SERVICE MANUAL

AM/FM STEREO TUNER

SANSUI TU-4400

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-4400 correctly.
When ordering the parts, use the stock numder 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) 2.0μV
TOTAL HARMONIC DISTORTION
MONO .....less than 0.3%
STEREO .....less than 0.4%
SIGNAL TO NOISE RATIO..better than 70dB
SELECTIVITY .....better than 60dB
CAPTURE RATIO (IHF) ....less than 2.0dB
IMAGE FREQUENCY REJECTION
.....better than 55dB
IF REJECTION .....better than 80dB
SPURIOUS RESPONSE REJECTION
.....better than 70dB
STEREO SEPARATION.....better than 40dB at 1KHz
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

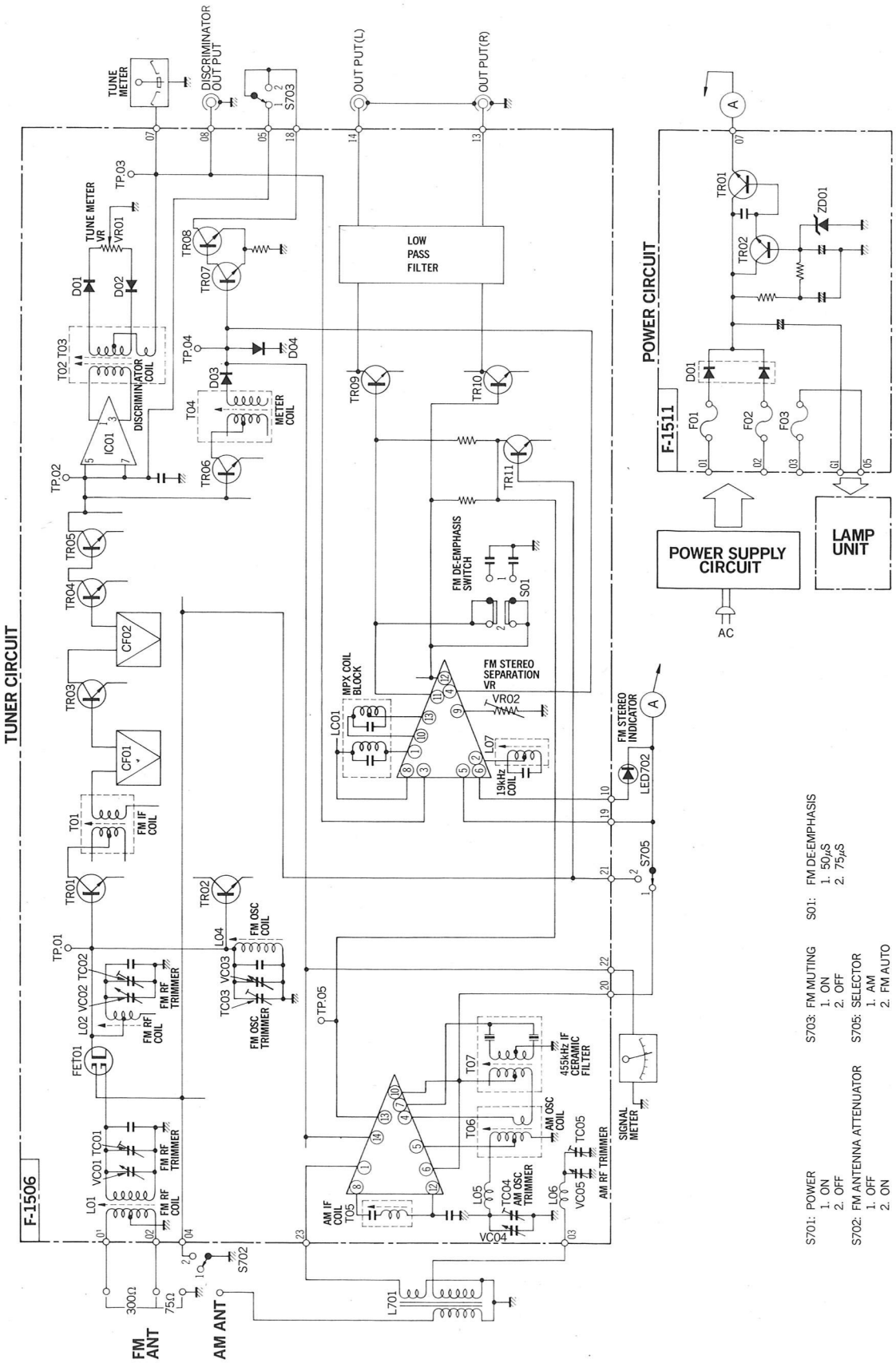
TUNING RANGE .....535 to 1,605KHz
SENSITIVITY (Bar Antenna) 53dB/m
SELECTIVITY .....better than 30dB
IMAGE FREQUENCY REJECTION
.....better than 80dB/m at 1MHz
IF REJECTION .....better than 80dB/m at 1MHz

OTHERS

OUTPUT .....0 to 0.775V
REC OUTPUT 0.4V
SEMICONDUCTORS
TRANSISTORS 13
FET 1
ICs 3
DIODES 6
ZENER DIODE 1
LEDS 2
POWER REQUIREMENTS
POWER VOLTAGE 100, 117, 220, 240V 50/60Hz
POWER CONSUMPTION ..9W (rated)
DIMENSIONS .....400mm (15¾″) W
120mm (4¾″) H
240mm (9½″) D
WEIGHT.....5.0Kg (11.0 lbs) net
6.3Kg (13.9 lbs) packed

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

2. BLOCK DIAGRAM



3. ALIGNMENTS AND ADJUSTMENTS

Abbreviation

Equipment

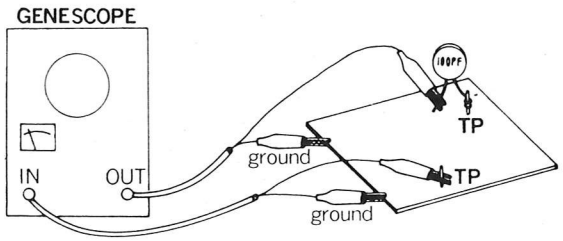
AM FM Generator Oscilloscope .....Genescope
AM Standard Signal Generator .....AM SSG
FM Standard Signal Generator .....FM SSG
FM Stereo Generator .....Stereo SG
Oscilloscope .....Scope
Audio Oscillator .....Audio Osc.
Distortion Meter .....Dist. Meter

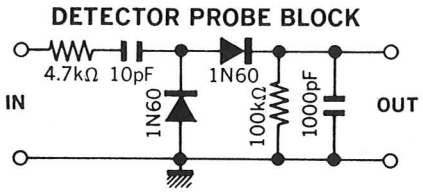
Others

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

3-1. FM IF Alignment (See Figs. 3-4, 3-5 on page 6)

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. 1 through 100pF ceramic capacitor.
6. FM MUTING switch .....OFF.

