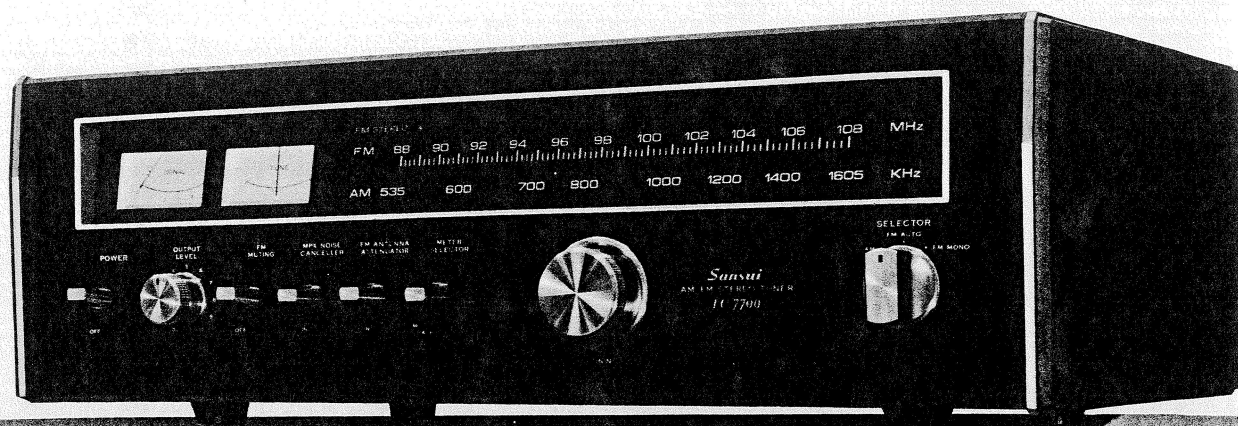
SERVICE MANUAL

AM/FM STEREO TUNER

SANSUI TU-7700



Sansui

SANSUI ELECTRIC CO., LTD.

This service manual is designed for service engineers to repair, adjust, maintain and order the replacement parts of the TU-7700 correctly.
When ordering the parts, use the stock number and parts name specifically referring to the Parts Locations & Parts List.
For general usage and maintenance of the unit, please refer to the Operating Instructions attached with the unit.

TABLE OF CONTENTS

1. SPECIFICATIONS

FM SECTION

TUNING RANGE .....88 to 108MHz
SENSITIVITY (IHF) 1.8μV
QUIETING SLOPE 40dB 1.8μV, 50dB 3μV,
60dB 10μV, 70dB 50μV
TOTAL HARMONIC DISTORTION
MONO .....less than 0.2%
STEREO .....less than 0.3%
SIGNAL TO NOISE RATIO..better than 75dB
SELECTIVITY .....better than 80dB
CAPTURE RATIO (IHF) ....less than 1.5dB
IMAGE FREQUENCY REJECTION
.....better than 75dB
IF REJECTION .....better than 90dB
SPURIOUS RESPONSE REJECTION
.....better than 80dB
STEREO SEPARATION.....better than 40dB at 1KHz
better than 30dB at 10KHz
SPURIOUS RADIATION....less than 34dB
FREQUENCY RESPONSE....20 to 15,000Hz
FM ANTENNA INPUT IMPEDANCE
.....300Ω balanced
.....75Ω unbalanced
FM ANTENNA ATTENUATOR
.....−20dB

AM SECTION

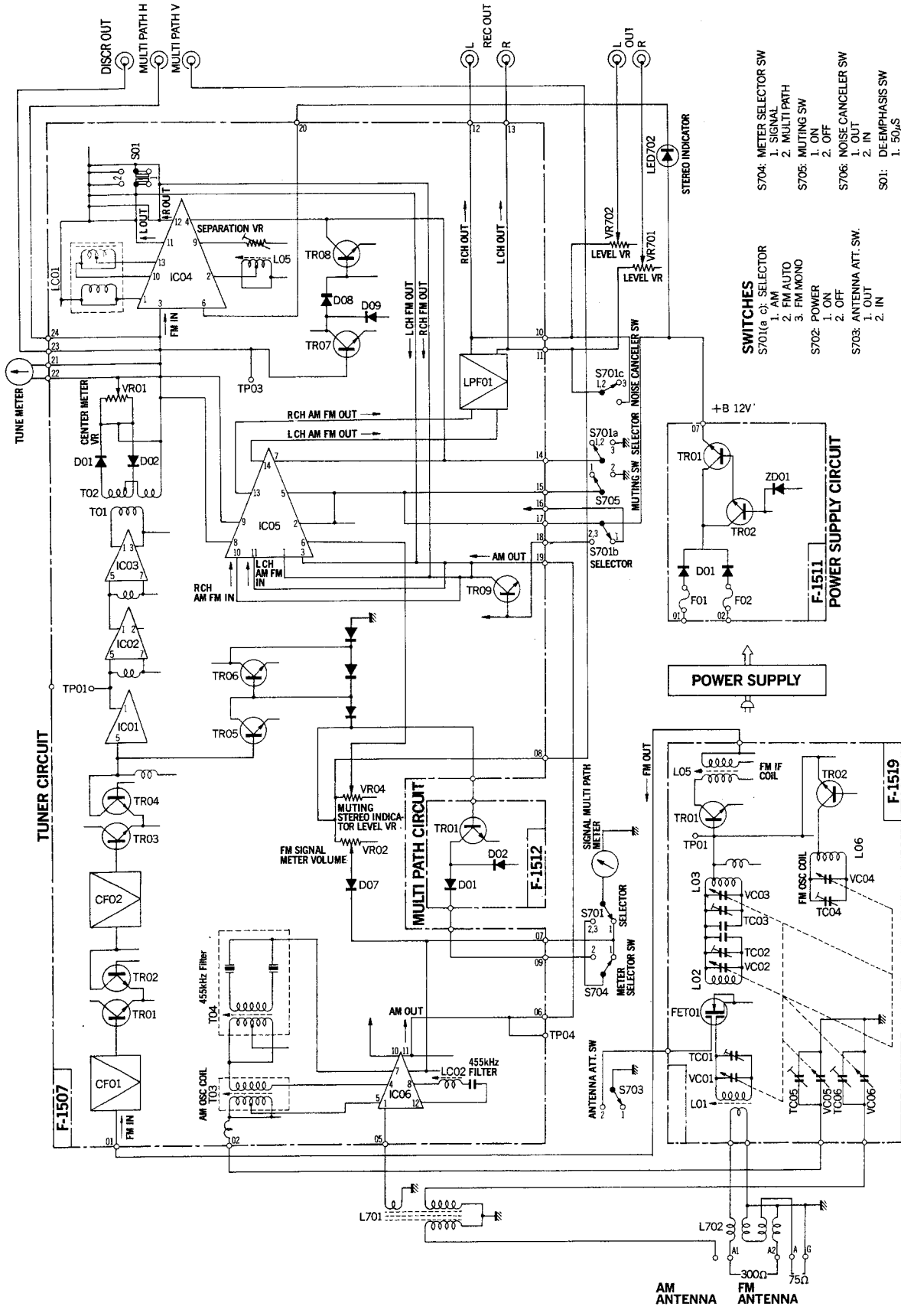
TUNING RANGE .....535 to 1,605KHz
SENSITIVITY (Bar Antenna)..50dB/m
SELECTIVITY .....better than 30dB
IMAGE FREQUENCY REJECTION
.....better than 80dB/m at 1MHz
IF REJECTION .....better than 80dB/m at 1MHz

OTHERS

SEMICONDUCTORS
TRANSISTORS 14
FET 1
ICs 6
DIODES 14
ZENER DIODE 1
LEDs 2
OUTPUT.....0 to 0.775V
REC OUTPUT 0.4V
POWER REQUIREMENTS
POWER VOLTAGE 100, 117, 220, 240V 50/60Hz
POWER CONSUMPTION..9W (rated)
DIMENSIONS .....434mm (17⅛″) W
130mm (5⅛″) H
243mm (9⁹⁄₁₆″) D
WEIGHT.....6.9Kg (15.2 lbs) net
8.3Kg (18.3 lbs) packed

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

2. BLOCK DIAGRAM



3. THREADING OF DIAL CORD

* If a dial cord is cut off or slips, replace it by following procedures.
  As TU-7700 uses 0.6mmϕ cord, please replace it with the same type certainly.
* The length of dial cord is approximately 170cm (66 inch).

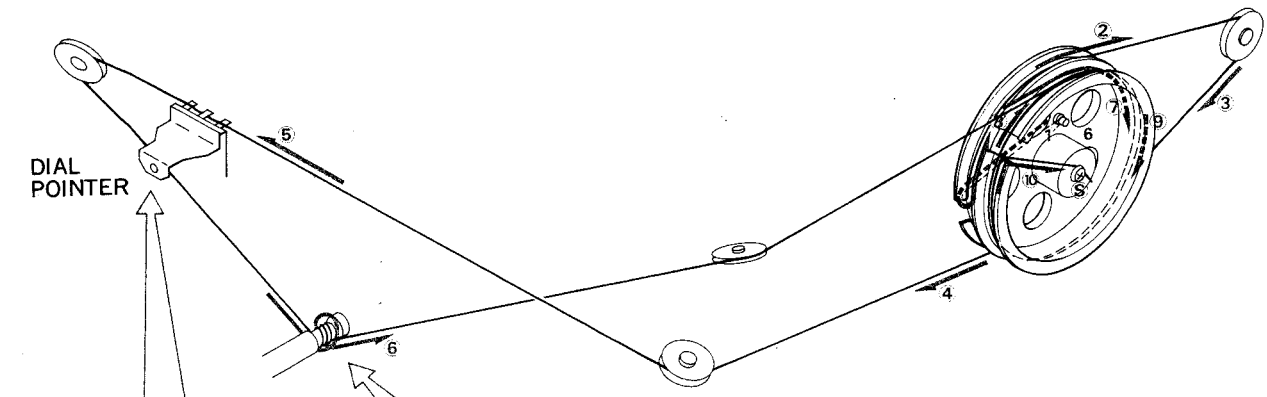


Fig. 3-1

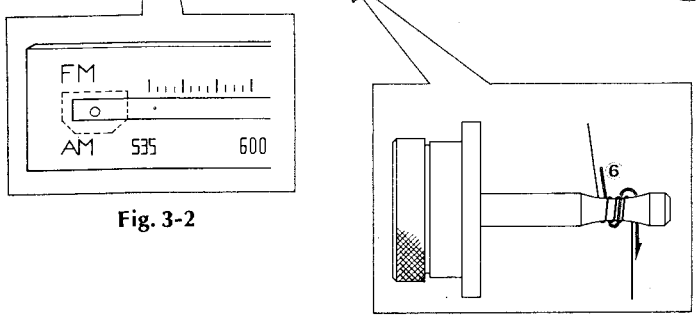


Fig. 3-2

3-1. Threading of Dial Cord

Thread the dial cord in numerical order from ① to ⑩ as Fig. 3-1.

1) Close the variable capacitor completely (Max. capacitance).
2) Only when you replace variable capacitor with new one, turn up the screw Ⓢ completely so that the screw 6 on dial pulley is positioned as shown in Fig. 3-1.
3) Tie the cord to screw 6 and thread it in the direction of arrow from ① to ⑤
4) Then, after winding the cord 3 turns around the tuning shaft counterclockwies, thread it from ⑦ to ⑩.
5) After ⑩, tie the cord to the screw Ⓢ of the dial pulley.
   *To strengthen the dial cord's tension, hold the end of cord, then pull it toward the front panel.
   Turn tuning shaft counterclockwies so that the cord's tension will be more obtained.
   *After procedure 5), lock the knot ⑩ of the cord and the screw ⑥ with paint.

3-2. Attachment of Dial Pointer

1) Close the variable capacitor completely.
2) Set the dial pointer to the position on dial scale as shown in Fig. 3-2.
   *Confirm that the dial pointer runs smoothly on the dial scale by turning the tuning shaft.

Stock No.	Description
6036050	Dial Cord (0.6mmϕ)

4. ALIGNMENTS AND ADJUSTMENTS

Abbreviation

Equipment

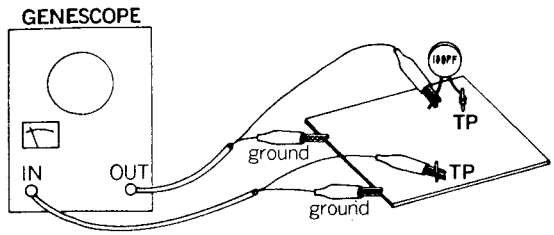
AM FM Generator Oscilloscope ..... Genescope
AM Standard Signal Generator ..... AM SSG
FM Standard Signal Generator ..... FM SSG
FM Stereo Generator ..... Stereo SG
Oscilloscope ..... Scope
Audio Oscillator ..... Audio Osc.
Distortion Meter ..... Dist. Meter

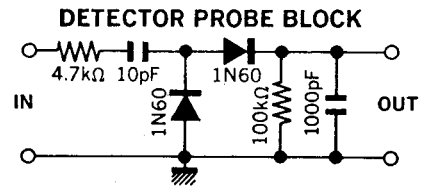
Others

Clockwise ..... CW.
Counterclockwise ..... CCW.
Antenna ..... ANT.
Modulation ..... MOD.

4-1. FM IF Alignment (See Figs. 4-4, 4-5, 4-6 and 4-7 on page 8)

Note. 1. Selector ..... FM AUTO
2. Output level of genescope ..... After attenuator
3. Sweepwidth ..... 1.5~2cm/150kHz
4. Frequency band ..... 9.5~11.5MHz
5. Connection ..... Connect the output of genescope to TP. 01 through 100pF ceramic capacitor
6. FM MUTING switch ..... OFF

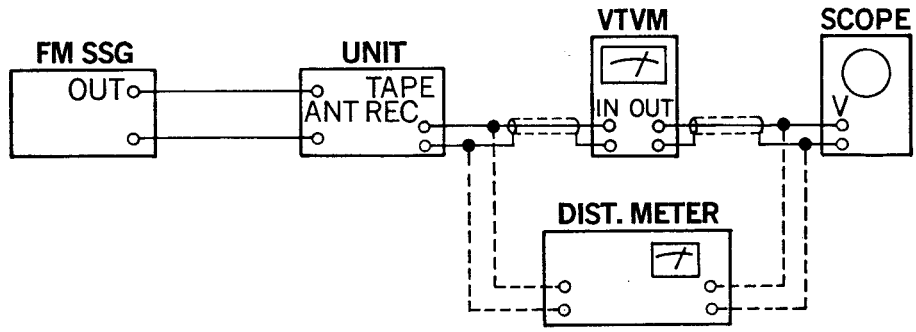


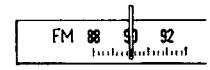
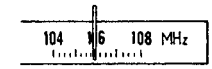
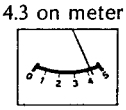
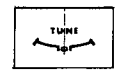


STEP	SUBJECT	FEED SIGNAL FROM	FEED SIGNAL TO	MEASURE OUTPUT	ADJUST	ADJUST FOR	CONDITION
1	IF coil	Output 65dB Genescope	TP. 01 (F-1519) (Fig. 4-7)	TP01 (Fig. 4-5) Use Detector Probe	L05 (Fig. 4-6)	Max. IF waveform 1 as Fig. 4-4	
2	Descriminator coil	Same as above	Same as above	TP03 (Fig. 4-5) Direct from Genescope	T01 (Fig. 4-5) T02 (Fig. 4-5)	Max. linearity of S curve Set the center of S curve to center of waveform 1 as Fig. 4-4	

4-2. FM Dial Calibration, Mono Distortion and RF Alignment (See Figs. 4-5 and 4-6 on page 8)

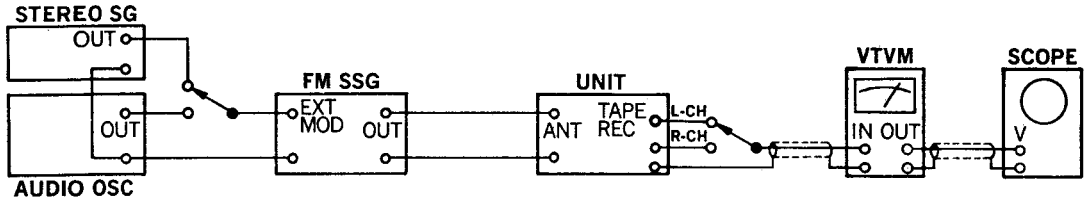
Note: 1. Selector.....FM AUTO
2. Confirm start point of dial pointer before alignment.
3. FM MUTING switch .....OFF



STEP	SUBJECT	FEED SIGNAL FROM	FEED SIGNAL TO	MEASURE OUTPUT	ADJUST	ADJUST FOR	CONDITION
1	90MHz Dial Calibration	90MHz ANT input 60dB 400Hz (100% MOD) FM SSG	ANT terminal 300Ω	REC OUT L or R-ch VTVM & Scope	L06 (Fig. 4-6)	Max. output	◦Set Dial on 90MHz 
2	106MHz Dial Calibration	106MHz ANT input 60dB 400Hz (100% MOD) FM SSG	Same as above	Same as above	Trimmer TC04 (Fig. 4-6)	Same as above	◦Set Dial on 106MHz 
3	Confirm 98MHz Dial Calibration	98MHz ANT input 60dB 1kHz (100% MOD) FM SSG	Same as above	Same as above		Confirm 98MHz Dial Calibration	◦If not, repeat from Steps 1, 2
4	90MHz RF Adj.	90MHz ANT input 50dB 400Hz (100% MOD) FM SSG	Same as above	Same as above	L01, L02, L03 (Fig. 4-6)	Max. output	◦Tune FM SSG (Max. indication of Signal Meter)
5	106MHz RF Adj.	106MHz ANT input 50dB 400Hz (100% MOD) FM SSG	Same as above	Same as above	Trimmer TC01, TC02 TC03 (Fig. 4-6)	Same as above	Same as above
6	Distortion	98MHz ANT input 66dB 400Hz (100% MOD) FM SSG	Same as above	REC OUT L or R-ch Dist. meter & Scope	T02 (Fig. 4-5)	Min. distortion	Same as above
7	Signal meter Volume	98MHz ANT input 80dB 400Hz (100% MOD) FM SSG	Same as above	Signal meter	VR02 (Fig. 4-5)	4.3 on meter 	
8	Tune meter Volume	98MHz ANT input 60dB 400Hz (100% MOD) FM SSG	Same as above	Tune meter	VR01 (Fig. 4-5)	Center on meter 	

