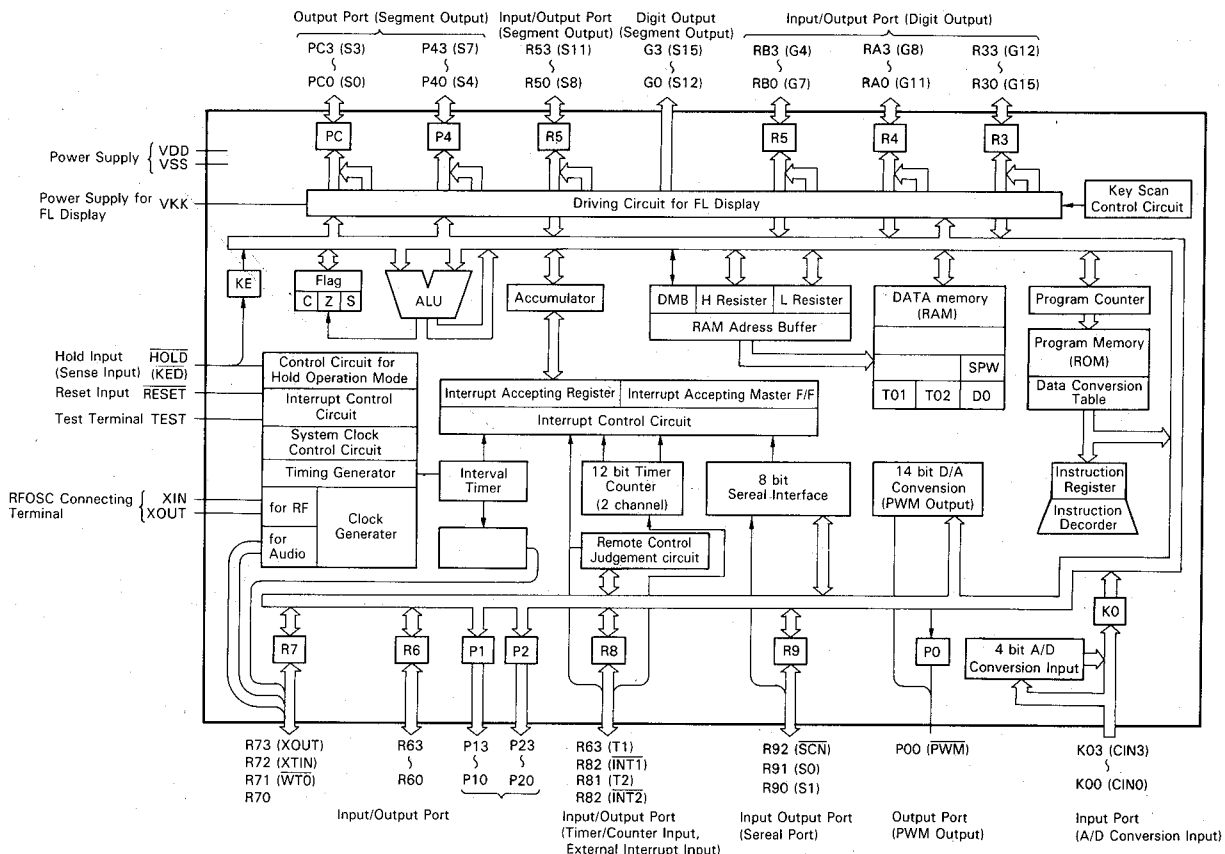
◆ ST Terminal Function

- * When data bit 1 is High level, source switch 1 is ON.
In the same manner, when data bit 2 (3~8) is High level, source switch 2 (3~8) is ON.
- * Shift register receives 14 bit sereal datas, and their datas are sent to the lutch circuit by the ST signal.

