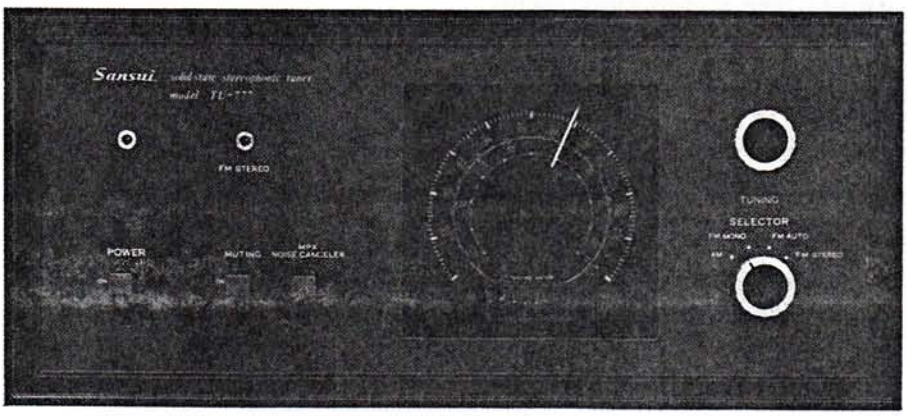
OPERATING INSTRUCTIONS & SERVICE MANUAL

SOLID-STATE AM/FM STEREOPHONIC TUNER

SANSUI *TU-777*



Sansui

SANSUI ELECTRIC COMPANY LIMITED

Thank you for purchasing the Sansui TU-777. In doing so, you have made a wise choice, one that promises you many delightful years of rich stereo enjoyment.

Model TU-777, incorporates the very latest in circuitry design, including a new FET front end for increased FM sensitivity, high stability and low distortion. It also features a dignified black faced front panel, symbolic of all Sansui high-grade sound equipment. Before leaving the Sansui factory, this model was tested, inspected and certified to be in perfect working order.

To keep it that way, it is imperative that you read the Operation section of this manual thoroughly before attempting to install and use the tuner. Since this manual also contains other helpful information on checking and servicing the tuner, and installing it in a custom-made cabinet, you will undoubtably want to retain it for future reference. Again, our sincere thanks for purchasing the TU-777 and our best wishes for many years of trouble-free stereo enjoyment.