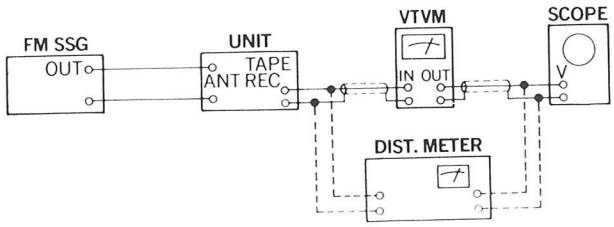


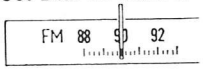
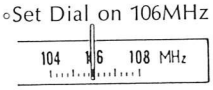
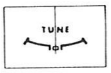


STEP	SUBJECT	FEED SICNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	CONDITION
		FROM	TO				
1	IF coil	Output 65dB Genescope	TP. 1 (Fig. 3-5)	TP. 2 (Fig. 3-5) Use Detector Probe	T01 (Fig. 3-5)	Max. IF waveform 1 as (Fig. 3-4)	
2	Meter coil	Output 70dB Genescope	Same as above	TP. 4 (Fig. 3-5)	T04 (Fig. 3-5)	Max. IF waveform 2 (Fig. 3-4) Set the center of waveform 2 with waveform 1 as (Fig. 3-4)	
3	Descrimina-tor coil	Same as above	Same as above	TP. 3 (Fig. 3-5)	T02 T03 (Fig. 3-5)	Max. linearity of S curve Set the center of S curve to of waveform 1 as (Fig. 3-4)	

3-2. FM Dial Calibration, Mono Distortion, TUNE meter and RF Alignment (See Fig. 3-5 on page 6)

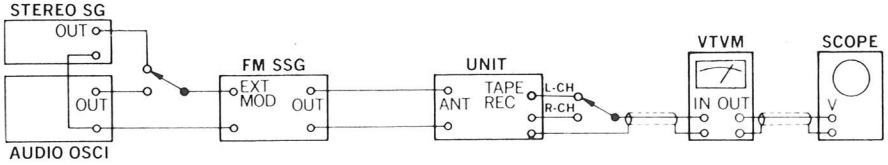
Note: 1. Selector.... .....FM AUTO
2. Confirm start point of dial pointer before alignment.
3. FM MUTING switch .....OFF.



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	L04 (Fig. 3-5)	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 TC03 (Fig. 3-5)	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 step 1, 2
4	90MHz RF Adj.	90MHz ANT input 50dB 400Hz (100% MOD) FM SSG	Same as above	Same as above	L01, L02 (Fig. 3-5)	Max. output	◦Tune FM SSG (Max. indication of Signal Meter)
5	106MHz RF Adj.	108MHz ANT input 50dB 400Hz (100% MOD) FM SSG	Same as above	Same as above	Trimmer TC01, TC02 (Fig. 3-5)	Same as above	◦Tune FM SSG (Max. indication of Signal Meter)
6	Distortion	98MHz ANT input 60bB 400Hz (100% MOD) FM SSG	Same as above	REC OUT L or R-ch Dist. meter & Scope	T03 (Fig. 3-5)	Min. distortion	Same as above
7	TUNE meter Volume	Same as above	Same as above	TUNE meter	VR01 (Fig. 3-5)	Center on meter 	Same as above

3-3. MPX Alignment (See Fig. 3-5 on page 6)

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

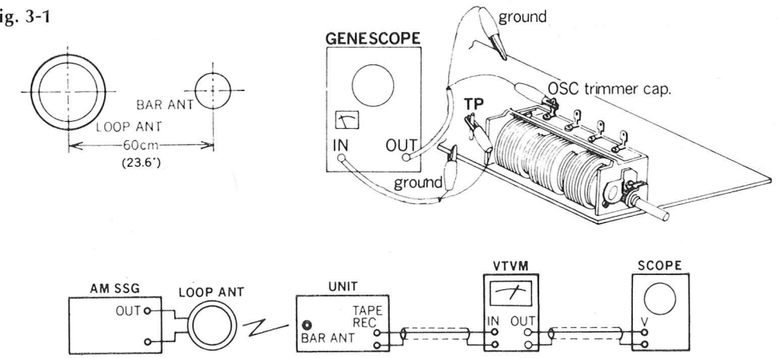


STEP	SUBJECT	FEED SIGNAL FROM	FEED SIGNAL TO	MEASURE OUTPUT	ADJUST	ADJUST FOR	CONDITION
1	19kHz coil	98MHz ANT input 60dB FM SSG Pilot 19kHz (10% MOD) L-ch 1kHz (45% MOD) R-ch (0% MOD) Stereo SG	ANT terminal 300Ω	REC OUT L-ch VTVM & Scope	L07 (Fig. 3-5)	Max. output	◦Tune FM SSG (Max. indication of signal meter)
2	Separation	Same as above	Same as above	REC OUT R-ch VTVM & Scope	VR02 (Fig. 3-5)	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 the 40dB adjust VR02

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

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. 3-1).

Fig. 3-1



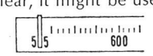
STEP	SUBJECT	FEED SIGNAL FROM	FEED SIGNAL TO	MEASURE OUTPUT	ADJUST	ADJUST FOR	CONDITION
1	IF coil	Output 70dB Genescope	OSC trimmer cap. TC04 (Fig. 3-5)	TP. 5 (Fig. 3-5)	T07 (Fig. 3-5)	Max. IF waveform (Fig. 3-2)	
2	IF coil	Output 60dB Genescope	Same as above	Same as above	T05 (Fig. 3-5)	Max. IF waveform (Fig. 3-3)	
3	IF coil	Output 70dB Genescope	Same as above	Same as above		Max. IF waveform (Fig. 3-3)	◦If not, readjust T07 & T05 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	T06 (Fig. 3-5)	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 TC04 (Fig. 3-5)	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 76dB 400Hz (30% MOD) AM SSG Use loop ANT	Same as above	Same as above	Trimmer TC05 (Fig. 3-5)	Same as above	
9	Confirm 1000kHz RF Adj.	1000kHz ANT input 76dB 400Hz (30% MOD) AM SSG Use loop ANT	Same as above	Same as above		Confirm 1000kHz RF Adj.	◦If not nepeat from step 7, 8

Fig. 3-2

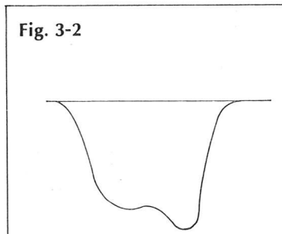


Fig. 3-3

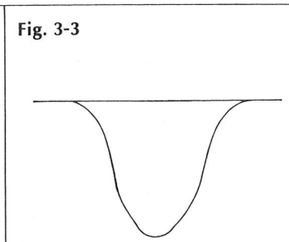


Fig. 3-4

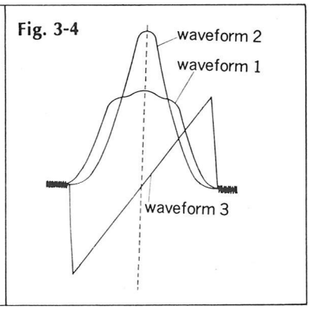
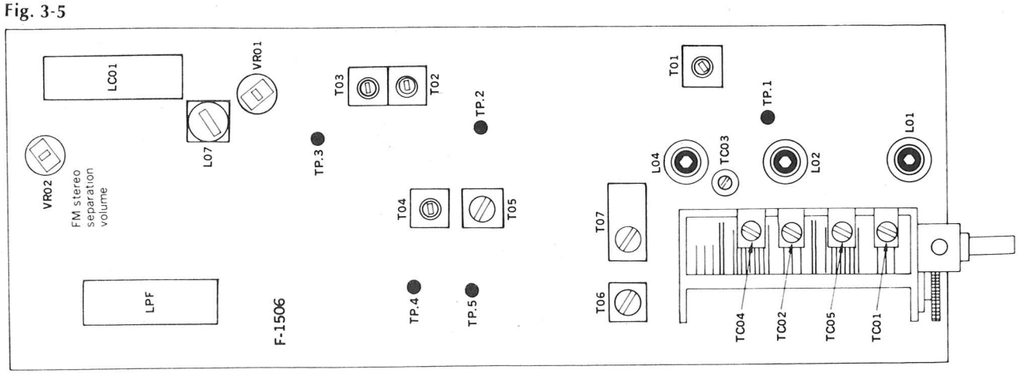