◆ Terminal Function <LC7218>

Pin No.	Pin Name	I/O	Description
1, 24	XIN, XOUT	—	Terminals for connecting a oscillator of 7.2 MHz.
3	SI	I	Serial interfaces for SI (Serial data input),
4	CK	I	SO (Serial data output) and CK (Serial clock input) from/to the TMP47C870.
5	SO	O	
7	fCON	I	Terminal to input a signal for performing the automatic search stop. When this pin is HIGH, the automatic search stop.
8	LW ENA	I	MW/LW select signal input terminal. In LOW level, MW mode. In HIGH level, MW/LW mode.
9	TUNING	O	Manual/Auto tuning select signal output. In LOW level, manual tuning operation. In HIGH level, automatic tuning operation.
13	FM	O	FM band switching signal output pin. In LOW level, FM band mode. In HIGH level, others mode.
14	AM	O	AM band switching signal output pin. In LOW level, AM band mode. In HIGH level, others mode.
15	AMIF	I	Terminal to input AM IF signal.
16	FMIF	I	Terminal to input FM IF signal.
18	AMOSC	I	Terminal to input a signal from AM local OSC.
19	FM OSC	I	Terminal to input a signal from FM local OSC.
20	VDD	—	Positive supply voltage.
22	DO	O	Terminal to output signal from a phase comparator.
23	GND	—	Ground

•TMP47C870N (Tuner/Audio System Control)



Pin No.	Pin Name	I/O	Description	
2 ~ 13	S0 ~ S11	O	Terminals for outputting segment signals to FL display.	
60 ~ 63	S15 ~ S12	O		
52 ~ 59	G11 ~ G4	O	Terminals for outputting grid signals to FL display and key matrix return timing signals.	
14	SIG	I	Terminal for inputting analog signal for signal indicator of FL display.	
			Input voltage	Signal indicator of FL display
			more than 0.62V	Indicator (1) lighting
			more than 0.94V	Indicator (1 and 2) lighting
			more than 1.56V	Indicator (1 ~ 3) lighting
			more than 2.19V	Indicator (1 ~ 4) lighting
more than 2.81V	Indicator (1 ~ 5) lighting			
more than 3.12V	All indicator lighting			

Pin No.	Pin Name	I/O	Description
15	BACK UP	I	Terminal to input buck-up signal.
16, 17	K2, K3 K4, K5, K1	I	Terminals for inputting a key return signal from externally connected key matrix.
24, 25			
49			
29	MUTE	O	Terminals to output muting signal. These terminals are kept in "L" level in ordinary state, and in "H" level in muting.
40	ATT	O	
31	PROT OUT	O	Terminal to output protecting signal. This terminal is kept in "L" level in ordinary state, and in "H" level in protecting.
43	PROT IN	O	Terminal to input protecting signal. This terminal is inputted in "L" level in ordinary state, and in "H" level in protecting.
44	STB	O	Serial interfaces for STB (strobe pulse output), SO (serial data output), SI (serial data input) and CK (serial clock output).
45	SI	I	
46	SO	O	
47	CK	O	
48	ST	I	Terminal to input a signal for FM STEREO indicator of FL display. When this terminal is LOW, STEREO indicator of FL display is lighted.
50	FL DUTY1	I	Terminals are used to determine a brightness for FL display.
51	FL DUTY2		



SANSUI ELECTRIC CO., LTD.:
 SANSUI ELECTRONICS CORPORATION:
 SANSUI ELECTRONICS G.M.B.H.:
 山水電気株式会社

14-1, Izumi 2-chome, Suginami-ku Tokyo 168 Japan
 PHONE: (03) 324-8891/TELEX: 232-2076 (International Division)
 1250 Valley Brook Ave. Lyndhurst, N.J. 07071 U.S.A.
 17150 South Margay Ave. Carson, California 90746 U.S.A.
 3036 Koapaka Street. Honolulu, Hawaii 96819 U.S.A.
 Paul Ehrlich Strasse 8, 6074 Rödermark 2, West Germany

東京都杉並区和泉2-14-1(〒168)