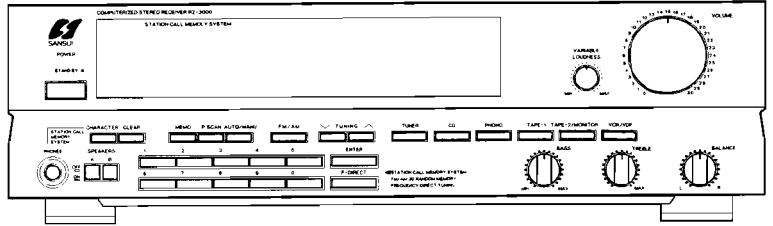




SERVICE MANUAL

RZ-3000

COMPUTERIZED
STEREO RECEIVER



CAUTION

1. 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.
2. 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.

NOTE

The symbols, UL, CSA, SEV, EU, SS, EG & 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.
SEV..... Manufactured for Swiss market.
EU..... Manufactured for European market.

SS..... Manufactured for Saudi Arabia market.
EG..... Manufactured for F.R. West Germany market.
XX <EXPORT> Standard Version
NON MARK..... Common Parts.

•SPECIFICATIONS

Audio section

Power output

Min. RMS, both channels driven, from 20 to 20,000 Hz with no more than 0.09% total harmonic distortion

50 watts per channel into 8 ohms

DIN

65 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..... 280 watts 320 VA Rated
410 watts Maximum

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

125 mm (4-15/16") H

335 mm (13-1/4") D

Weight..... 9.5 kg (20.9 lbs) net

10.9 kg (24.0 lbs) packed

Remote controller: RS-1070

Control system..... Infra-red ray pulse system

Power requirements..... DC 3V

Dimensions..... 60 mm (2-3/8") W

17 mm (11/16") H

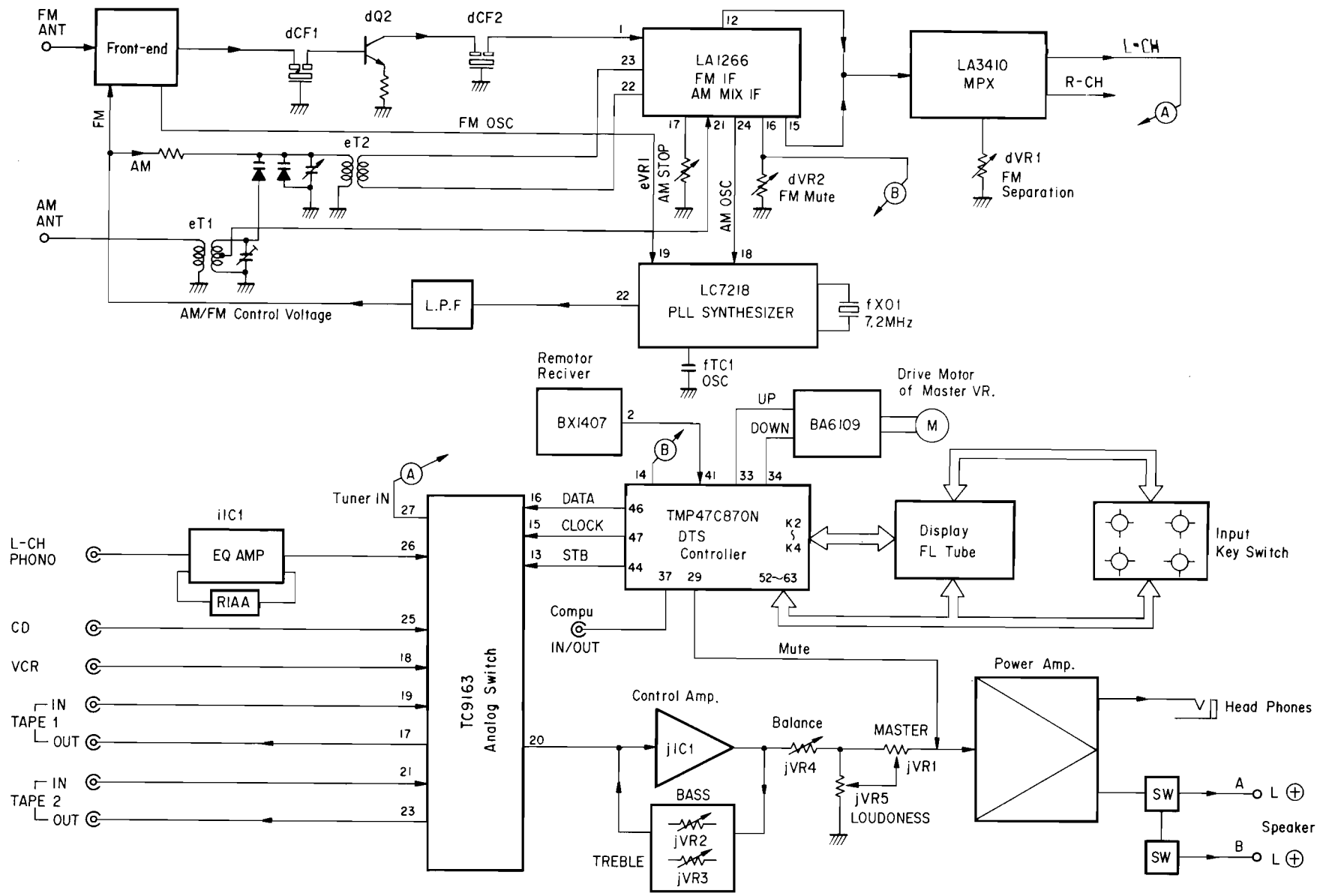
121 mm (4-13/16") D

Weight..... 65 g (0.1 lbs)

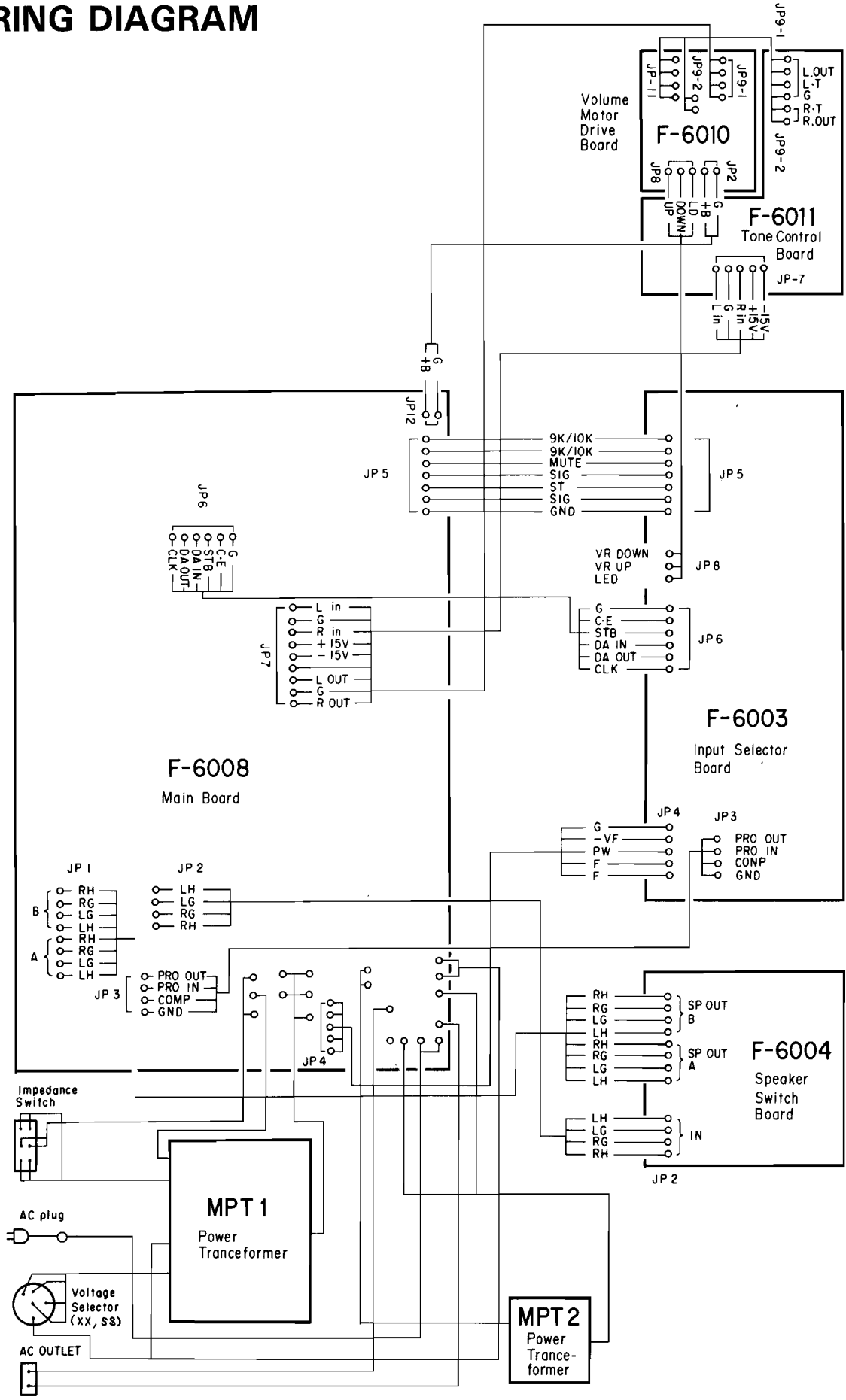
including dry batteries

- * 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.

