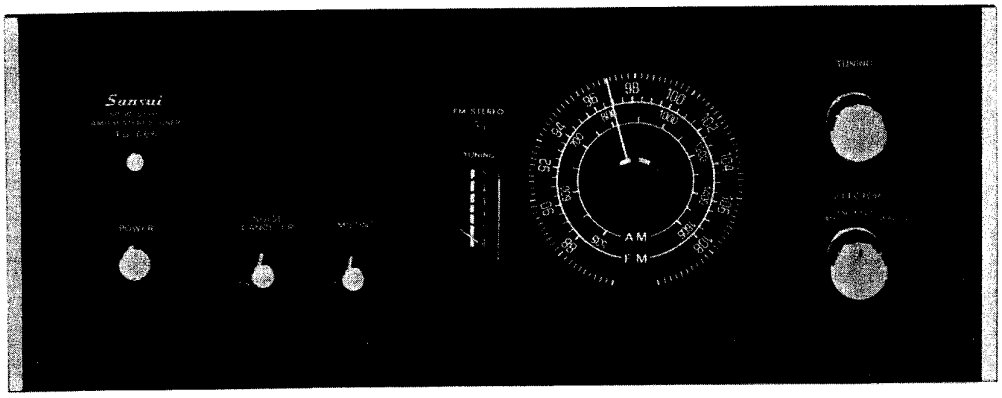
172

OPERATING INSTRUCTIONS & SERVICE MANUAL

SOLID-STATE AM/FM STEREO TUNER

SANSUI TU-666



Sansui

SANSUI ELECTRIC CO., LTD.

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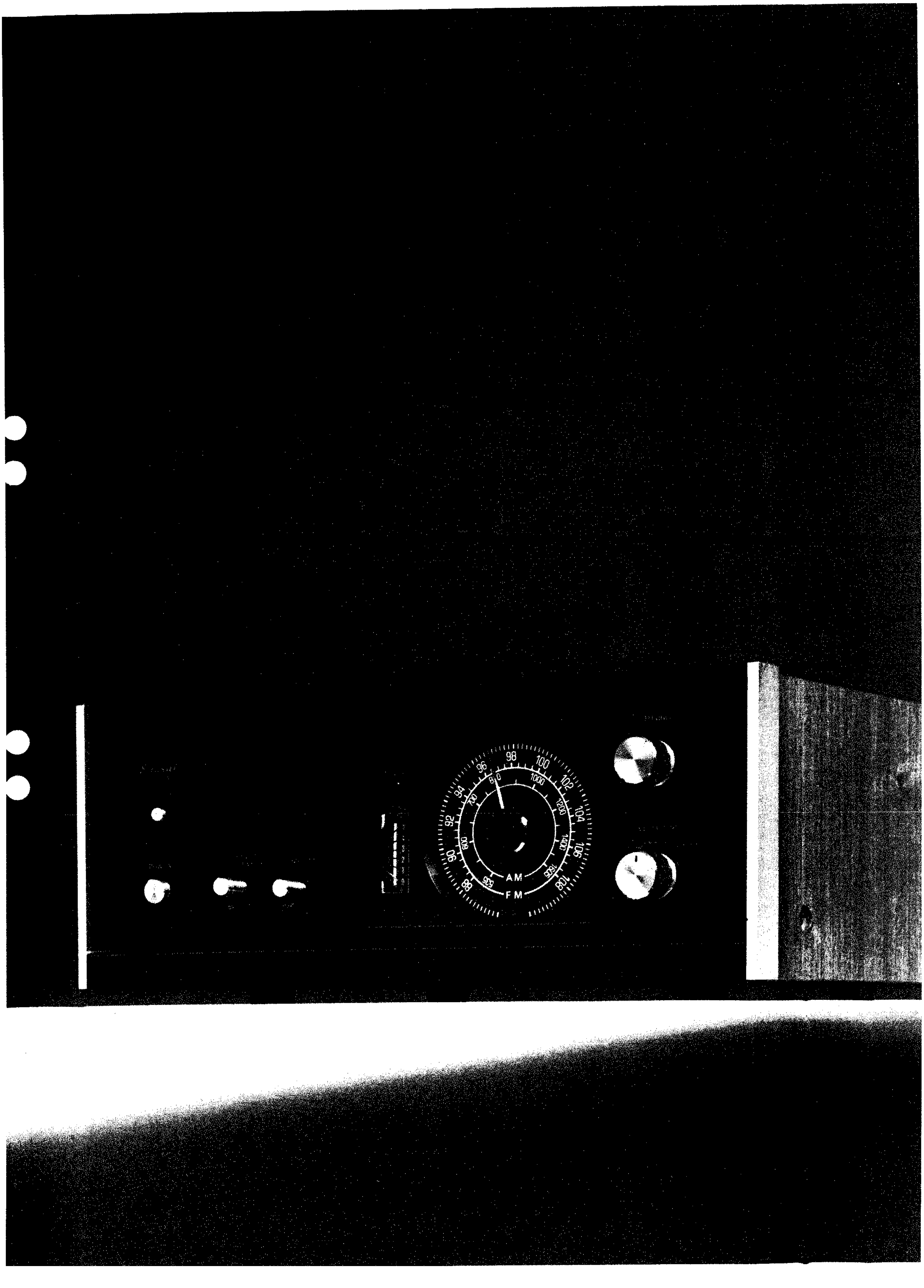
Congratulations, you are now the owner of the new Sansui TU-666 solid state stereo tuner built for exceptional performance by the world's foremost audio-only specialist. Designed specifically for FM enthusiasts, the TU-666 will pull in an increasing number of FM stations more clearly in either strong signal areas or fringe locations. Its highly sensitive FET front end and IC-equipped i.f. strip show a new degree of selectivity by permitting weak signals to be tuned without being blanketed by adjacent strong signals. In the AM section, the exclusive ceramic filter upgrades its performance characteristics. The refined dull black panels are common to all AU series professional control amplifiers from Sansui.

From the superior performance characteristics to the carefull finish of panels, Sansui's tradition of quality is evident. Packed with the most advanced circuits throughout, The TU-666 comes to you with the full confidence and guarantee of the manufacturer. It is now up to you to read the contents of this manual carefully before setting out to use it, so you may operate it correctly and obtain the maximum performance it is capable of offering for many years to come.

CONTENTS



88
90
92
94
96
98
100
102
104
106
108
1000
1200
AM
FM

SWITCHES AND CONTROLS

FM Stereo Indicator

The stereo indicator light glows when a stereo program is received or when the dial pointer crosses a station making an FM stereo broadcast. During mono reception, it remains unlit.

Power Indicator

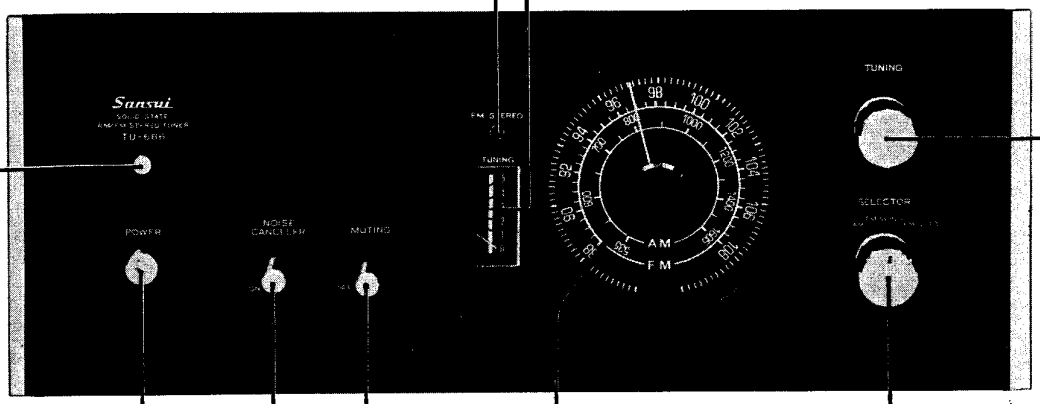
Lights up whenever the tuner is receiving current. Remains lit as long as the power switch is ON.

Tuning Meter

This meter aids in pinpointing either AM or FM station; when the needle swings to the maximum upward position (but not necessarily to "5"), the station is correctly tuned.

Tuning Knob

Use this knob to select your desired AM or FM station by watching the tuning meter.



Power Switch

Push this switch to turn the power on; push again to turn the power off.

Noise Canceler Switch

This switch is used to eliminate annoying noise on FM multiplex programs transmitted by distant or weak stations without weakening the treble tones in the music being played. When this switch is on, the TU-666's stereo separation may be slightly reduced. Unless such noise is heard, this switch should not be used.

Selector Switch

AM—Use this position for all AM programs.
FM MONO—Use this position for all FM monophonic programs.
FM AUTO—Use this position for automatic FM stereo/mono switching.