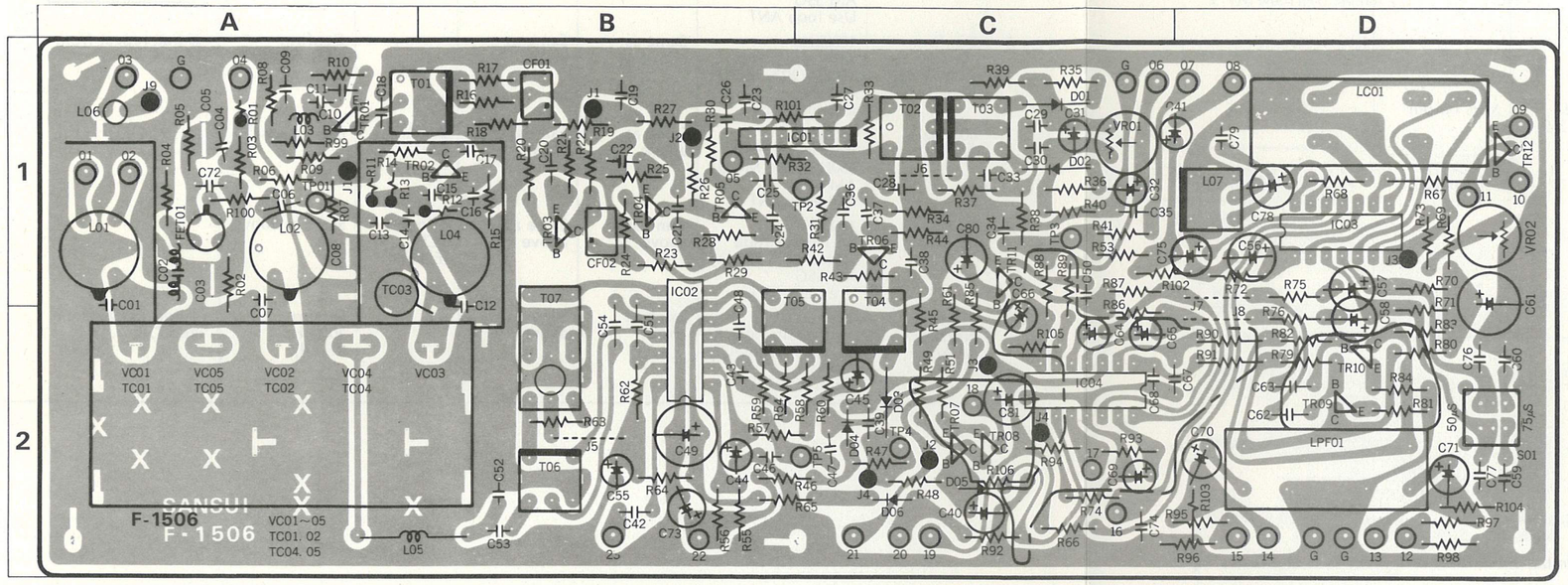
Fig. 3-5



4. PARTS LOCATIONS AND PARTS LISTS

4-1. F-1506D Tuner Circuit Board (Stock No. 7520750 Complete Circuit Board F-1506D)

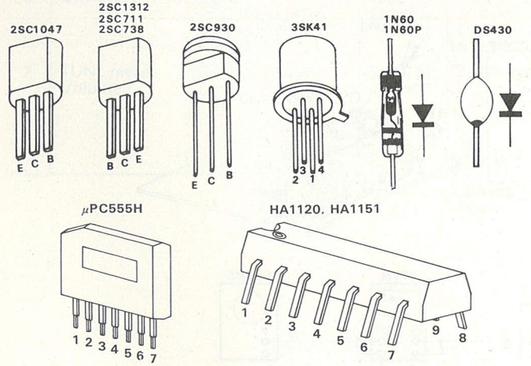
Coductor Side



Parts List

Parts No.	Stock No.	Description		Position
TR_{01}	0305801	2SC1047 (B)	Transistor	1 A
TR_{02}	0305790, 1	2SC930 (C, D)	Transistor	1 B
TR_{03}	0306112, 3	2SC738 (C, D)	Transistor	1 B
TR_{04}	0306112, 3	2SC738 (C, D)	Transistor	1 B
TR_{05}	0306112, 3	2SC738 (C, D)	Transistor	1 B
TR_{06}	0306112, 3	2SC738 (C, D)	Transistor	1 B
TR_{07}	0305731, 2	2SC711 (E, F)	Transistor	2 C
TR_{08}	0305731, 2	2SC711 (E, F)	Transistor	2 C
TR_{09}	0306090, 1	2SC1312 (F,G)	Transistor	2 D
TR_{10}	0306090, 1	2SC1312 (F,G)	Transistor	2 D
TR_{11}	0305731, 2	2SC711 (E, F)	Transistor	1 C
IC_{01}	0360120	μPC555H	IC	1 B, C
IC_{02}	0360150	HA1151	IC	1, 2 B
IC_{03}	0360080	HA1120	IC	1 D
FET_{01}	0370120, 1	3SK41 (L, K) FET		1 A
D_{01}	0311060	1N60P	Diode	1 C
D_{02}	0311060	1N60P	Diode	1 C
D_{03}	0340090	DS-430	Diode	2 C
D_{04}	0340090	DS-430	Diode	2 C
T_{01}	4235930	FM IF Coil		1 A, B
T_{02}	4235750	Discrimminator Coil		1 C
T_{03}	4235760	Discrimminator Coil		1 C
T_{04}	4235940	FM Meter Coil		1, 2 C
T_{05}	4230620	AM IF Coil		1, 2 B C
T_{06}	4220550	AM OSC Coil		2 B
T_{07}	0910270	Ceramic Filter		1, 2 B
L_{01}	4200560	FM ANT Coil		1 A
L_{02}	4210190	FM RF Coil		1 A
L_{03}	4010120	Choke Coil		1 A