1. BLOCK DIAGRAM



2. WIRING DIAGRAM



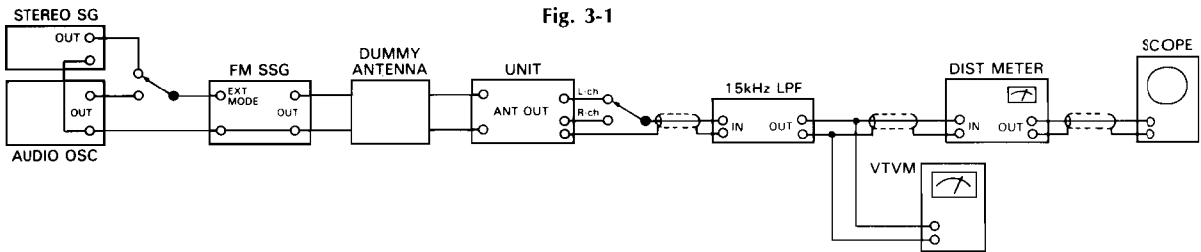
3. ADJUSTMENT

3-1. Bias Adjustment of Power Amp. (See Parts Location F-6007 on page 9 and F-6008 on page 8)

- 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) > DC Volt Meter	kVR1, L-CH (F-6007)	DC8.5 ~ 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) > DC Volt Meter	kVR1, R-CH (F-6007)	DC8.5 ~ 9.5mV	

3-2. FM Adjustment (See Parts Location F-6008 on page 8)



1) FM IF & Reference Frequency Adjustment

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

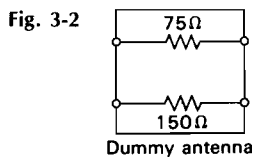
STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	Reference Frequency Adj.	No Input (Tune to 98MHz)	—	Between Point(E) (Pin 1 of Front-end) & Earth Freq. counter	fTC1 (F-6008)	108.7MHz ± 100Hz	
2.	Discriminator Coil Adj.	1	98MHz ANT. Input 65dBf (59.8dB), 1kHz (100% MOD.), FM SSG	ANT Terminal 300Ω	Between Point(F) & Point(G) (Across dR17, F-6008) DC Volt Meter	DC 0V ± 30mV	•Repeat procedures as stated in subject 1 & 2.
		2	Same as above	Same as above	REC OUT L or R-CH	dT2 (F-6008)	

◆ Technical Hint for FM Adjustment

- There are two kind in indication of FM SSG output attenuator.
- Attenuator with marking of 75Ω open open indication type.
 - 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 SSG attenuator indication (dB), available power ratio (dBf) and antenna terminal voltage (dB/μV) in each indication type.

	FM SSG 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



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 SSC, 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-6008)	Max. Separation	Confirm R→L-CH
2.	Muting Level Adj.	98MHz ANT Input 20dBf (14.8dB), FM SSC, Pilot 19kHz (9% MOD.), L or R MODE 1kHz+Pilot (100% MOD.), STEREO SG.	Same as above	Stereo indicator OUTPUT L-CH or R-CH, VTVM & SCOPE	dVR2 (F-6008)	Stereo indicator turns On or Output Signal comes out	

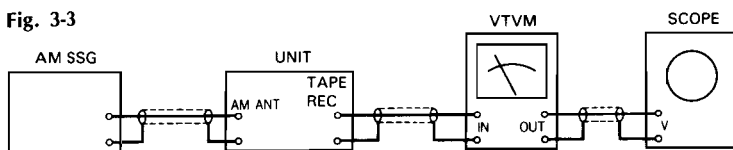
3-3. AM Adjustment (See Parts Location F-6008 on page 8)


1) AM IF Adjustment & Tuning Adjustment

Note: 1. SELECTOR AM

2. Connect

Fig. 3-3



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-6008)	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-6008)	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-6008)	8V (9kHz step) 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-6008)	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-6008)	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 dIC1) DC Volt Meter	eVR1	L-Level (0V)	

***NOTE**

Notice when the frequency-step of AM board casting is set to 9kHz or 10kHz by the AM channel (9kHz/10kHz) selection switch. Set the AM channel selection switch (oS30) on the F-6008 board in the following sequence.

1. Pull out the power supply cord.
2. Remove the bonnet.
3. Short the Pin 64 of sIC1 (TMP47C870N-4612Z) on the F-6003 board and ground for more than thirty seconds.
4. Set the AM channel selection switch (oS30) on the F-6008 board to proper position.

4. PARTS LIST OF BOARD

Note

- 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
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

4-1. F-6008 Main Board

<Stock No. 01117605 = EU, EG, SEV>
<Stock No. 01117601 = XX, SS, UL, CSA>

Parts No.	Stock No.	Description
	49316500	FM Frontend Pack
•Transistor		
dQ1	46834300	DTC144ES
dQ2	46393201	2SC2786
dQ3	46540801	2SC2878
	or 46604301	2SC3327
dQ4 ~ 7	46834300	DTC144ES
dQ8	46834200	DTA144ES
dQ9	46367101	2SC2603
	or 48058801	2SC1740S
dQ11	46834300	DTC144ES
•IC		
dIC1	48715100	LA1266
dIC2	48491000	LA3410A
dXO1	83000200	Ceramic RESONATOR
•Diode		
dD1 ~ 9	46464100	1SS133
dD10	46078000	1SS133
△dR9	46402000	10Ω 1/2W N.I.R.
△dR19	46402400	22Ω 1/2W N.I.R.
dC4 ~ 8	48426900	22000pF 25V C.C.
dC9	48103300	0.68μF 50V E.B.
dC11	48662600	100pF 50V C.C.
dC12, 13	48102400	4.7μF 25V E.B.
dC18	48663100	270pF 50V C.C.
dC27	48426900	22000pF 25V C.C.
dCF1, dCF2	83000000	Ceramic Filter SFE10.7MS2 (XX·SS·UL·CSA)
dCF1, dCF2	48064800	Ceramic Filter SFE10.7MS2 (EU·EG·SEV)

Parts No.	Stock No.	Description
dL1	83043200	Inductor 100μH
dT1	83005900	FM IF Coil
dT2	83006000	FM IF Coil
dT3	46202400	Filter (EG)
dVR1	83007600	200kΩ S.V.R., SEPALATION
dVR2	83007600	200kΩ S.V.R., FM MUTE
•Transistor		
eQ1, 2	46367001	2SA1115
	or 48058601	2SA933S
eQ3	46367101	2SC2603
	or 48058801	2SC1740S
•FET		
eFT2	46643501	2SK163-K2
	or 46643502	2SK163-L1
	or 46643601	2SK117-Y
	or 46643602	2SK117-GR
eD1	46146300	Variable Capacitance, Diode KV1236Z2
•Diode		
eD2, 3	46464100	1SS133
eC10 ~ 12	48426900	22000pF 25V C.C.
eC16	48426900	22000pF 25V C.C.
eC17	48666200	0.01μF 50V C.C.
eC20, 21	48426900	22000pF 25V C.C.
eC23	48663800	1000pF 50V C.C.
eC24	48103500	2.2μF 50V E.B.
eTC1, 2	46095700	Trimmer Capacitor 30pF
	or 46162900	Trimmer Capacitor 30pF
eCF1	48865700	Ceramic Filter BFCF_-450
eL1	83020300	Coil 39mH
eT1	48528900	AM ANT Coil
eT2	83005700	AM OSC Coil
eT3	83013400	AM IF Coil
eVR1	83007500	100kΩ S.V.R., AM STOP
•IC		
fIC1	49317500	LC7218
fXO1	83004400	Quartz Element
•Diode		
fD1	46464100	1SS133
fTC1	46095700	Trimmer Capacitor 30pF
	or 46162900	Trimmer Capacitor 30pF
fL1	83042600	Inductor 10μH
•IC		
iIC1	46078900	M5218L
iC2	48663000	220pF 50V C.C.
iC100	46663400	470pF 50V C.C. (EC)
•Transistor		
kQ7	03067401	2SC1845
kQ12	49320301	2SC3854
kQ13	49320201	2SA1490
kR34, 35	46542500	0.22Ω 3W Ce.R.
•Transistor		
IQ1	48863701	2SC2857
	or 48863901	2SC1473
IQ2	46367001	2SA1115
	or 48058601	2SA933S

< F-6008 >

Parts No.	Stock No.	Description
•Diode ID1	46464100	1SS133
•Zener Diode IDZ2	48551900	MTZ4.7CT-77
IF1	83049100	Fuse 5A
•Transistor mQ1	48581701	2SD438
mQ2	03083901	2SD313HP
mQ3	46367101	2SC2603
or 48058801		2SC1740S
mQ4, 5	48064001	2SA1284
mQ10	48581701	2SD438
mQ50	03083901	2SD313HP
mQ51, 52	46367101	2SC2603
or 48058801		2SC1740S
mQ60	48061801	2SC3244
•FET mFT50	46643601 or 46643701 or 46643502	2SK117-YR 2SK246-GR 2SK163-LI
•Diode mD1 ~ 4	83024700	1N4003
mD5	83002100	KBU4D
mD50	83020200	DF04mH
mD51	83024700	1N4003
•Zener Diode mDZ1	48552700	MTZ6.2BT-77
mDZ2, 3	48555200	MTZ13BT-77
or 48555300		MTZ13CT-77
mDZ4	48552100	MTZ5.1BT-77
or 48552200		MTZ5.1CT-77
mDZ5	48558000	MTZ30BT-77
or 48558100		MTZ30CT-77
mDZ6	48556100	MTZ18BT-77
mDZ7	48552700	MTZ6.2BT-77
mDZ50	48555300	MTZ13CT-77
△mR1	46242100	56Ω 1W N.I.R.
mR4	46623700	33Ω 2W N.I.R.
△mR23	46402900	56Ω 1W N.I.R.
△mR50	46402000	10Ω 1/2W N.I.R.
△mR60	46402400	22Ω 1W N.I.R.
△mR100	46401600	4.7Ω 1/2W N.I.R.
△mR101	46402000	10Ω 1/2W N.I.R.
mC8, 9	49338700	5600μF 63V E.C.*
mC10, 11	08680400	0.01μF 500V C.C.
mRL1	48982000	Relay,
•Transistor oQ1	46540801 or 46604301	2SC2878 2SC3327
oQ2	46367101 or 48058801	2SC2603 2SC1740S
oQ3	46834200	DTA144ES
oQ21	48229400	DTA114TS
•IC oIC1	49312200	TC9163N
oIC2	46147700	M5218L
•Diode oD20	83000100	1N414Z
•Zener Diode oDZ21	48554300 or 48554400 or 48229400	MTZ10C MTZ10D DTA114TS