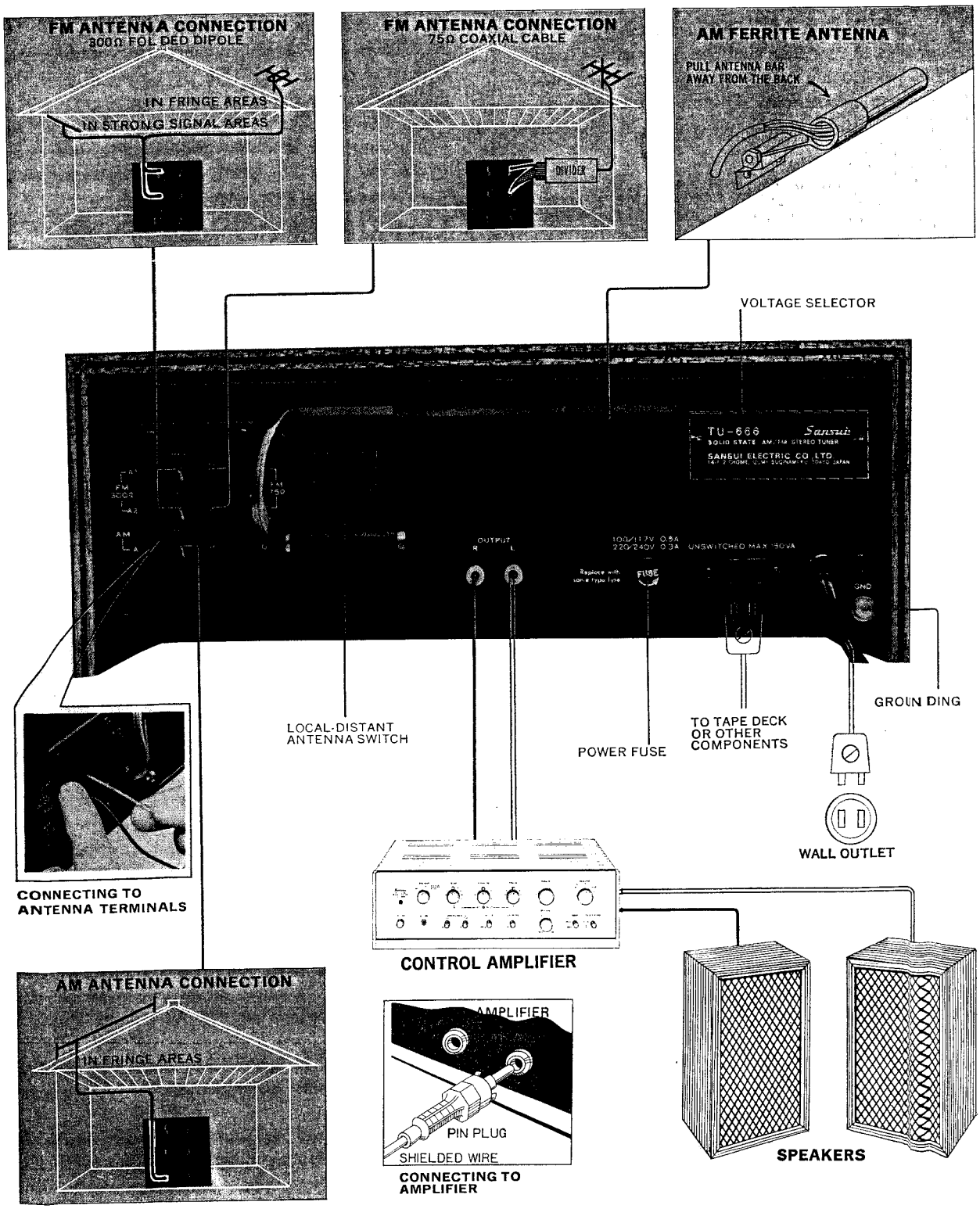
Dial Scales

The outer dial scale is for FM, the inner for AM.

Muting Switch

This switch is used to eliminate interstation noise for quiet FM station selection. When this switch is on, weak or distant stations may also be suppressed. To tune weak or distant stations, keep this switch in the OFF position.

CONNECTIONS



ANTENNA CONNECTIONS/OPERATIONS

ANTENNA CONNECTION

The quality of reception that can be expected from the TU-666 depends largely on the correct positioning and use of antennas. To pull in more stations more clearly, the following procedures are recommended:

Built-in AM Ferrite Antenna

This highly sensitive antenna, located on the rear panel of the tuner, is usually adequate for AM reception in many areas. To use, pull it down and away from the back of the tuner until the best reception is obtained.

Outdoor AM Antenna

In ferroconcrete buildings or in fringe areas, the built-in ferrite antenna may be inadequate for reception of weak or distant stations. An outdoor antenna then becomes necessary. This can be accomplished by connecting the PVC wire supplied with the set to the antenna terminal marked AM-A on the rear panel. Run this wire to an antenna that has been placed outside a window or mounted on a roof. At the same time, the unit should be grounded. Position the outdoor antenna where reception is strongest while actually receiving a broadcast. And, for reasons of safety, be sure to attach a lightning arrester to the outdoor antenna.

Indoor FM Antenna

In urban or strong signal areas, satisfactory FM reception can be obtained by using the folded dipole antenna (300 ohm) supplied with the TU-666. Connect the two leads from the dipole to the terminals marked FM 300Ω A1 and A2 on the rear panel and tack the dipole up on the wall in the form a T. Be sure to position the dipole for best signal reception before the antenna is permanently tacked up on the wall.

Outdoor FM Antennas

In ferroconcrete buildings or in fringe areas, the indoor dipole antenna may be inadequate for reception of weak or distant FM stations. An outdoor antenna designed specifically for FM should then be installed.

Either a balanced 300 ohm or unbalanced 75 ohm antenna can be used with the TU-666. If the 300 ohm twin-lead is used, connect it to the terminals marked FM 300Ω A_1 and A_2 on the rear panel just like the indoor dipole antenna connection. If the 75 ohm coaxial cable is used, connect the center conductor to the FM 75Ω A terminal and the shielding wire to the G terminal.

Note: FM sensitivity cannot be raised simply by lengthening the antenna. Adjust the antenna's height and direction while actually listening to a broadcast for best reception.

AMPLIFIER CONNECTION

To connect a control amplifier to the TU-666, use the two cables supplied with the tuner. Connect the R output on the rear panel of the tuner to the right channel input marked TUNER or AUX on the rear of the amplifier. The left channel connection are made between the L output of the tuner and the left TUNER or AUX input of the amplifier.

OPERATIONS

To Listen to an AM Program

1. Set the SELECTOR switch to the AM position.
2. Select your desired station on the AM band of the tuning dial with the TUNING knob. The station is properly tuned when the needle in the tuning meter swings to the maximum upward position.

Note: While the scale of the tuning meter is graduated from 1 to 5, the needle need not move all the way to "5" to indicate optimum reception.

To Listen to an FM Program

1. Set the SELECTOR switch to the FM AUTO position. If too much noise or interference accompanies a stereo program with the SELECTOR switch in the FM AUTO position, turn it to the FM MONO position and listen to the program monophonically.
2. Set the MUTING switch to the ON position.
3. Select your desired position on the FM band of the tuning dial with the TUNING knob. The station is properly tuned when the needle in the tuning meter swings to the maximum upward position.
4. Set the NOISE CANCELER to the ON position if annoying noise accompanies the FM stereo program.
5. For FM stereo reception, the mode switch of the control amplifier must be in the STEREO position.

MAINTENANCE

Local-Distant Antenna Switch

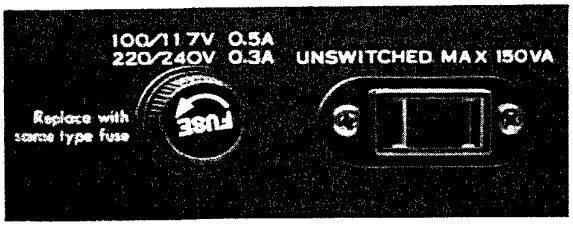
This switch is used to attenuate very strong signals to avoid overloading. In strong signal areas, this switch should be set to LOC. In other locations, this switch should be set to DIST.

Ventilation

Adequate air circulation is absolutely essential for proper operation. The enclosure should be open at the rear, and should provide at least 1½ in. of free space above the TU-666 for air circulation. Nothing must be placed directly on the top of the tuner.

AC Outlet

One AC outlet on the rear panel is used to serve as power supply source for a tape deck or other components. This outlet has a maximum rating of 150 VA.

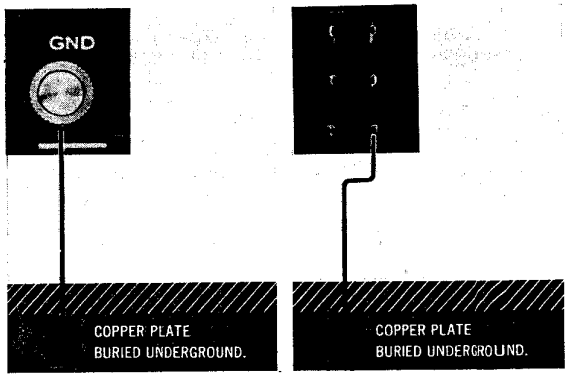


Power Fuse

Should the tuner fail to operate when the POWER switch is pushed on, the probable cause is either a power stoppage or a blown fuse. To check, remove the TU-666's power cord from its outlet, turn the fuse holder on the rear panel counterclockwise, and remove the fuse. If it is blown, replace it with a new glass-tubed fuse of the same capacity (100~117–0.5A, 220~240V–0.3A) after determining and eliminating the trouble source that caused the fuse to blow. Using wire or a fuse of a different capacity as a stop-gap measure is dangerous and should be avoided.

Grounding

Connect a vinyl or enameled wire from the terminal screw marked GND or AM-G to a copper plate buried underground or to a water pipe. Whenever an outdoor AM antenna is used, grounding becomes necessary.



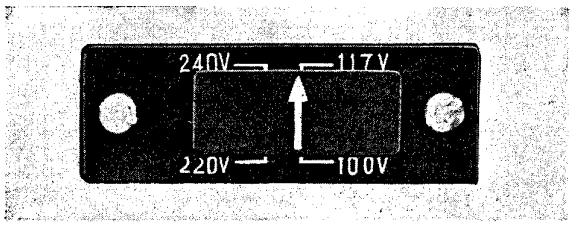
Voltage Adjustment

To reach the voltage selector, remove the two screws from the nameplate on the rear panel and then remove the nameplate. The voltage selector makes it possible to operate the TU-666 at the correct voltage in any area. The voltage has been pre-adjusted at the factory, but can be easily re-adjusted as follows:

STEP I Set arrow of voltage selector plug to required voltage: 100, 117, 220, or 240 volts.

STEP II The power fuse should also be changed whenever the AC line voltage is changed. For 100-117 volt operation a 0.5 ampere fuse is required. For 220-240 volt operation the fuse should be changed to a 0.3 ampere unit.

NOTE: The voltage selector can be used to eliminate the trouble caused by the considerable voltage fluctuation. In this case, it should be set to the peak voltage.