4-3. MPX Alignment (See Figs. 4-5 and 4-6 on page 8)

Note: 1. Selector .....FM AUTO
2. FM MUTING switch.....OFF

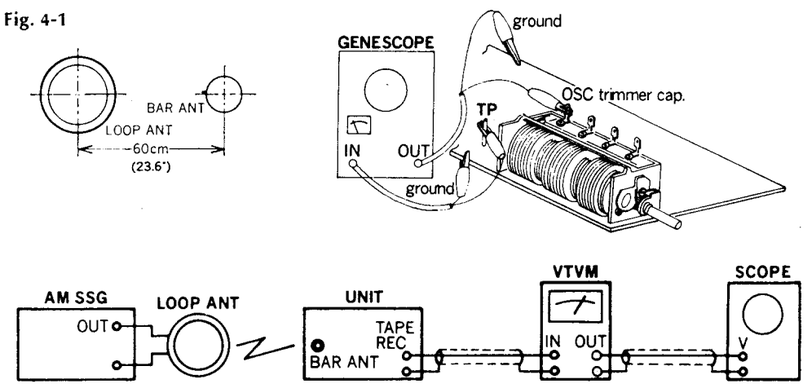


STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	CONDITION
		FROM	TO				
1	19kHz coil	98MHz ANT input 60dB FM SSG Pilot 19kHz (10% MOD) L-ch 1kHz (45% MOD) R-ch (0% MOD) Stereo SG	ANT terminal 300Ω	REC OUT L-ch VTVM & Scope	L05 (Fig. 4-6)	Max. output	◦ Tune FM SSG (Max. indication of signal meter)
2	Separation	Same as above	Same as above	REC OUT R-ch VTVM & Scope	VR03 (Fig. 4-5)	Min. output	
3	Confirm Separation	98MHz ANT input 60dB FM SSG Pilot 19kHz (10% MOD) L-ch (0% MOD) R-ch 1kHz (45% MOD) Stereo SG	Same as above	REC OUT L-ch VTVM & Scope		Min. output	◦ If less than 40dB, adjust VR03
4	Indicator (Lighting level) muting level	98MHz ANT input 32dB FM SSG Pilot 19kHz (10% MOD) Stereo SG L-ch (0% MOD) R-ch (45% MOD)	Same as above	Stereo indicator lamp REC OUT R-ch VTVM & Scope	VR04 (Fig. 4-5)	Lighting Point, Muting Point 32dB	◦ Tune FM SSG (Max. indication of signal meter)

4-4. AM IF, Dial Calibration and RF Alignment
(See Figs. 4-2, 4-3, 4-5 and 4-6 on page 8)

Note: 1. Selector.....AM
2. Confirm start point of dial pointer before alignment.
3. In case of using loop antenna, increase output of AM SSG for 26dB than bar antenna's direct input as it attenuates input sensitivity for 26dB (See Fig. 4-1).

Fig. 4-1



STEP	SUBJECT	FEED SIGNAL FROM	FEED SIGNAL TO	MEASURE OUTPUT	ADJUST	ADJUST FOR	CONDITION
1	IF coil	Output 70dB Genescope	OSC trimmer cap. TC05 (Fig. 4-6)	TP04 (Fig. 4-5)	T04 (Fig. 4-5)	Max. IF waveform Fig. 4-2	
2	IF coil	Output 60dB Genescope	Same as above	Same as above	LC02 (Fig. 4-5)	Max. IF waveform Fig. 4-3	
3	IF coil	Output 70dB Genescope	Same as above	Same as above		Max. IF waveform Fig. 4-3	◦ If not, readjust T04 & LC02 slightly
4	535kHz Dial Calibration	535kHz ANT input 86dB 400Hz (30% MOD) AM SSG Use loop ANT	Bar ANT	REC OUT L or R-ch VTVM & Scope	T03 (Fig. 4-5)	Max. output	◦ If broadcasting station is near, it might be used
5	1400kHz Dial Calibration	1400kHz ANT input 86dB 400Hz (30% MOD) AM SSG Use loop ANT	Same as above	Same as above	Trimmer TC05 (Fig. 4-6)	Same as above	Same as above
6	Confirm 1000kHz Dial Calibration	1000kHz ANT input 86dB 400Hz (30% MOD) AM SSG Use loop ANT	Same as above	Same as above		Confirm 1000kHz Dial Calibration	◦ If not, repeat from Step 4, 5
7	600kHz RF Adj.	600kHz ANT input 76dB 400Hz (30% MOD) AM SSG Use loop ANT	Same as above	Same as above	Bar ANT L701	Max. output	
8	1400kHz RF Adj.	1400kHz ANT input 96dB 400Hz (30% MOD) AM SSG Use loop ANT	Same as above	Same as above	Trimmer TC06 (Fig. 4-6)	Same as above	

Fig. 4-2

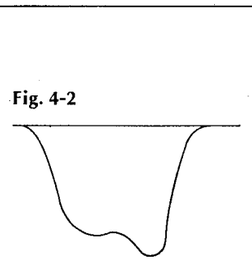


Fig. 4-3

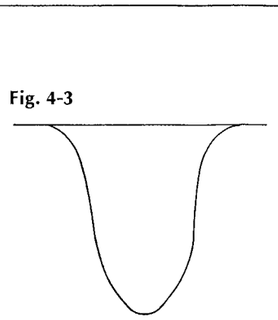


Fig. 4-4

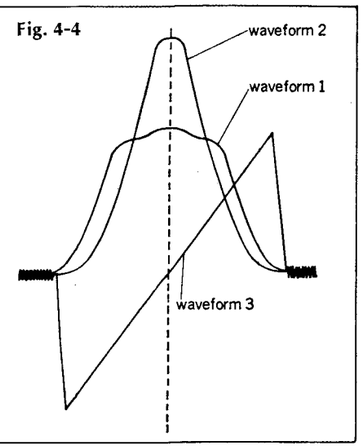


Fig. 4-5

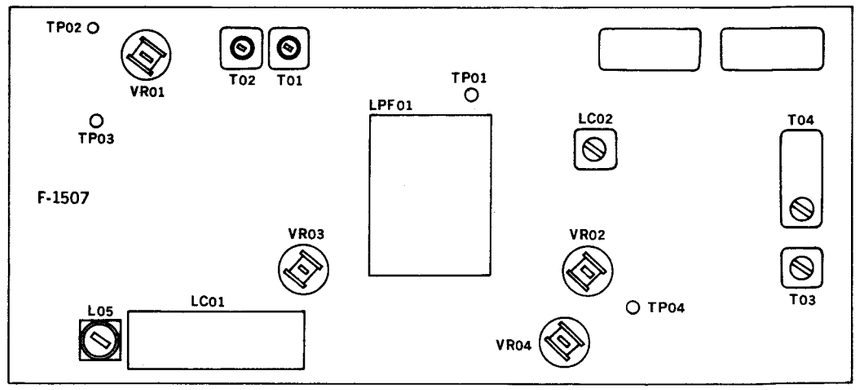


Fig. 4-6

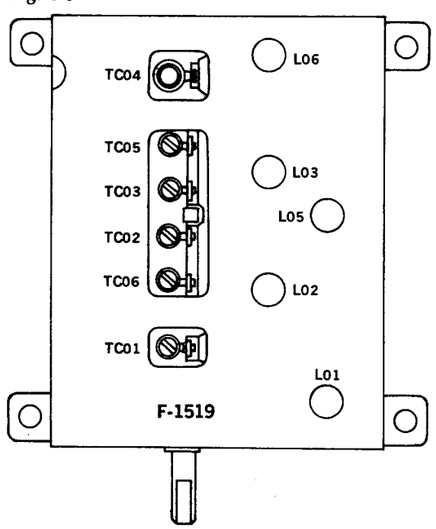
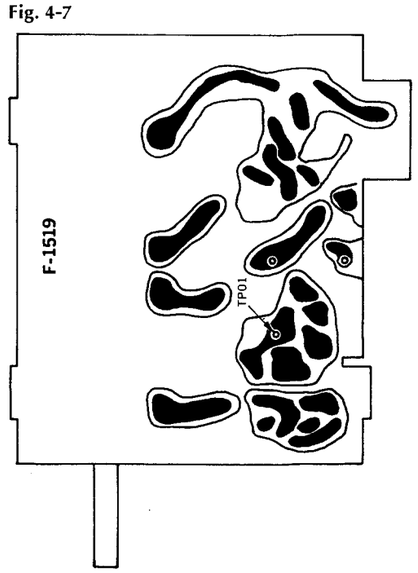


Fig. 4-7



5. TROBLESHOOTING CHART

5-1. Troubleshooting on Power Supply Section

Symptom	Check Point	Cause & What to Do
1-1. Each lamp on dial scale not lighted		1. Imperfect function of power cord, plug or power switch, S702
		2. Opened power fuse F701 or F03
1-2. +12V not supplied to point [07] on F-1511		3. Opened fuse, F01 or F02
		4. Defective diode D01 or zener diode ZD01
		5. Defective transistor TR01, TR02
1-3. Power indicator not lighted		6. Defective light emitted diode, LED701

5-2. Troubleshooting on Tuner Section

1. Both AM and FM reception inoperative

1. +12V not supplied to points [16], [17], [18] on F-1507
2. Defective IC05
3. Opened low pass filter LPF01

2. FM reception only inoperative

* Before check, set FM MUTING switch to OFF

2-1. Signal meter inoperative (Meter circuit on F-1507 is normally operative)

1. Incorrect adjustment of frontend pack, F-1519
2. Defective frontend pack, F-1519
3. Defective transistor, TR01~TR04 on F-1507
4. Defective ceramic filter, CF-1, CF-2 on F-1507

2-2. Signal meter operative

5. Defective IC01~IC03 on F-1507
6. Defective diode, D01, D02 on F-1507
7. Discriminator coil, T01, T02, defective or out of adjustment

3. Inoperative MPX circuit

* Confirm that FM signal supplied to test point, TP03 on F-1507

3-1. MPX signal including R and L-ch not supplied to points [11], [12], of IC04

1. Defective IC04

3-2. No channel separation & no light on stereo indicator

2. L05, LC01 defective or out of adjustment
3. Defective separation volume, VR03
4. Incorrect adjustment of muting volume VR04
5. Defective muting volume, VR04
6. Selector, S701c short
7. Defective IC05
8. Transistor, TR08 short
9. Defective stereo indicator, LED702

Symptom	Check Point	Cause & What to Do
3-3. The MPX indicator lamp is flickered by FM background noise		1. Defective transistor, TR07, TR08
		2. Defective diode, D08, 09

4. Signal meter circuit inoperative

* FM or AM sound can be heard

1. Defective transistor, TR05, TR06
2. Defective diode, D03~D07
3. Meter volume, VR02 defective or out of adjustment
4. Defective meter selector switch, S704 or selector, S701
5. Defective signal meter

5. Multi path meter inoperative

* Multi path meter (signal meter) inoperative when setting METER SELECTOR switch, S704 to [2]

1. Defective selector S704, meter selector switch, S701
2. Defective diode, D01~D03 on F-1512
3. Defective transistor, TR01 on F-1512

6. FM muting function inoperative

6-1. FM reception inoperative when setting switch to ON

1. Poor sensitivity due to incorrect tracking IF adjustment
2. Incorrect adjustment of muting volume, VR04
3. FM antenna attenuator switch is set to ON in a weak electric field intensity area

6-2. FM muting function inoperative

4. Defective muting switch, S705
5. Defective muting volume, VR04

7. AM reception inoperative

7-1. Signal meter operative (AM sound can not be heard)

* The output, TP. 04 on F-1507 is normally operative

1. Shorted transistor, TR09 on F-1507
2. Defective IC05
3. Defective low pass filter, LPF01

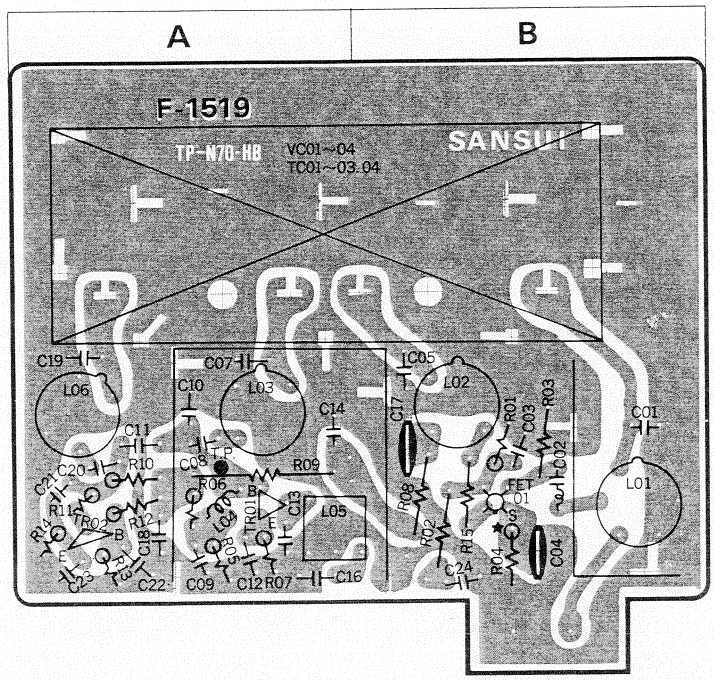
7-2 Signal meter inoperative (AM sound can not be heard)

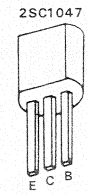
4. Defective IC06
5. Bar antenna coil, L701 opened or out of adjustment
6. Incorrect tracking, IF adjustment
7. Opened osc coil T03, IF coil T04 or LC02

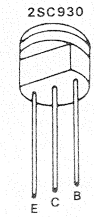
6. PARTS LOCATIONS AND PARTS LISTS

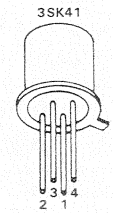
6-1. F-1519 Frontend Pack (Stock No. 7510630 Frondend Pack F-1519)

Conductor Side









Parts List

Parts No.	Stock No.	Description	Position
TR01	0305800, 1	2SC1047A, B } Transistor	A
TR02	0305790, 1	2SC930C, D } Transistor	A
FET01	0370132	3SK41K } FET	B
	0370021	3SK41L } FET	B
L01	4200640	Antenna Coil	B
L02	4210220	RF Coil (1)	B
L03	4210220	RF Coil (2)	A
L04	4290110	Choke Coil	A
L05	4235910	IF Coil	A, B
L06	4220430	OSC Coil	A
VC01~04 / TC01~03	1220130	FM, AM Variable Capacitor	A, B / A, B
TC04	1230090	Trimmer Capacitor	
C01	0669342	5.6pF } 50V C.C.	B
C02	0657102	1000pF } 50V C.C.	B
C03	0657223	0.022μF } 50V C.C.	B
C04	0659015	2200pF } 50V C.C.	B
C05	0669345	10pF } 50V C.C.	B
C06	0679023	0.39pF 500V Gimmick Capacitor	
C07	0669345	10pF } 50V C.C.	A
C08	0669210	10pF } 50V C.C.	A
C09	0657102	1000pF } 50V C.C.	A
C10	0661220	22pF } 50V C.C.	A
C11	0669003 / 0669202	2.2pF } 50V C.C.	A
C12	0657223	0.022μF } 50V C.C.	A
C13	0660121	120pF } 50V C.C.	A
C14	0657223	0.022μF } 50V C.C.	A
C15	0660181	180pF } 50V C.C.	
C17	0659015	2200pF } 50V C.C.	B