Parts No.	Stock No.	Description
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.,
△pC1	46425800	0.01μF 400V C.C.
△	or 46943200	0.01μF 400V C.C.
△pF1	83021900	Fuse 3A (XX•SS)
△	83022200	Fuse 6A (UL•CSA)
△	83024000	Fuse 3.15A (EU•EG•SEV)
△pF2	83021900	Fuse 3A (XX•SS)
	83012600	Mini Jack, SYSTEM CONTROL
	48528400	2P Terminal, PHONO
	48528300	6P Terminal, TAPE1/CD
	48528200	4P Terminal, TAPE2
	48987400	2P Pin Jack, VCR/VDP
	49299700	Antenna 4P Terminal (XX•SS•UL•CSA)
	49320400	Antenna 2P Terminal (EU•EG•SEV)
	46947500	Speaker 8P Terminal
qZ47	83041800	Spring

4-2. F-6007 Power Amp. Board

< Stock No. 01122401 >

Parts No.	Stock No.	Description
•Transistor kQ1	46367001 or 46392001	2SA1115 2SA1175
kQ2	48577701	2SA1349
kQ3, 4	46728301 or 48113001	2SC2705 2SC2229
kQ5	03064001 or 46128101	2SC1904 2SC2911
kQ6	03007901 or 46128001	2SA899 2SA1209
kQ8	48061801	2SC3244
kQ9	48064001	2SA1284
kQ10	49318301 or 49318501	2SC3421 2SC2590
kQ11	49318201 or 49318401	2SA1358 2SA1110
•Diode kD1	46464100	1SS133
kVR1	48078600	1kΩ S.V.R., BIAS
△kR11	46404400	1kΩ 1/2W N.I.R.
△kR12	46403400	150Ω 1/2W N.I.R.
△kR18	46405300	5.6kΩ 1/2W N.I.R.
△kR19	46402700	39Ω 1/2W N.I.R.
△kR20	46403400	150Ω 1/2W N.I.R.
△kR21	46404400	1kΩ 1/2W N.I.R.
△kR23, 24	46402600	33Ω 1/2W N.I.R.
△kR29	46404400	1kΩ 1/2W N.I.R.
△kR30	46403300	120Ω 1/2W N.I.R.
△kR31	46404400	1kΩ 1/2W N.I.R.
△kR32, 33	46401600	4.7Ω 1/2W N.I.R.

4-3. F-6003 Input Selector Board

<Stock No. 01117201>

Parts No.	Stock No.	Description
nLD1	48841100	SEL3210S
•IC		
oIC3	48525000	Remote Control Receiver BX1407
•Diode		
oD1 ~ 10	46464100	1SS133
oS1	83003000	Push SW., 1
oS2	83003000	Push SW., 2
oS3	83003000	Push SW., 3
oS4	83003000	Push SW., 4
oS5	83003000	Push SW., 5
oS6	83003000	Push SW., 6
oS7	83003000	Push SW., 7
oS8	83003000	Push SW., 8
oS9	83003000	Push SW., 9
oS10	83003000	Push SW., 0
oS11	83003000	Push SW., ^
oS12	83003000	Push SW., v
oS13	83003000	Push SW., CHARA
oS14	83003000	Push SW., CLEAR
oS15	83003000	Push SW., MONO
oS16	83003000	Push SW., ENT
oS17	83003000	Push SW., F DIRECT
oS18	83003000	Push SW., P SCAN
oS19	83003000	Push SW., BAND
oS20	83003000	Push SW., AUTO/H
oS22	83003000	Push SW., POWER
oS23	83003000	Push SW., PHONO
oS24	83003000	Push SW., CD
oS25	83003000	Push SW., TU
oS26	83003000	Push SW., TA
oS27	83003000	Push SW., V1
oS28	83003000	Push SW., V2
•Transistor		
sQ1, 2	46367101	2SC2603
sQ2	48058801	2SC1740S
sQ3	46367101	2SC2603
or 48058801		2SC1740S
sQ4 ~ 6	46719900	DTC124ES
sQ7	46367101	2SC2603
or 48058801		2SC1740S
sQ9	46834300	DTC144ES
•IC		
sIC1	49346400	TMP47C870N-4612Z
sXO1	48241600	Ceramic OSC Element KBR 4.0MS
•Diode		
sD1 ~ 5	46464100	1SS133
sFL1	49317100	FL. Display Tube CP3023
sR10, 11	49346000	10kΩX7 A.R.
sC4	49299400	047μF 5.5V E.C.
sC6	49345000	470μF 6.3V E.C.

4-4. F-6004 Speaker Switch Board

Parts No.	Stock No.	Description
ΔkR39, 40	46402000	10Ω 1/2W N.I.R.
ΔkR41	46242800	220Ω 1W N.I.R.
kL1	83020100	Inductor
oS31	83045900	Push SW., SPEAKERS
	46579600	Jack, PHONE

4-5. F-6009 Voltage Selector Board (SEV only)

Parts No.	Stock No.	Description
pF3	83023500	Slide SW., Voltage Selector

4-6. F-6010 Volume Motor Drive Board

Parts No.	Stock No.	Description
•IC		
jIC2	07233100	BA6109
•Zener Diode		
jDZ1	48552200	MTZ5.1CT-77
jC15	48666200	0.01μF 50V C.C.
jVR1	48977500	R V.R., 150kΩB Master VR with Motor

4-7. F-6011 Tone Control Board

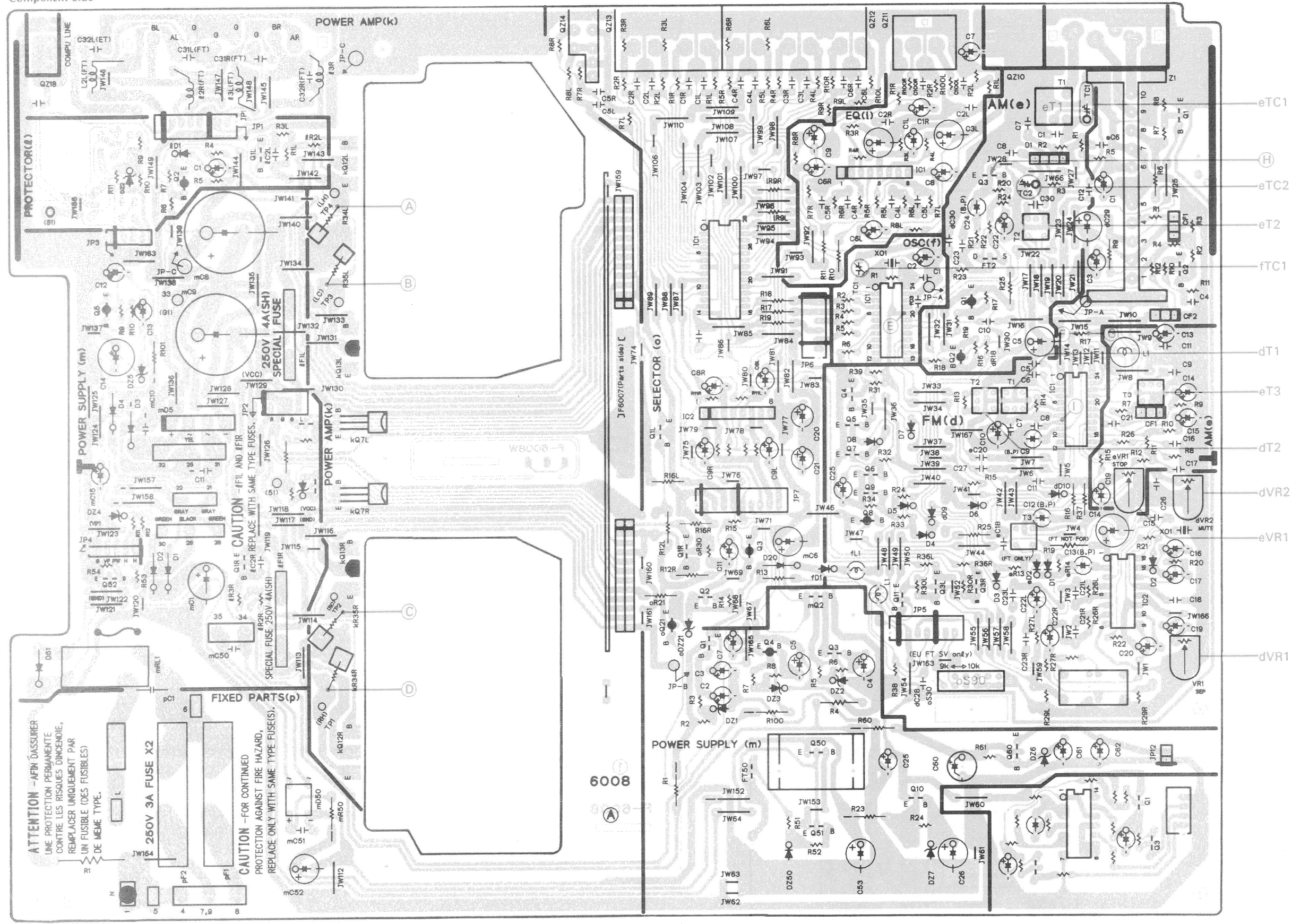
Parts No.	Stock No.	Description
•IC		
jIC1	46673800	M5218P
jC2	48660200	47pF 50V C.C.
jC3	48102000	10μF 16V E.B.
jC5	48102900	0.15μF 50V E.B.
jC9	48663700	820pF 50V C.C.
jC10	48665900	5600pF 50V C.C.
jVR2	83012800	50kΩ (C) V.R., BASS
jVR3	83012800	50kΩ (C) V.R., TREBLE
jVR4	83013000	250kΩ V.R., BALANCE
jVR5	83046000	150kΩ (B) V.R., LOUDNESS