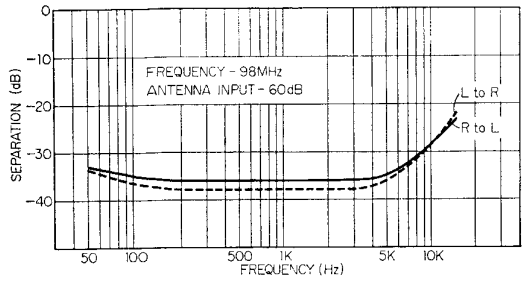
SPECIFICATIONS/CHARACTERISTICS

FM SECTION
- TUNING RANGE: 88 to 108MHz
- SENSITIVITY:
  - (20dB quieting) 2μV
  - (IHF) 2.5μF
- TOTAL HARMONIC DISTORTION: less than 0.8%
- SIGNAL TO NOISE RATIO: better than 65dB
- SELECTIVITY: better than 45dB
- CAPTURE RATIO (IHF): 3dB
- IMAGE FREQUENCY REJECTION: better than 55dB
- IF REJECTION: better than 60dB
- SPURIOUS RESPONSE REJECTION: better than 60dB
- STEREO SEPARATION: better than 35dB at 400Hz
- SPURIOUS RADIATION: less than 34dB
- ANTENNA INPUT IMPEDANCE: 300 ohms balanced, 75 ohms unbalanced

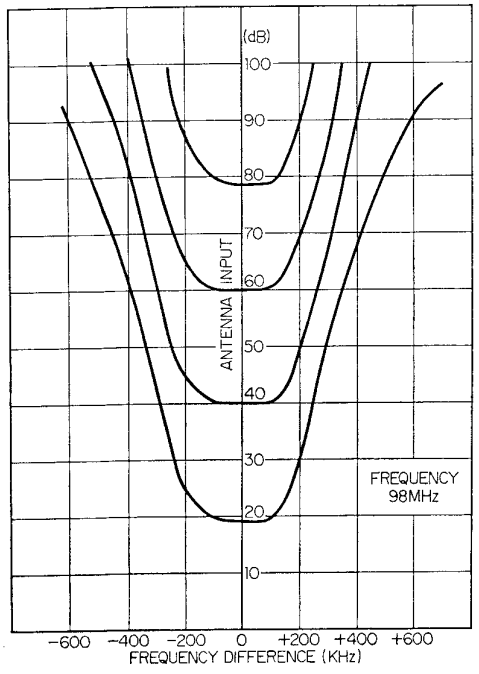
AM SECTION
- TUNING RANGE: 535 to 1,605kHz
- SENSITIVITY: 150μV at 1,000kHz (bar antenna)
- IMAGE FREQUENCY REJECTION: better than 40dB at 1,000Hz
- SELECTIVITY: better than 25dB
- OUTPUT: 0.7V

- CONTROLS AND SWITCHES:
  - SELECTOR: AM, FM MONO, FM AUTO
  - FM MUTING: ON, OFF
  - MPX NOISE CANCELER: OFF, ON
  - FM ANT SWITCH: LOCAL, DISTANT
- SEMICONDUCTORS: TRANSISTORS: 23 FET: 1 DIODES: 19 IC: 1
- POWER REQUIREMENTS:
  - POWER VOLTAGE: 100, 117, 220, 240V, 50/60Hz
  - POWER CONSUMPTION: 15W
- DIMENSIONS: 13¼"(335mm)W, 5"(127mm)H, 10⅝"(278mm)D
- WEIGHT: 11 lbs. (5kg)