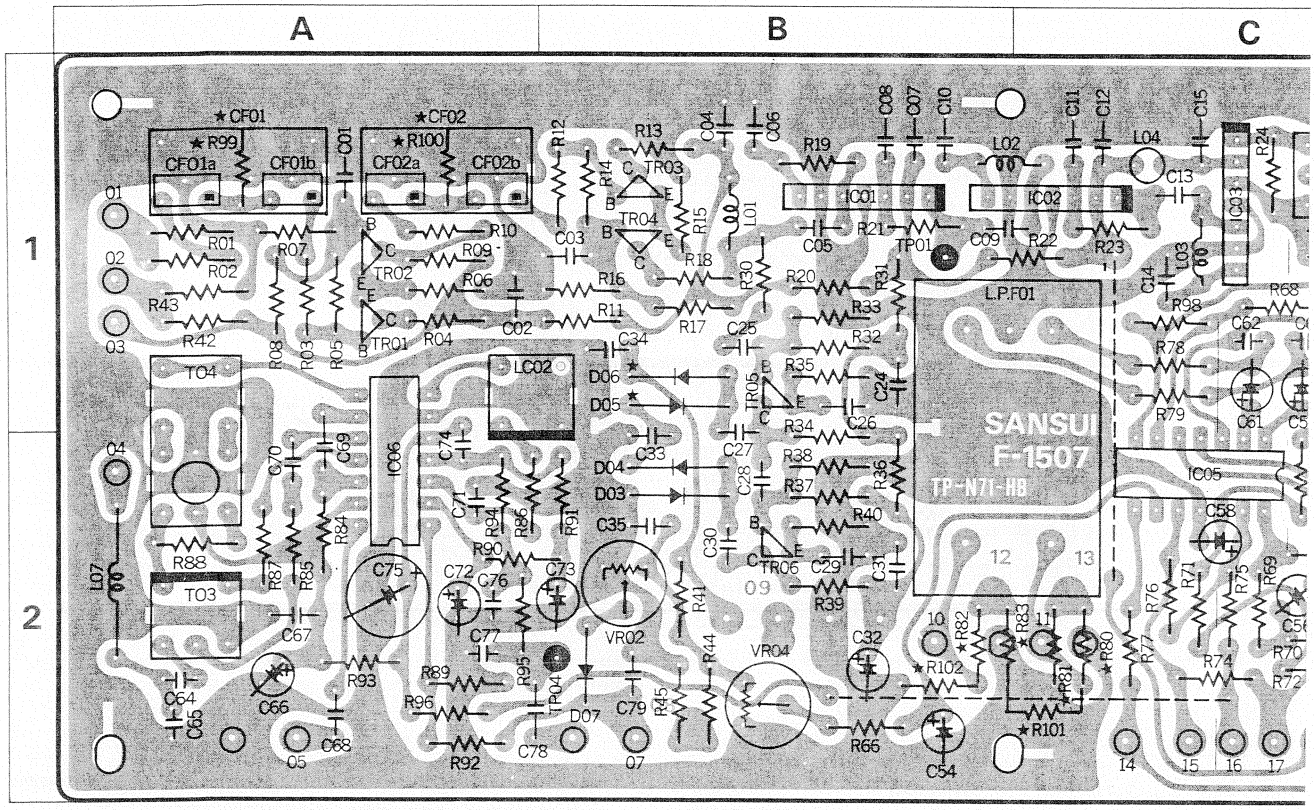
Parts No.	Stock No.	Description	Positio
C18	0657223	0.022μF } 50V C.C.	A
C19	0669350	15pF } 50V C.C.	A
C20	0657102	1000pF } 50V C.C.	A
C21	0669369	8.2pF } 50V C.C.	A
C22	0657223	0.022μF } 50V C.C.	A
C23	0661220 / 0669221	22pF } 50V C.C.	A
C24	0657223	0.022μF } 50V C.C.	B
R01	0106105	1MΩ ¼W C.R. (E.L.R.)	B
R02	0113104	100kΩ } ¼W S.R.	B
R03	0113104	100kΩ } ¼W S.R.	B
R04	0106101 / 0106151	100Ω / 150Ω } ¼W C.R. (E.L.R.)	B
R05	0106392	3.9kΩ } ¼W C.R. (E.L.R.)	A
R06	0106123	12kΩ } ¼W C.R. (E.L.R.)	A
R07	0106392	3.9kΩ } ¼W C.R. (E.L.R.)	A
R08	0113121	120Ω } ¼W S.R.	B
R09	0113271	270Ω } ¼W S.R.	A
R10	0106392	3.9kΩ } ¼W C.R.	A
R11	0106121	120Ω } ¼W C.R.	A
R12	0106682	6.8kΩ } ¼W C.R.	A
R13	0106222	2.2kΩ } ¼W C.R.	A
R14	0106182	1.8kΩ } ¼W C.R.	A
R15	0113470	47Ω ¼W S.R.	B
	2260010	Test Pin	

Abbreviations

C.R.	: Carbon Resistor	BP.E.C.	: Bi-Polar Electrolytic Capacitor
S.R.	: Solid Resistor	C.C.	: Ceramic Capacitor
Ce.R.	: Cement Resistor	Mi.C.	: Mica Capacitor
M.R.	: Metallized Film Resistor	O.C.	: Oil Capacitor
M.C.	: Mylar Capacitor	P.C.	: Polystyrene Capacitor
E.C.	: Electrolytic Capacitor	T.C.	: Tantalum Capacitor

6-2. F-1507 Tuner Circuit Board (Stock No. 7520950 Complete Circuit Board F-1507)

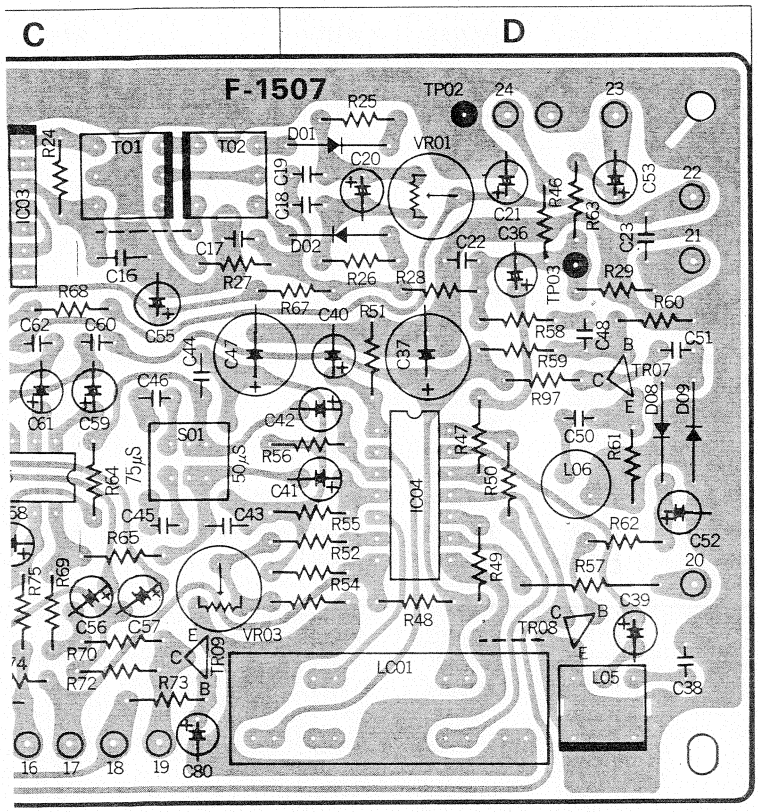
Conductor Side

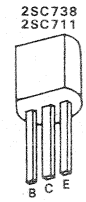


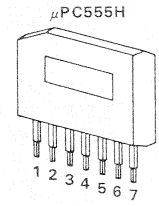
Parts List

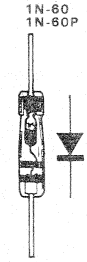
Parts No.	Stock No.	Description	Position
TR01	0306112, 3	2SC738C, D	1 A
TR02	0306112, 3	2SC738C, D	1 A
TR03	0306112, 3	2SC738C, D	1 B
TR04	0306112, 3	2SC738C, D	1 B
TR05	0306112, 3	2SC738C, D	1 B
TR06	0306112, 3	2SC738C, D	2 B
TR07	0305731, 2	2SC711E, F	1 D
TR08	0305731, 2	2SC711E, F	2 C
TR09	0305731, 2	2SC711E, F	2 C
TR901	0305731, 2	2SC711E, F	
IC01	0360120	μPC555H	1 B
IC02	0360120	μPC555H	1 B, C
IC03	0360120	μPC555H	1 C
IC04	0360080	HA1120	2 D
IC05	0360140	HA1149	2 C
IC06	0360150	HA1151	1, 2 A
D01	0311060	1N60P	1 D
D02	0311060	1N60P	1 D
D03	0310330, 1	1N60	2 B
D04	0310330, 1	1N60	2 B
D05	0310330, 1	1N60	1 B
D06	0310330, 1	1N60	1 B
D07	0310330, 1	1N60	2 B
D08	0310330, 1	1N60	1, 2 D
D09	0310330, 1	1N60	1, 2 D

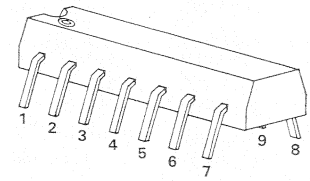
Parts No.	Stock No.	Description	Position
CF01	0910260	SFG10.7MA-6	1 A
CF02	0910260	SFG10.7MA-6	1 A
TO4	0910270	YFL455E6	1, 2 A
L01	4900200	10μH	1 B
L02	4900200	10μH	1 B
L03	4900200	10μH	1 C
L04	4900100	3.3μH	1 C
L05	4240720	19kHz Coil	2 D
L06	4900120	1mH	2 D
L07	4290011	3.5μH Peaking Coil	2 A
LC01	4240710	MPX Coil Block	2 D
LC02	4230620	AM IF Coil	1 A, B
T01	4235750	FM Discriminator Coil	1 C
T02	4235760	FM Discriminator Coil	1 C
T03	4220550	AM OSC Coil	2 A
LPF01	0910210	BL-11 Low Pass Filter	1, 2 B C
VR01	1035150	22kΩ(B) Tune Meter Volume	1 D
VR02	1035170	47kΩ(B) Signal Meter Volume	2 B
VR03	1035070	1kΩ(B) MPX Separation Volume	2 C
VR04	1035190	100kΩ(B) Muting, FM Indicator Volume	2 B
C01	0657223	0.022μF 50V C.C.	1 A
C02	0657223	0.022μF 50V C.C.	1 A
C03	0657223	0.022μF 50V C.C.	1 B











Parts No.	Stock No.	Description	Position
C04	0657223	0.022μF	1 B
C05	0657223	0.022μF	1 B
C06	0657223	0.022μF	1 B
C07	0657223	0.022μF	1 B
C08	0657223	0.022μF	1 B
C09	0657223	0.022μF	1 B , C
C10	0657223	0.022μF	1 B
C11	0657223	0.022μF 50V C.C.	1 C
C12	0657223	0.022μF	1 C
C13	0657223	0.022μF	1 C
C14	0657223	0.022μF	1 C
C15	0657223	0.022μF	1 C
C16	0657223	0.022μF	1 C
C17	0660101	100pF	1 C
C18	0660101	100pF	1 D
C19	0660101	100pF	1 D
C20	0512100	10μF 16V E.C.	1 D
C21	0513479	4.7μF 25V E.C.	1 D
C22	0660101	100pF	1 D
C23	0657223	0.022μF	1 D
C24	0657223	0.022μF	1 B
C25	0661470	47pF	1 B
C26	0657223	0.022μF 50V C.C.	1 B
C27	0661330	33pF	2 B
C28	0661470	47pF	2 B
C29	0657223	0.022μF	2 B
C30	0661470	47pF	2 B
C31	0657223	0.022μF	2 B

Parts No.	Stock No.	Description	Position
C32	0512100	10μF 10V E.C.	2 B
C33	0660221	220pF	2 B
C34	0660221	220pF 50V C.C.	1 B
C35	0657223	0.022μF	2 B
C36	0515229	2.2μF 50V E.C.	1 D
C37	0512221	100μF 16V E.C.	1 D
C38	0629001	6800pF 50V P.C.	2 D
C39	0513479	4.7μF 25V E.C.	2 D
C40	0513479	4.7μF	1 D
C41	0515109	1μF	2 D
C42	0515109	1μF	1 D
C43	0600127	0.012μF	2 C
C44	0600127	0.012μF 50V M.C.	1 C
C45	0600826	0.0082μF	
C46	0600826	0.0082μF	
C47	0512101	100μF 16V E.C.	1 D
C48	0620221	220pF 50V P.C.	1 D
C50	0600126	0.0012μF	1 D
C51	0601106	0.001μF 50V M.C.	1 D
C52	0515339	3.3μF 50V E.C.	2 D
C53	0512100	10μF 16V E.C.	1 D

Abbreviations

C.R.	: Carbon Resistor	BP.E.C.	: Bi-Polar Electrolytic Capacitor
S.R.	: Solid Resistor	C.C.	: Ceramic capacitor
Ce.R.	: Cement Resistor	Mi.C.	: Mica Capacitor
M.R.	: Metallized Film Resistor	O.C.	: Oil Capacitor
M.C.	: Mylar Capacitor	P.C.	: Polystyrene Capacitor
E.C.	: Electrolytic Capacitor	T.C.	: Tantalum Capacitor

F-1507 Parts List

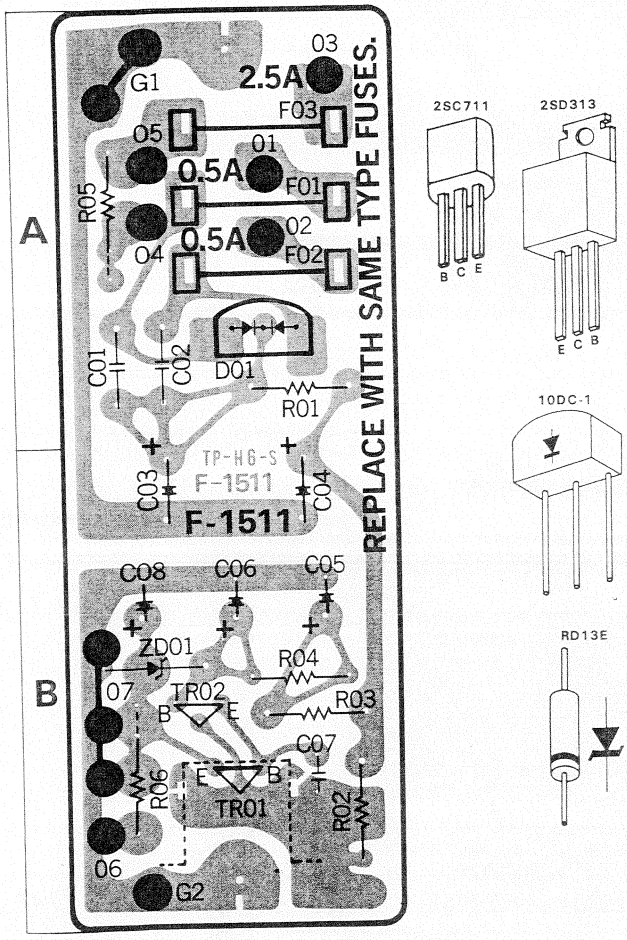
Parts No.	Stock No.	Description	Position
C54	0515109	1μF 50V E.C.	2 B
C55	0515339	3.3μF 50V E.C.	1 C
C56	0515109	1μF 50V E.C.	2 C
C57	0515109	1μF 50V E.C.	2 C
C58	0512100	10μF 16V E.C.	2 C
C59	0519102	3.3μF 50V E.C.	1 C
C60	0601686	0.0068μF 50V M.C.	1 C
C61	0519102	3.3μF 50V E.C.	1 C
C62	0601686	0.0068μF 50V M.C.	1 C
C64	0620361	360pF 50V P.C.	2 A
C65	0669400	15pF 50V C.C.	2 A
C66	0512100	10μF 16V E.C.	2 A
C67	0657223	0.022μF 50V C.C.	2 A
C68	0657223	0.022μF 50V C.C.	2 A
C69	0657223	0.022μF 50V C.C.	2 A
C70	0601107	0.01μF 50V M.C.	2 A
C71	0601106	0.001μF 50V M.C.	2 A
C72	0515109	1μF 50V E.C.	2 A
C73	0515339	10μF 16V E.C.	2 B
C74	0601107	0.01μF 50V M.C.	2 A
C75	0512101	100μF 16V E.C.	2 A
C76	0601107	0.01μF 50V M.C.	2 A
C77	0601826	0.0082μF 50V M.C.	2 A
C78	0601108	01.μF 50V M.C.	2 A
C79	0657223	0.022μF 50V M.C.	2 B
C80	0510470	47μF 63V E.C.	2 C
R01	0113471	470Ω ¼W S.R.	1 A
R02	0113151	150Ω ¼W S.R.	1 A
R03	0113680	68Ω ¼W S.R.	1 A
R04	0113151	150Ω ¼W S.R.	1 A
R05	0113391	390Ω ¼W S.R.	1 A
R06	0113681	680Ω ¼W S.R.	1 A
R07	0113153	15kΩ ¼W S.R.	1 A
R08	0113103	10kΩ ¼W S.R.	1 A
R09	0113331	330Ω ¼W S.R.	1 A
R10	0113100	10Ω ¼W S.R.	1 A
R11	0113479	4.7Ω ¼W S.R.	1 B
R12	0113470	47Ω ¼W S.R.	1 B
R13	0113151	150Ω ¼W S.R.	1 B
R14	0113391	390Ω ¼W S.R.	1 B
R15	0113221	220Ω ¼W S.R.	1 B
R16	0113562	5.6kΩ ¼W S.R.	1 B
R17	0113103	10kΩ ¼W S.R.	1 B
R18	0113151	150Ω ¼W S.R.	1 B
R19	0113102	1kΩ ¼W S.R.	1 B
R20	0113479	4.7Ω ¼W S.R.	1 B
R21	0113102	1kΩ ¼W S.R.	1 B
R22	0113479	4.7Ω ¼W S.R.	1 B C
R23	0113102	1kΩ ¼W S.R.	1 C
R24	0113682	6.8kΩ ¼W S.R.	1 C
R25	0113102	1kΩ ¼W S.R.	1 D
R26	0113102	1kΩ ¼W S.R.	1 D
R27	0113101	100Ω ¼W S.R.	1 C
R28	0113471	470Ω ¼W S.R.	1 D
R29	0113393	39kΩ ¼W S.R.	1 D
R30	0113152	1.5kΩ ¼W S.R.	1 B
R31	0113220	22Ω ¼W S.R.	1 B
R32	0113333	33kΩ ¼W S.R.	1 B
R33	0113822	8.2kΩ ¼W S.R.	1 B
R34	0113102	1kΩ ¼W S.R.	2 B
R35	0113391	390Ω ¼W S.R.	1 B
R36	0113220	22Ω ¼W S.R.	2 B