4-8. F-6012 VOLUME LED Board

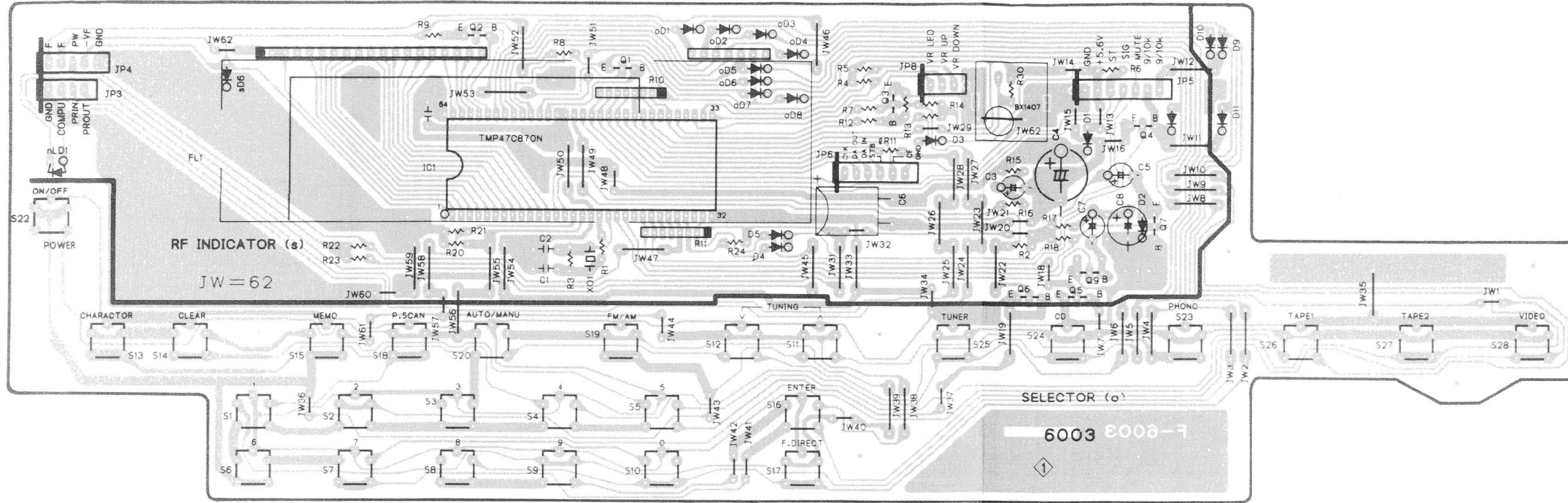
Parts No.	Stock No.	Description
•LED		
nLD2	48126300	SEL2210S

5. PARTS LOCATION ON BOARD

5-1. F-6008 Main Board Component Side



5-2. F-6003 Input Selector Board
Component Side



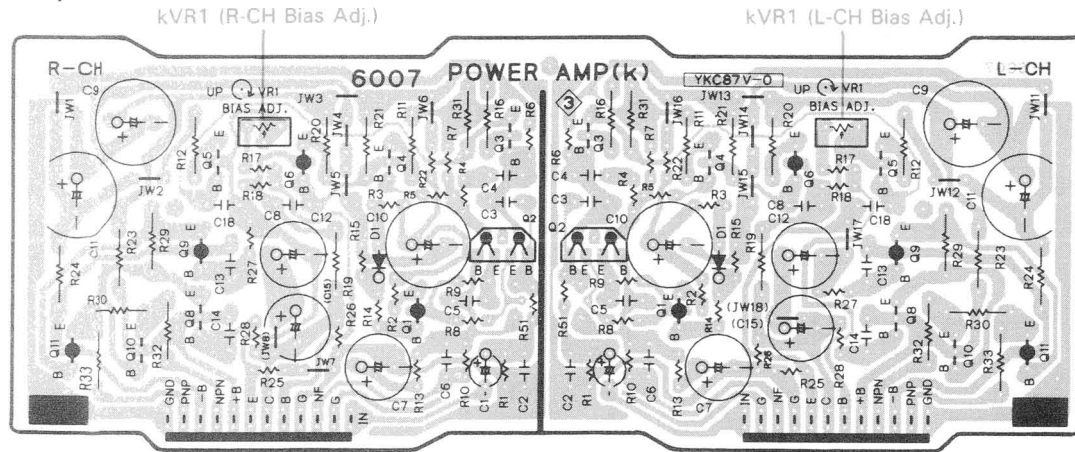
5-7. F-6009 Voltage Selector Board
Component Side



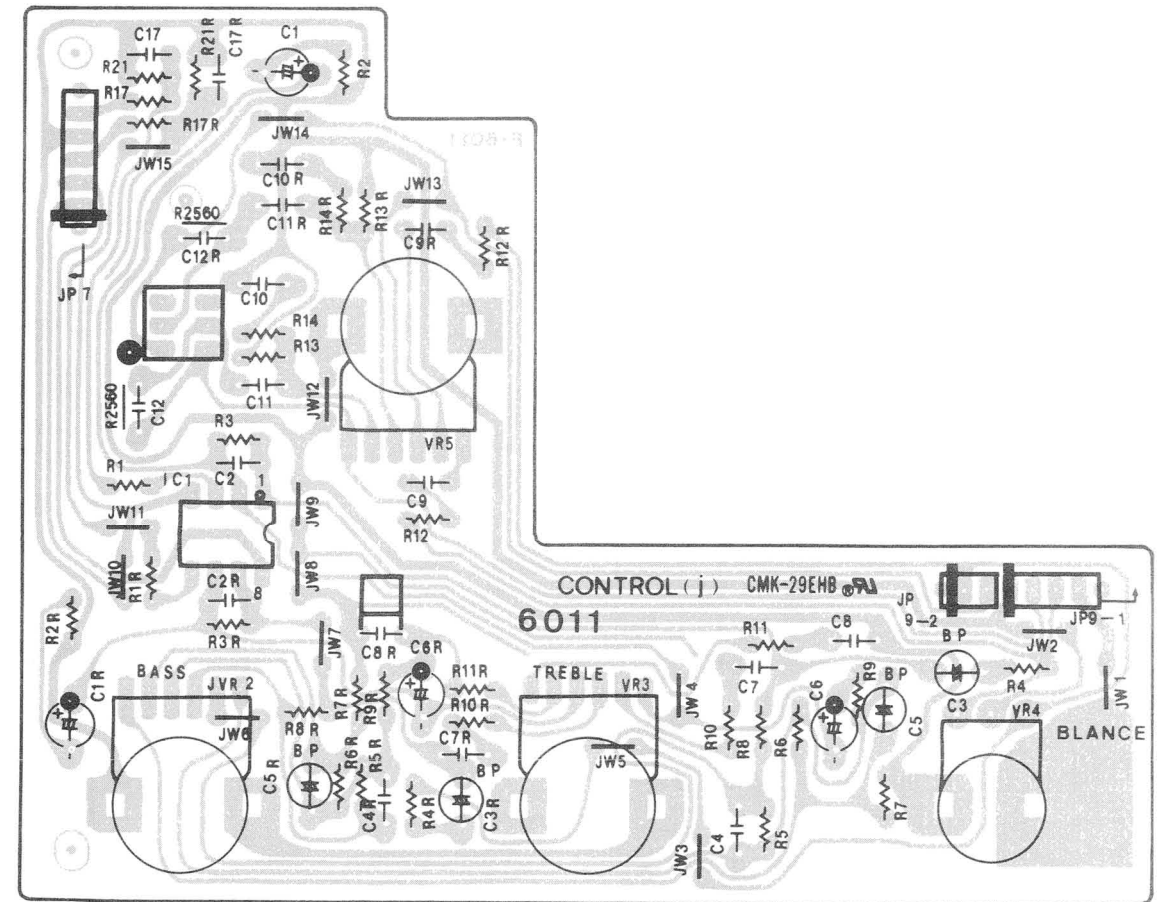
5-8. F-6012 VOLUME LED Board
Component Side