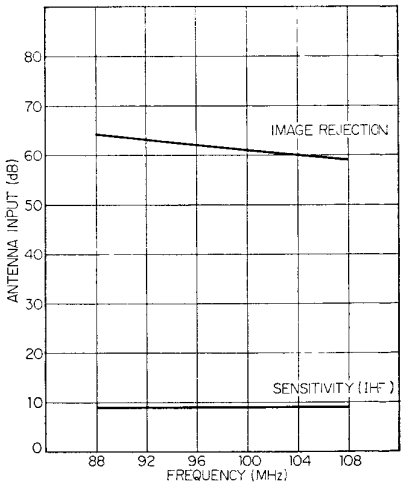
FM MPX SEPARATION



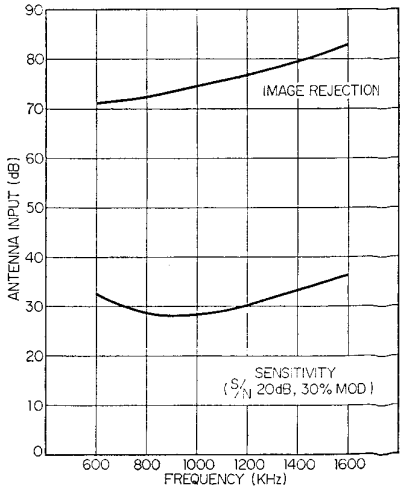
FM SELECTIVITY



FM SENSITIVITY & IMAGE REJECTION

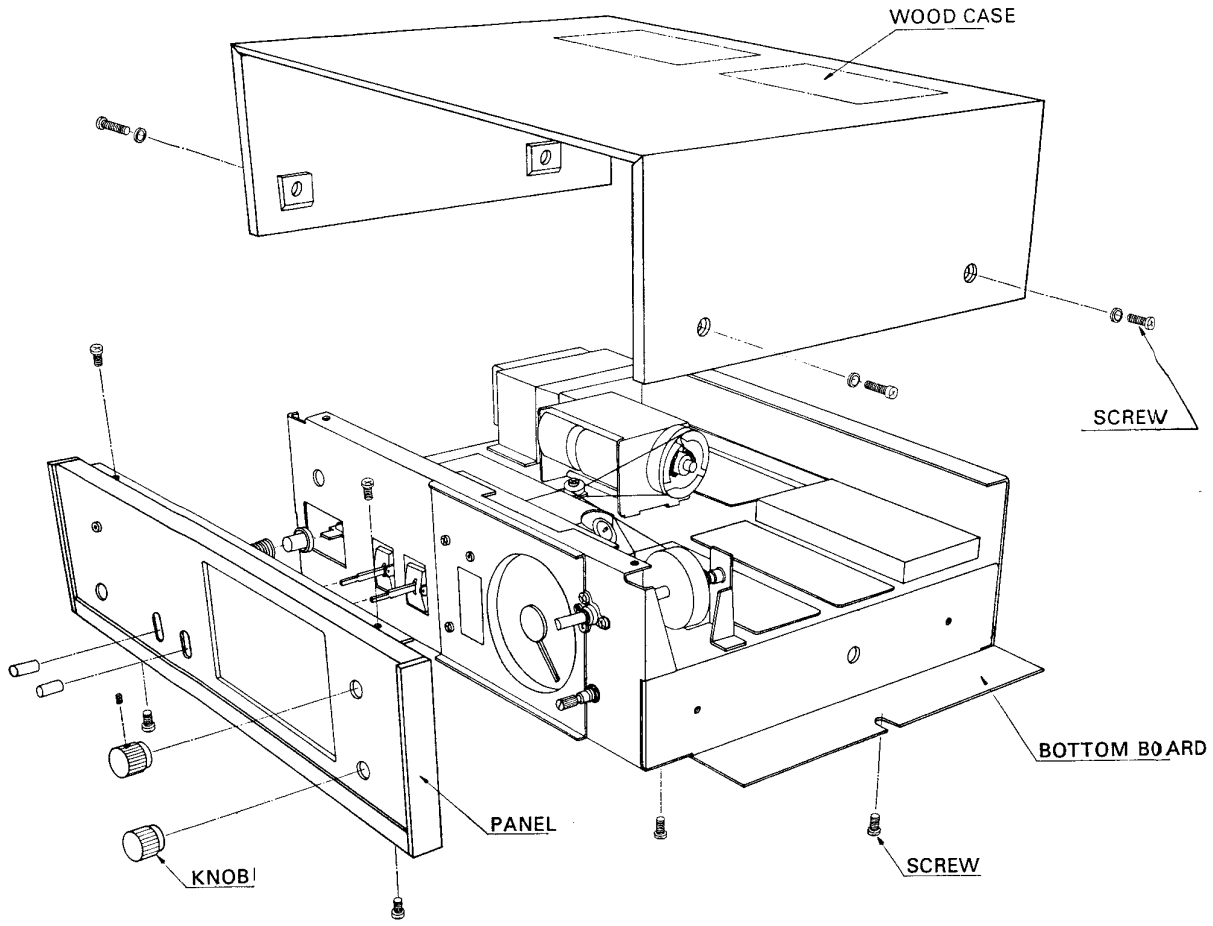


AM SENSITIVITY & IMAGE REJECTION

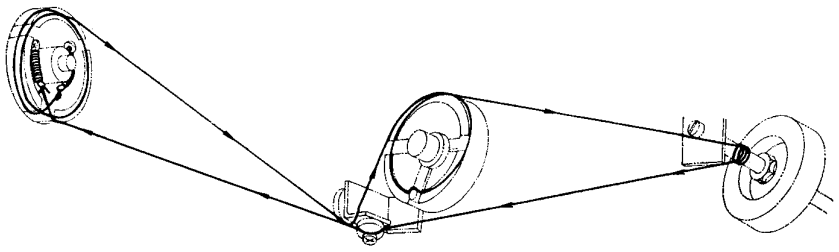


DISASSEMBLY PROCEDURE

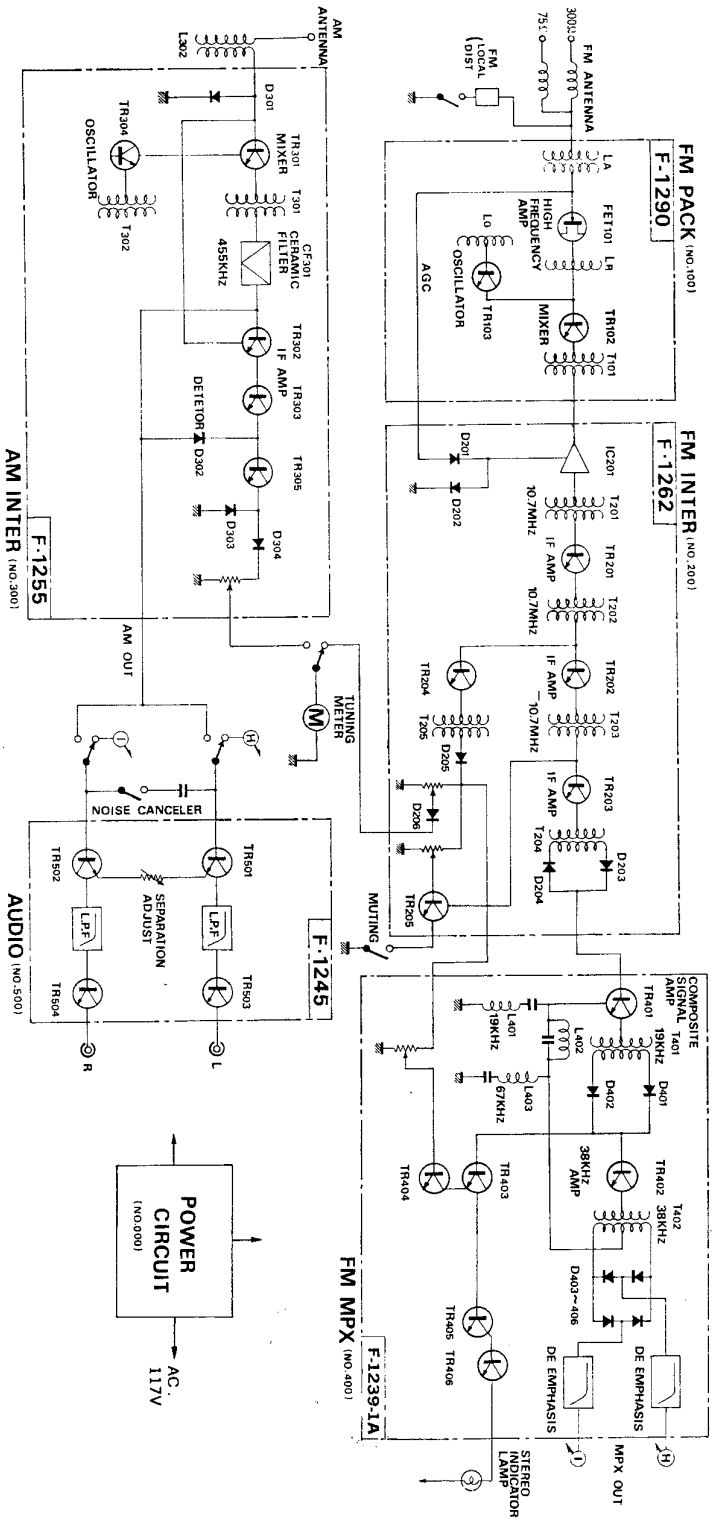
REMOVING THE FRONT PANEL, WOOD CASE AND BOTTOM PLATE



DIAL MECHANISM

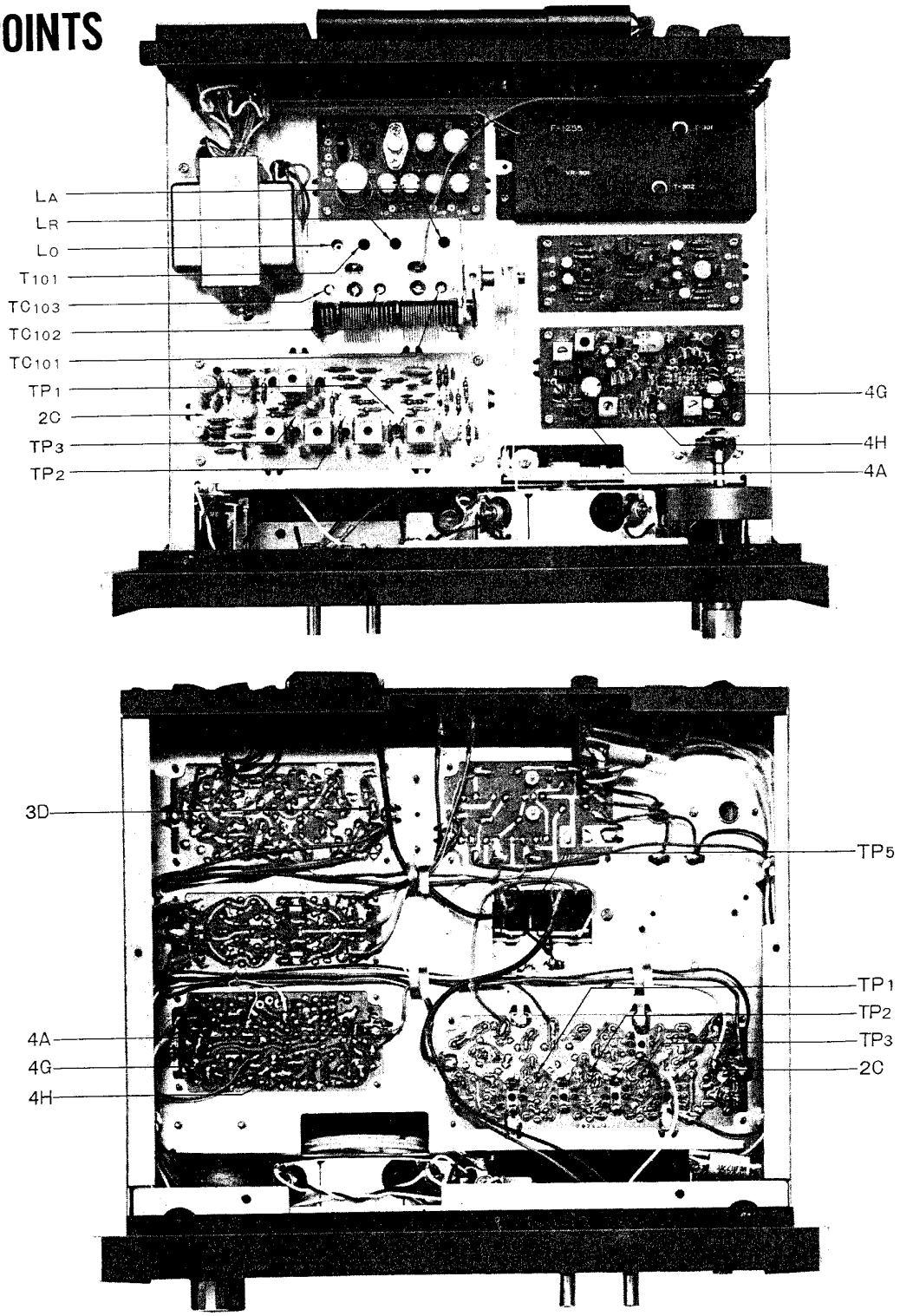


BLOCK DIAGRAM



ALIGNMENT

TEST POINTS



ALIGNMENT

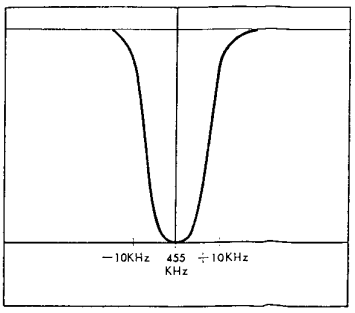
Alignment procedures are summarized in this section. Proper alignment requires use of precision instruments as given below:

1. Sweep generator;
2. Oscilloscope;
3. FM signal generator;
4. Multiplex stereo generator;
5. AC vacuum-tube voltmeter;
6. Audio signal generator;
7. AM signal generator

AM TUNER ALIGNMENT PROCEDURE

STEP	ALIGN	GENERATOR	FEED SIGNAL TO	CONNECT	DIAL SETTING	ADJUST	ADJUST FOR
1.	IF	455 kHz ±30 kHz sweep generator	Antenna terminals	Oscilloscope to 3D		T_{301}	Best I.F.T. wave form
2.	OSC. (1)	AM signal generator 535 kHz 400 Hz 30% modulation	Antenna terminals	Oscilloscope & V.T.V.M. to output load	535 kHz	OSC. coil (T_{302})	Maximum
3.	OSC. (2)	1600 kHz 400 Hz 30% modulation	Antenna terminals	Oscilloscope & V.T.V.M. to output load	1600 kHz	OSC. trimmer (PT_{105})	Maximum
4.	Reiterate 2,3						
5.	Antenna circuit (1)	600 kHz 400 Hz 30% modulation	Antenna terminals	Oscilloscope & V.T.V.M. to output load	600 kHz	Ferrite antenna coil (L_{302})	Maximum
6.	Antenna circuit (2)	1400 kHz 400 Hz 30% modulation	Antenna terminals	Oscilloscope & V.T.V.M. to output load	1400 kHz	Trimmer (PT_{104})	Maximum
7.	Reiterate 5,6						

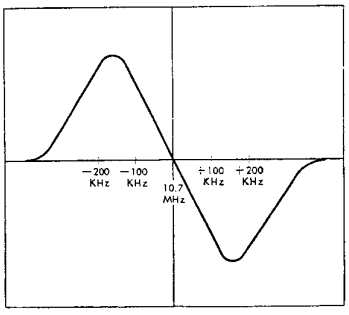
AM IF CHARACTERISTIC



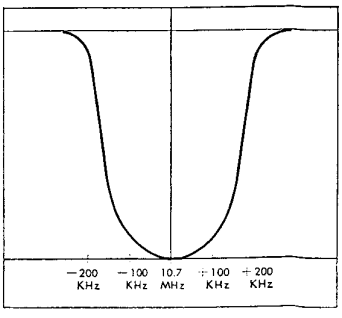
FM TUNER ALIGNMENT PROCEDURE

STEP	ALIGN	SIGNAL GENERATOR	FEED SIGNAL TO	CONNECT	DIAL SETTING	ADJUST	ADJUST FOR
1.	IF transformer	10.7 MHz ±200 kHz sweep generator	TP_5	Oscilloscope to TP_3 through 0.02μF ceramic capacitor		Primary and secondary of IF transformer (T_{101}, T_{201}, T_{202}, T_{203})	Best wave form
2.	Discriminator	10.7 MHz ±200 kHz sweep generator	TP_5	Oscilloscope to 2C through 0.02μF ceramic capacitor		Primary and secondary of discriminator transformer (T_{204})	S curve
3.	Local oscillator (1)	FM signal generator 88MHz, 400 Hz, 100% modulation	Antenna terminals	Oscilloscope and V.T.V.M. to load terminal	88 MHz	Local oscillator coil (L_0)	Maximum
4.	Local oscillator (2)	FM signal generator 108 MHz, 400 Hz, 100% modulation	Antenna terminals	Oscilloscope and V.T.V.M. to load terminal	108 MHz	Local oscillator trimmer (PT_{103})	Maximum
5.	Reiterate 3 & 4.						
6.	High-frequency amp. circuit (1)	FM signal generator 90 MHz, 400 Hz, 100% modulation	Antenna terminals	Oscilloscope and V.T.V.M. to load terminal	90 MHz	Antenna coil (L_A, L_R)	Maximum
7.	High-frequency amp. circuit (2)	FM signal generator 106 MHz, 400 Hz, 100% modulation	Antenna terminals	Oscilloscope and V.T.V.M. to load terminal	106 MHz	Trimmer (PT_{101}, PT_{102})	Maximum
8.	Reiterate 6 & 7.						