Parts No.	Stock No.	Description		Position
L_{04}	4220410	FM OSC Coil		1 A, B
L_{05}	4290011	3.5μH Peaking Coil		2 A, B
L_{06}	4900100	3.3μH Micro Inductor		1 A
L_{07}	4240720	19kHz Coil		1 D
LC_{01}	4240710	MPX Coil Brock		2 D
CF_{01}	0910150	Ceramic Filter		1 B
CF_{02}	0910150	Ceramic Filter		1 B
LPF_{01}	0910220	Low Pass Filter		1 D
VC	1220170	Variable Capacitor		2 A
TC_{03}	1230090	Trimmer Capacitor		2 A
VR_{01}	1035150	22kΩ(B) Tune Meter Volume		1 C
VR_{02}	1035070	1kΩ (B) MPX Separation Volume		1 D
C_{01}	0669380	20pF	50V C.C.	1 A
C_{02}	0654102	1000pF	50V C.C.	1 A
C_{03}	0659015	2200pF	50V C.C.	1 A
C_{04}	0657223	22000pF	50V C.C.	1 A
C_{05}	0659015	2200pF	50V C.C.	1 A
C_{06}	0669002	3.9pF	50V C.C.	1 A
C_{07}	0669380	20pF	50V C.C.	1 A
C_{08}	0659015	2200pF	50V C.C.	1 A
C_{09}	0654102	1000pF	50V C.C.	1 A
C_{10}	0661220	22pF	50V C.C.	1 A
C_{11}	0657223	22000pF	50V C.C.	1 A
C_{12}	0669383	15pF	50V C.C.	1 A, B
C_{13}	0669200	1pF	50V C.C.	1 A
C_{14}	0669370	10pF	50V C.C.	1 A
C_{15}	0669370	10pF	50V C.C.	1 B
C_{16}	0669381	22pF	50V C.C.	1 B



Parts No.	Stock No.	Description		Position
C_{17}	0657223	22000pF	50V C.C.	1 B
C_{18}	0657223	22000pF	50V C.C.	1 A
C_{19}	0657223	22000pF	50V C.C.	1 B
C_{20}	0657473	0.047 pF	50V C.C.	1 B
C_{21}	0657223	22000pF	50V C.C.	1 B
C_{22}	0657223	22000pF	50V C.C.	1 B
C_{23}	0657223	22000pF	50V C.C.	1 B
C_{24}	0657223	22000pF	50V C.C.	1 B
C_{25}	0657223	22000pF	50V C.C.	1 B
C_{26}	0657223	22000pF	50V C.C.	1 B
C_{27}	0657223	22000pF	50V C.C.	1 C
C_{28}	0657223	22000pF	50V C.C.	1 C
C_{29}	0660101	100pF	50V C.C.	1 C

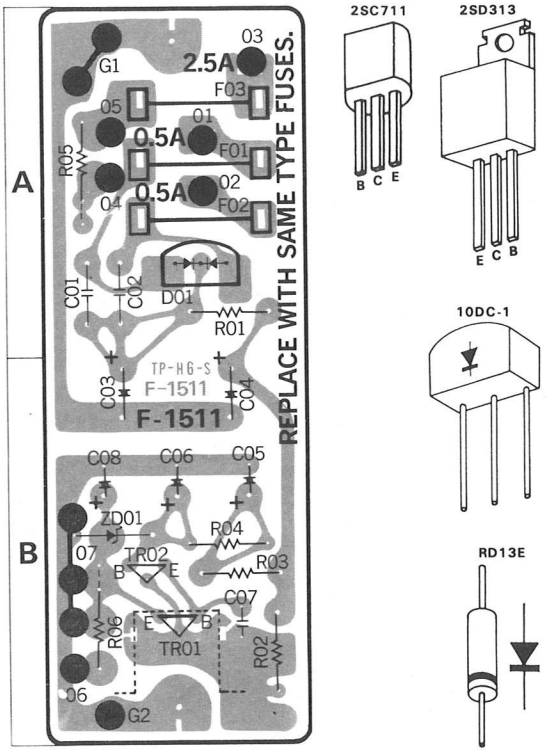
Parts No.	Stock No.	Description		Position
C_{30}	0660101	100pF	50V C.C.	1 C
C_{31}	0512100	10μF	16V E.C.	1 C
C_{33}	0660101	100pF	50V C.C.	1 C
C_{34}	0660101	100pF	50V C.C.	1 C
C_{35}	0657223	22000pF	50V C.C.	1 C
C_{36}	0657223	22000pF	50V C.C.	1 C
C_{37}	0657223	22000pF	50V C.C.	1 C
C_{38}	0657223	22000pF	50V C.C.	1 C
C_{39}	0657223	22000pF	50V C.C.	2 C
C_{40}	0515109	1μF	50V E.C.	2 C
C_{41}	0512100	10μF	16V E.C.	1 C, D
C_{42}	0657223	22000pF	50V C.C.	2 B
C_{43}	0601106	0.001μF	50V M.C.	2 B
C_{44}	0515109	1μF	50V E.C.	2 B
C_{45}	0515100	10μF	50V E.C.	2 C
C_{46}	0601107	0.01μF	50V M.C.	2 B
C_{47}	0601477	0.047μF	50V M.C.	2 C
C_{48}	0601107	0.01μF	50V M.C.	2 B
C_{49}	0512101	100μF	16V E.C.	2 B
C_{50}	0601476	0.0047μF	50V M.C.	1 C
C_{51}	0657223	22000pF	50V C.C.	2 B
C_{52}	0669215	15pF	50V C.C.	2 B
C_{53}	0620361	360pF	50V P.C.	2 B
C_{54}	0601107	0.01μF	50V M.C.	2 B
C_{55}	0512100	10μF	16V E.C.	2 B
C_{56}	0513479	4.7μF	25V E.C.	1 D
C_{57}	0515109	1μF	50V E.C.	1 D
C_{58}	0515109	1μF	50V E.C.	1, 2 D
C_{61}	0512101	100μF	16V E.C.	1, 2 D
C_{62}	0601108	0.1μF	50V M.C.	2 D
C_{63}	0601108	0.1μF	50V M.C.	2 D
C_{70}	0519101	1μF	50V E.C.	2 D
C_{71}	0519101	1μF	50V E.C.	2 D
C_{72}	0654102	1000pF	50V C.C.	1 A
C_{73}	0510470	47μF	6.3V E.C.	2 B
C_{74}	0519105	2.2μF	50V E.C. (BRN)	2 C
C_{75}	0513479	4.7μF	25V E.C.	1 D
C_{76}	0600157	0.015μF	50V M.C.	2 D
C_{77}	0600157	0.015μF	50V M.C.	2 D
C_{78}	0513479	4.7μF	25V E.C.	1 D
C_{79}	0629001	6800pF	50V P.C.	1 D
C_{81}	0510221	220μF	6.3V E.C.	2 C