Parts No.	Stock No.	Description	Position
R37	0113223	22kΩ ¼W S.R.	2 B
R38	0113183	18kΩ ¼W S.R.	2 B
R39	0113102	1kΩ ¼W S.R.	2 B
R40	0113102	1kΩ ¼W S.R.	2 B
R41	0113222	2.2kΩ ¼W S.R.	2 B
R42	0113104	100kΩ ¼W S.R.	1 A
R43	0113333	33kΩ ¼W S.R.	1 A
R44	0113473	47kΩ ¼W S.R.	2 B
R45	0113104	100kΩ ¼W S.R.	2 B
R46	0113104	100kΩ ¼W S.R.	1 D
R47	0113562	5.6kΩ ¼W S.R.	1, 2 D
R48	0113221	220Ω ¼W S.R.	2 D
R49	0113334	330kΩ ¼W S.R.	2 D
R50	5113181	180Ω ¼W S.R.	2 D
R51	0113472	4.7kΩ ¼W S.R.	1 D
R52	0113151	150Ω ¼W S.R.	2 D
R54	0113101	100Ω ¼W S.R.	2 D
R55	0113392	3.9kΩ ¼W S.R.	2 D
R56	0113392	3.9kΩ ¼W S.R.	2 D
R57	0107102	1kΩ ¼W C.R.	2 D
R58	0113222	2.2kΩ ¼W S.R.	1 D
R59	0113104	100kΩ ¼W S.R.	1 D
R60	0113333	33kΩ ¼W S.R.	1 D
R61	0113122	1.2kΩ ¼W S.R.	2 D
R62	0113333	33kΩ ¼W S.R.	2 D
R63	0113471	470Ω ¼W S.R.	1 D
R64	0113332	3.3kΩ ¼W S.R.	2 C
R65	0113332	3.3kΩ ¼W S.R.	2 C
R66	0113104	100kΩ ¼W S.R.	2 B
R67	0113223	22kΩ ¼W S.R.	1 C, D
R68	0113223	22kΩ ¼W S.R.	1 C
R69	0113562	5.6kΩ ¼W S.R.	2 C
R70	0113183	18kΩ ¼W S.R.	2 C
R71	0113562	5.6kΩ ¼W S.R.	2 C
R72	0113183	18kΩ ¼W S.R.	2 C
R73	0113472	4.7kΩ ¼W S.R.	2 C
R74	0113222	2.2kΩ ¼W S.R.	2 C
R75	0113472	4.7kΩ ¼W S.R.	2 C
R76	0113222	2.2kΩ ¼W S.R.	2 C
R77	0113103	10kΩ ¼W S.R.	2 C
R78	0113102	1kΩ ¼W S.R.	1 C
R79	0113102	1kΩ ¼W S.R.	1 C
R80	0113472	4.7kΩ ¼W S.R.	2 C
R81	0113562	5.6kΩ ¼W S.R.	2 C
R82	0113472	4.7kΩ ¼W S.R.	2 B
R83	0113562	5.6kΩ ¼W S.R.	2 B
R84	0113392	3.9kΩ ¼W S.R.	2 A
R85	0113100	10Ω ¼W S.R.	2 A
R86	0113101	100Ω ¼W S.R.	2 A
R87	0113100	10Ω ¼W S.R.	2 A
R88	0113224	220kΩ ¼W S.R.	2 A
R89	0113182	1.8kΩ ¼W S.R.	2 A
R90	0113682	6.8kΩ ¼W S.R.	2 A
R91	0113103	10kΩ ¼W S.R.	2 B
R92	0113152	1.5kΩ ¼W S.R.	2 A
R93	0113151	150Ω ¼W S.R.	2 A
R94	0113182	1.8kΩ ¼W S.R.	2 A
R95	0113682	6.8kΩ ¼W S.R.	2 A
R96	0113101	6.8kΩ ¼W S.R.	2 A
R97	0113272	2.7kΩ ¼W S.R.	1 D
R98	0113104	100kΩ ¼W S.R.	1 D
R903	0107333	33kΩ ¼W C.R.	
S01	1110270	DE-EMPHASIS switch	

6-3. F-1511 Power Supply Circuit Board

(Stock No. 7500890 Complete Circuit Board F-1511)

Conductor Side



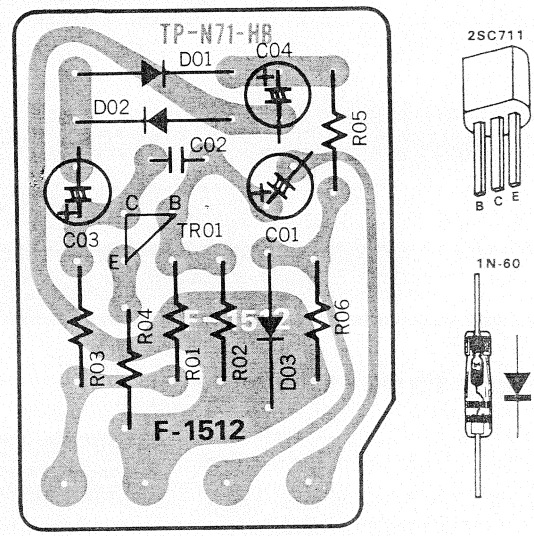
Parts List

Parts No.	Stock No.	Description	Position
TR01	0308392, 3	2SD313 (E, F) } Transistor	B
TR02	0305732, 3	2SC711 (E, G) }	B
D01	0310680	10DC-1 Diode	A
ZD01	0315310	RD13A (N) Zener Diode	B
C01	0659011	0.01μF } 500V C.C.	A
C02	0659011	0.01μF }	A
C03	0514471	470μF } 35V E.C.	B
C04	0514471	470μF }	B
C05	0513470	47μF } 25V E.C.	B
C06	0513470	47μF }	B
C07	0601107	0.01μF 50V M.C.	B
C08	0512101	100μF 16V E.C.	B
R01	0103100	10Ω ½W C.R.	A
R02	0107100	10Ω } ¼W C.R.	B
R03	0107102	1kΩ }	B
R04	0107391	390Ω }	B
R05	0103100	10Ω ½W C.R.	A
R06	0107102	1kΩ ¼W C.R.	B
F01	0430810	250V 0.5A } Power Fuse	A
F02	0430810	250V 0.5A }	A
F03	0430860	250V 2.5A }	A

6-4. F-1512 Multi Path Circuit Board

(Stock No. 7592140 Complete Circuit Board F-1512)

Conductor Side



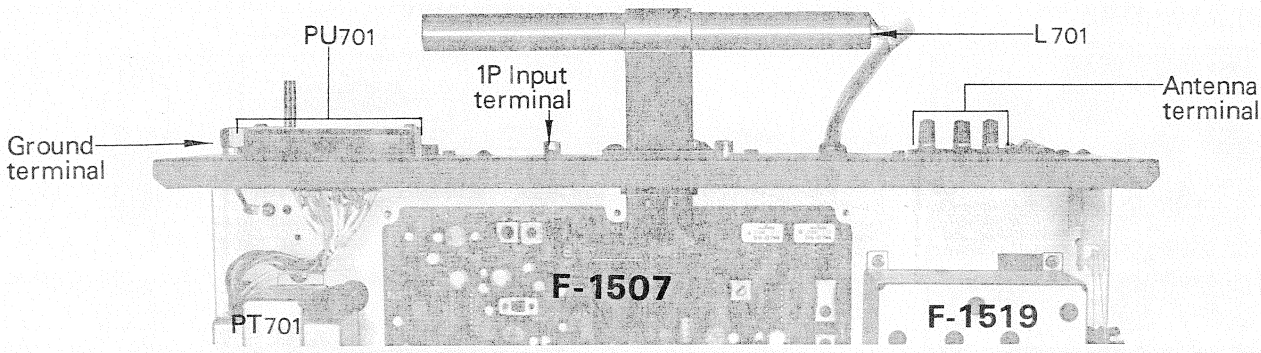
Parts List

Parts No.	Stock No.	Description
TR01	0305731	2SC711E, F Transistor
D01	0310330, 1	1N60 } Diode
D02	0310330, 1	1N60 }
D03	0310330, 1	1N60 }
C01	0515109	1μF 50V E.C.
C02	0660101	100pF 50V C.C.
C03	0513479	4.7μF 25V E.C.
C04	0512100	10μF 16V E.C.
R01	0113563	56kΩ } ¼W S.R.
R02	0113103	10kΩ }
R03	0113182	1.8kΩ }
R04	0113331	330Ω }
R05	0113223	22kΩ }
R06	0113223	22kΩ }

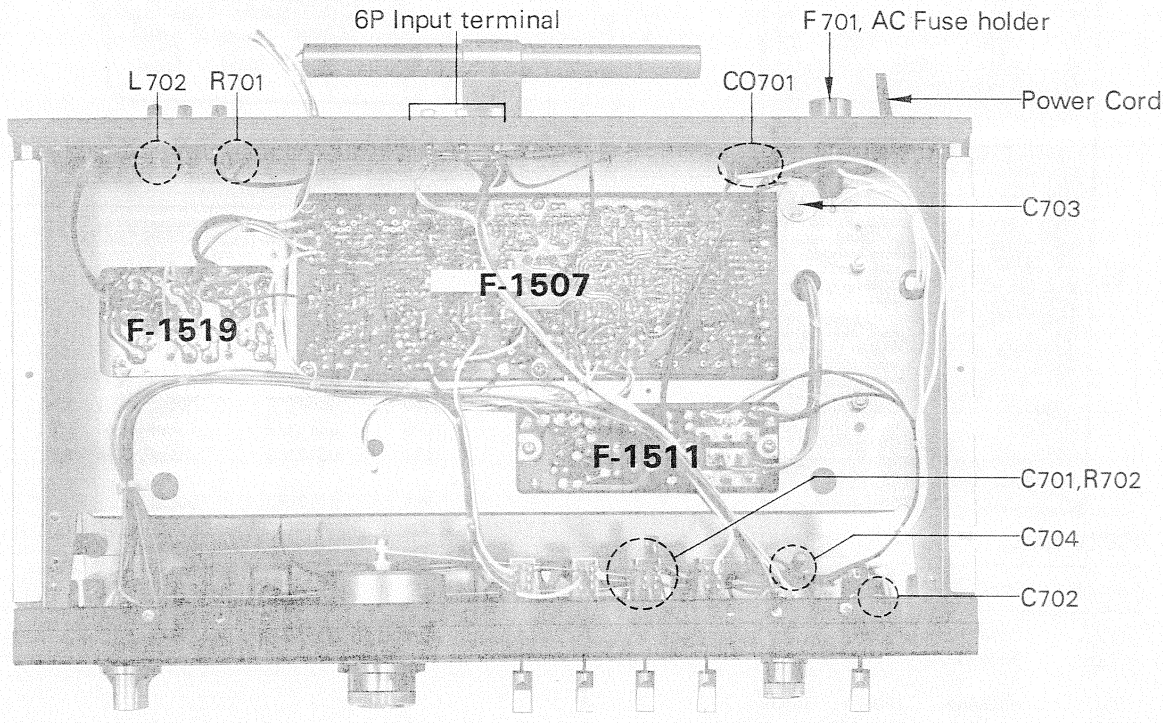
Abbreviations

C.R.	: Carbon Resistor	BP.E.C.	: Bi-Polar Electrolytic Capacitor
S.R.	: Solid Resistor	C.C.	: Ceramic Capacitor
Ce.R.	: Cement Resistor	Mi.C.	: Mica Capacitor
M.R.	: Metallized Film Resistor	O.C.	: Oil Capacitor
M.C.	: Mylar Capacitor	P.C.	: Polystyrene Capacitor
E.C.	: Electrolytic Capacitor	T.C.	: Tantalum Capacitor

6-5. Other Parts (Top Side)



6-6. Other Parts (Bottom Side)



Other Parts List (Top, Bottom Side)

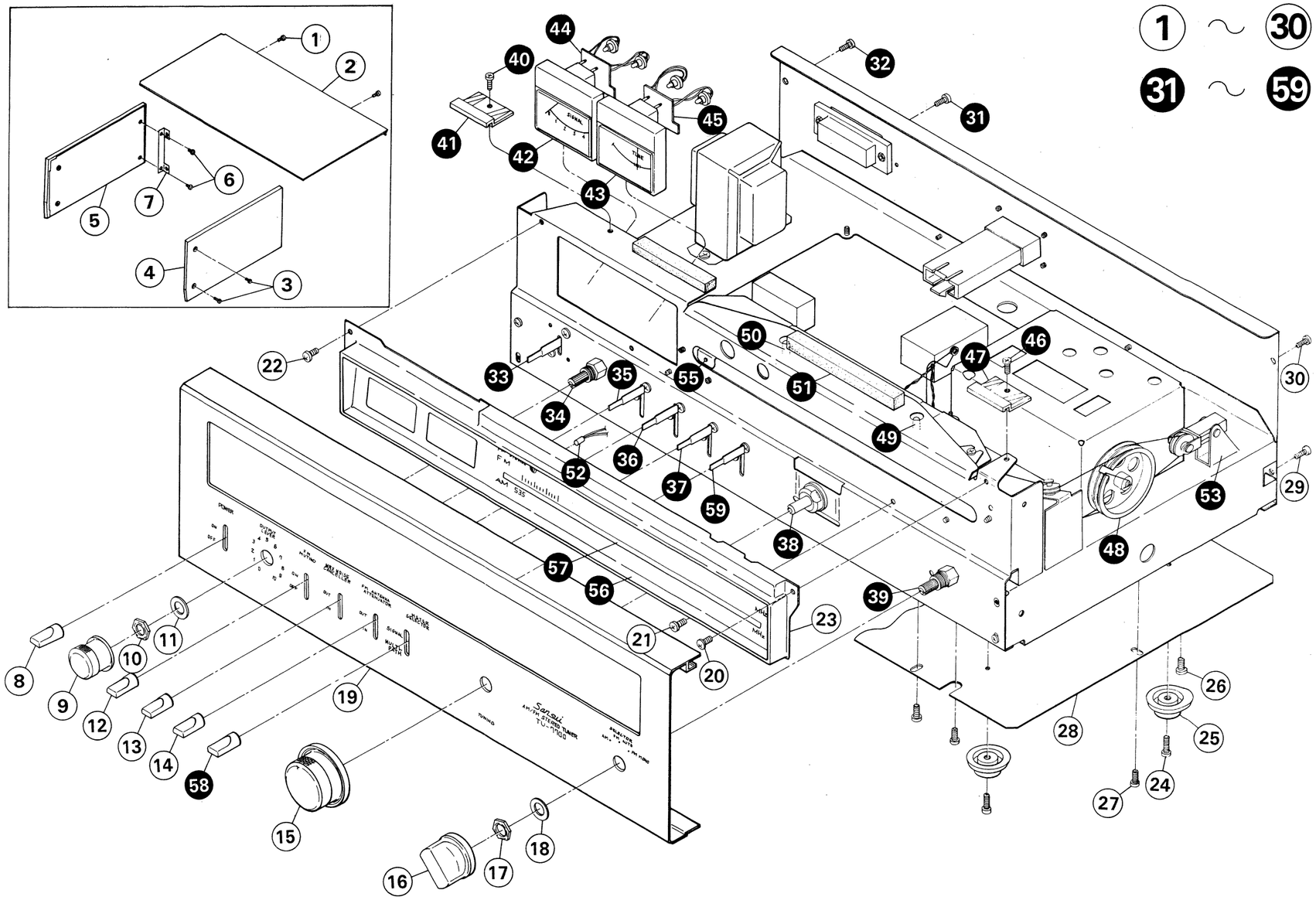
Parts No.	Stock No.	Description
C701	0601157	0.015μF 50V Mylar Capacitor
C702	0659801	0.01μF 1.4kV } Ceramic Capacitor
C703	0659802	0.0047μF 1.4kV }
C704	0510470	47μF 6.3V Electrolytic Capacitor
R701	0113122	1.2kΩ ¼W } Solid Resistor
R702	0113681	680Ω ¼W }
F701	0431221	1A Power fuse (100~117V)
	0431212	0.5A (220~240V)
	2300060	AC Fuse holder
CO701	2450050	AC Outlet

Parts No.	Stock No.	Description
PT701	4002020	Power transformer
	3800021	Power cord
	2200330	6P Input terminal
	2200290	1P Input terminal
	2230051	Ground terminal
	2210190	Antenna terminal
L701	4200660	Bar Antenna
L702	4290021	75Ω: 300Ω FM Balum
PU701	2410080	Voltage selector, socket
	2410070	Voltage selector, plug
	5268600	Voltage selector, cover

6-7. Other Parts (Front Side)