FM DISCRIMINATOR CHARACTERISTIC



FM IF CHARACTERISTIC



ALIGNMENT

FM MULTIPLEX ALIGNMENT PROCEDURE

STEP	ALIGN	SIGNAL GENERATOR	FEED SIGNAL TO	CONNECT	DIAL SETTING	ADJUST	ADJUST FOR
1.	67 kHz trap	Audio signal generator, 67 kHz 200 mV r.m.s.	4A	V.T.V.M. to 4G		L_{403}	Minimum
2.	19 kHz tuning coil	1) FM signal generator, 98 MHz, 60 dB 2) Stereo signal generator, 30% modulation of composite signal (L or R) including pilot signal	Antenna terminals	V.T.V.M. to 4G	98 MHz	L_{401}, T_{403}	Maximum
3.	38 kHz tuning coil	1) FM signal generator, 98 MHz, 60 dB 2) Stereo signal generator, 30% modulation of composite signal (L or R) including pilot signal	Antenna terminals	V.T.V.M. to 4G	98 MHz	T_{402}	Maximum
4.	38 kHz tuning coil Separation VR	1) FM signal generator, 98 MHz, 60 dB 2) Stereo signal generator including pilot signal Composite signal L-channel 30% modulation	Antenna terminals	Oscilloscope and V.T.V.M. to load terminals	98 MHz	VR_{501}	1) Observe the wave form of the L channel output and adjust T_{401}, T_{402} to maximum output. 2) Adjust the separation VR_{501} for optimum separation

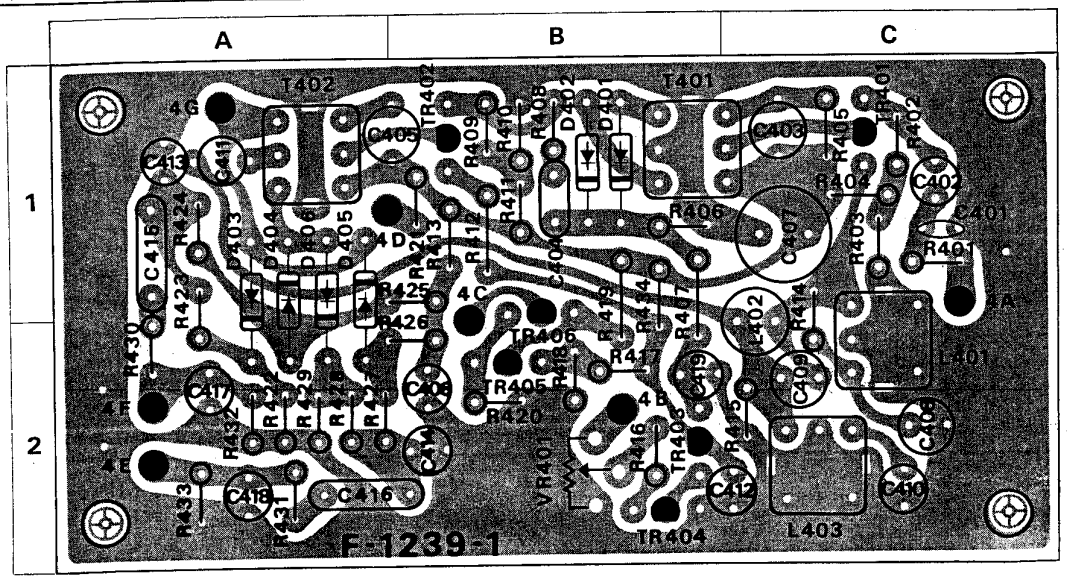
PRINTED CIRCUIT BOARDS AND PARTS LIST

X: Parts No. **Y:** Parts Name **Z:** Positoin of Parts

FM MPX. 〈F-1239-1A〉

X	Y	Z
R401	1kΩ	1 C
R402	100kΩ	1 C
R403	15kΩ	1 C
R404	22kΩ	1 C
R405	68kΩ	1 C
R406	100kΩ	1 B
R407	100kΩ	1, 2 B
R408	4.7kΩ	1 B
R409	100kΩ	1 B
R410	2.2kΩ	1 B
R411	22kΩ	1 B
R412	330Ω	1 B
R413	220kΩ	1 B
R414	47kΩ	1, 2 C
R415	2.2kΩ	2 C
R416	47kΩ	2 B
R417	22kΩ	2 B
R418	22kΩ	2 B
R419	3.3kΩ	1, 2 B
R420	4.7Ω	2 B
R421	47Ω	1 B
R422	220kΩ	2 A
R423	10kΩ	1, 2 A
R424	10kΩ	1 A
R425	220kΩ	1 B
R426	220kΩ	2 B
R427	10kΩ	2 A
R428	10kΩ	2 A
R429	220kΩ	2 A
R430	56kΩ	2 A
R431	56kΩ	2 A
R432	82kΩ	2 A
R433	82kΩ	2 A
R434	47kΩ	1, 2 B
	±10% 1/4W Carbon Resistor	
VR401	200kΩ (B) Indicator Adjust (1032150)	2 B
C401	68pF ±10% 50 WV Ceramic Capacitor	1 C
C402	10μF 10 WV Electrolytic Capacitor	1 C

X	Y	Z
C403	0.01μF ± 5% 50 WV Styrol Capacitor	1 C
C404	0.022μF ±10% 50 WV Mylar Capacitor	1 B
C405	4700pF ± 5% 50 WV Styrol Capacitor	1 A, B
C406	1μF 50 WV Electrolytic Capacitor	2 B
C407	47μF 25 WV Electrolytic Capacitor	1 C
C408	0.01μF	2 C
C409	2200pF ± 5% 50 WV Styrol Capacitor	2 C
C410	270pF	2 C
C411	10μF 25 WV Electrolytic Capacitor	1 A
C412	1μF 50 WV Electrolytic Capacitor	2 C
C413	680pF	1 A
C414	680pF ± 5% 50 WV Styrol Capacitor	2 B
C415	0.15μF	1 A
C416	0.15μF ±10% 50 WV Mylar Capacitor	2 A
C417	2200pF	2 A
C418	2200pF ± 5% 50 WV Styrol Capacitor	2 A
C419	1μF 50 WV Electrolytic Capacitor	2 A
TR401	(0305732, 3)	1 C
TR402	(0305732, 3)	1 B
TR403	2SC711 (F, G) (0305732, 3)	2 B
TR404	(0305732, 3)	2 B
TR405	2SC733 (Y) (0305371)	2 B
TR406	2SC735 (O. Y) (0305640, 1)	1, 2 B
D401	(0310400)	1 B
D402	IN34A (0310400)	1 B
D403	(0310401)	1 A
D404	(0310401)	1 A
D405	IN34A (Y) (0310401)	1 A
D406	(0310401)	1 A
T401	19kHz Coil (4240580)	1 B
T402	38kHz Coil (4240600)	1 A
L401	19kHz Coil (4240590)	2 C
L402	Micro Inductor (4900100)	1, 2 C
L403	67kHz Coil (4240410	2 C



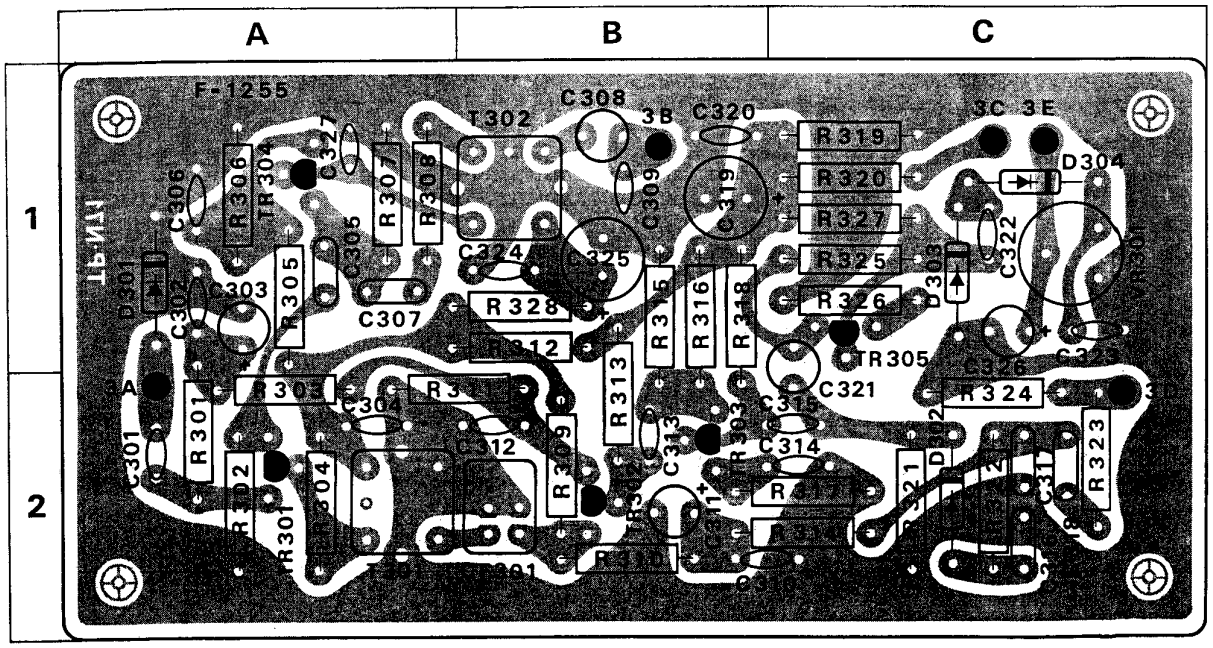
PRINTED CIRCUIT BOARDS AND PARTS LIST

X: Parts No. **Y:** Parts Name **Z:** Position of Parts

AM IF 〈F-1255〉

X	Y	Z
R301	2.2kΩ }	2 A
R302	1kΩ }	2 A
R303	10kΩ }	2 A
R304	47kΩ }	2 A
R305	22kΩ }	1 A
R306	3.9kΩ }	1 A
R307	1kΩ }	1 A
R308	10Ω }	1 A
R309	180kΩ }	2 B
R310	2.2kΩ }	2 B
R311	1kΩ }	2 A, B
R312	100Ω }	1 B
R313	1.2kΩ }	1, 2 B
R314	47kΩ } ±10% ¼W Carbon Resistor	2 B, C
R315	22kΩ }	1 B
R316	68kΩ }	1 B
R317	1kΩ }	2 B, C
R318	1.8kΩ }	1 B
R319	1kΩ }	1 C
R320	270Ω }	1 C
R321	10kΩ }	2 C
R322	1kΩ }	2 C
R323	56kΩ }	2 C
R324	12kΩ }	2 C
R325	470kΩ }	1 C