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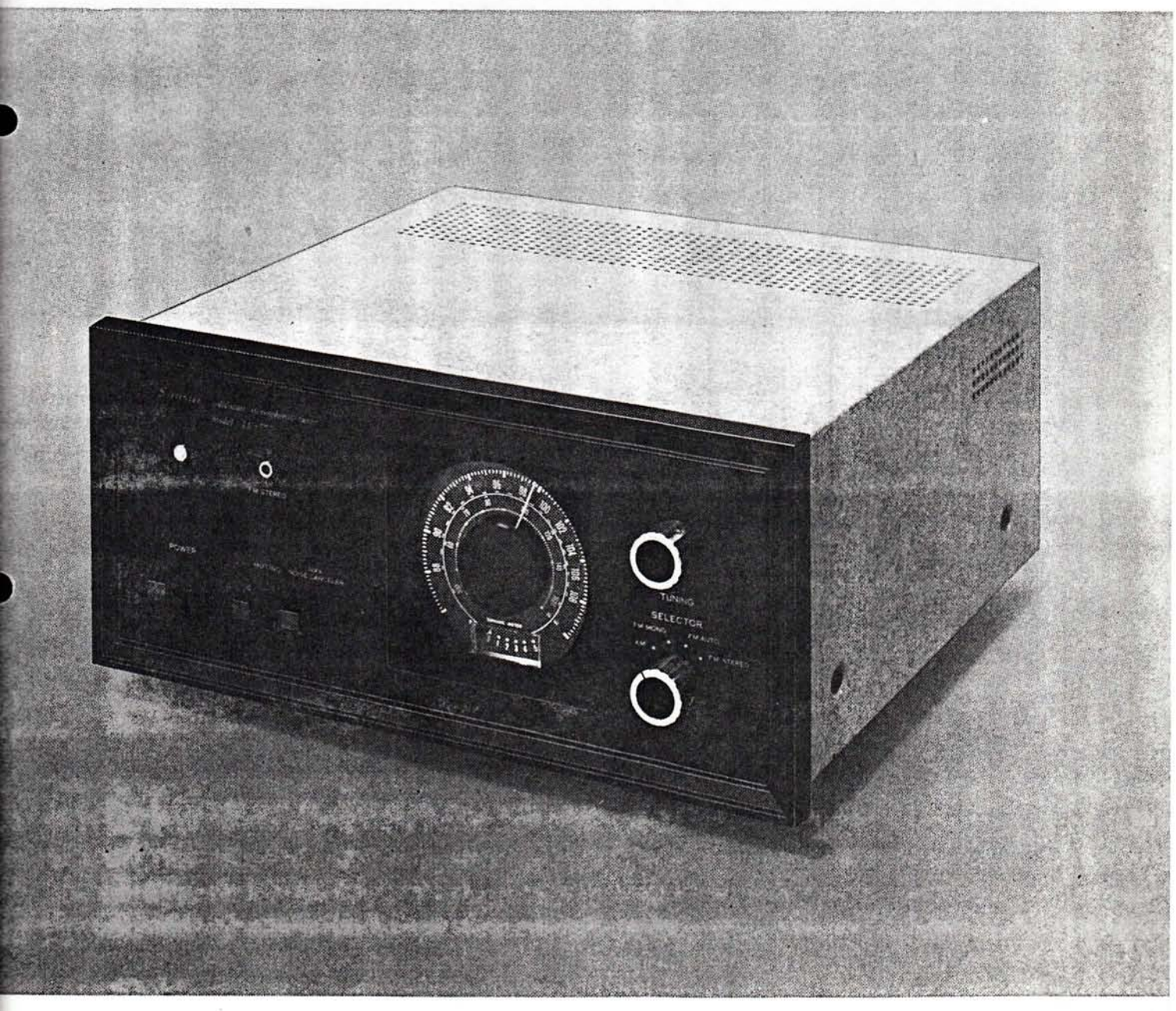
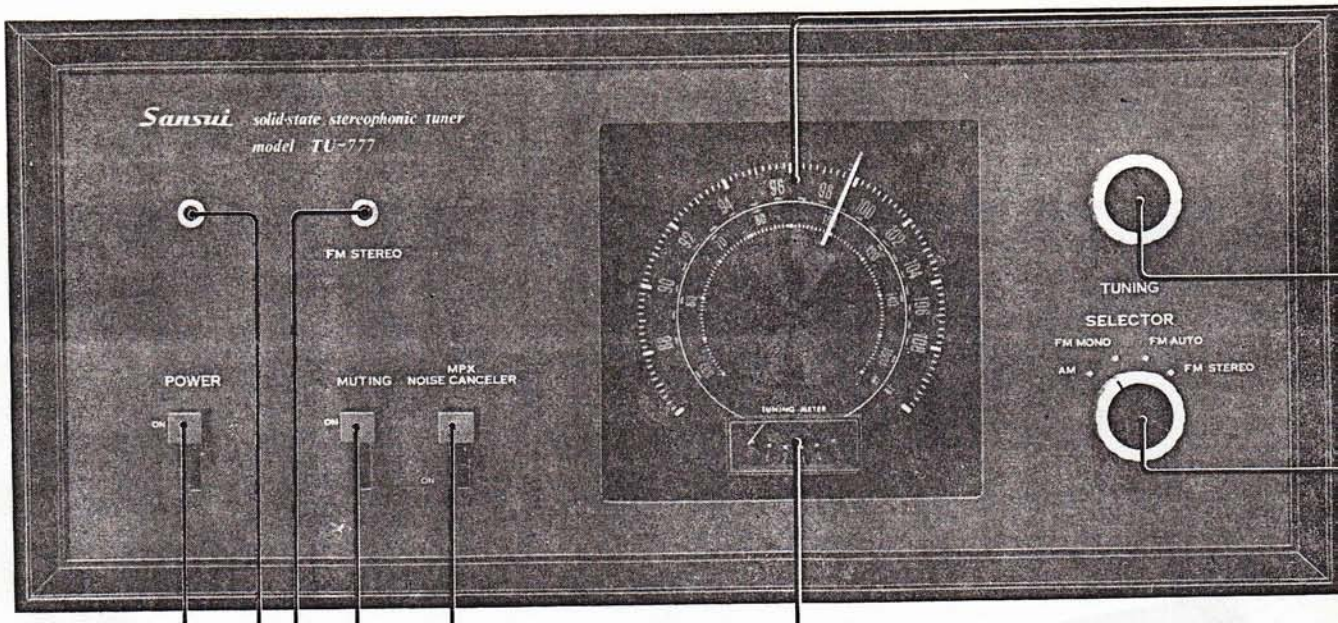

TUNING
SELECTOR

SWITCHES & CONTROLS



Power Switch

The TU-777 goes on when POWER switch lever is set to ON position.