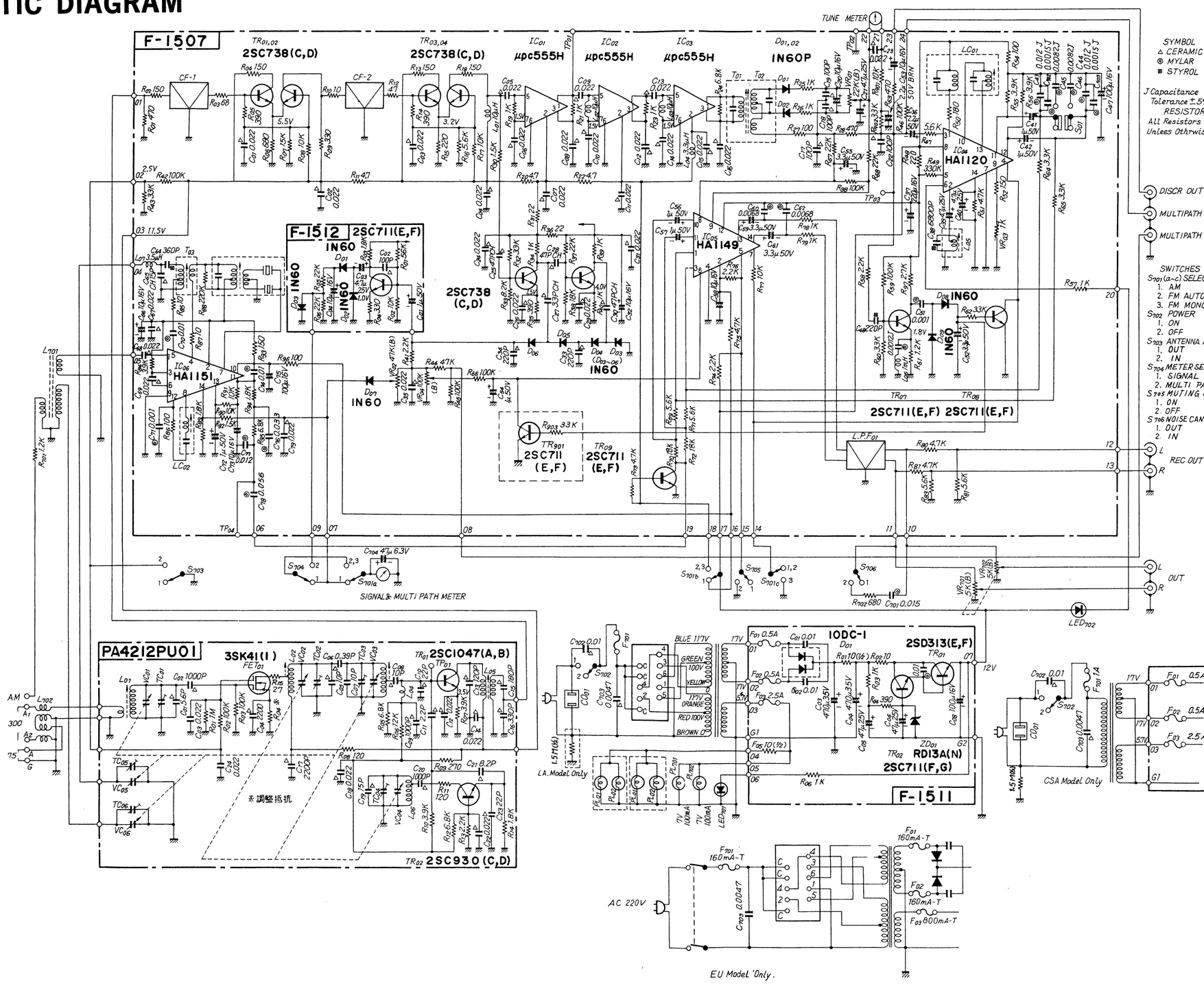
Parts List

Parts No.	Stock No.	Description
1	5101143	Binding Head Screw, M3×6
2	5006330	Bonnet
3	5101161	Binding Head Screw, M4×6
4	5309260	Side Panel R
5	5309270	Side Panel L
6	5109121	Binding Head Tapping Screw, M3×6
7	5269830	Retainer (Side Panel)
8	5326460	Knob (Power Switch)
9	5317880	S-5 TY Type Knob (Level Volume)
10	5110780	Hex. Nut, M8
11	5120183	Plain washer, 8φ
12	5326460	E-1 Type Knob (Muting)
13	5326460	E-1 Type Knob (Noise Canceller)
14	5326460	E-1 Type Knob (Antenna Att.)
15	5317921	T-7 Type Knob (Tuning)
16	5318041	S-5 Metal Type Knob (Selector Switch)
17	5110781	Hex. Nut, M9
18	5120184	Plain Washer, 9φ
19	5309320	Front Panel
20	5101043	Binding Head Screw, M3×6
21	5101043	Binding Head Screw, M3×6
22	5101043	Binding Head Screw, M3×6
23	5309451	Dial Scale Flame
24	5166520	Washer Head Tapping Screw, M3×2
25	5516940	Foot
26	5109222	Binding Head Tapping Screw, M3×8
27	5109222	Binding Head Tapping Screw, M3×8
28	5058211	Bottom Plate
29	5109222	Binding Head Tapping Screw, M3×8
30	5109222	Binding Head Tapping Screw, M3×8
31	5109222	Binding Head Tapping Screw, M3×8
32	5109222	Binding Head Tapping Screw, M3×8
33	1170330	Power Switch
34	1011051	Level Volume
35	1170390	Lever Switch (Muting)
36	1170390	Lever Switch (Noise Canceller)
37	1170390	Lever Switch (FM Antenna Att.)
38	7036392	Tuning Unit Ass'y
39	1101590, 1	Selector Switch
40	5101143	Binding Head Screw, M3×6
41	5269880	Panel Holder
42	4300690	Signal Meter
43	4300680	Tune Meter
44	7726040	Lamp Unit
45	7726040	Lamp Unit
46	5101143	Binding Head Screw, M3×6
47	5269880	Panel Holder
48	6146670	D-44 Pulley
49	0400330	7V 100mA Dial Lamp
50	6400330	7V 100mA Dial Lamp
51	5446191	Cover Plate, Dial Lamp
52	7726090	LED Ass'y (B) FM Stereo Indicator
53	7136050	Tention Unit
55	7726070	Dial Pointer Ass'y
56	5407711	Dial Scale
57	5047770	Smoked Plate
58	5326460	E-1 Type Knob (Meter Selector)
59	1170390	Lever Switch (Meter Selector)



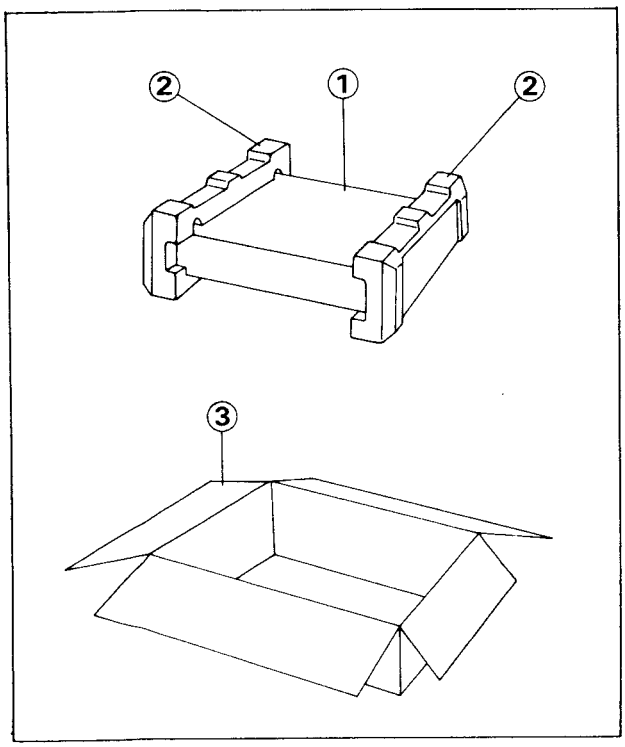
7. SCHEMATIC DIAGRAM

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



8. PACKING LIST

Parts No.	Stock No.	Description
1	9116640	Vinyl Cover
2	9027790	Stylofoam Packing
3	9008040	Carton Case



9. ACCESSORY PARTS LIST

Stock No.	Description
3820091	FM Antenna
3810180	Pinplug Cord
9208350	Operating instructions
9228350	Operating instruction sheet

OPERATING INSTRUCTIONS

STEREO TUNER

SANSUI TU-7700

Sansui

SANSUI ELECTRIC CO., LTD.

We are grateful for your choice of the Sansui TU-7700 AM/FM stereo tuner. Before you begin to operate it, may we suggest that you read this booklet of operating instructions as well as the instructions sheet once carefully? You will then be able to connect and operate it correctly, and enjoy its superb performance for years.

●FUNCTIONAL FEATURES

* Smooth tuning feel.

The SIGNAL and TUNING meters permit instant and accurate station pinpointing. The FM STEREO indicator lights up to let you know when the broadcast you're receiving is in stereo.

* Adjustable output level.

The set is equipped with an OUTPUT LEVEL control on the front panel, you can match the output level of the tuner with that of any other program source (such as a deck or a turntable), connected to your amplifier. Therefore, you do not need to take trouble and adjust the volume control when switching from the tuner to a tape deck or turntable, or vice versa.

* Extra conveniences for clear FM reception.

The set is provided with easily-accessible front-panel switches for steady and clear FM reception. The FM MUTING and MPX NOISE CANCELLER switches come in handy for those living in areas where signal strength is too weak, i.e. the locations where the desired station may be very far or where tall buildings may be dominating the area. The FM ATTENUATOR switch is for those who live in areas where signal strength is too strong.

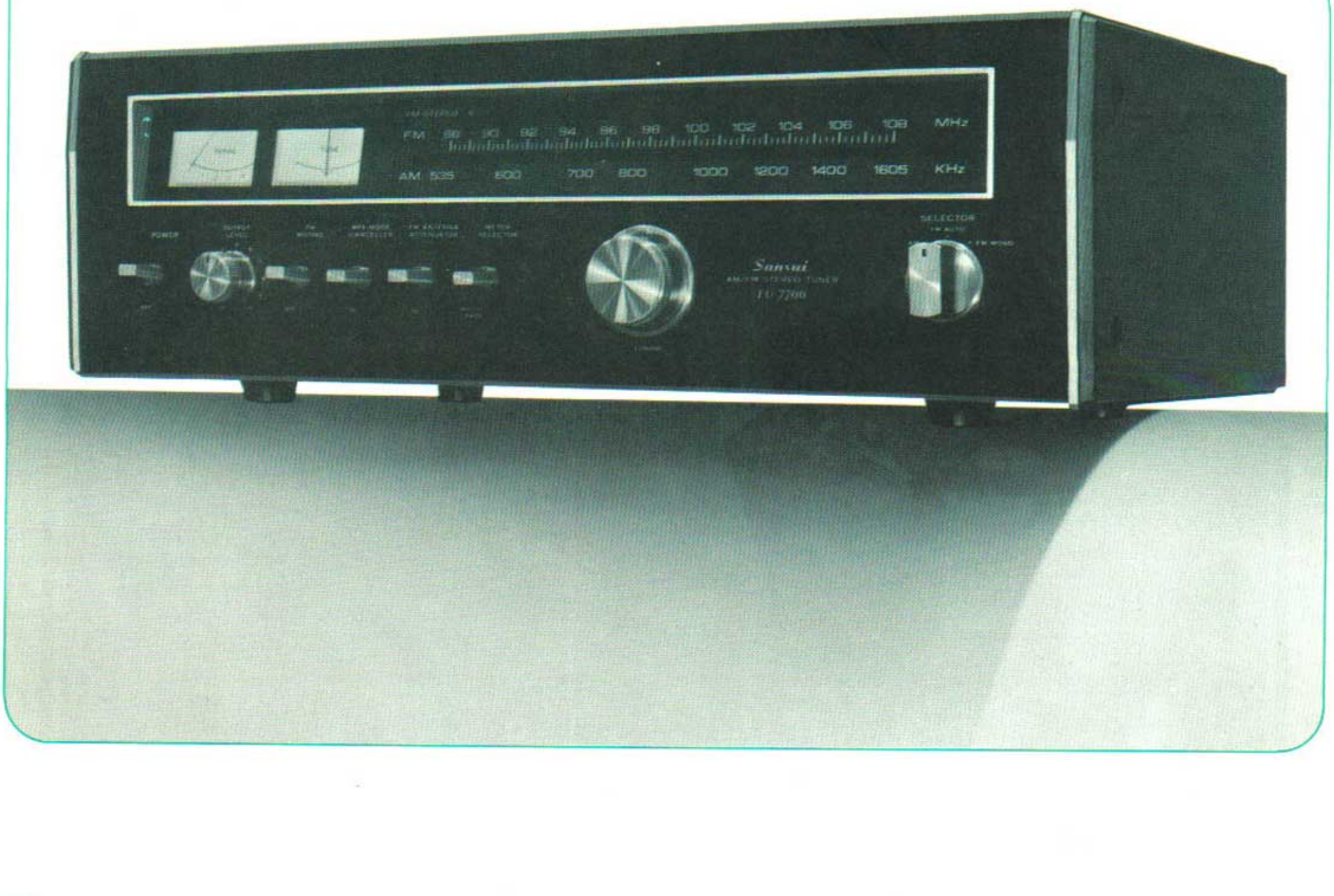
* Device for reduced multipath reception.

Switching the METER SELECTOR switch to MULTIPATH lets the SIGNAL meter function as multipath detection meter. You can thus easily orient an FM antenna in a direction where the multipath reflection is minimum and therefore you hear the optimum FM reception with least distortion. More critical multipath check is possible when an oscilloscope is connected to the FM MULTIPATH OUTPUT terminals on the set's rear panel.

* Terminals provided for two different types of FM antennas.

Provisions are made for both 75-ohm and 300-ohm FM antenna terminals. Connection is extremely simple when setting up an outdoor antenna using either a 75-ohm unbalanced coaxial type lead-in cable or a 300-ohm balanced feeder type lead-in cable.

Table of Contents



IMPORTANT PRECAUTIONS

To keep the set in top condition all the time, observe these precautions:

1. Install the set where there is a good circulation of air.
2. Avoid an extremely hot or dusty place.
3. If the set is placed on a shelf, be sure that the shelf board is thick and strong.

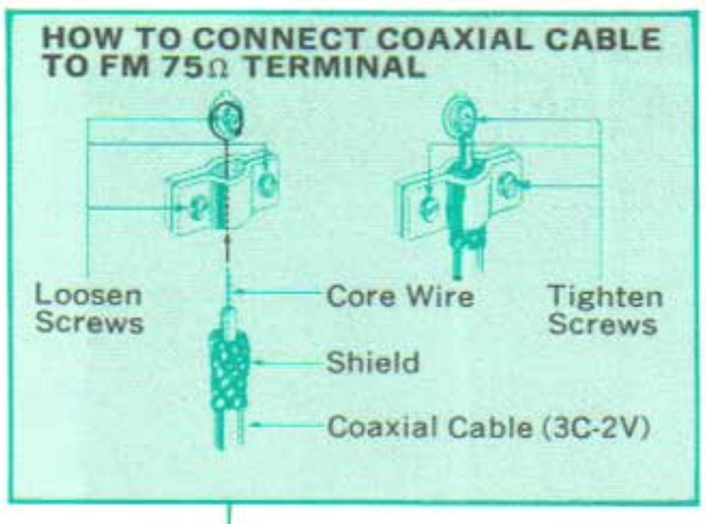
HEAT RADIATED BY THE SET

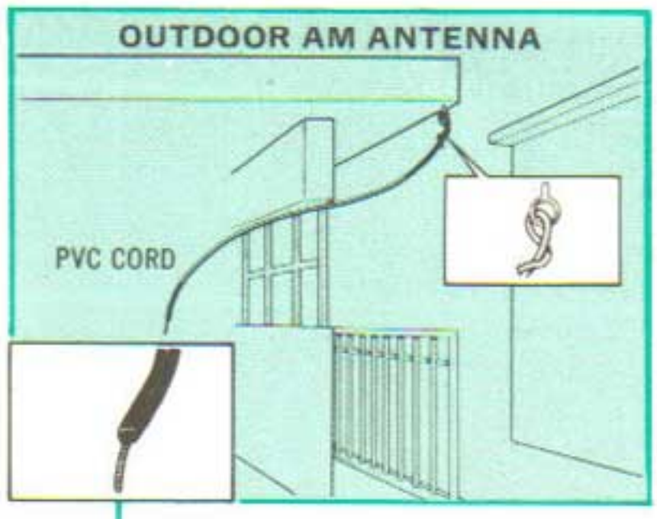
As transistors are sensitive to heat, the enclosure of this set is designed to provide a good dissipation of the heat radiated inside this set. Thus, if you place something on top the enclosure, place the set inside a closed box and operate it for many hours, it is possible that the set will break down. Always try to provide sufficient circulation of air around the set. But removing the enclosure or the bottom plate to allow better ventilation is not only dangerous but undesirable from the standpoint of electrical performance.

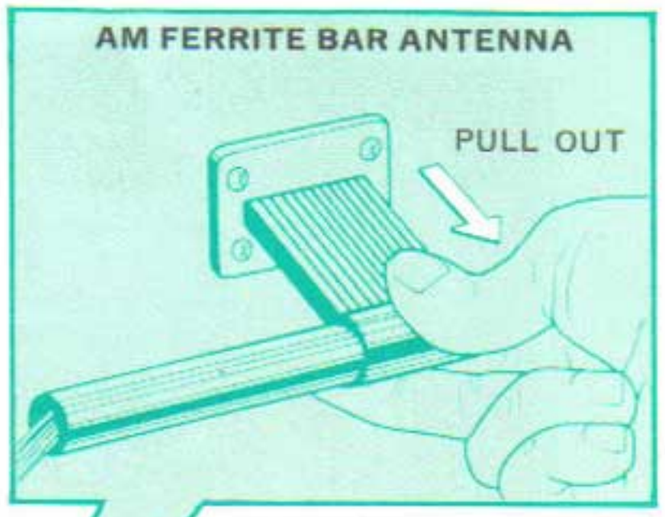
AC OUTLET

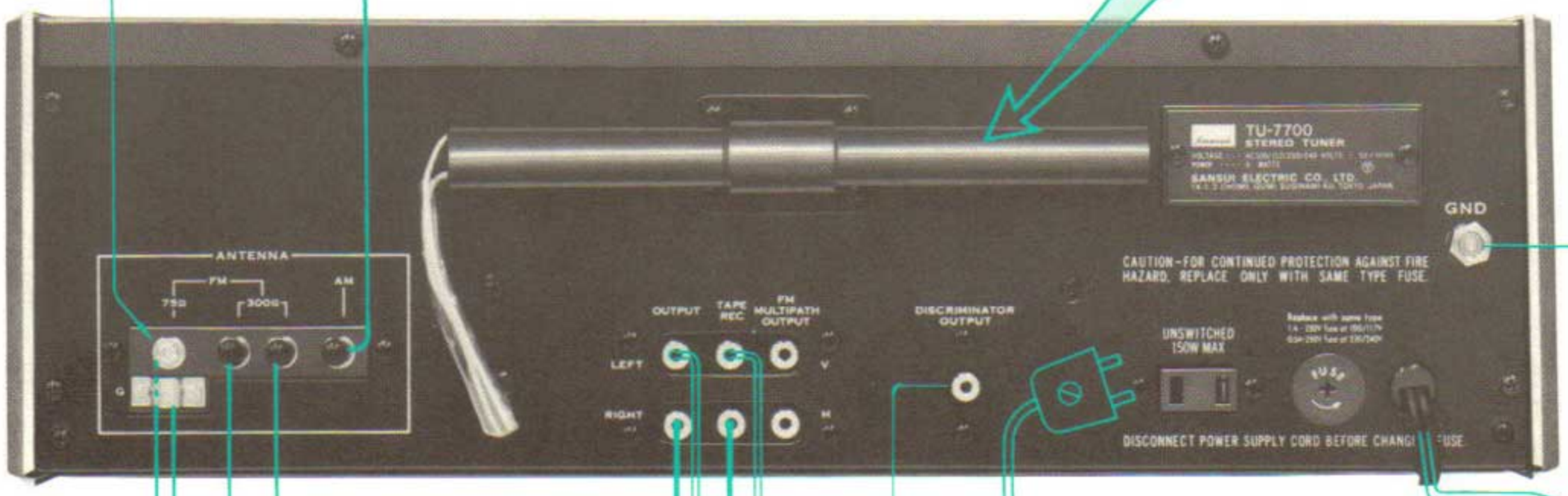
An AC outlet marked 'UNSWITCHED' is provided on the rear panel. The voltage delivered at this AC outlet is the same as the power supply voltage used. It is convenient to use it to power a program source such as your turntable or tape deck. It has a 150-watt capacity. Do not connect any equipment whose power consumption exceeds the capacity of the outlet, as it is extremely dangerous.