X	Y	Z
R326	560Ω }	1 C
R327	3.3kΩ } ±10% ¼W Carbon Resistor	1 C
R328	270Ω }	1 B
VR301	47kΩ(B) Meter Adjustment (103517)	1 C
C301	0.02μF } +100 −0 % 25 WV Ceramic	2 A
C302	0.04μF } Capacitor	1 A
C303	3.3μF 50 WV Electrolytic Capacitor	1 A
C304	0.04μF +100 −0 % 25 WV Ceramic Capacitor	2 A
C305	0.01μF ±10% 50 WV Mylar Capacitor	1 A
C306	0.04μF +100 −0 % 25 WV Ceramic Capacitor	1 A
C307	0.01μF ±10% 50 WV Mylar Capacitor	1 A
C308	470 pF ± 5 % 50 WV Styrol Capacitor	1 B
C309	10 pF ±10% 50 WV } Ceramic	1 B
C310	0.04μF +100 −0 % 25 WV } Capacitor	2 B, C
C311	1μF 50 WV Electrolytic Capacitor	2 B
C312	0.04μF }	2 B
C313	0.02μF } +100 −0 % 25 WV Ceramic	2 B
C314	0.04μF } Capacitor	2 C
C315	0.02μF }	2 C
C316	0.0047μF ±10% 50 WV Mylar Capacitor	2 C

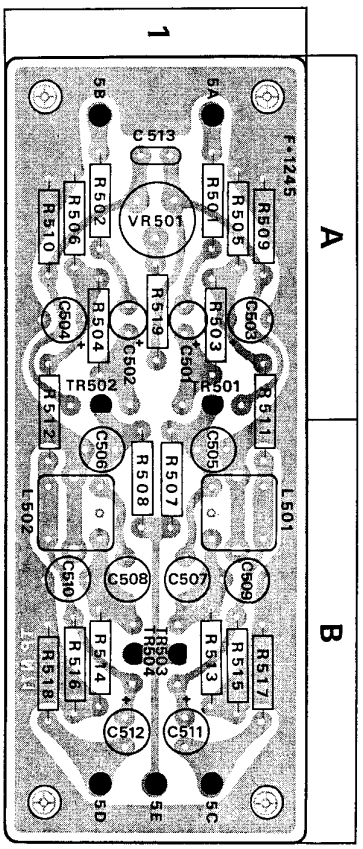


X	Y	Z
C317	0.0047μF ±10% 50 WV Mylar Capacitor	2 C
C318	0.022μF ±10% 50 WV Mylar Capacitor	2 C
C319	47μF 16 WV Electrolytic Capacitor	1 B
C320	0.04μF +100 −0 % 25 WV Ceramic Capacitor	1 B
C321	100 pF ± 5 % 50 WV Styrol Capacitor	1, 2 C
C322	0.02μF +100 −0 % 25 WV Ceramic Capacitor	1 C
C323	0.02μF +100 −0 % 25 WV Ceramic Capacitor	1 C
C324	0.04μF +100 −0 % 25 WV Ceramic Capacitor	1 B
C325	47μF 16WV Electrolytic Capacitor	1 B
C326	10μF 10WV Electrolytic Capacitor	1 C
C327	47pF ±10% 50WV Ceramic Capacitor	1 A
C328	0.001μF ±10% 50WV Mylar Capacitor	
TR301	2SC460(B, C) (030535,-1)	2 A
TR302	2SC460(B, C) (030535,-1)	2 B
TR303	2SC460(B, C) (030535,-1)	2 B
TR304	2SC460(B, C) (030535,-1)	1 A
TR305	2SC460(B, C) (030535,-1)	1 C
D301	IN34A (031040)	1 A
D302	IN34A (031040)	2 C
D303	IN34A (031040)	1 C
CF301	Ceramic Filter (091009)	2 B
T301	Matching Coil (423039)	2 A
T302	OSC Coil (422020)	1 B

MPX DIFFERENTIAL AMP 〈F-1245〉

X	Y	Z
R501	2.2kΩ ±10% ¼W Carbon Resistor	1 A
R502	2.2kΩ ±10% ¼W Carbon Resistor	1 A
R503	150kΩ ±10% ¼W Carbon Resistor	1 A
R504	150kΩ ±10% ¼W Carbon Resistor	1 A
R505	22kΩ ±10% ¼W Carbon Resistor	1 A
R506	22kΩ ±10% ¼W Carbon Resistor	1 A
R507	10kΩ ±10% ¼W Carbon Resistor	1 B
R508	10kΩ ±10% ¼W Carbon Resistor	1 B
R509	1kΩ ±10% ¼W Carbon Resistor	1 A
R510	1kΩ ±10% ¼W Carbon Resistor	1 A
R511	100kΩ ±10% ¼W Carbon Resistor	1 A, B
R512	100kΩ ±10% ¼W Carbon Resistor	1 A, B
R513	47kΩ ±10% ¼W Carbon Resistor	1 B
R514	47kΩ ±10% ¼W Carbon Resistor	1 B
R515	4.7kΩ ±10% ¼W Carbon Resistor	1 B
R516	4.7kΩ ±10% ¼W Carbon Resistor	1 B
R517	100kΩ ±10% ¼W Carbon Resistor	1 B
R518	100kΩ ±10% ¼W Carbon Resistor	1 B
R519	220Ω ±10% ¼W Carbon Resistor	1 A
VR501	10kΩ(B) Separption Adjustment (103513)	1 A

X	Y	Z
C501	1μF 50 WV Electrolytic Capacitor	1 A
C502	1μF 50 WV Electrolytic Capacitor	1 A
C503	10μF 25 WV Electrolytic Capacitor	1 A
C504	10μF 25 WV Electrolytic Capacitor	1 A
C505	1000 pF ± 5 % 50 WV Styrol Capacitor	1 B
C506	1000 pF ± 5 % 50 WV Styrol Capacitor	1 B
C507	1200 pF ± 5 % 50 WV Styrol Capacitor	1 B
C508	1200 pF ± 5 % 50 WV Styrol Capacitor	1 B
C509	1000 pF ± 5 % 50 WV Styrol Capacitor	1 B
C510	1000 pF ± 5 % 50 WV Styrol Capacitor	1 B
C511	10μF 25 WV Electrolytic Capacitor	1 B
C512	10μF 25 WV Electrolytic Capacitor	1 B
C513	0.0033μF ±10% 50 WV Mylar Capacitor	1 A
C514	0.04μF +100 −0 % 25 WV Ceramic Capacitor	1 B
TR501	2SC458LG(C) (030531-1)	1 A
TR502	2SC458LG(C) (030531-1)	1 A
TR503	2SC458L(C) (030542-1)	1 B
TR504	2SC458L(C) (030542-1)	1 B
L501	Coil (424057)	1 B
L502	Coil (424057)	1 B