Parts No.	Stock No.	Description		Position
R_{01}	0106103	10kΩ	1/4W C.R. (E.L.R)	1 A
R_{02}	0113394	390kΩ	1/4W S.R.	1 A
R_{03}	0113103	10kΩ	1/4W S.R.	1 A
R_{04}	0113104	100kΩ	1/4W S.R.	1 A
R_{05}	0113101 (3SK41 (L))	100Ω	1/4W S.R.	1 A
	0113151 (3SK41 (K))	150Ω	1/4W S.R.	
R_{06}	0113105	1MΩ	1/4W S.R.	1 A
R_{07}	0113220	22Ω	1/4W S.R.	1 A
R_{08}	0113562	5.6kΩ	1/4W S.R.	1 A
R_{09}	0113123	12kΩ	1/4W S.R.	1 A
R_{10}	0113332	3.3kΩ	1/4W S.R.	1 A
R_{11}	0106822	8.2kΩ	1/4W C.R. (E.L.R)	1 A
R_{12}	0106222	2.2kΩ	1/4W C.R. (E.L.R)	1 B
R_{13}	0106220	22Ω	1/4W C.R. (E.L.R)	1 A
R_{14}	0113222	2.2kΩ	1/4W S.R.	1 A, B
R_{15}	0113102	1kΩ	1/4W S.R.	1 B
R_{16}	0113471	470Ω	1/4W S.R.	1 B
R_{17}	0113221	220Ω	1/4W S.R.	1 B
R_{18}	0113392	3.9kΩ	1/4W S.R.	1 B
R_{19}	0113152	1.5kΩ	1/4W S.R.	1 B
R_{20}	0113101	100Ω	1/4W S.R.	1 B
R_{21}	0113182	1.8kΩ	1/4W S.R.	1 B
R_{22}	0113471	470Ω	1/4W S.R.	1 B

4-2. F-1511 Power Supply Circuit Board

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

Coductor Side



Parts No.	Stock No.	Description	Position
R_{23}	0113681	680Ω	1 B
R_{24}	0113101	100Ω	1 B
R_{25}	0113271	270Ω	1 B
R_{26}	0113152	1.5kΩ	1 B
R_{27}	0113220	22Ω	1 B
R_{28}	0113271	270Ω	1 B
R_{29}	0113391	390Ω	1 B
R_{30}	0113681	680Ω	1 B
R_{31}	0113332	3.3kΩ	1 B C
R_{32}	0113222	2.2kΩ	1 C
R_{33}	0113682	6.8kΩ	1 C
R_{34}	0113331	330Ω	1 C
R_{35}	0113102	1kΩ	1 C
R_{36}	0113102	1kΩ	1 C
R_{37}	0113101	100Ω	1 C
R_{38}	0113471	470Ω	1 C
R_{41}	0113393	39kΩ	1 C
R_{42}	0113103	10kΩ	1 C
R_{43}	0113183	18kΩ	1 C
R_{44}	0113102	1kΩ	1 C
R_{45}	0113821	820Ω	1, 2 C
R_{46}	0113122	1.2kΩ	2 B, C
R_{47}	0113682	6.8kΩ	2 C
R_{48}	0113104	100kΩ	2 C
R_{49}	0113104	100kΩ	2 C
R_{51}	0113220	22Ω	2 C
R_{53}	0113471	470Ω	1 C
R_{54}	0113101	100Ω	2 B
R_{55}	0113122	1.2kΩ	2 B
R_{56}	0113152	1.5kΩ	2 B
R_{57}	0113103	10kΩ	2 B, C
R_{58}	0113103	10kΩ	2 C
R_{59}	0113182	1.8kΩ	2 B
R_{60}	0113473	47kΩ ¼W S.R.	2 C
R_{61}	0113153	15kΩ	1, 2 C
R_{62}	0113392	3.9kΩ	2 B
R_{63}	0113224	220kΩ	2 B
R_{64}	0113151	150Ω	2 B
R_{65}	0113101	100Ω	2 B, C
R_{66}	0113334	330kΩ	2 C
R_{67}	0113102	1kΩ	1 D
R_{68}	0113151	150Ω	1 D
R_{69}	0113101	100Ω	1 D
R_{70}	0113332	3.3kΩ	1 D
R_{71}	0113332	3.3kΩ	2 D
R_{72}	0113472	4.7kΩ	1 D
R_{73}	0113151	150Ω	1 D
R_{74}	0113104	100kΩ	2 C
R_{75}	0113223	22kΩ	1 D
R_{76}	0113223	22kΩ	2 D
R_{79}	0113684	680kΩ	2 D
R_{80}	0113332	3.3kΩ	2 D
R_{81}	0113181	180Ω	2 D
R_{82}	0113684	680kΩ	2 D
R_{83}	0113332	3.3kΩ	2 D
R_{84}	0113181	180Ω	2 D
R_{85}	0113472	4.7kΩ	1, 2 C
R_{86}	0113563	56kΩ	2 C
R_{87}	0113563	56kΩ	1 C
R_{95}	0113332	3.3kΩ	2 C, D
R_{97}	0113332	3.3kΩ	2 D
R_{99}	0113101	100Ω	1 A
R_{100}	0113470	47Ω	1 A
R_{101}	0113220	22Ω	1 B, C
R_{106}	0113124	120kΩ	
R_{107}	0113151	150Ω	
	2260010	Test Pin	