REAR-PANEL CONNECTIONS









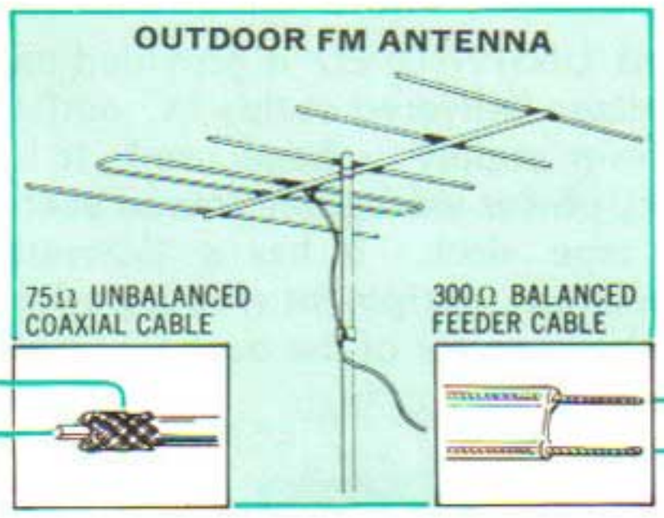
GROUNDING
(See p. 4)

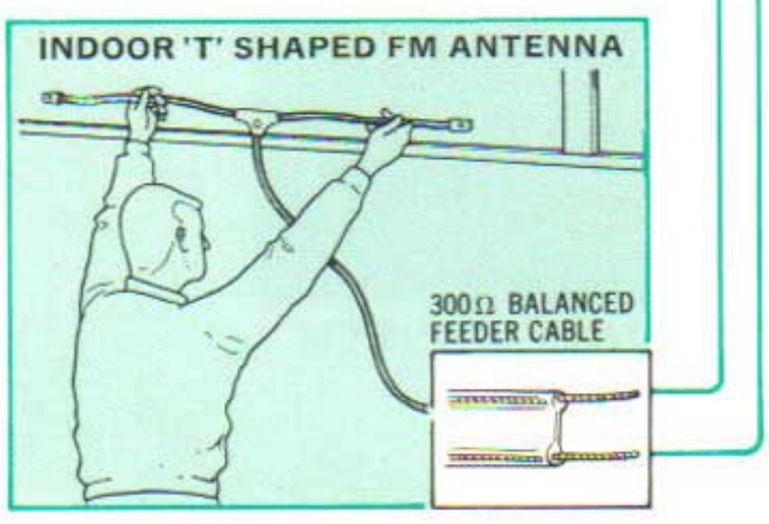
TO TAPEDECK, ETC.

CAUTION:
Never connect equipment with greater power requirements than specified maximum rating.

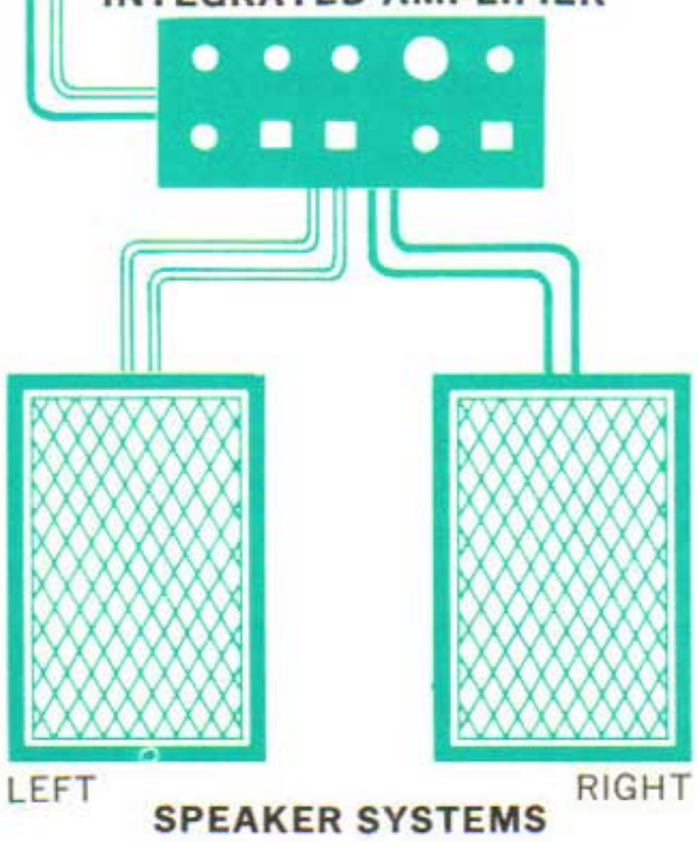
DISCRIMINATOR OUTPUT TERMINAL
(See p. 10)

WALL AC OUTLET





INTEGRATED AMPLIFIER



SPEAKER SYSTEMS

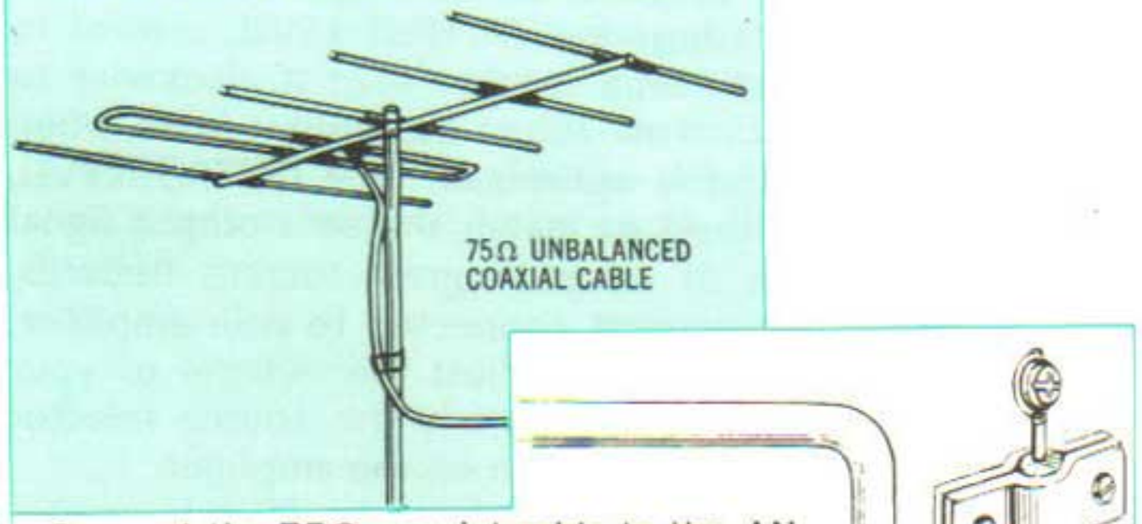
TAPE DECK (RECORDING)
(See p. 10)

LEFT CHANNEL
RIGHT CHANNEL

HINTS FOR BETTER RECEPTION

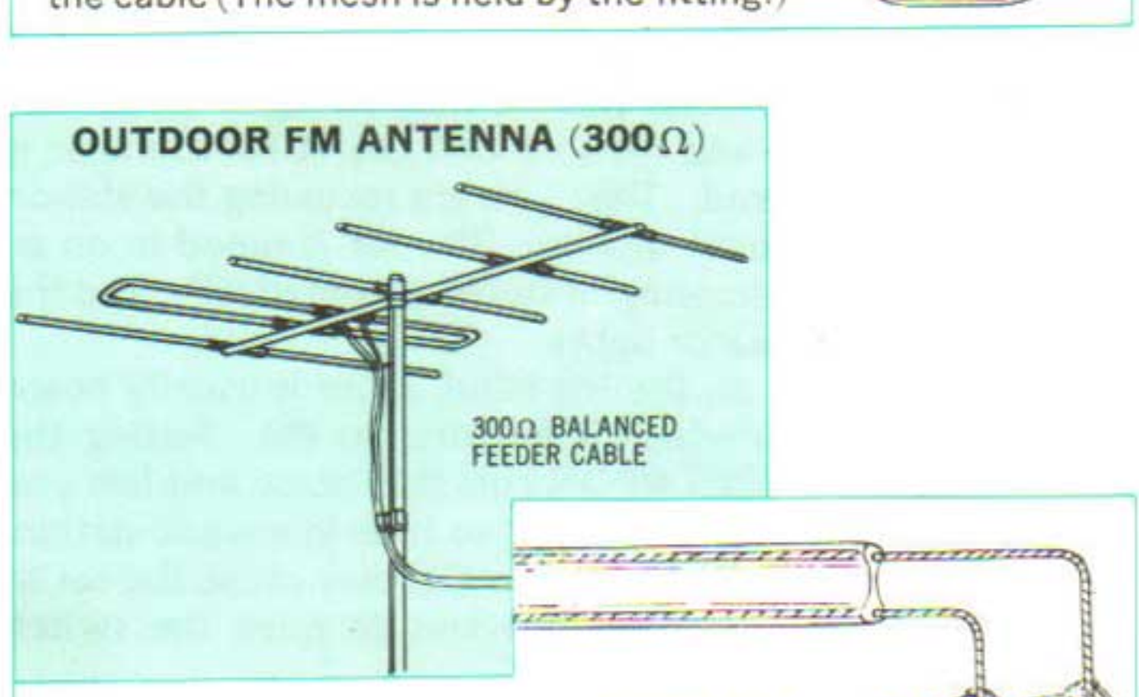
It is always recommended to install outdoor antennas so that you may receive noise-free FM and AM broadcasts with optimum tonal quality. You will find an outdoor antenna—especially one for FM—particularly effective if you are remote from broadcasting transmitters or surrounded by high mountains, buildings or other obstacles.

OUTDOOR FM ANTENNA (75Ω)



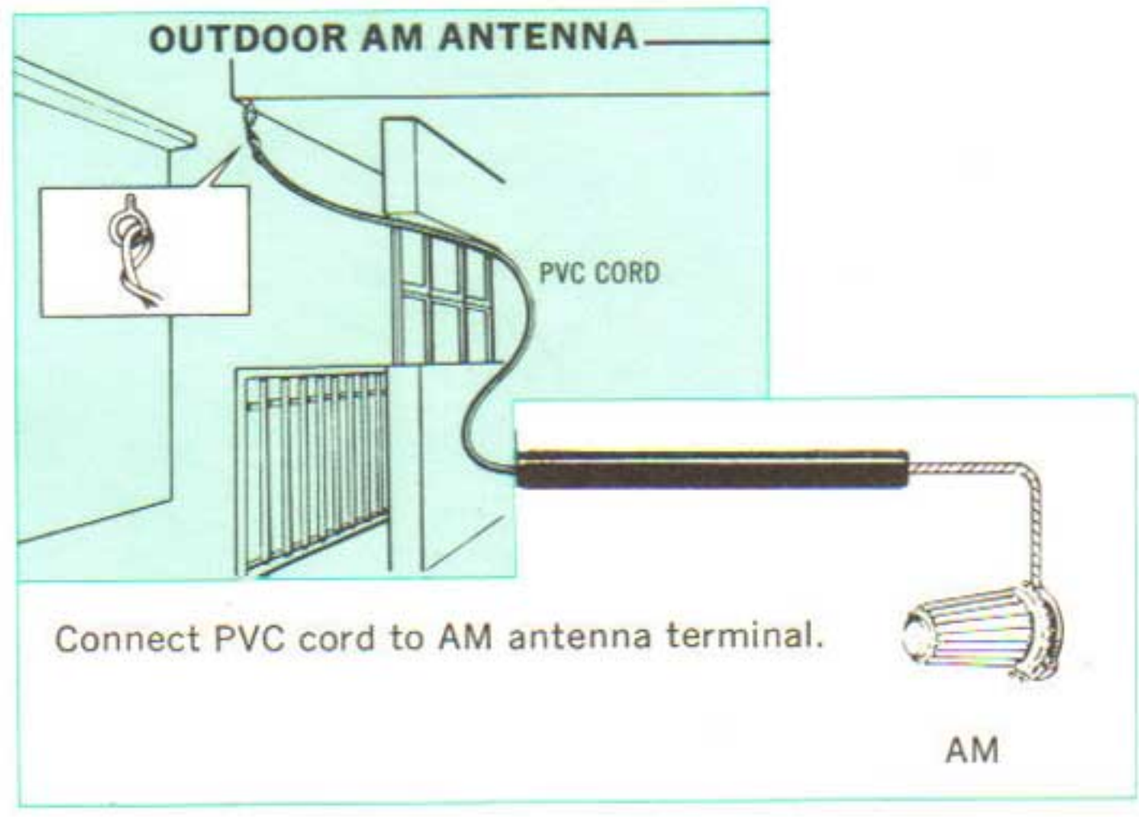
Connect the 75Ω coaxial cable to the ANTENNA FM 75Ω terminal. The mesh shield of the coaxial cable is to facilitate electrical connection with the metal fitting that holds the cable (The mesh is held by the fitting.)

OUTDOOR FM ANTENNA (300Ω)



Connect 300Ω feeder cable to FM 300Ω antenna terminals.

OUTDOOR AM ANTENNA



Connect PVC cord to AM antenna terminal.

FM ANTENNAS

Outdoor FM antennas are commercially available with three, five or seven 'elements'. The more elements an antenna has, the greater distance it is generally intended to cover. You may connect an antenna to your set either by means of coaxial cable (75-ohm unbalanced) or feeder cable (300-ohm balanced). The former is more expensive but more effectively keeps out external noise—especially the ignition noise of nearby automobiles—and transmit the signals more efficiently.

It is advised that you decide on the type of antenna and cable to use after consultation with your Sansui dealer. Depending on the type of antenna, you may require an impedance matching transformer between the antenna and the connecting cable, and this too should be found out from the dealer.

How to connect: Connect the antenna to your set as illustrated in the diagram.

If you are using coaxial cable, connect it to the FM 75Ω terminals; if you are using feeder cable, connect it to the FM 300Ω terminals.

〈**Note for Installing**〉

◇ To avoid ignition noise produced by automobiles and motor-cycles, install the antenna as far away from the street as possible.

◇ As an antenna is directional, adjust its height and direction while actually receiving your favorite FM station.

◇ Be careful so that the antenna or the lead-in cable does not touch the electrical power line around your house.

◇ It is always advisable to keep the lead-in cable as short as possible.

AM ANTENNA

When you cannot obtain the desired results by using the AM ferrite bar antenna only, connect a PVC cord to the AM antenna terminal, extending it outdoors if possible.

GROUNDING

If you connect a grounding lead to the grounding terminal marked GND on the rear panel, the noise contained in radio broadcasts may decrease. It may also keep external noises from creeping into the set.

The grounding lead may either be standard PVC cord or enameled wire. Attach a small copper plate or carbon rod to its end, and bury it deep underground. Or if there is a special grounding wire or terminal in your room, or if your water piping is of iron, the grounding lead may be connected to them. NEVER connect it to your gas piping.

OPERATING PROCEDURES

1. POWER

① POWER Switch

Raise the lever switch to ON to turn the set on, push it down to OFF to turn it off.

2. OPERATION OF THE AMPLIFIER

Operate your amplifier to which this set is connected so that you will hear radio broadcasts.

3. BAND SELECTION

② SELECTOR Switch

This switch selects the band (AM or FM) that you want to hear.

AM: To receive AM broadcasts.

FM AUTO: To receive FM broadcasts, whether stereo or mono.

FM MONO: If the FM stereo reception is too noisy for pleasant listening, set the switch to this position. The broadcast will be received in mono but the noise will be substantially decreased.

4. STATION SELECTION and OUTPUT LEVEL ADJUSTMENT

③TUNING Control

④OUTPUT LEVEL Control

⑤ FM MUTING Switch

By turning the TUNING control, first tune in the desired station and adjust the OUTPUT LEVEL control to attain a reasonably loud level. (Turn it clockwise to increase the level.) Fine-adjust the output level when the radio reception is optimized. The OUTPUT LEVEL control is to be used to match the set's output signal level with those of other program sources (records, tapes, etc.) on equipment connected to your amplifier; then you do not need to adjust the volume of your amplifier each time you switch the source selector switch or tape monitor switch on the amplifier.