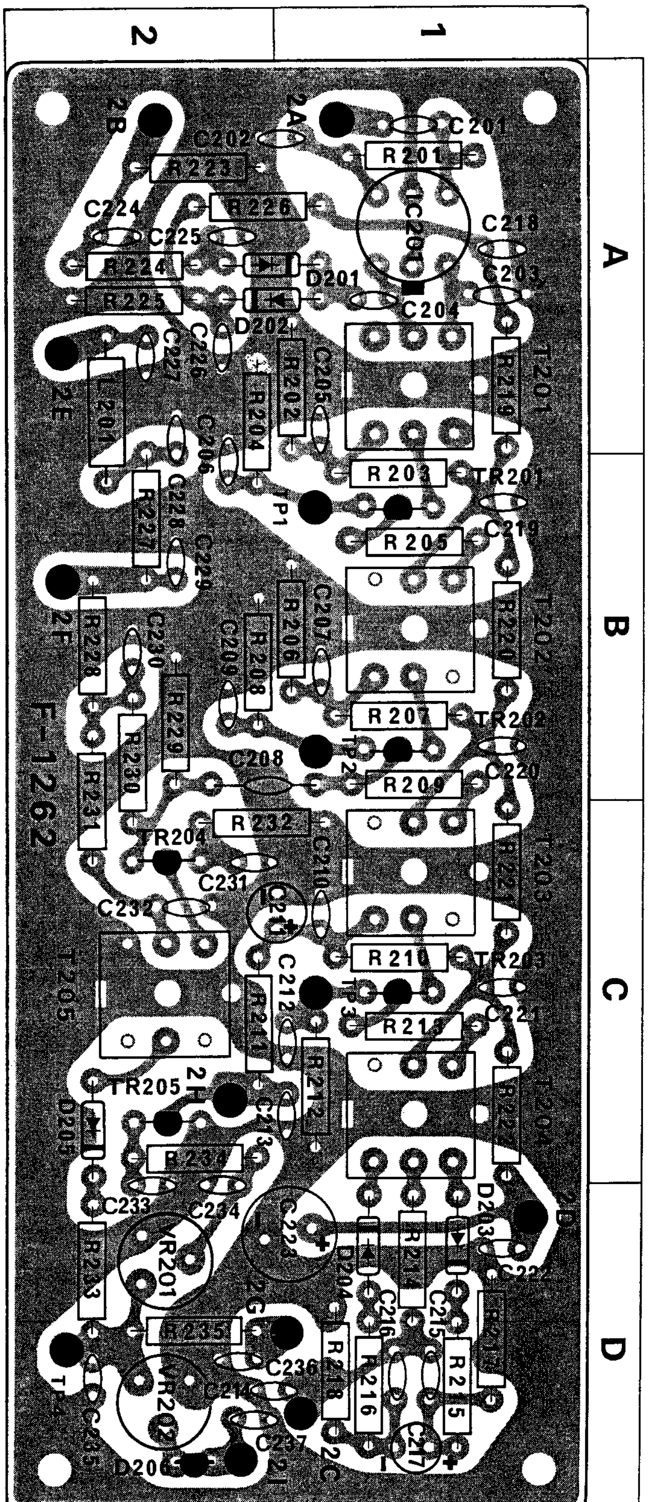
PRINTED CIRCUIT BOARDS AND PARTS LIST

X: Parts No **Y:** Parts Name **Z:** Position of Parts

FM IF 〈F-1262〉

X	Y	Z
R201	1.8kΩ ±10% ¼W Carbon Resistor	1 A
R202	6.8kΩ ±10% ¼W Carbon Resistor	1 A
R203	22kΩ ±10% ¼W Carbon Resistor	1 B
R204	1kΩ ±10% ¼W Carbon Resistor	1 A, B
R205	560Ω ±10% ¼W Carbon Resistor	1 B
R206	6.8kΩ ±10% ¼W Carbon Resistor	1 B
R207	18kΩ ±10% ¼W Carbon Resistor	1 B
R208	1kΩ ±10% ¼W Carbon Resistor	2 B
R209	680Ω ±10% ¼W Carbon Resistor	1 B
R210	12kΩ ±10% ¼W Carbon Resistor	1 C
R211	6.8kΩ ±10% ¼W Carbon Resistor	2 C
R212	1kΩ ±10% ¼W Carbon Resistor	1 C
R213	820Ω ±10% ¼W Carbon Resistor	1 C
R214	100Ω ±10% ¼W Carbon Resistor	1 D
R215	1.2kΩ ±10% ¼W Carbon Resistor	1 D
R216	1.2kΩ ±10% ¼W Carbon Resistor	1 D
R217	12kΩ ±10% ¼W Carbon Resistor	1 D
R218	12kΩ ±10% ¼W Carbon Resistor	1 B
R219	27Ω ±10% ¼W Carbon Resistor	1 B
R220	27Ω ±10% ¼W Carbon Resistor	1 C
R221	27Ω ±10% ¼W Carbon Resistor	1 C
R222	27Ω ±10% ¼W Carbon Resistor	2 A
R223	470kΩ ±10% ¼W Carbon Resistor	2 A
R224	100kΩ ±10% ¼W Carbon Resistor	2 A
R225	560Ω ±10% ¼W Carbon Resistor	1, 2 A
R226	68kΩ ±10% ¼W Carbon Resistor	2 ∞
R227	18Ω ±10% ¼W Carbon Resistor	2 B
R228	18Ω ±10% ¼W Carbon Resistor	2 B
R229	8.2kΩ ±10% ¼W Carbon Resistor	2 B, C
R230	22kΩ ±10% ¼W Carbon Resistor	2 B, C
R231	27Ω ±10% ¼W Carbon Resistor	1, 2 C
R232	1kΩ ±10% ¼W Carbon Resistor	2 D
R233	100Ω ±10% ¼W Carbon Resistor	2 C
R234	27kΩ ±10% ¼W Carbon Resistor	2 D
R235	27kΩ ±10% ¼W Carbon Resistor	
R236	15kΩ ±10% ¼W Carbon Resistor	
VR201	220kΩ(B) Muting Adjustment (103521)	2 C
VR202	47kΩ(B) Tuning Meter (103517)	2 C
C201	0.02μF +100 −0 % 25 WV Ceramic Capacitor	1 A
C202	0.02μF +100 −0 % 25 WV Ceramic Capacitor	1, 2 A
C203	0.02μF +100 −0 % 25 WV Ceramic Capacitor	1 A
C204	2.2 pF ±0.5pF 50 WV Ceramic Capacitor	1 A
C205	0.02μF +100 −0 % 25 WV Ceramic Capacitor	1 A
C206	0.02μF +100 −0 % 25 WV Ceramic Capacitor	2 A, B
C207	0.02μF +100 −0 % 25 WV Ceramic Capacitor	1 B
C208	2.2 pF ±0.5pF 50 WV Ceramic Capacitor	1 A, 2 B
C209	0.02μF +100 −0 % 25 WV Ceramic Capacitor	2 B
C210	0.02μF +100 −0 % 25 WV Ceramic Capacitor	1 C
C211	1μF 50 WV Electrolytic Capacitor	1, 2 C
C212	0.02μF +100 −0 % 25 WV Ceramic Capacitor	1 C
C213	0.02μF +100 −0 % 25 WV Ceramic Capacitor	1 C
C214	100 pF +100 −0 % 50 WV Ceramic Capacitor	1, 2 D
C215	220 pF +100 −0 % 50 WV Ceramic Capacitor	1 D
C216	220 pF +100 −0 % 50 WV Ceramic Capacitor	1 D

X	Y	Z
C217	10μF 10 WV Electrolytic Capacitor	1 D
C218	0.02μF +100 −0 % 25 WV Ceramic Capacitor	1 A
C219	0.02μF +100 −0 % 25 WV Ceramic Capacitor	1 B
C220	0.02μF +100 −0 % 25 WV Ceramic Capacitor	1 B
C221	0.02μF +100 −0 % 25 WV Ceramic Capacitor	1 C
C222	0.02μF +100 −0 % 25 WV Ceramic Capacitor	1 D
C223	100μF 16 WV Electrolytic Capacitor	1, 2 D
C224	0.02μF +100 −0 % 25 WV Ceramic Capacitor	2 A
C225	0.02μF +100 −0 % 25 WV Ceramic Capacitor	2 A
C226	0.02μF +100 −0 % 25 WV Ceramic Capacitor	2 A
C227	0.02μF +100 −0 % 25 WV Ceramic Capacitor	2 A
C228	0.02μF +100 −0 % 25 WV Ceramic Capacitor	2 A, B
C229	0.02μF +100 −0 % 25 WV Ceramic Capacitor	2 B
C230	0.02μF +100 −0 % 25 WV Ceramic Capacitor	2 B
C231	0.02μF +100 −0 % 25 WV Ceramic Capacitor	2 C
C232	0.02μF +100 −0 % 25 WV Ceramic Capacitor	2 C
C233	0.02μF +100 −0 % 25 WV Ceramic Capacitor	2 D
C234	0.02μF +100 −0 % 25 WV Ceramic Capacitor	2 D
C235	0.02μF +100 −0 % 25 WV Ceramic Capacitor	2 D
C236	0.02μF +100 −0 % 25 WV Ceramic Capacitor	2 D
C237	0.02μF +100 −0 % 25 WV Ceramic Capacitor	2 D
TR201	2SC829(C) (030546-1)	1 B
TR202	2SC829(C) (030546-1)	1 B
TR203	2SC829(C) (030546-1)	1 C
TR204	2SC829(C) (030546-1)	2 C
TR205	2SC828(T) (030527)	2 C
D201	IN60 (031033)	1, 2 A
D202	IN60 (031033)	1, 2 A
D203	IN60 (031033)	1 D
D204	IN60 (031033)	1 D
D205	IN60 (031033)	2 C
D206	DS410 Varistor (031046)	2 D
IC201	LM703L (036004)	1 A
T201	FM IFT (423548)	1 A
T202	FM IFT (423546)	1 B
T203	FM IFT (423546)	1 C
T204	Discri Transformer (423556)	1 C
T205	FM Meter Transformer (423529)	2 C
L201	3.5μH Choke Coil (429001-1)	2 A, B


2
1
A
B
C
D
F-1262
R201
R203
R205
R207
R209
R210
R213
R223
R224
R225
R226
R232
R234
R235
C201
C202
C203
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C208
C218
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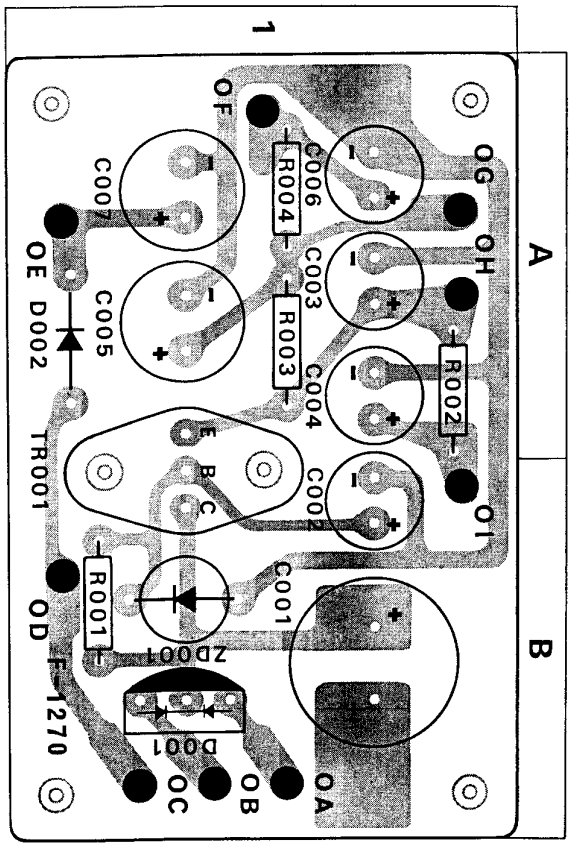
C236
C237
D201
D202
TR201
TR202
TR203
TR204
TR205
T201
T202
T203
T204
T205

PRINTED CIRCUIT BOARDS AND PARTS LIST
ACCESSORIES

X: Parts No. **Y:** Parts Name **Z:** Position of Parts

POWER ⟨F-1270⟩

X	Y		Z
R001	560Ω } ±10% ¼W Carbon Resistor		1B
R002	680Ω }		1A
R003	390Ω ±10% ½W Solid Resistor		1A
R004	47Ω ±10% ¼W Carbon Resistor		1A
C001	330μF	50 WV } Electrolytic Capacitor	1B
C002	100μF	25 WV	1B
C003	33μF	50 WV	1A
C004	100μF	25 WV	1A
C005	220μF	16 WV	1A
C006	100μF	16 WV	1A
C007	470μF	10 WV	1A
TR001	2SD223(Y)	(030823-1)	1A, B
D001	10DC(N)	(031068)	1B
D002	10D-1	(031034)	1A
ZD001	ZB1-25	(031071)	1B