Muting Switch

Eliminates interstation tuning noise when select ing FM stations. It should be used sparingly particularly if the tuner is located in a weak signa area. When you want to receive a weak station this switch should be kept off.

FM Stereo Indicator

Illuminates whenever the tuning dial passes station broadcasting an FM-MPX program. Doe not light up for regular FM monaural broadcasts

Power Indicator

Lights up whenever the tuner is receiving cu rent. Remains lit as long as the Power Switch i On.

Dial Scales

For more convenient tuning, the TU-777 features a rounded dial window. The outside dial corresponds to the FM band, the inside dial to the AM band. Both bands share a single dial controlled by the Tuning Knob.

Tuning Knob

Use to select both AM and FM stations. Be sure to watch the Tuning Indicator when using this control for pinpoint station accuracy.

Function Selector

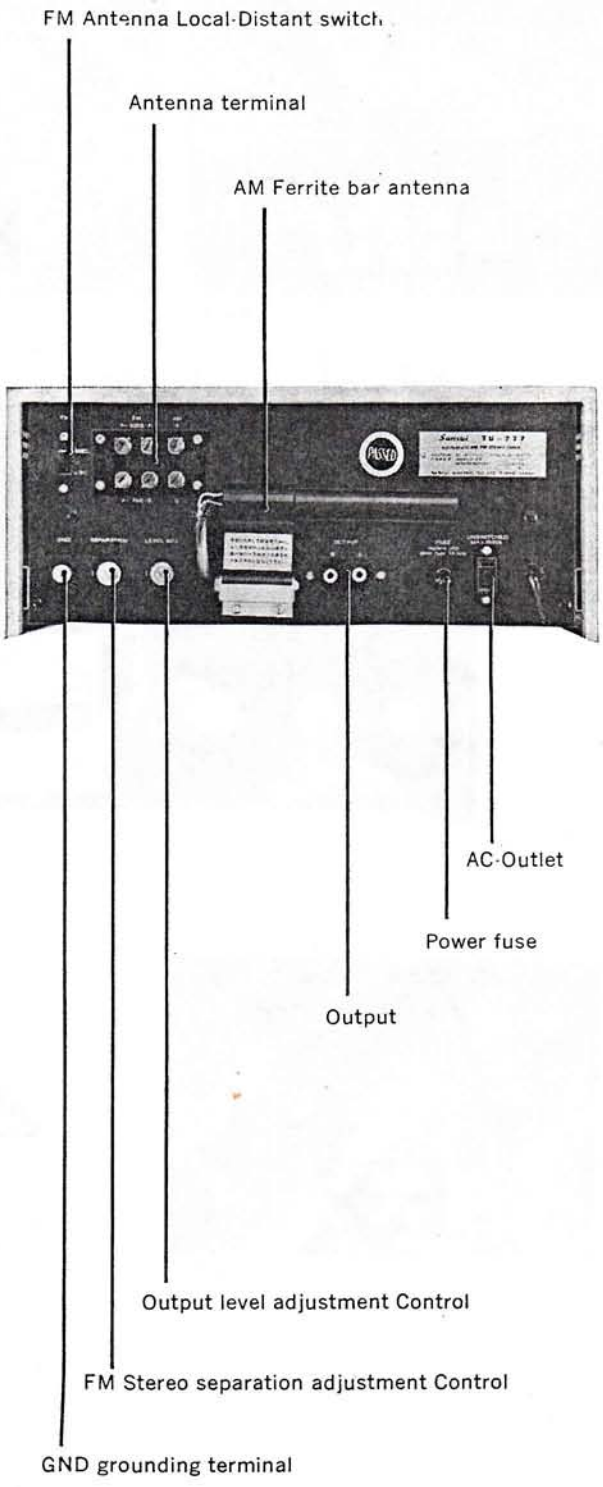
Allows the following selections to be made:
AM: for ordinary AM band broadcasts
FM MONO: for FM band monaural broadcasts
FM AUTO: for both monaural and stereophonic FM band broadcasts. Tuner switches automatically to either signal depending on what is being broadcast.
FM STEREO: for FM stereophonic broadcasts exclusively. Use if stereo signal is too weak and automatic switching is unstable in the FM AUTO position.