To tune in an AM station, when the SIGNAL meter deflects fully to the right while turning the TUNING control, you are receiving the station with optimum tonal quality. Ignore the TUNING meter while tuning on AM.

To tune in an FM station, turn the TUNING control so that the SIGNAL meter pointer may swing as far to the right as possible and then so that the TUNING meter is accurately centered. Then you are receiving the station with optimum tonal quality. The set is tuned in on an FM station broadcasting in stereo automatically, and the FM STEREO indicator lights.

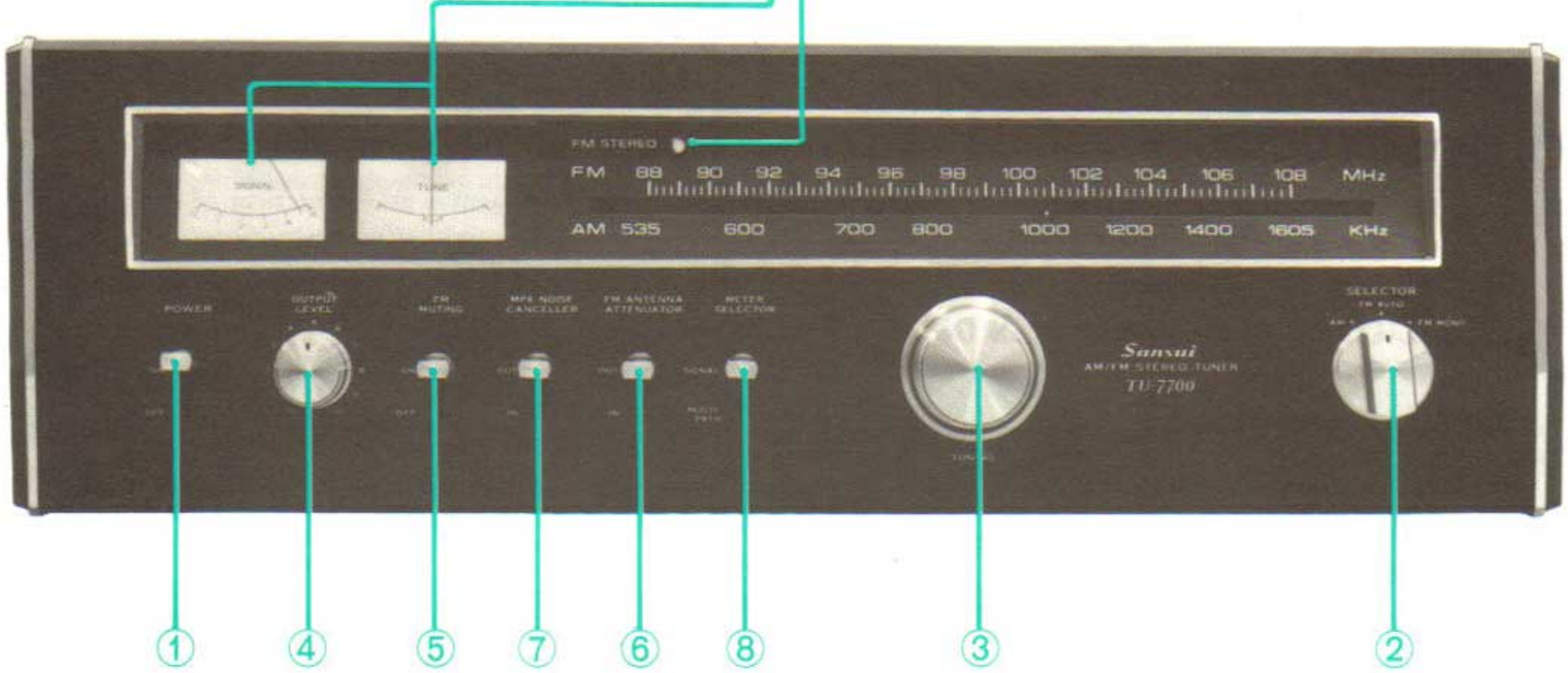
When tuning on the FM band, noise is usually heard between stations which is peculiar to FM. Setting the FM MUTING switch to ON cuts that noise and lets you tune quietly. If you are trying to tune in a weak station, however, setting the switch to ON may cause the set to miss it. In that case, it is better to push the switch down to OFF and then tune.

SIGNAL & TUNING METERS

Tune in the desired station while observing these meters. To use the SIGNAL meter to check the signal strength, the METER SELECTOR switch must be at the SIGNAL position. To use it to check the multipath reflection, the switch must be at the MULTIPATH position.

FM STEREO INDICATOR

Lights when the set is tuned in on an FM station broadcasting in stereo.



● The numbers indicated in the photograph above coincide with the colored switch designations.

5. CLEAR FM RECEPTION

⑥ FM ANTENNA ATTENUATOR Switch

This switch selects the input sensitivity for FM stations. It should normally be at the OUT position. If while receiving an FM station, located in your vicinity, you hear too coarse or distorted reception due to excessively strong signal strength, however, flip the switch down to IN.

⑦ MPX NOISE CANCELLER Switch

When you hear disturbing noise while receiving FM stereo broadcasts, push the switch down to IN; high-frequency noise will then be suppressed and the broadcasts will sound more pleasant. At all other times, however, the switch should be at its OUT position.

If you should still hear noise even when the MPX NOISE CANCELLER switch is IN, turn the SELECTOR switch to FM MONO; you should hear less noise, though in monaural.

● Excessive noise is often caused when the incoming signal is too weak. Re-orientation or re-location of the antenna may result in improving the reception of such a weak signal.

⑧ METER SELECTOR Switch

To use the SIGNAL meter to check the signal strength, this switch should be at the SIGNAL position. To use it to check the multipath reflection, this swith must be pushed down to MULTIPATH; you can orient the antenna for the best FM reception.

The radio wave, used for FM broadcast, possesses a natural tendency to travel straight ahead and be reflected by various obstacles just as a light beam does. As a result, an antenna receives both the radio wave arriving directly from the broadcasting station and the waves reflected by nearby mountains, tall buildings and so forth. (Multipath reflection. Refer to the page 8 for details.) When this condition is present, the radio waves interfering with one another resulting in amplitude and phase modulations, and distortion and reduced separation. To minimize this condition, it is necessary to orient the antenna correctly.

You are receiving optimum FM reception with the least multipath phenomenon when the SIGNAL meter deflects fully to the left. Therefore, tune in an FM station and then turn the antenna until the SIGNAL meter pointer swings as far to the left as possible before fixing it.

● You can orient the antenna more critically if you have an oscilloscope. Refer to page 9.

CONDITIONS MISTAKEN FOR BREAKDOWNS

Many of the troubles which seem to be a fault in the set may be caused by wrong operation or by external devices. These can be easily corrected by simple checking and easy remedies. If you notice a condition which looks like a breakdown of the set, examine the various connections and your operating procedure once, then look up the condition in the following chart to see if it cannot be easily removed. If this fails to improve the situation and the set definitely seems faulty, please contact the Sansui dealer from whom you purchased the set or your nearest Authorized Sansui Service Station.

PROGRAM	SYMPTOM	PROBABLE CAUSE	WHAT TO DO
AM, FM or MPX reception	* Constant or intermittent noise heard at times or in certain areas.	* Discharge or oscillation caused by electrical appliances, such as fluorescent lamp, TV set, D.C. motor, rectifier or oscillator. * Natural atmospheric phenomena * Insufficient antenna input due to ferroconcrete structure or long distance from station.	* Attach noise limiter to electrical appliance producing noise, or attach it to set's power source. * Install outdoor antenna and ground set to improved S/N ratio. * Reverse power cord plug/receptacle connections. * If noise occurs at certain frequency, attach wave trap to input. * Keep set at proper distance from other electrical appliances.
FM reception	* Noisy	* Poor noise limiter effect or too low S/N ratio due to insufficient antenna input.	* Install antenna for maximum signal strength. * If this does not prove effective, use exclusive FM outdoor antenna. * Excessively long lead-in wire of antenna may cause noise.
	Note: FM reception is affected considerably by transmitting conditions of station, such as power and antenna efficiency. As a sesult, you may receive one station quite well while receiving another station poorly.		
	* A series of pops	* Ignition noise caused by starting of nearby automobile engine.	* Install antenna and its lead-in wire at proper distance from street or increase antenna input.
	* Tuning noise between station.	* Results from nature of FM reception. * FM MUTING switch at OFF.	* Turn on FM MUTING switch.
FM-MPX reception	* Noise heard during FM-MPX reception but inaudible during FM mono reception.	* Weaker signal because service area of FM-MPX broadcast is only half that of FM mono broadcast.	* Orient antenna for maximum antenna input. * Set MPX NOISE CANCELLER switch to IN position.
AM reception	* Noise heard at particular time of day, in certan area or over part of dial.	* Peculiar to AM broadcasts.	* Install antenna for maximum antenna efficiency. See 'AM Antenna'. * In some cases, noise can be eliminated by grounding tuner or reversing power cord plug/receptacle connections.
	* High-frequency noise.	* Beat interference by adjacent station. * TV set too close to stereo systems.	* Turn on amplifier's High Filter. * Keep TV set at proper distance from stereo system.

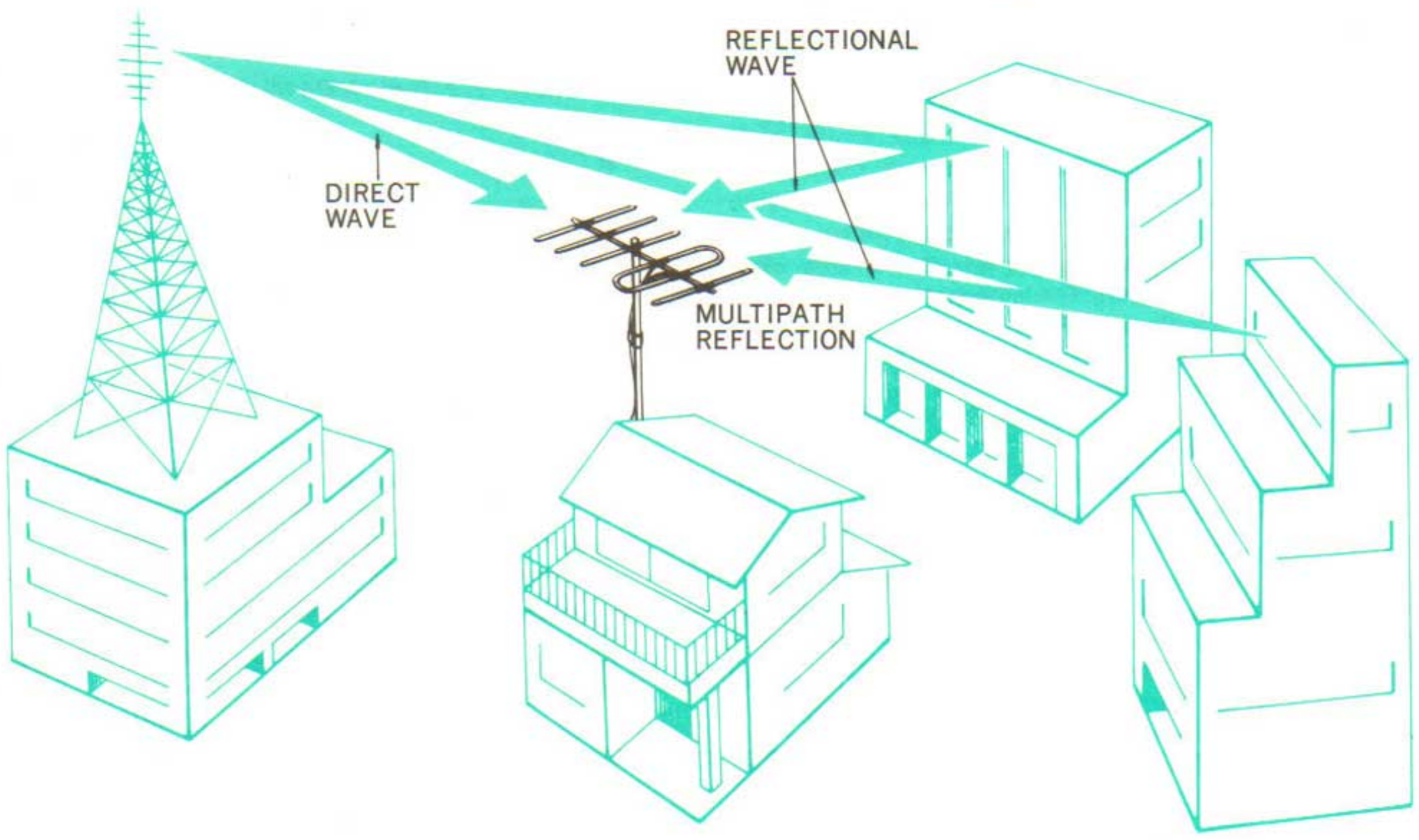
INSTALLING OUTDOOR FM ANTENNA CORRECTLY

WHAT IS MULTIPATH REFLECTION?

As the radio wave used for FM broadcast is of high frequencies, it possesses a natural tendency to advance in a straight line and be reflected by various obstacles just as a light beam does. As result, an antenna receives both the radio wave arriving directly from the broadcasting station and the waves reflected by nearby mountains, tall buildings and so forth. This phenomenon is called a multipath reflection.

When this condition is present, the radio waves interfere with one another and cause amplitude and phase modulation, which result in distortion and reduced separation. To minimize this condition, it is necessary to select an antenna with good directionality and also orient it correctly.

DIRECT WAVE & REFLECTIONAL WAVE



HOW TO USE FM MULTIPATH OUTPUT TERMINALS

The multipath condition can be visually observed by connecting an oscilloscope to the FM MULTIPATH OUTPUT terminals on the rear panel of the set, so that you may install the antenna in the correct direction.

The two terminals (indicated as V and H) deliver the output signals described below:

V: Delivers the detector output of signals amplitude-modulated by the multipath reflection, if any. If no multipath reflection exists, no output will be provided.

H: Delivers the set's discriminator output signal, whose level changes with the level of the original audio signal.

HOW TO CONNECT AND OPERATE AN OSCILLOSCOPE

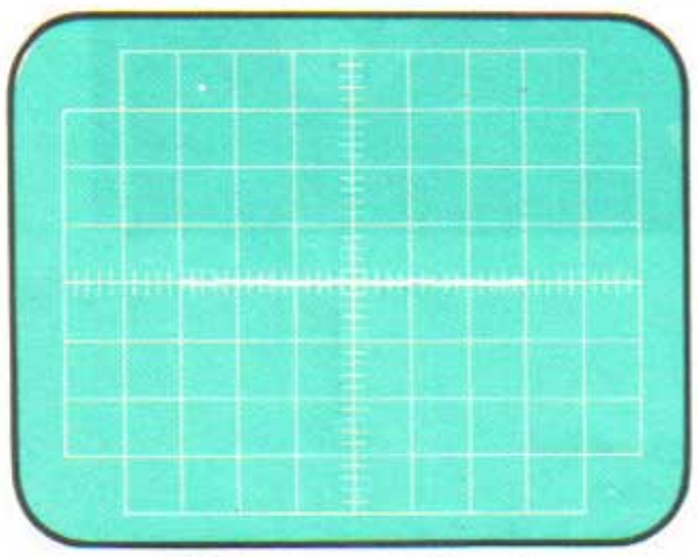
1. Connect the oscilloscope to the FM MULTIPATH OUTPUT terminals as indicated in the diagram below—namely, its vertical axis to the V terminal and its horizontal axis to the H terminal.

2. Tune in your favorite FM station accurately while watching the SIGNAL and TUNING meters, and actually receive it.

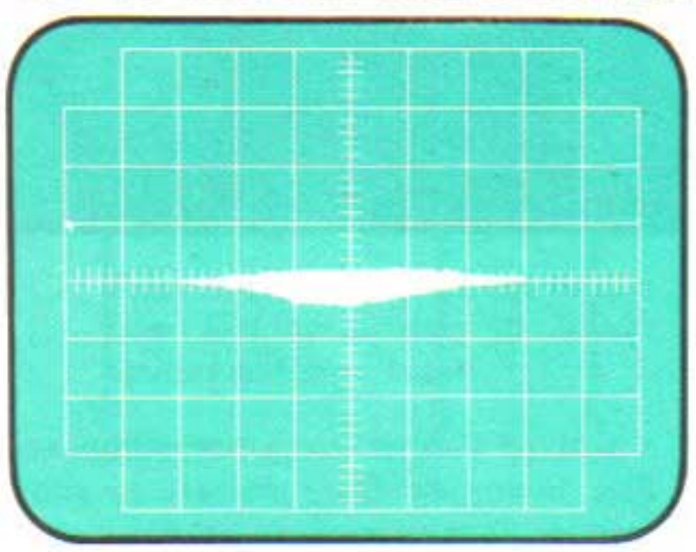
3. Observe the waveform on the oscilloscope. Set the horizontal axis sensitivity of the oscilloscope to 10mV/cm while raising its vertical axis sensitivity to an optimum level.

4. Adjust the position and direction of the antenna and fix it where the height of the waveform is minimized. See a sample oscilloscope waveform as below.