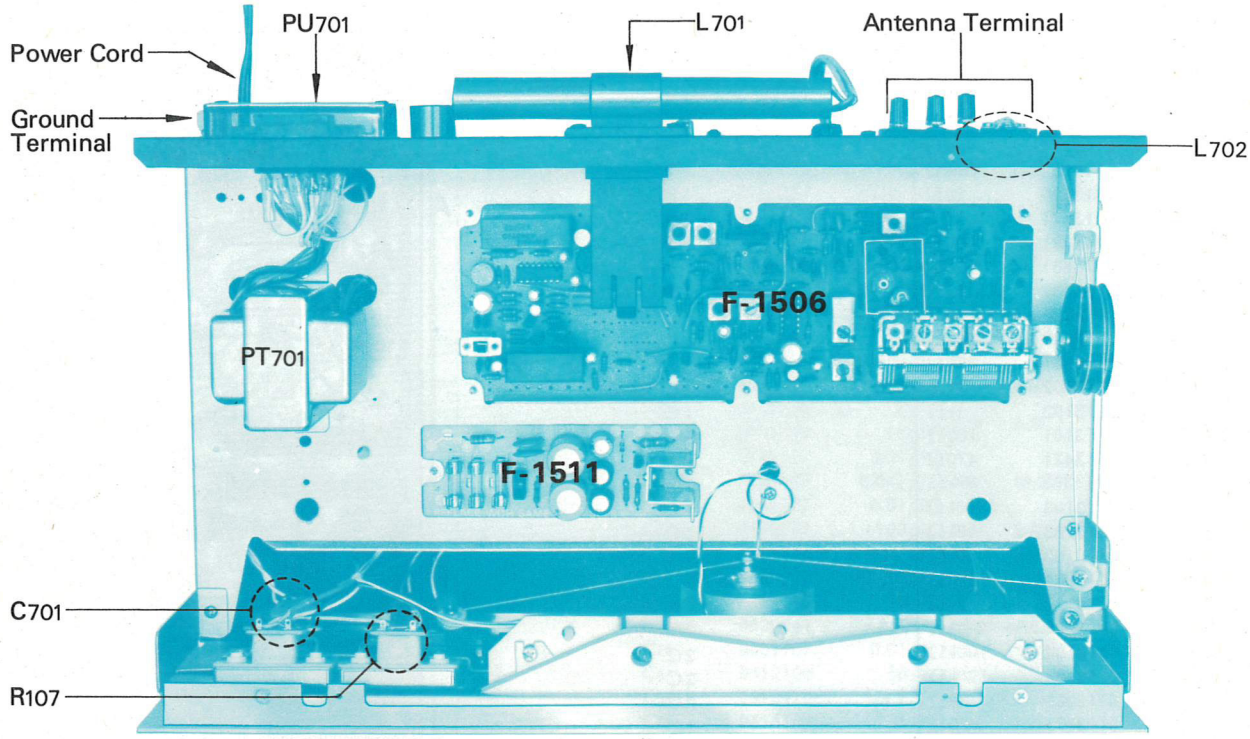
Parts List

Parts No.	Stock No.	Description	Position
TR_{01}	0308392, 3	2SD313 (E, F) Transistor	B
TR_{02}	0305732, 3	2SC711 (E, G) Transistor	B
D_{01}	0310680	10DC-1 Diode	A
ZD_{01}	0315310	RD13A (N) Zener Diode	B
C_{01}	0659011	0.01μF 500V C.C.	A
C_{02}	0659011	0.01μF 500V C.C.	A
C_{03}	0514471	470μF 35V E.C.	B
C_{04}	0514471	470μF 35V E.C.	B
C_{05}	0513470	47μF 25V E.C.	B
C_{06}	0513470	47μF 25V E.C.	B
C_{07}	0601107	0.01μF 50V M.C.	B
C_{08}	0512101	100μF 16V E.C.	B
R_{01}	0107100	33Ω ¼W C.R.	A
R_{02}	0107100	10Ω ¼W C.R.	B
R_{03}	0107102	1kΩ ¼W C.R.	B
R_{04}	0107391	390Ω ¼W C.R.	B
R_{05}	0103100	10Ω ½W C.R.	A
R_{06}	0107102	1kΩ ¼W C.R.	B
F_{01}	0430810	250V 0.5A Power Fuse	A
F_{02}	0430810	250V 0.5A Power Fuse	A
F_{03}	0430860	250V 2.5A Power Fuse	A

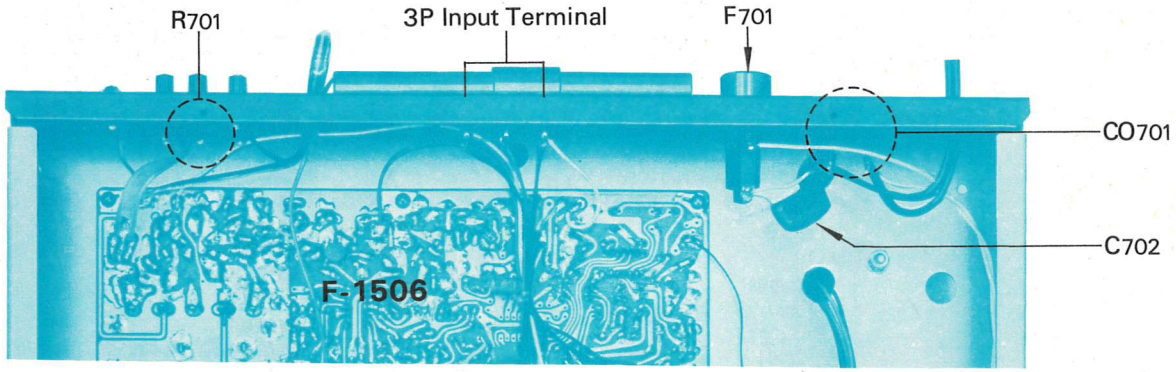
Abbreviations

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

4-3. Other Parts (Top Side)



4-4. Other Parts (Bottom Side)

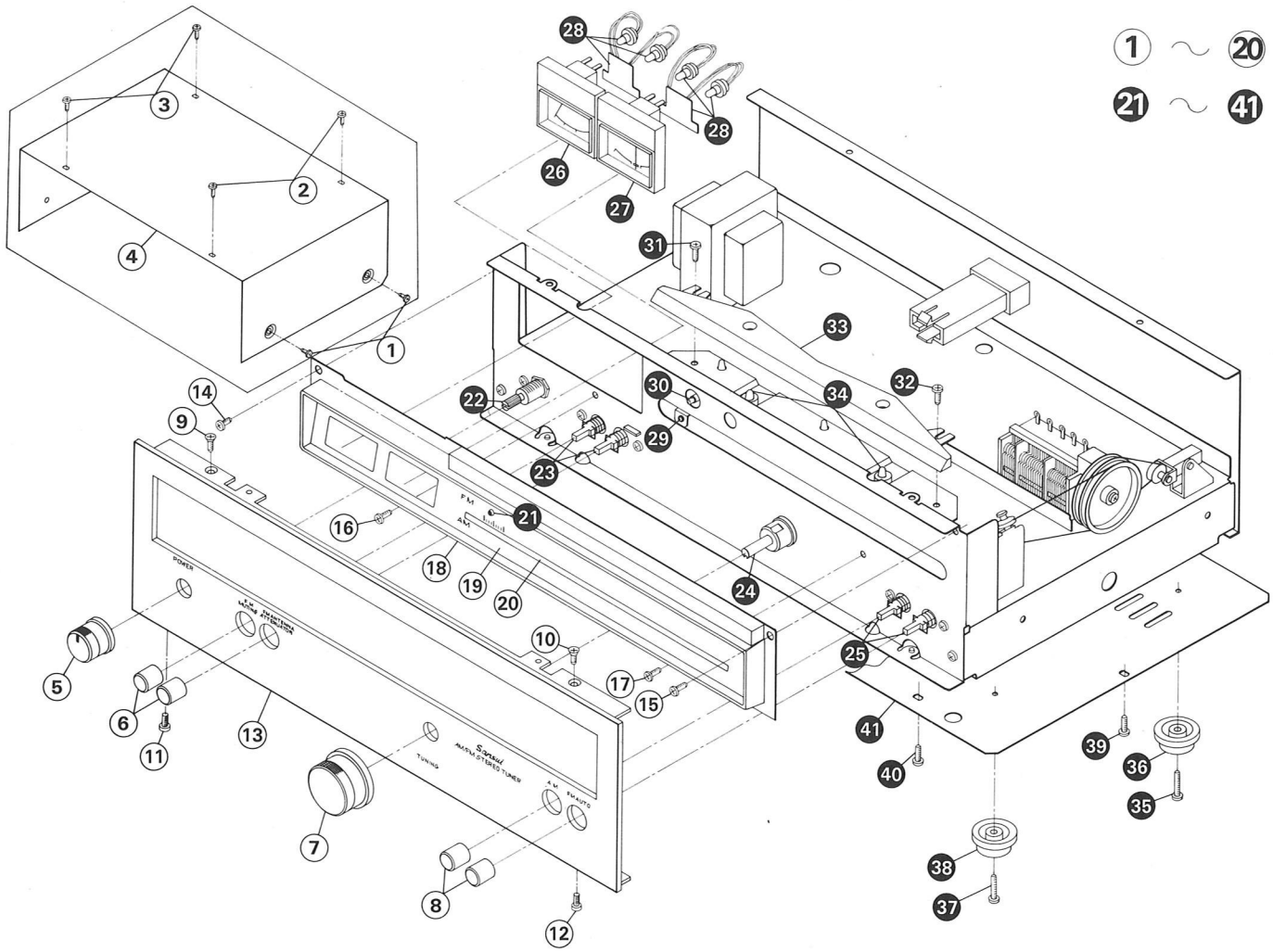


Parts List (Top, Bottom Side)