Tuning Indicator

Aids in pinpointing stations with the Tuning Knob. Stations are accurately tuned when the needle in this window swings as far to the right as possible, but not necessarily to "5". This movement may vary from station to station.

MPX Noise Canceler

Use to depress disturbing noise when listening to an FM stereo broadcast, but only if disturbing noise occurs. In weak signal areas it may sometimes impair the separation of stereo sounds. High frequency sounds are not affected when this switch is on.



ANTENNA CONNECTION
AMPLIFIER CONNECTION

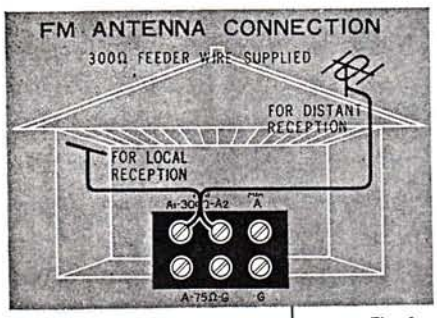


Fig. 1

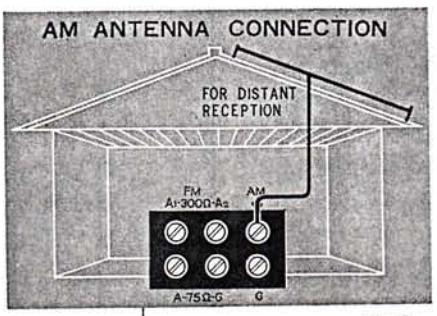


Fig. 2

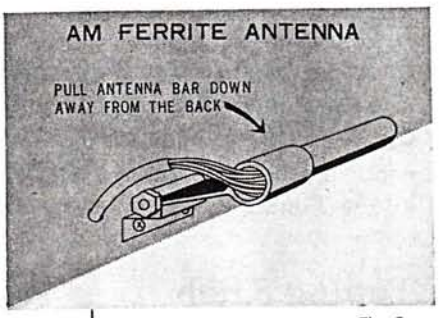
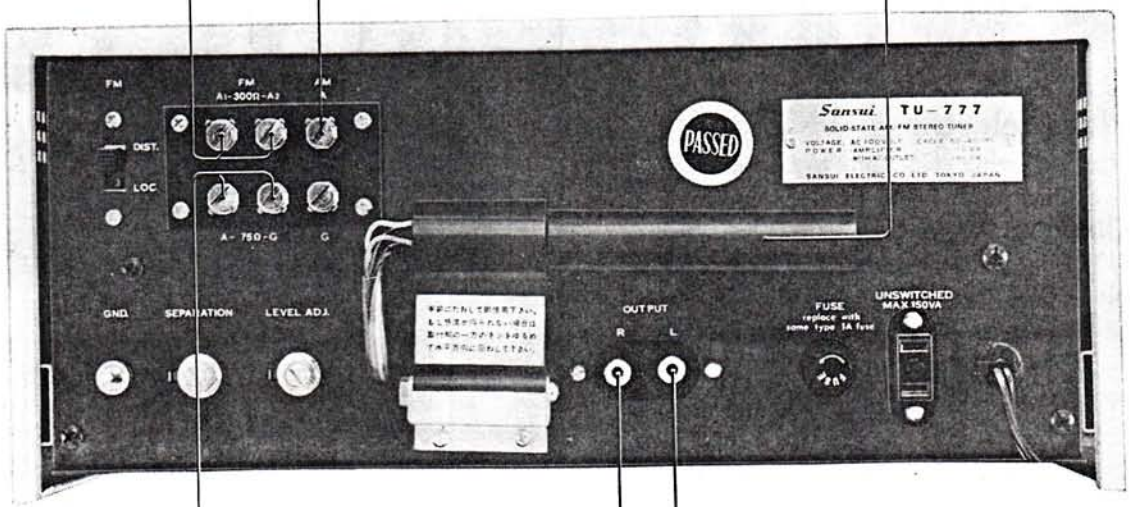