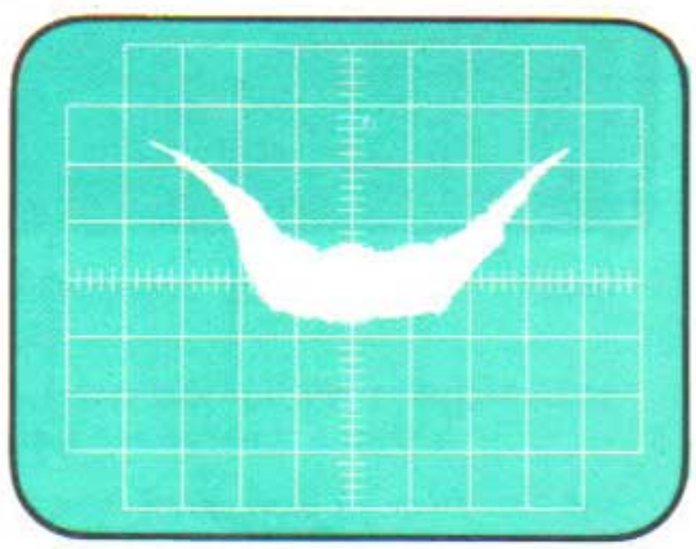
SAMPLE OSCILLOSCOPE WAVEFORMS OF MULTIPATH REFLECTION



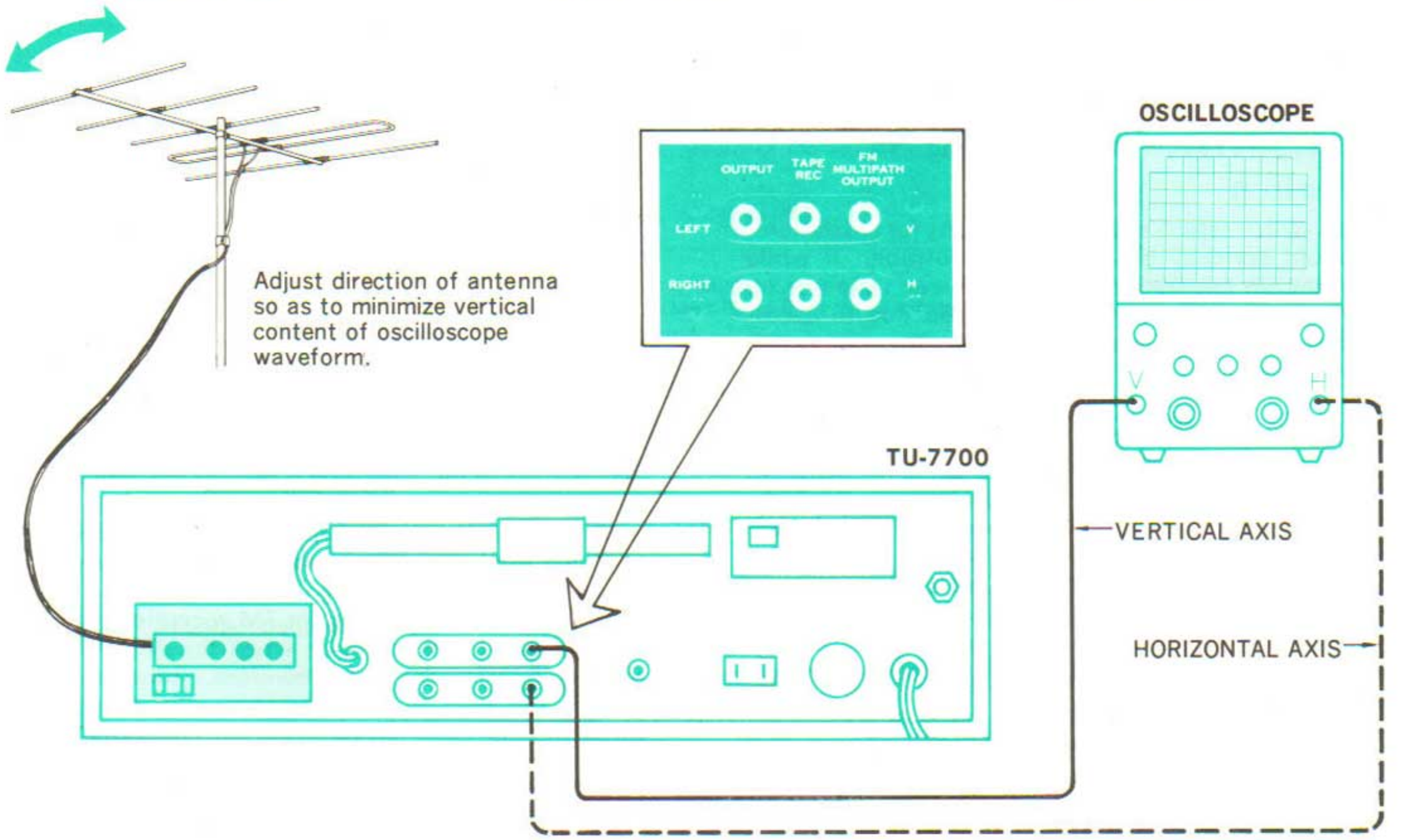
When no multipath reflection exists



When a slight multipath reflection exists



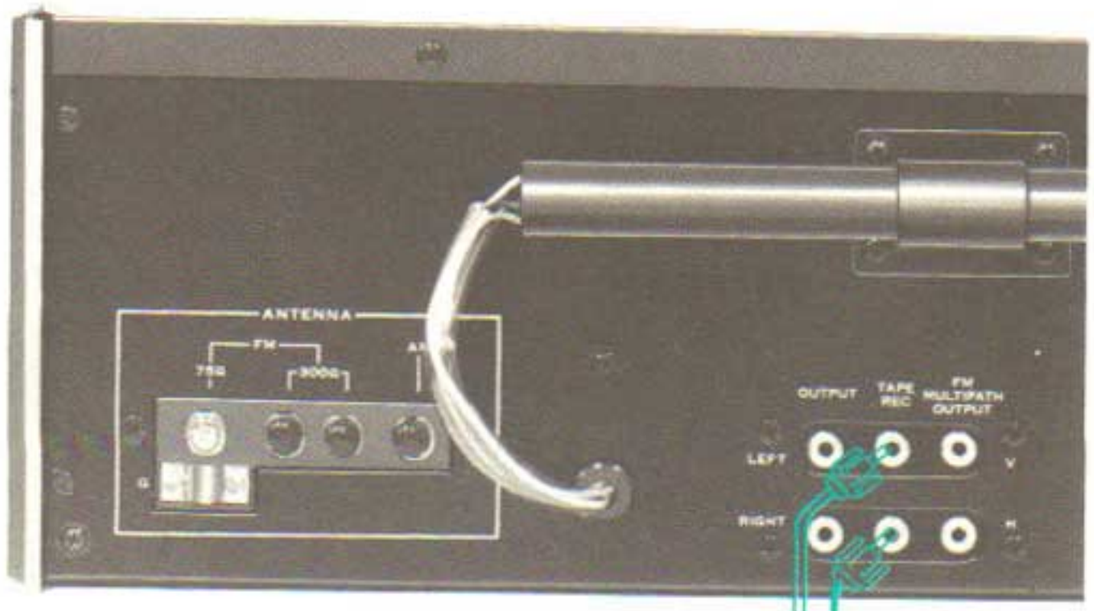
When a serious multipath reflection exists

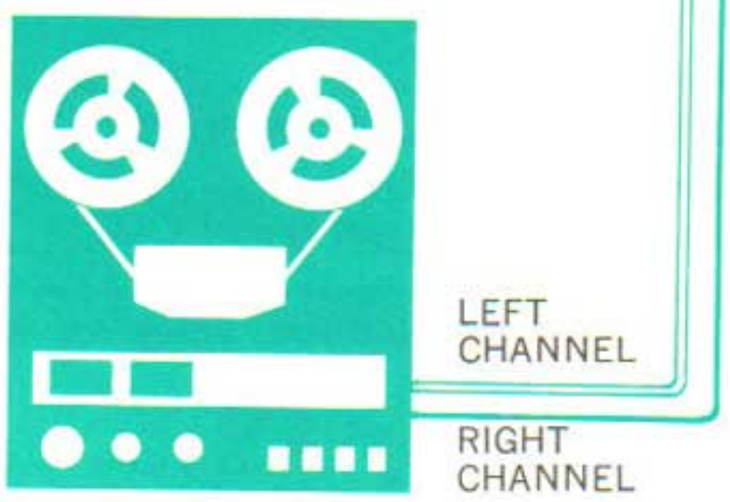


SIMPLE MAINTENANCE HINTS

RECORDING INTO A TAPE DECK

Radio broadcasts can be recorded by connecting a tape deck to the set. Connect the TAPE REC terminals on the rear panel with the recording inputs of a tape deck (often indicated LINE INPUT), utilizing shielded cables with pin plugs.





TAPE DECK

DISCRIMINATOR OUTPUT TERMINAL

Four-channel stereo is fast becoming popular as a means of reproduction of the live sound field. Four-channel FM broadcasts are already underway in many areas of the world using Sansui QS and other matrix 4-channel systems. The discrete 4-channel system is also expected to be introduced to FM in the not to distant future. To receive discrete 4-channel FM broadcasts, you will need an adaptor in addition to the set itself. The DISCRIMINATOR OUTPUT terminal on the set's rear panel is for connecting such adaptor.

SIMPLE MAINTENANCE HINTS

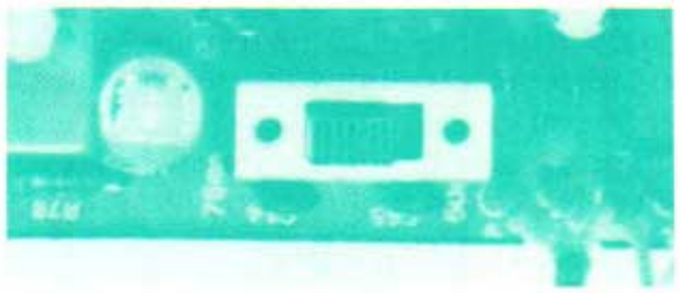
SHOULD THE POWER FUSE BLOW

If no Dial Indicator should glow and the set simply remains dead even after you have turned on its POWER switch, it is possible that its power fuse has blown.

If this happens, disconnect the power cord from the AC outlet at once and examine the power fuse on the rear panel. If you find it blown, replace it with a new glass-tubed fuse of the rated capacity (1-ampere for 100 to 117 volts, 0.5-ampere for 220 to 240 volts).
Never use a fuse of a different capacity or a piece of wire, even as a stop-gap measure, or serious danger could result.

ABOUT THE FM DE-EMPHASIS SWITCH

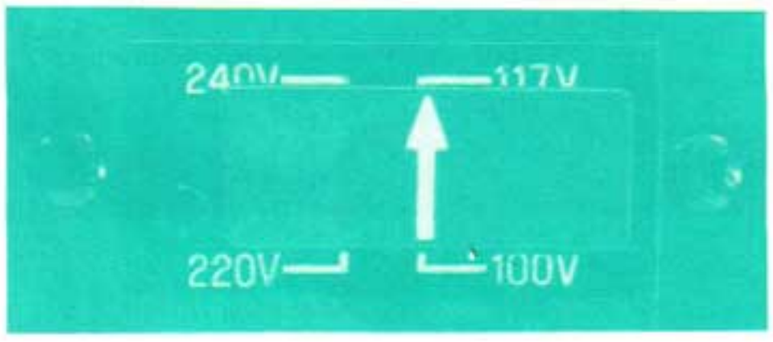
Use this switch inside the set only if you move to an area where the FM de-emphasis characteristic is different. It is adjusted to the correct de-emphasis characteristic of your area in our factory prior to shipment, so there is normally no need to touch it. The correct de-emphasis is 50 μsec for Japan and Europe, and 75 μsec for the U.S.A. and Southeast Asia.



ABOUT THE VOLTAGE ADJUSTMENT

Your set is adjusted to operate at the correct power supply voltage of your area prior to shipment from our factory. If you move after purchasing it, or send it as a gift to a friend living in an area where the voltage is different, it may be necessary to adjust its Voltage Selector.

To adjust it, remove the two screws securing the name plate on the rear panel, then set the arrow mark on the Voltage Selector Plug to the correct Voltage indication (100, 117, 220 or 240 volts). It may be necessary to replace the power fuse as well whenever the voltage has changed. For operation at 100 to 117 volts, use a 1-ampere fuse. For operation at 220 to 240 volts use a 0.5-ampere one.



LIST OF ACCESSORIES

1.	FM ANTENNA	1
2.	CONNECTION CABLE WITH PIN PLUGS	2
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4.	OPERATING INSTRUCTIONS SHEET	1

Operating Instructions **Stock No. 9208350**

SPECIFICATIONS

FM SECTION

TUNING RANGE .....88 to 108MHz
SENSITIVITY (IHF) 1.8μV
QUIETING SLOPE.....40dB 1.8μV, 50dB 3μV, 60dB 10μV, 70dB 50μV
TOTAL HARMONIC DISTORTION
  MONO .....less than 0.2%
  STEREO .....less than 0.3%
SIGNAL TO NOISE RATIO..better than 75dB
SELECTIVITY .....better than 80dB
CAPTURE RATIO (IHF) ....less than 1.5dB
IMAGE FREQUENCY REJECTION
.....better than 75dB
IF REJECTION .....better than 90dB
SPURIOUS RESPONSE REJECTION
.....better than 80dB
STEREO SEPARATION.....better than 40dB at 1KHz
better than 30dB at 10KHz
SPURIOUS RADIATION....less than 34dB
FREQUENCY RESPONSE....20 to 15,000Hz
FM ANTENNA INPUT IMPEDANCE
.....300Ω balanced,
75Ω unbalanced
FM ANTENNA ATTENUATOR
.....—20dB

AM SECTION

TUNING RANGE .....535 to 1,605KHz
SENSITIVITY (Bar Antenna) 50dB/m
SELECTIVITY .....better than 30dB
IMAGE FREQUENCY REJECTION
.....better than 80dB/m at 1MHz
IF REJECTION .....better than 80dB/m at 1MHz

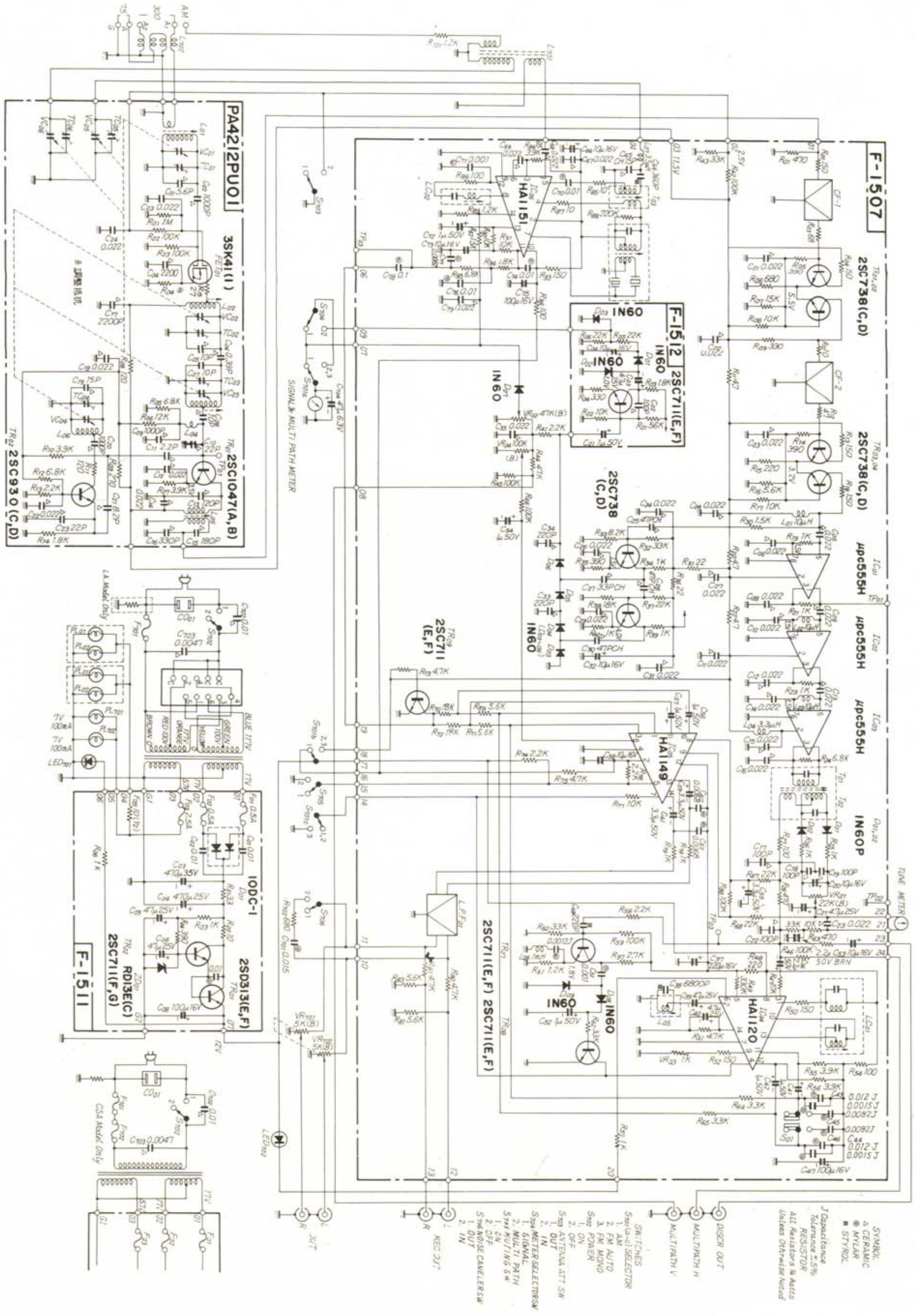
OTHERS

OUTPUT .....0 to 0.775V
REC OUTPUT 0.4V
POWER REQUIREMENTS
  POWER VOLTAGE 100, 117, 220, 240V 50/60Hz
  POWER CONSUMPTION ..9W (rated)
DIMENSIONS .....434mm, (17$\frac{1}{8}$") W
130mm (5$\frac{1}{8}$") H
243mm (9$\frac{9}{16}$") D
WEIGHT.....6.9Kg (15.2 lbs) net
8.3Kg (18.3 lbs) packed

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

SCHEMATIC DIAGRAM

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



Sansui

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Printed in Japan (D4M201)