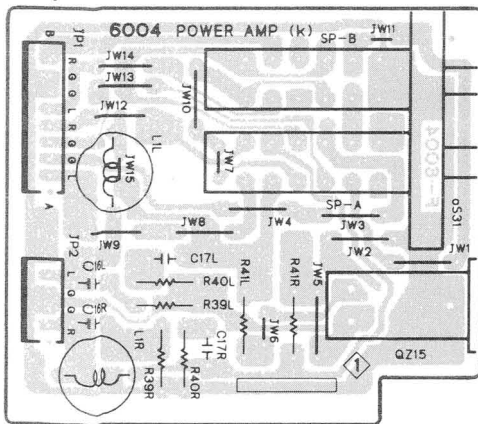
5-3. F-6007 Amp. Board
Component Side



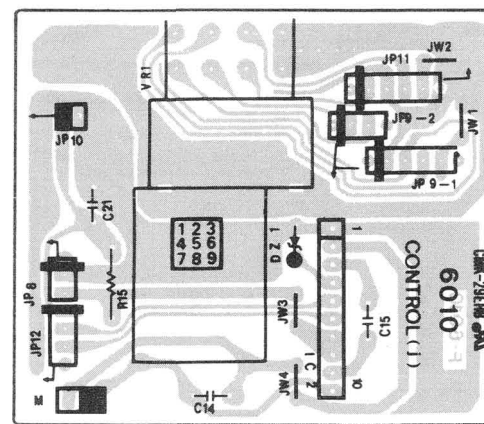
5-6. F-6011 Tone Control Board
Component Side



5-4. F-6004 Speaker Switch Board
Component Side

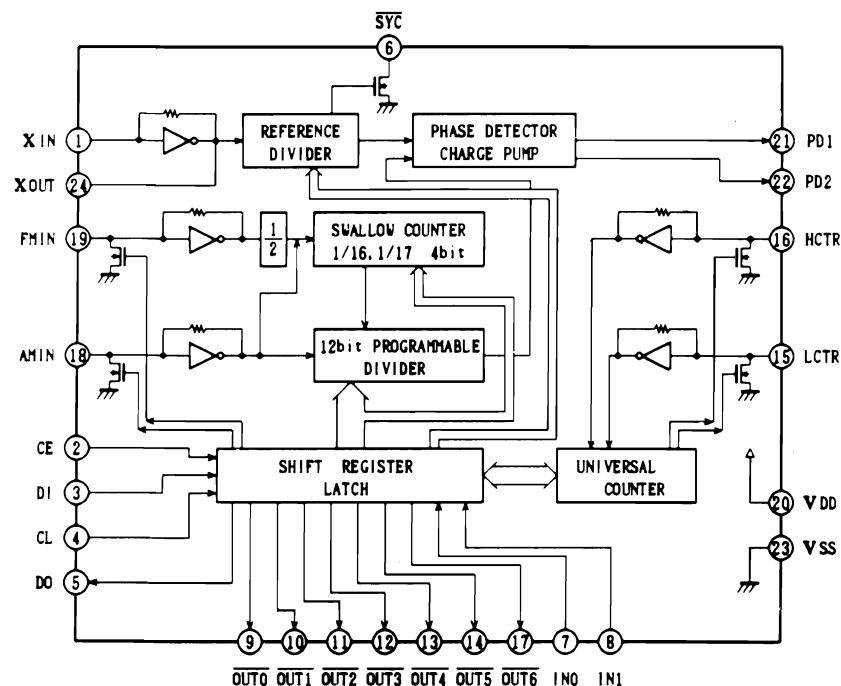


5-5. F-6010 Volume Motor Drive Board
Component Side



6. INTERIOR BLOCK DIAGRAM & TERMINAL FUNCTION OF IC

•LC7218 (PLL SYNTHESIZER)

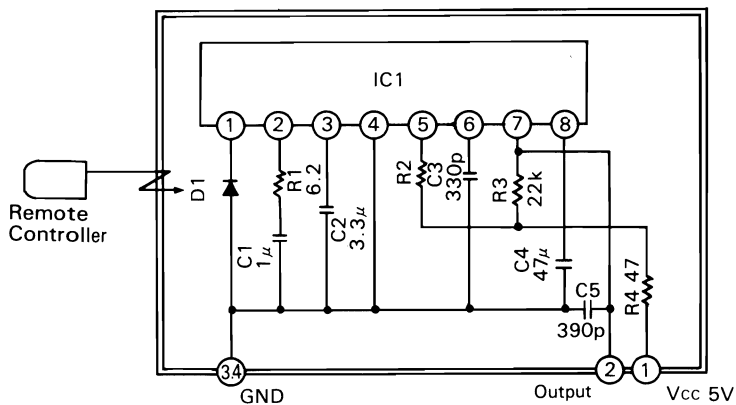


◆ Terminal Function

PIN NO.	FUNCTION	L level	H level
7	SOTP	SCAN	STOP
8	LW ENABLE	MW ONLY	LW/MW
9	TUNING	MANUAL	AUTO
10	TAPE 2	SOURCE	MONITOR
11	VCR	OTHERS	VCR
12	GEO	OFF	ON
13	FM	FM	OTHERS
14	MW	MW	OTHERS

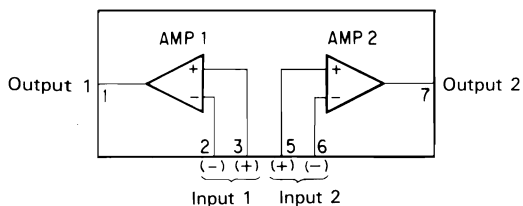
XIN, XOUT : X'tal OSC (7.2 MHz)
 FMIN, AMIN : OSC INPUT
 CE, CL, D1, D0 : Serial Data Input
 OUT0~OUT6 : Output Port
 IN0, IN1 : Input Port
 HCTR, LCTR : Counter Input
 PD1, PD2 : Charge Pump Output
 SYC : Clock for Controller (400 kHz)

•BX-1407 (Remote Control Receiver)

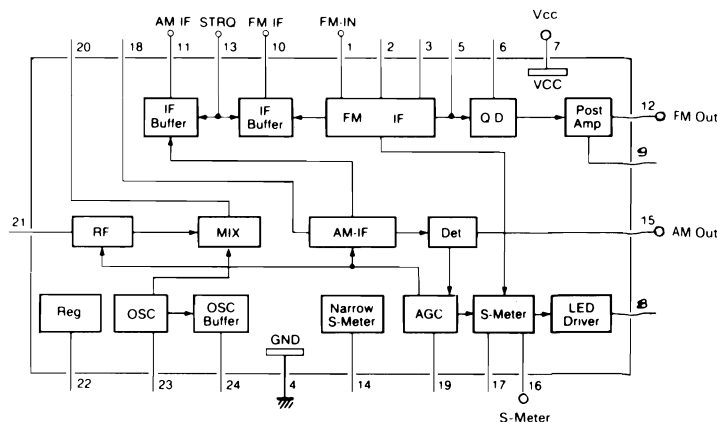


IC1: CX20106A Chip
 D1: PIN Photo Diode
 C1,C2,C4: E.C. 5%
 C3,C3: C.C.
 R2: ± 1% (for Adjust)

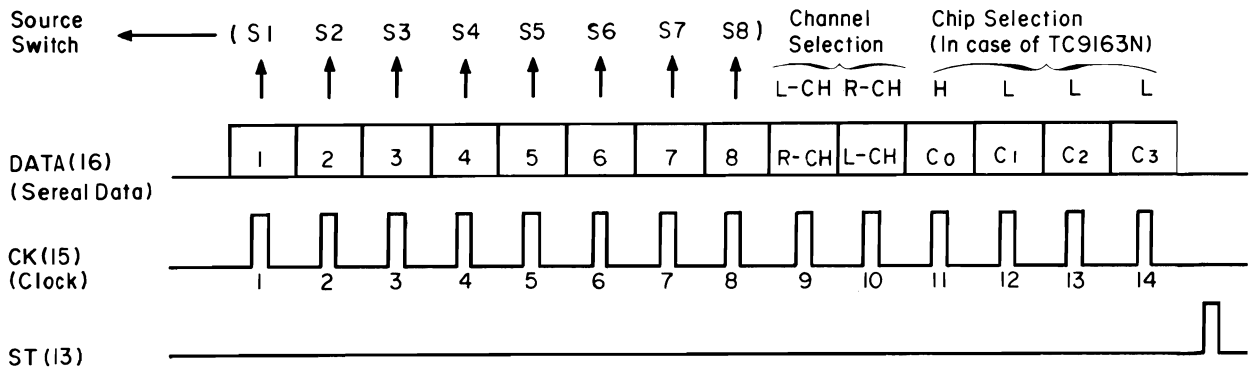
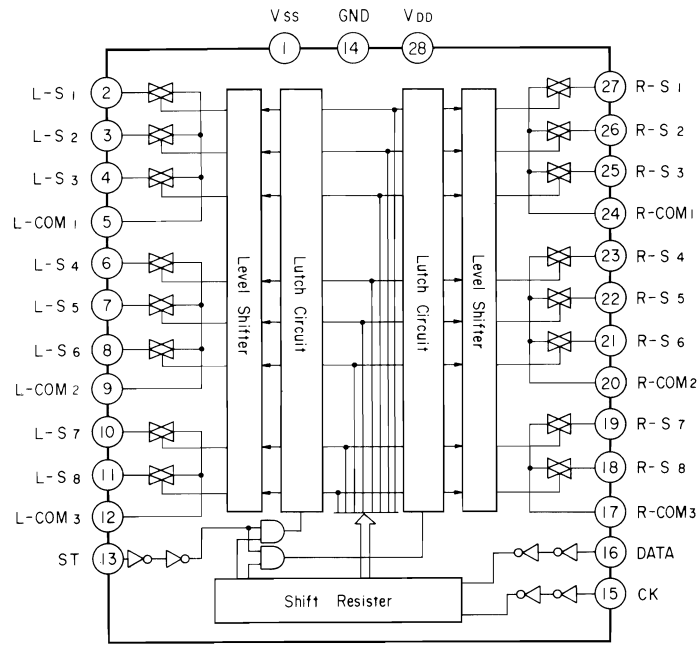
•M5218L (Op Amp.)