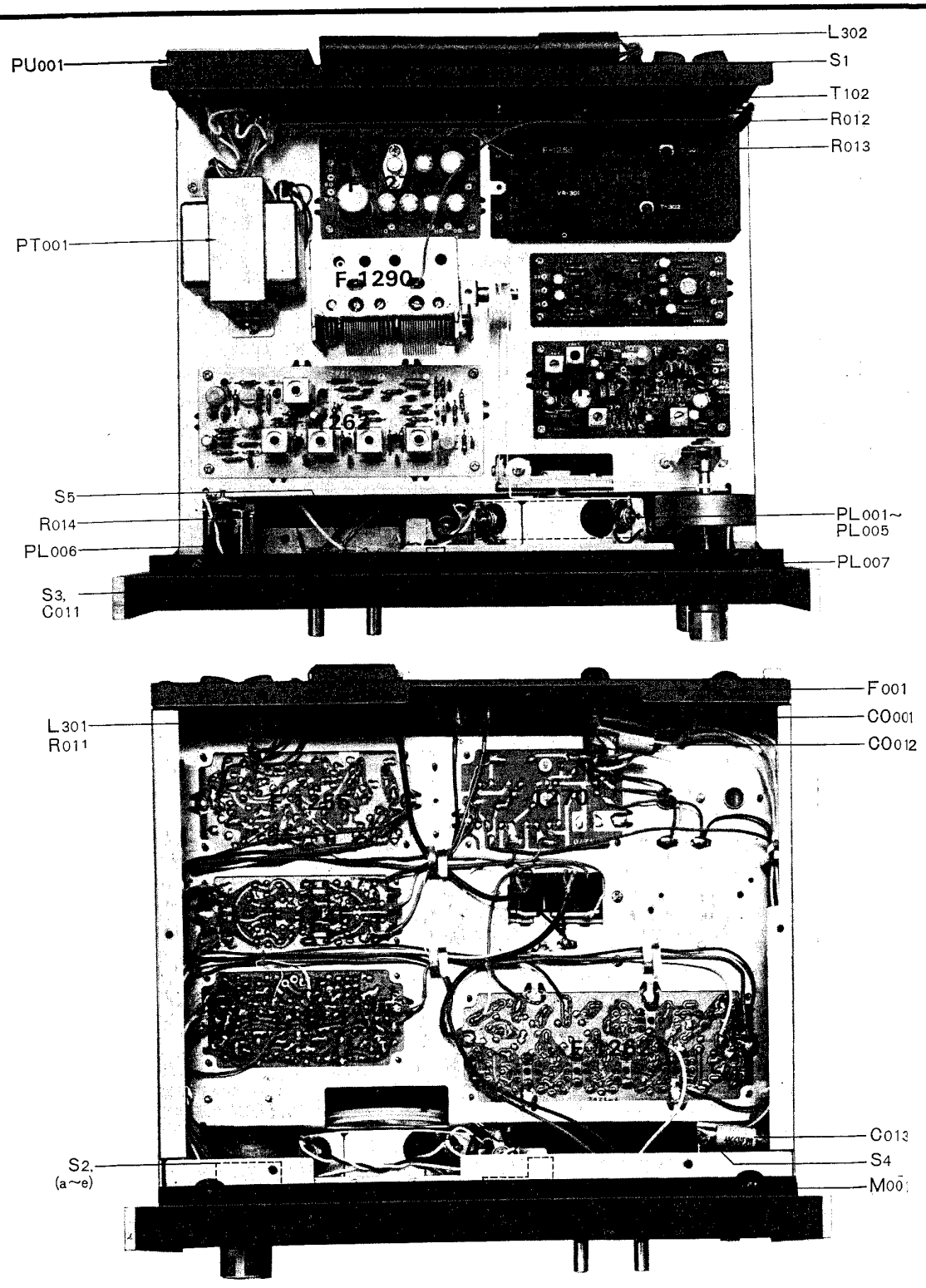
OTHER PARTS

X	Y	
R011	1.8kΩ } ±10% ¼W Carbon Resistor	
R012	680Ω }	
R013	68Ω }	
R014	1kΩ }	
R024	6.8Ω ±10% 1 W Wire Wound Resistor	
R246	470Ω } ±10% ¼W Carbon Resistor	
R438	47kΩ }	
R439	10kΩ }	
C011	0.0015μF ±10% 50 WV Mylar Capacitor	
C012	0.0047μF } 600WV Oil Capacitor	
C013	0.022μF }	
C430	3.3μF 25 WV Electrolytic Capacitor	
C521	100Ω } ±10% ¼W Carbon Resistor	
C522	100Ω }	
PL001~006	6.3V 0.25A Pilot Lamp	(040009)
PL007	6V 0.1A Pilot Lamp	(040016)
F001	0.5A FUSE (100~117V)	(043044)
	0.3A FUSE (220~240V)	(043045)
M001	200μA Tuning Meter	(090025)
CO001	AC Outlet	(245001)
PT001	Power Transformer 400-5397	(400066)
T102	FM Antenna Trans 300Ω : 75Ω	(429002-1)
L301	Ferri Inductor 150μH	(490008)
L302	Bar Antenna	(420031)
S1	Antenna Switch	(111004)
S2(a~e)	Selector Switch	(110216)
S3	Noise Canceler Switch	(117017)
S4	Power Switch	(113016)
S5	Muting Switch	(117017)

Accessories List

1. FM ANTENNA 1
2. AM ANTENNA 1
3. OPERATING SHEET 1
4. OPERATING INSTRUCTIONS AND SERVICE MANUAL 1
5. CONNECTION CORD WITH PIN PLUGS 2
6. BUTTERFLY BOLTS 2
7. WASHERS 2
8. POLISHING CLOTH 1

OTHER PARTS AND THEIR POSITION ON CHASSIS



GENERAL TROUBLESHOOTING CHART

In some instances, the amplifier which is operating satisfactorily develops hum or noise as listed on this page. In this case, eliminate the trouble source as indicated in the column under WHAT TO DO.

If you are confronted with a trouble not covered here or if you have any questions concerning the operation and maintenance of this amplifier, please contact our Customer Service Department.

If your AM and/or FM stereo listening isn't all you'd expected, it is in many cases that the tuner is not at fault. The trouble may attributed to the following:

1. Incorrect component connection or loose terminal contact;
2. Incorrect or improper operation of tuner and/or other components;
3. Improper location of components;
4. Other component or components defective.

Other probable causes are listed below:

PROGRAM	SYMPTOM	PROBABLE CAUSE	WHAT TO DO
AM, FM mono or FM stereo	A. Constant or intermittent noise heard at times or in a certain area	* Discharge or oscillation caused by electrical appliances, such as fluorescent lamp, TV set, D.C. motor, rectifier and oscillator * Natural phenomena, such as atmospherics, statics, strays and thunderbolt * Insufficient antenna input due to thick reinforced concrete wall of a building or long distance from the station * Wave interference from other electrical appliances	* Attach a noise limiter to the electrical appliance that causes the noise, or attach it to the power source of the amplifier. * Install an outdoor antenna and ground the amplifier to raise the signal-to-noise ratio. * Reverse the power cord plug-receptacle connections. * If the noise occurs at a certain frequency, attach a wave trap to the ANT. input. * Keep the set in proper distance from other electrical appliances.
	B. The needle of the tuning meter does not move well.	The movement of the needle is one thing, the sensitivity of the amplifier is another.	Turn the set for maximum signal strength.
	C. The zero point of the meter diverges much.	Regional difference in field intensity	The unit is not at fault.
AM	A. Noise heard at a particular time of a day, in a certain area or over part of dial	This results from the nature of AM broadcast.	* Install the antenna for maximum antenna efficiency. * In some cases, the noise can be eliminated by grounding the amplifier or reversing the power cord plug-receptacle connections.
	B. High-frequency noise	* Adjacent-channel interference or beat interference * TV set too close to the audio system	* Although such noise cannot be eliminated it is advisable to switch on the noise filter of the amplifier. * Keep the TV set in proper distance from the audio system.

PROGRAM	SYMPTOM	PROBABLE CAUSE	WHAT TO DO
FM	A. Noisy	* Poor noise limiter effect or to low S/N ratio due to insufficient antenna input	* Install the antenna (supplied) for maximum signal strength. * If this does not prove effective, use an outdoor antenna designed exclusively for FM. When you use a TV antenna for both TV and FM with the help of a divider, make sure the TV reception is not affected. * Excessive long antenna may rather cause a noise.
	Note: FM reception is affected considerably by the conditions of transmission by stations: power and antenna efficiency. As a result, you may receive one station quite well while having difficulty in receiving another station.		
	B. A series of pops	* Ignition noise caused by the starting of an automobile engine	* Install the antenna and its lead-in wire in proper distance from the road or raise the antenna input as described above.
	C. Distortion or no sound during the reception	* Drift of tuning resulted from the nature of FM	* Retune the signal with the tuning knob.
	D. Tuning noise between stations	This noise results from the nature of the FM reception. As the station signal becomes weak, the noise limiter effect is also decreased. The amplification of the limiter, in turn, is enlarged and thus a big noise is generated.	* Turn the MUTING switch on.
FM stereo	A. Noise heard during FM-MPX reception while not heard during FM mono reception	* The service area of the FM-MPX broadcast is only half as much as that of the FM mono broadcast.	* Install the antenna for maximum antenna input. * Switch on the NOISE CANCELER.
	B. Clearness of channel separation is decreased during the reception.	* Excess heat	* Circulation of air is important to the amplifier. Make sure that air can flow underneath.
	C. The stereo indicator goes on and off.	* Interference	* The indicator is not at fault. * Readjust VR_{401}.
	D. The stereo indicator goes on and off even though a stereo station is not received.	* Interference	* The indicator is not at fault. * Readjust VR_{401}.
	E. The BALANCE control of the amplifier used is not at the midpoint when equal sound comes from left and right channels	* The BALANCE control should not be always set to the midpoint	* Set the control to the position where equal sound comes from both channels * Check for unequal program loudness

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