Fig. 3



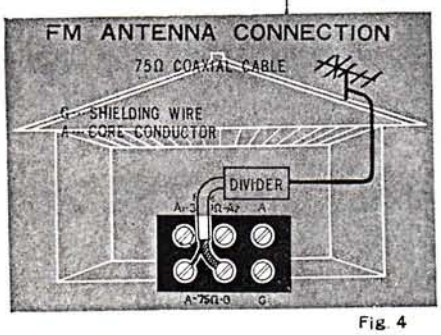
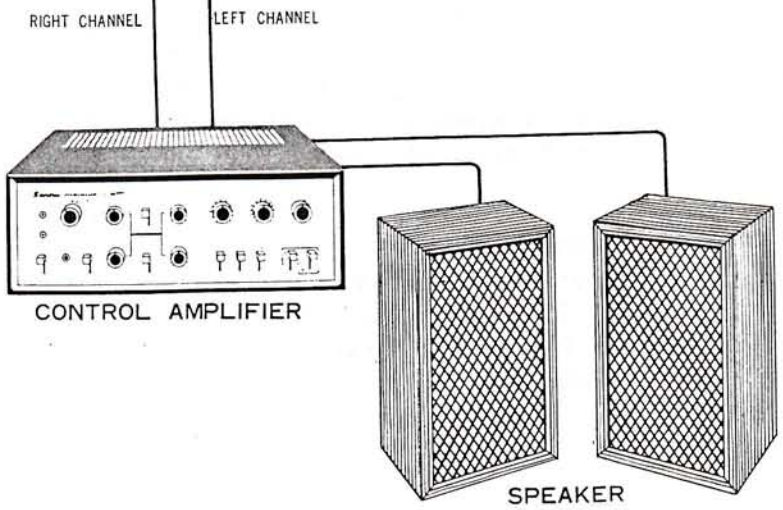


Fig. 4



ANTENNA CONNECTION

The quality of reception that can be expected from the TU-777 is largely dependent on the correct positioning and use of antennas. The following procedures are recommended for noise-free reception.

Built-in AM Ferrite Bar Antenna

This sensitive antenna, located on the rear panel of the tuner, is usually adequate for strong AM reception. To use, pull it down and away from the back of the tuner until it comes to a stop halfway between the top and the bottom of the tuner.

Outdoor AM Antenna

In ferroconcrete buildings or in areas remote from the broadcasting station, the built-in ferrite bar antenna may be inadequate for strong AM reception. An outdoor antenna then becomes necessary. This can be accomplished by connecting the PVC wire accompanying the tuner to the antenna terminal marked AM-A on the back panel. Run this wire to an antenna that has been installed outdoors and away from the building. 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.

FM Antenna

Where FM broadcasting stations are near and FM signals are strong, satisfactory FM reception can be obtained by using the feeder wire accompanying the tuner. Connect the feeder wire to the antenna terminals marked FM-A_1 and FM-A_2 on the rear panel, then fully extend the wire to a T shape and fix it to a wall or ceiling where it allows the strongest reception.

If the TU-777 is used in a thick-walled building or in an area remote from FM broadcasting stations, the indoor feeder wire antenna may be inadequate for strong signal reception. An outdoor antenna designed exclusively for FM reception should then be installed.

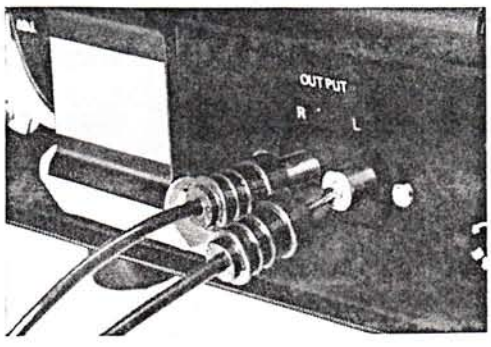
FM antennas of the 300 ohm balanced type and 75 ohm unbalanced type can be used with the TU-777. Connect either antenna to the matching antenna terminals on the rear of the tuner. The 300 ohm feeder wire should be connected to the FM antenna terminals A_1 and A_2 as in Fig. 1.

If a 75 ohm coaxial cable is used, connect the conductor to the FM antenna terminal A, and the shielding wire to the terminal G as in Fig. 4.

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 the best reception.