•LA1266 (FM-IF, AM-RF•MIX•IF)



•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 serial datas, and their datas are sent to the latch circuit by the ST signal.

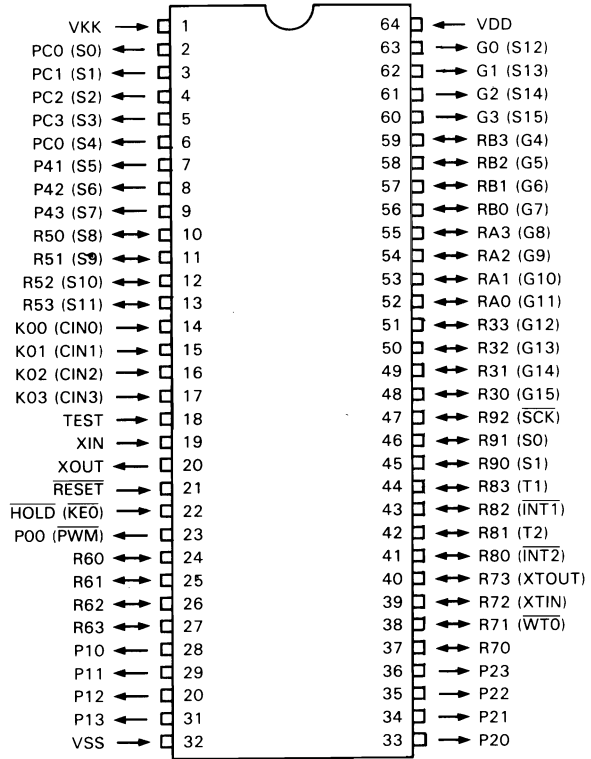
•TMP47C870N (DTS/Audio Controller)

◆ Terminal Function

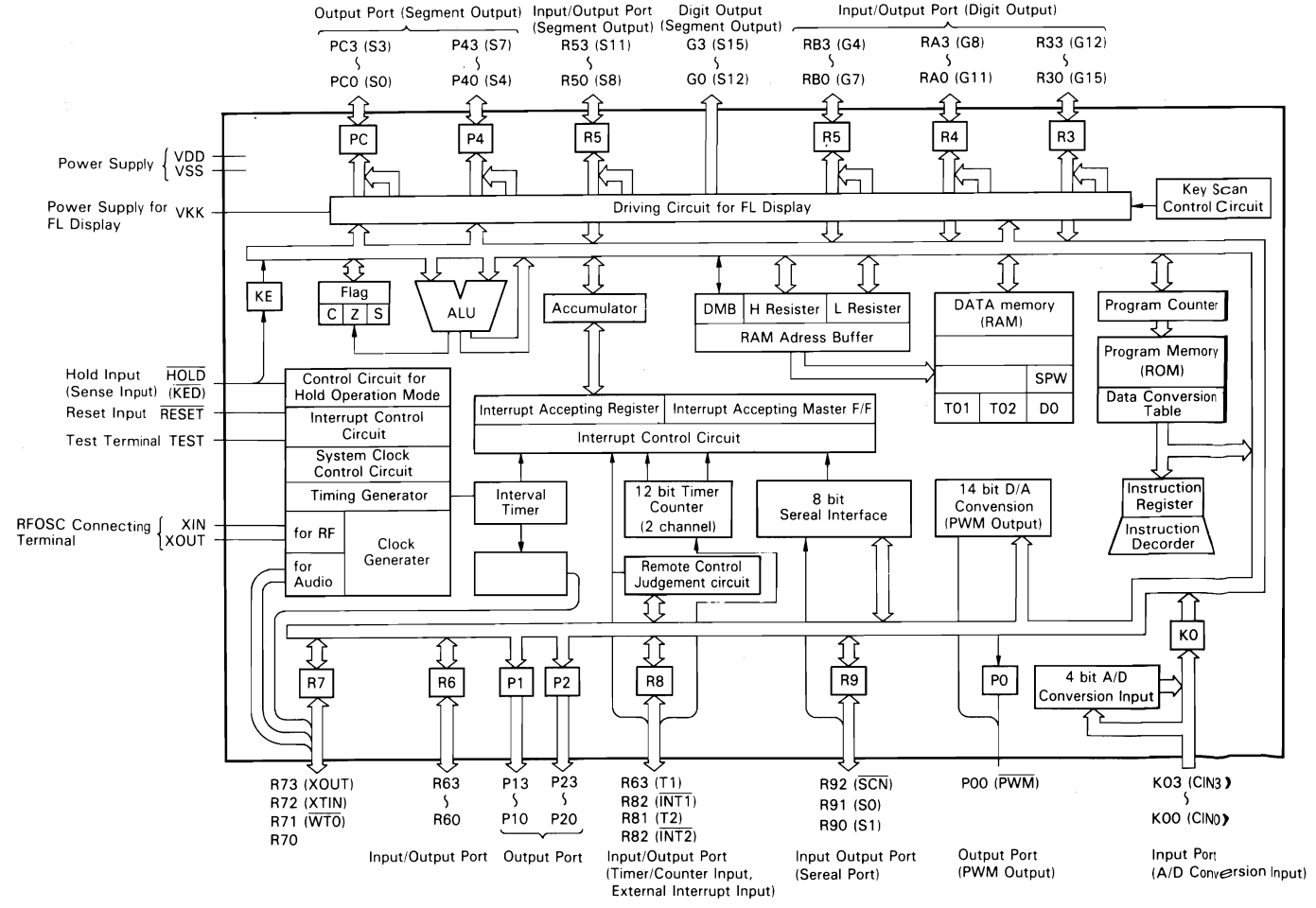
PORT	PIN NO.	FUNCTION	L	H
K00	i 14	SIG. LEVEL IN	—	—
K01	i 15	BACKUP VOLT	RAM CLEAR < 1.25	RAM KEEP > 1.25
K02	i 16	K2 IN		H > 0.94V
K03	i 17	K3 IN		H > 0.94V
P00 PWM	o 23	PEE OUT		2kHz
P10	o 28	POWER OUT	OFF	ON
P11	o 29	MUTE OUT	NORMAL	MUTE
P12	o 30	IF BW OUT	WIDE	NARROW
P13	o 31	PROTECTOR OUT	NORMAL	PROTECT
P20	o 33	VR UP OUT	UP	STOP
P21	o 34	VR DOWN OUT	DOWN	STOP
P22	o 35	VR LED OUT	OFF	ON
23	o 36	DAT MONITOR	SOURCE	MONITOR
R60	i 24	K4 IN	○	
R61	i 25	K5 (D-MATX) IN	○	
R62	i 26	PHONO T/T IN	PLAY	STOP
R63	i/o 27	PHONO S/S I/O	○	

PORT	PIN NO.	FUNCTION	L	H
R70	i 37	COMPULINE IN	○	
R71	o 38	COMPULINE OUT		○
R72	o 39			○
R73	o 40	ATT. (MUTE) OUT		○
R80	i 41	RECEIV RF IN	○	
R81	o 42	PERIOD/CE OUT		○
R82	i 43	PROTECTOR IN		○
R83	o 44	STB OUT		○
R90	i 45	SER. DATA IN		○
R91	o 46	SER. DATA OUT		○
R92	o 47	SER. CLK OUT		○
KE0	i 22	BACK UP IN	BACK UP	RUN
R30	i 48	STEREO IND IN	FL ON	OFF
R31	i 49	K1 IN	○	
R32	i 50	FL DUTY1 IN		○
R33	i 51	FL DUTY2 IN		○

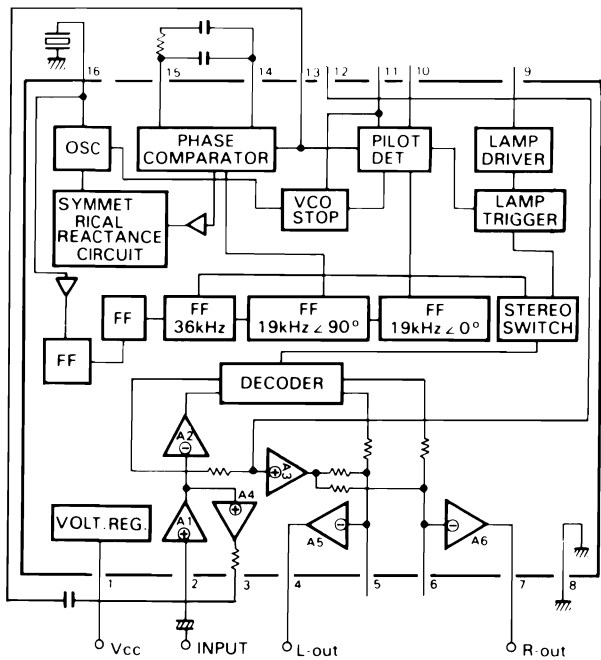
◆ Figuer <TMP47C870N>



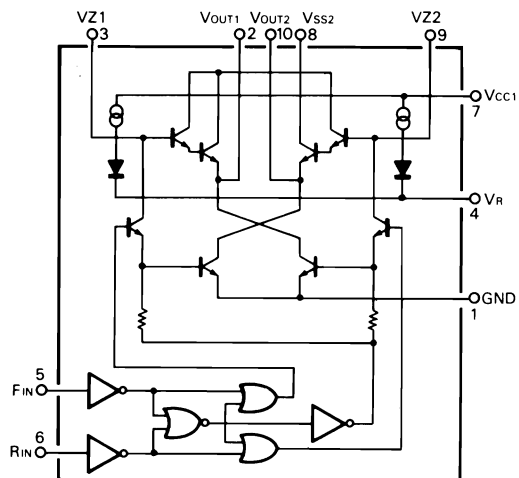
◆ Block Diagram <TMP47C870N>



•LA3410 (MPX)