Parts No.	Stock No.	Description
C701	0659801	0.01μF 1.4kV C.C.
C702	0605477	0.047μF 250V M.C.
R107	0113154	150Ω ¼W S.R.
R701	0113122	1.2kΩ ¼W S.R.
F701	0431222	1A 250V Power Fuse
	0431212	0.5A 250V
	2300060	Fuse Holder
L701	5266441	Bar Antenna Holder
	4200650	Bar Antenna

Parts No.	Stock No.	Description
L702	4290021	75Ω : 300Ω FM Balun
PT701	4002020	Power Transformer
CO701	2450050	AC Outlet
PU701	2410080	Voltage Selector, Socket
	2410090	Voltage Selector, Plug
	3800020	Power Cord
	2210190	Antenna Terminal
	2200400	3P Input Terminal
	2230051	Ground Terminal

4-5. Other Parts (Front Side)



Parts List

Parts No.	Stock No.	Description
1	5101161	Binding Head Screw, M4×6
2	5109222	Binding Head Tapping Screw, 3×8
3	5109222	Binding Head Tapping Screw, 3×8
4	5006310	Bonnet
5	5317880	S-5 Type Knob, POWER
6	5326500	B Type Button, push switch
7	5317930	T-5 Type Knob, TUNING
8	5326500	B Type Button, push switch
9	5102843	F Type Screw, M3×6
10	5102843	F Type Screw, M3×6
11	5101043	Binding Head Screw, M3×6
12	5101043	Binding Head Screw, M3×6
13	5309281	Front Panel Ass'y
14	5101043	Binding Head Screw, M3×6
15	5101043	Binding Head Screw, M3×3
16	5101043	Binding Head Screw, M3×6
17	5101043	Binding Head Screw, M3×6
18	5309450	Frame, dial scale
19	5407733	Dial Scale
20	5047770	Smoked Plate
21	5269800	Holder, FM STEREO Indicator

Parts No.	Stock No.	Description
22	1190190	POWER switch
23	1130880	Push Switch
24	7036400	Tuning Ass'y
25	1130910	Push Switch
26	4300690	S-1 Type Meter, SIGNAL
27	4300680	T-1 Type Meter, TUNE
28	7726040	Meter Lamp Ass'y
29	7726070	Dial Pointer Ass'y
30	0319010	Light Emited Diode, FM STEREO Indicator
31	5101043	Binding Head Screw, M3×6
32	5101043	Binding Head Screw, M3×6
33	5446190	Illuminator Plate
34	0400330	Lead Type Lamp (7V 100mA)
35	5109124	Binding Head Screw, 3×12
36	5516940	Foot
37	5109124	Binding Head Screw, 3×12
38	5516940	Foot
39	5109222	Binding Head Screw, 3×8
40	5109222	Binding Head Screw, 3×8
41	5058191	Bottom Plate

5. THREADING OF DIAL CORD

* If a dial cord is cut off or slips, replace it by following procedures.
  As TU-5500 uses 0.6mmϕ Cord, please replace it with the same type certainly.
* The length of dial cord is approximately 170cm (66 inch).

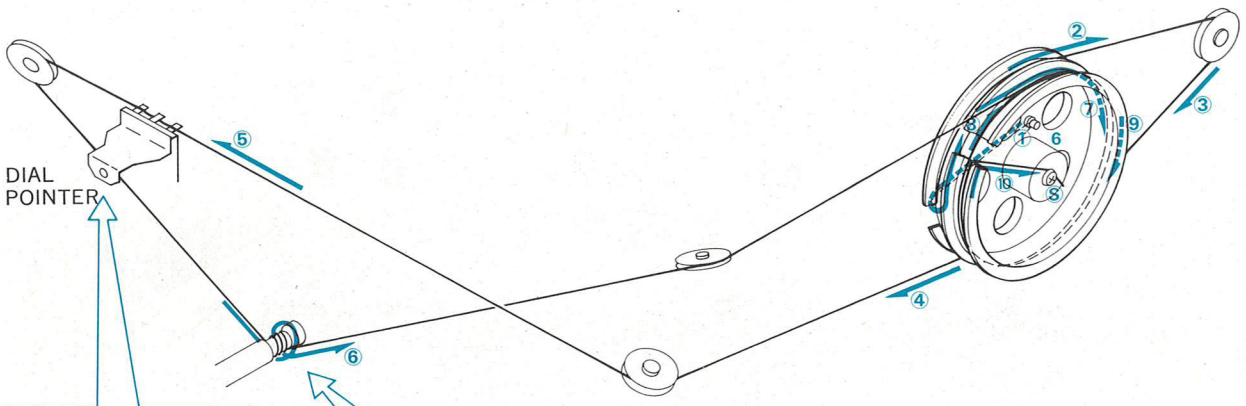


Fig. 5-1

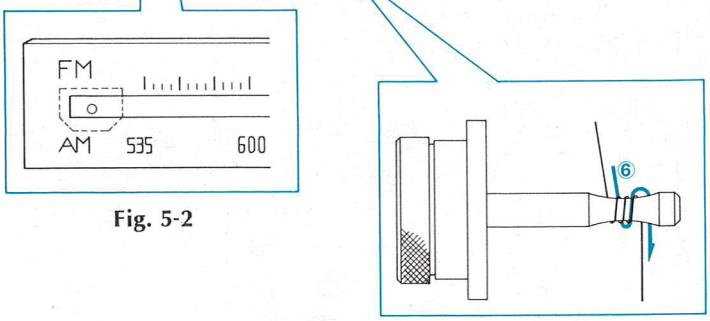


Fig. 5-2

5-1. Threading of Dial Cord

Thread the dial cord in numerical order from ① to ⑩ as Fig. 5-1.

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. 5-1.
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.

5-2. 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. 5-2.
   *Confirm that the dial pointer runs smoothly on the dial scale by turning the tuning shaft.

Stock No.	Description
6036050	Dial Cord (0.6mmϕ)

6. TROUBLESHOOTING CHART

6-1. Troubleshooting on Power Supply Section

Symptom **Check Point** **Cause & What to Do**

1. No power supplied to each section

1-1. Each lamp not lighted
- 1. Imperfect contact of power supply plug
- 2. Defective power switch S701
- 3. Imperfect contact of voltage selector PU701
- 4. Power fuse F701 open
- 5. F03 on F-1511 open
- 6. Defective power transformer

1-2. Power Indicator lamp not lighted

1) +12V not supplied to terminal [07] on F-1511
- 7. F01, F02 on F-1511 open
- 8. Defective D01 on F-1511
- 9. Defective TR01, TR02 on F-1511
- 10. Defective ZD01 on F-1511

2) +12V supplied to terminal [07] on F-1511
- 11. Defective Light Emitted Diode LED701

6-2. Troubleshooting on Tuner Section

1. FM and AM inoperative

1-1. +12V not supplied to terminal [19], [20], [21] on F-1506
- 1. Defective power supply section (F-1511)

1-2. +12V Supplied to terminal [19], [20], [21] on F-1506
- 2. Defective LPF01 on F-1506
- 3. Defective IC04 on F-1506

2. FM Section

* Before check, set MUTING switch to OFF

2-1. FM inoperative only

1) Signal meter inoperative
- 4. IF, RF out of adjustment on F-1506
- 5. Defective L01~L04 on F-1506
- 6. Defective T01 on F-1506
- 7. Defective FET01 on F-1506
- 8. Defective TR01~TR05 on F-1506
- 9. Defective CF01, CF02 on F1506

2) Signal meter operative
- 10. Defective IC01, IC03 on F-1506
- 11. Defective T01, T02 on F-1506
- 12. Defective D01, D02 on F-1506

2-2. Stereo indicator lamp not lighted

1) No channel separation on FM stereo broadcasting

1-1) MPX output signals including R and L not supplied to [11] and [12] of IC03 on F-1506
- 13. Defective IC03 on F-1506
- 14. L07 out of adjustment on F-1506
- 15. Defective L07 on F-1506
- 16. Defective LC01 on F-1506
- 17. Defective VR02 on F-1506

2) Operative channel separation on FM stereo broadcasting
- 18. Defective Light Emitted Diode LED702

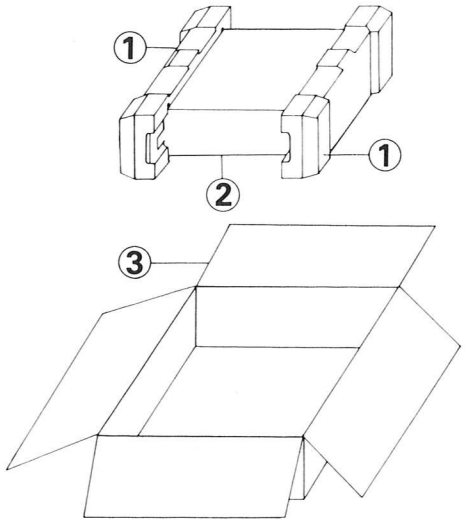
Symptom	Check Poiut	Cause & What to Do
2-3. Signal meter inoperative (FM broadcasting sound can be heard)		19. Defective TR06 on F-1506 20. Defective T04 on F-1506 21. Defective D03, D04 on F-1506 22. Defective signal meter
2-4. Muting circuit inoperative		23. Defective TR07, TR08 on F-1506 24. Defective Muting swich S703
	1) FM Section will be inoperative when the Muting is switched ON.	25. RF, IF out of adjustment on F-1506 26. Defective FM Antenna Attenuator S702

3. AM Section

3-1. AM inoperative		
	1) Signal meter operative (AM broadcasting sound can not be heard)	27. Defective TR11 on 1506 28. Defective TR09, TR10 on F-1506 29. Defective LPF01 on F-1506
	2) Signal meter in operative (AM broadcasting sound can not be heard)	
	1-1) Interstation noise does not incrcase by touching the terminal [23] on F-1506	30. Defective IC02 on F-1506 31. Defective T05~T07 on F-1506 32. Defective L05, L06 on F-1506
	1-2) Interstation noise increases by touching the terminal [23] on F-1506	33. Defective bar antenna, L701 34. RF, IF out of adjustment on F-1506

7. PACKING LIST

Parts No.	Stock No.	Description
1	9027800	Stylofoam Packing
2	9116640	Vinyl Cover
3	9008091	Carton Case

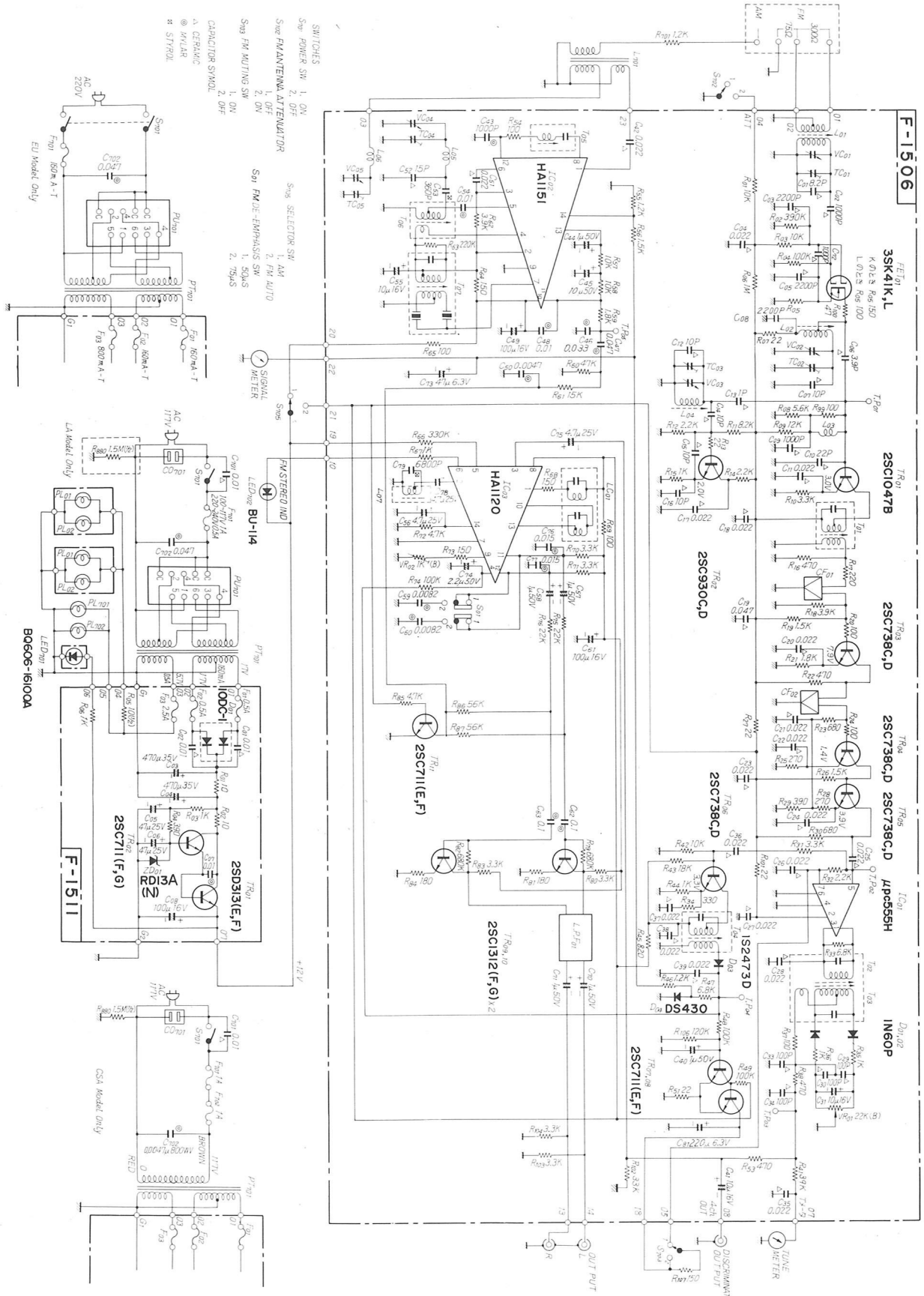


8. ACCESSORY PARTS LIST

Stock No,	Description
3810180	Pin Plug Cord (yellow) Pin Plug Cord (blue)
3820091	FM Antenna
9208390	Operating Instructions
9228390	Operating Instruction Sheet

9. SCHEMATIC DIAGRAM

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



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