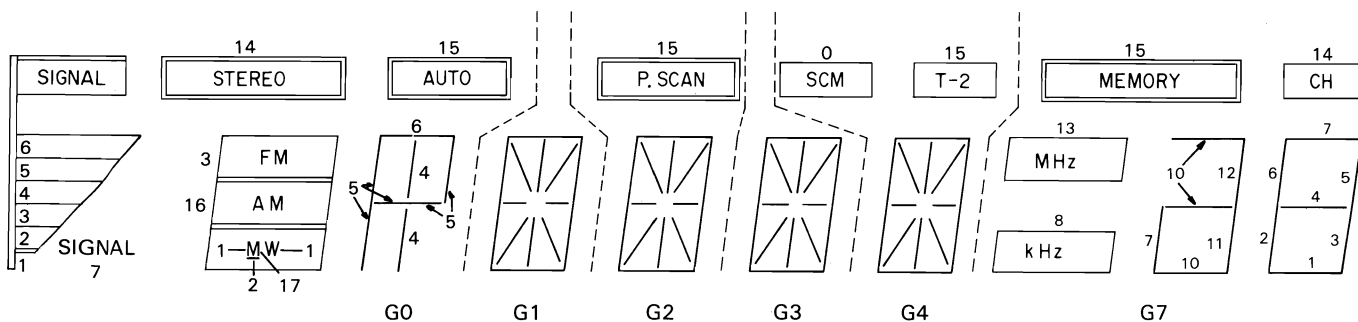
•BA6109 (Motor Driver)



FIN	RIN	Vout 1	Vout 2
1	1	L	L
0	1	L	H
1	0	H	L
0	0	L	L

Input level 1 = 2.0V or more
Input level 0 = 0.7V or less

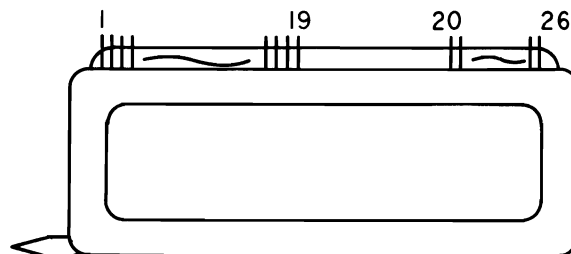
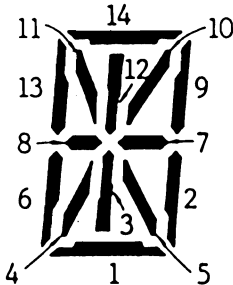
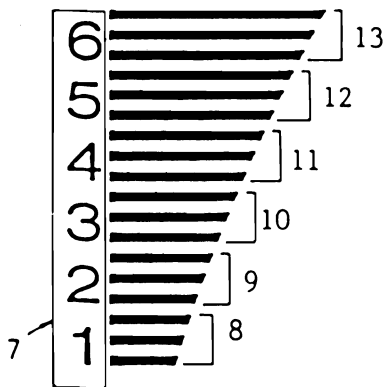
•FL Display (CP3023) Terminal Function



◆ Pin Assignment

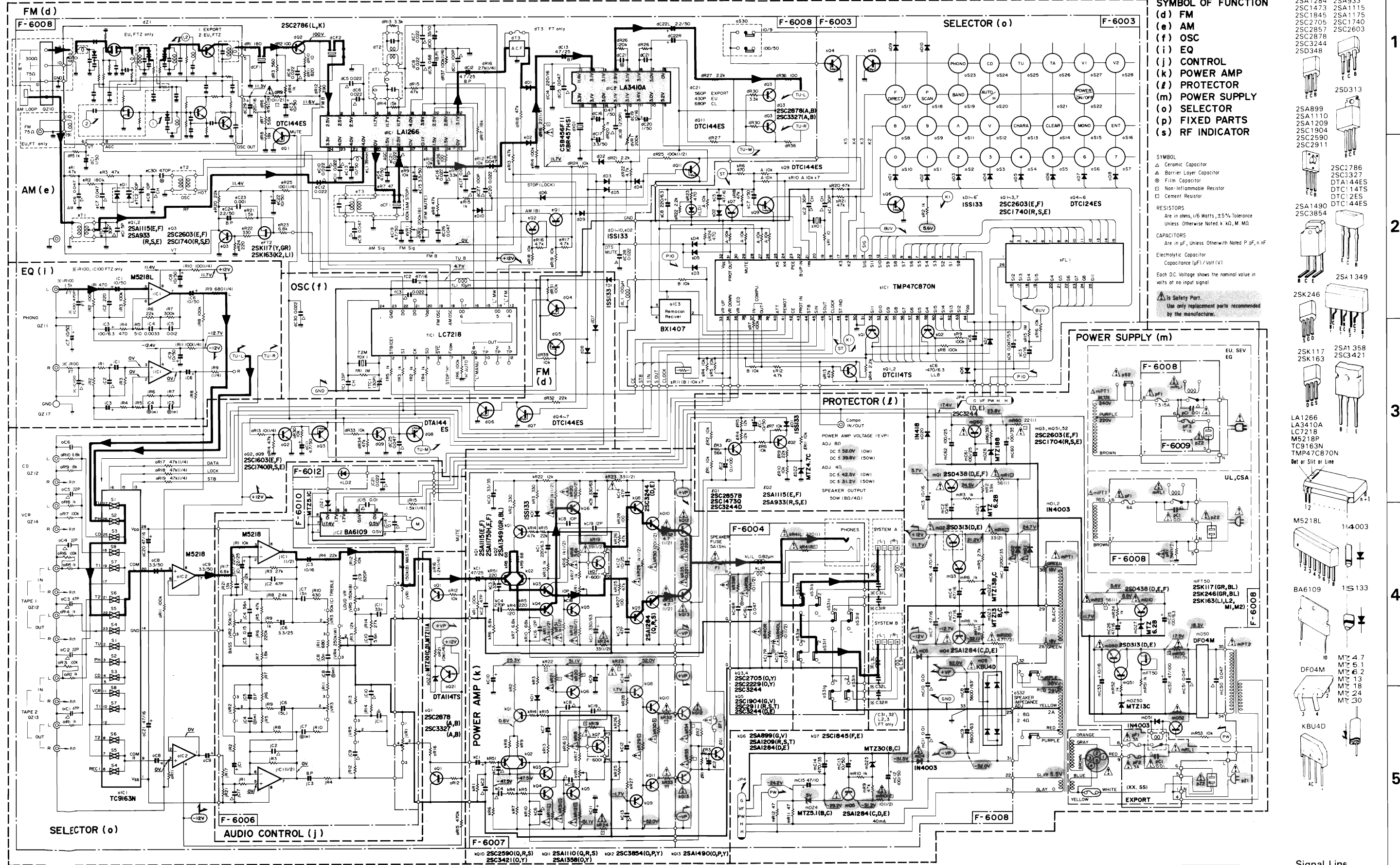
Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Assignment	F	P0	P16	P17	P1	P2	P3	P4	P5	P6	P7	P8	P9

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



7. 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.

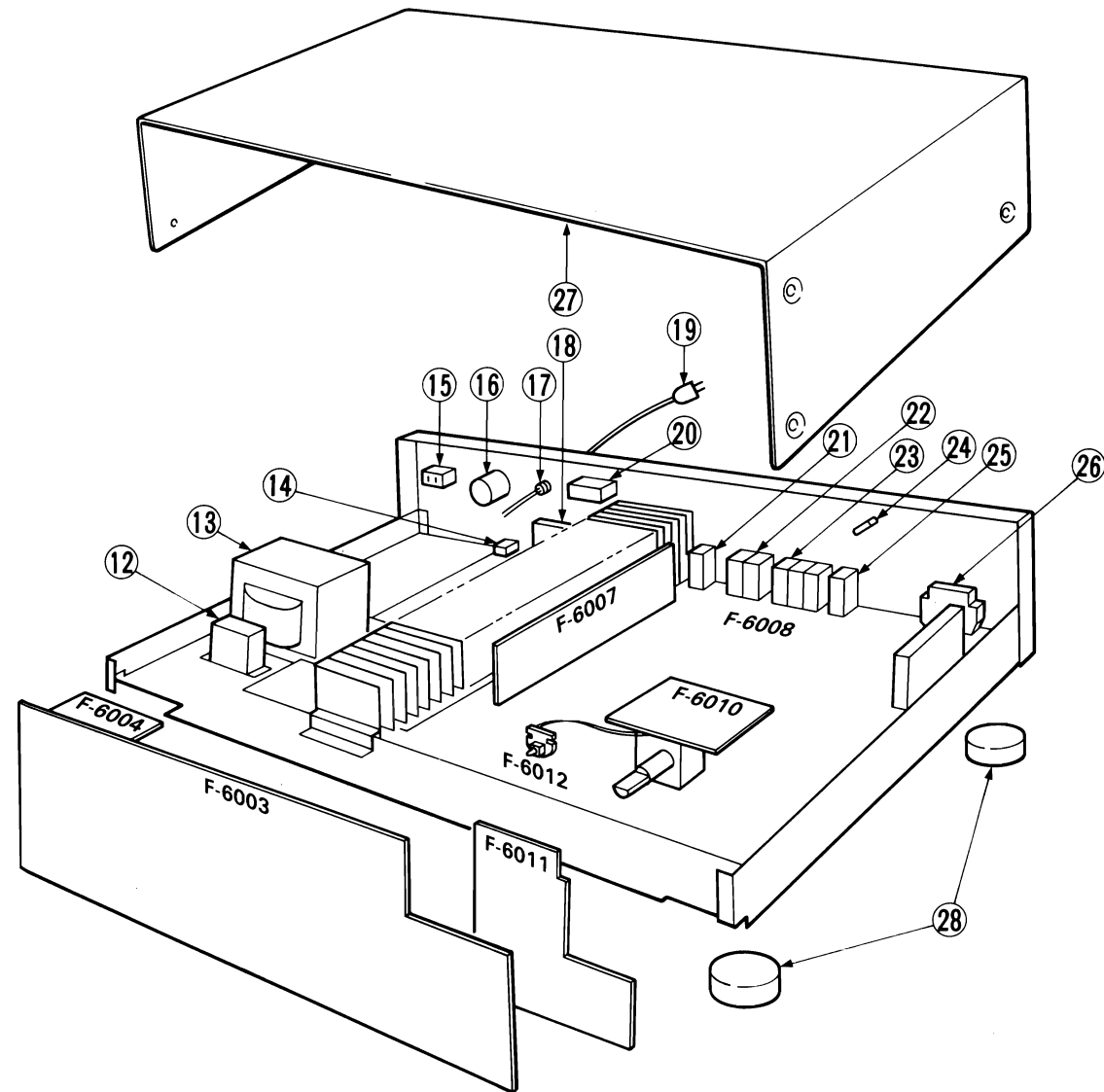
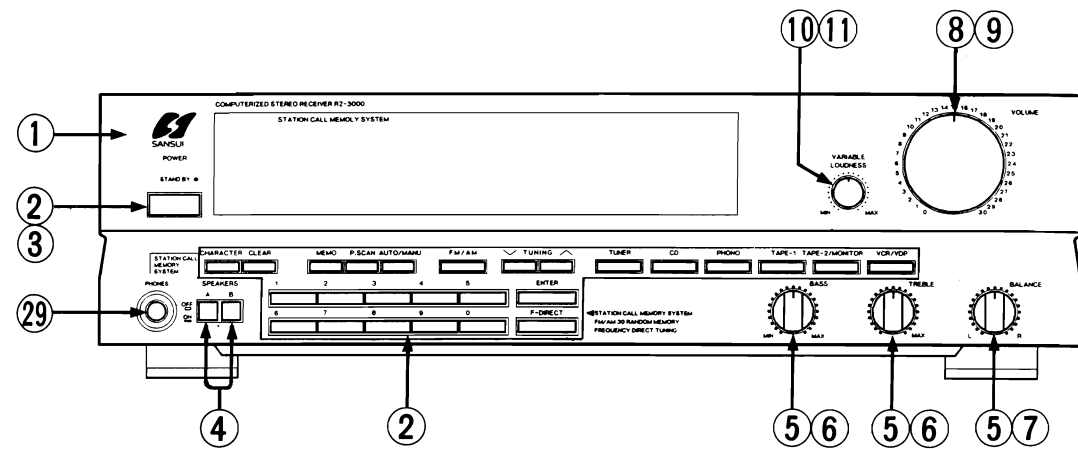


- SYMBOL OF FUNCTION**
- (d) FM
 - (e) AM
 - (f) OSC
 - (i) EQ
 - (j) CONTROL
 - (k) POWER AMP
 - (l) PROTECTOR
 - (m) POWER SUPPLY
 - (o) SELECTOR
 - (p) FIXED PARTS
 - (s) RF INDICATOR
- RESISTORS**
 Are in ohms, 1/8 Watts, ±5% Tolerance
 Unless Otherwise Noted: k, M, M Mil
- CAPACITORS**
 Are in µF, Unless Otherwise Noted: p, pF, nF
- Electrolytic Capacitor**
 Capacitance (µF) / Volt (V)
- Each DC Voltage shows the nominal value in volts at no input signal.
- is Safety Part.**
 Use only replacement parts recommended by the manufacturer.

- POWER SUPPLY (m)**
- EU, SEV EG
- F-6008
- F-6009
- UL, CSA
- F-6008
- F-6008
- F-6008
- EXPORT
- Signal Line
- 2SA1284
 - 2SA1473
 - 2SC1845
 - 2SC2705
 - 2SC2857
 - 2SC2878
 - 2SC3244
 - 2SC348
 - 2SA933
 - 2SA1115
 - 2SA1175
 - 2SC1705
 - 2SC1740
 - 2SC2603
 - 2SC2878
 - 2SC3244
 - 2SC348
 - 2SD313
 - 2SD313
 - 2SA899
 - 2SA1110
 - 2SA1209
 - 2SA1904
 - 2SC2590
 - 2SC2911
 - 2SC786
 - 2SC327
 - DTA144ES
 - DTA144S
 - DTC12ES
 - DTC144ES
 - 2SA1490
 - 2SC3854
 - 2SA1349
 - 2SK246
 - 2SK117
 - 2SK163
 - 2SA1358
 - 2SC3421
 - LA1266
 - LA3410A
 - LC7218
 - M5218P
 - TC9163N
 - TMP47C870N
 - Dot or Shift or Line
 - M5218L
 - 144003
 - BA6109
 - 1S133
 - DF04M
 - MTZ 4.7
 - MTZ 5.1
 - MTZ 6.2
 - MTZ 13
 - MTZ 18
 - MTZ 24
 - MTZ 30
 - KBU4D

1
2
3
4
5

8. EXPLODED VIEW OF SET & PARTS LIST



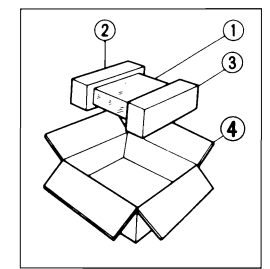
Parts List

Parts No.	Stock No.	Description
1	37502501	Front Panel Ass'y (XX•SS•EU•CSA•SEV)
	37502502	Front Panel Ass'y (UL)
2	83003000	Push Switch
3	84580000	Knob, SPEAKERS
4	83045900	Push Switch, SPEAKERS
5	84580100	Knob, BASS•TREBLE•BALANCE
6	83012800	Tone Control VR., 50kΩ
7	83013000	Balance VR., 250kΩ
8	84599900	Knob, Master Volume
9	48977500	Master VR., 150kΩ
10	48580200	Knob, LOUDNESS
11	83046000	LOUDNESS VR., 150kΩ
△12	83046401	Power Transformer, MPT2 (XX•SS)
△	83046402	Power Transformer, MPT2 (UL•CSA)
△	83046405	Power Transformer, MPT2 (EU•EG•SEV)
△13	83046309	Power Transformer, MPT1 (XX•SS)
△	83046302	Power Transformer, MPT1 (UL•CSA)
△	83046305	Power Transformer, MPT1 (EU•EG•SEV)
14	83012600	System Control Jack
△15	83002500	AC Outlet (EU•EG•SEV)
△	83004100	AC Outlet (XX•SS)
△	83002200	AC Outlet (UL•CSA)

Parts No.	Stock No.	Description
△16	48175200	Voltage Selector (XX•SS)
△	07204700	Voltage Selector Switch (EU•EG•SEV)
17	39106000	Strain Relief (XX)
	48913500	Strain Relief (SS•EU•EG•SEV)
	39104900	Strain Relief (UL•CSA)
18	46947500	8P Speaker Terminal
△19	83000400	Power Supply Cord (XX)
△	83000500	Power Supply Cord (CSA)
△	83003600	Power Supply Cord (UL)
△	83034900	Power Supply Cord (SS)
△	83000600	Power Supply Cord (EU•EG•SEV)
20	49338500	Speaker Impedance Switch
21	48987400	2P VCR/VDP Terminal
22	48528200	4P TAPE2 Terminal
23	48528300	6P TAPE1/CD Terminal
24	84528300	Ground Terminal
25	48528400	2P PHONO Terminal
26	49299700	4P Antenna Terminal (XX•UL•CSA•SS)
	49320400	2P Antenna Terminal (EU•EG•SEV)
27	84578500	Bonnet
28	84526700	Foot
29	46579600	Head Phone Jack

9. PACKING LIST

Parts No.	Stock No.	Description
1	47859600	Vinyl Bag
2	84582400	Styrofoam Packing, Front Side
3	84584600	Styrofoam Packing, Rear Side
4	84582000	Carton Case



10. ACCESSORY LIST

Stock No.	Description
84453900	Operating Instructor (*E•F•S)
84454000	Operating Instructor (*G•I•Sw)
46051700	Antenna Wire
48529800	Antenna Holder
48489800	Antenna Plug
83041000	AM Loop Antenna
	Dry Battery, UM-4
	Remote Controller, RS-1070

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



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