AMPLIFIER CONNECTION

The TU-777 has been provided with two cords for quick and convenient connection to an amplifier. One is marked L and corresponds to the left stereo channel, the other is marked R and corresponds to the right. If the TU-777 is to be used with Sansui's matching AU-777 amplifier or any other Sansui amplifier, insert the pin plugs of each cord into the amplifier inputs labeled TUNER or AUX respectively. Be sure in either case, that cord L is inserted into the left input and R is inserted into the right input. If the TU-777 is to be used with an amplifier other than Sansui, the same procedures generally hold true, but it is best to check the manufacturer's instructions to be sure.



OPERATION
GENERAL MAINTENANCE

RADIO PROGRAMS

To receive AM broadcasts:

1. Turn the Function Selector to AM
2. Select the desired AM station on the AM dial with the Tuning Knob. It is properly tuned when the needle in the Tuning Indicator woves as far to the right as possible.

To receive FM broadcasts:

1. Turn the Function Selector to FM MONO for regular monaural broadcasts, to FM AUTO for both monaural and stereo broadcasts, and to FM STEREO for only stereo broadcasts.

NOTE: If stereo reception is unstable with the Function Selector in the FM AUTO position, turn to FM STEREO.

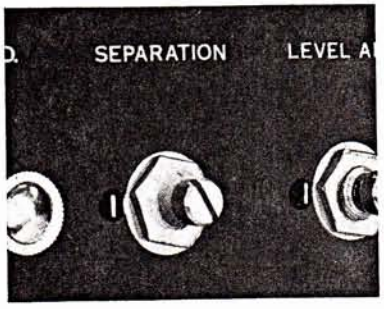
If too much disturbing noise accompanies a stereo broadcast in either FM STEREO or FM AUTO positions, first switch the NOISE CANCELER on, and if the noise is still too disturbing, turn the Function Selector to FM MONO to hear the same broadcast monaurally.

2. Select the desired FM station on the FM dial with the Tuning Knob. It is properly tuned when the needle in the Tuning Indicator moves as far to the right as possible. The FM Stereo Indicator illuminates automatically whenever an FM stereo broadcast is being received.
3. When too much interstation noise is during tuning, turn the Muting Switch to its On position.
4. It is best to adjust the output level of the tuner to match that of other sound equipment being used with the amplifier. This can be done by turning the LEVEL ADJ. control on the rear of the panel to either a higher or lower level.

GENERAL MAINTENANCE

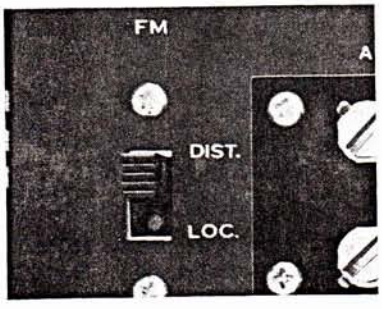
FM Stereo Separation

If the channel separation during FM-MPX stereo reception is inadequate or excessive, turn the screw marked MPX SEPARATION on the rear of the tuner for natural proportions. Never attempt to adjust it without reason however, as it has been properly adjusted and tested prior to leaving our factory.



Local-Distant Antenna Switch

This switch helps to adjust the tuner to the strength of FM signals in whatever area it is being used. Set it to DIST if you live in an area where FM signals are weak. If you live near broadcasting stations where there is danger of interference between stations, set the switch to LOC.

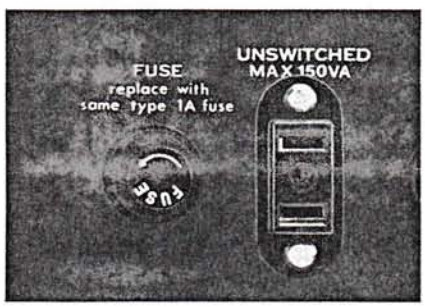


Where to Place

Since transistors are extremely susceptible to heat, the TU-777 has been designed to diffuse heat through the top and rear of its case. Therefore, special consideration should be given to where it will be used before installing the tuner. It should not be operated in a place where it is exposed directly to the sun, near radiators or other heat-generating sources, and it should never be mounted in an air-tight cabinet. Finally nothing should be placed on top of it.

AC Outlet

The TU-777 has ben provided with a 150VA power outlet on its rear panel. It can be used an AC power source for other components such as a turntable, but care should be taken not to use it for any component that exceeds its 150VA power capacity.



Power Fuse

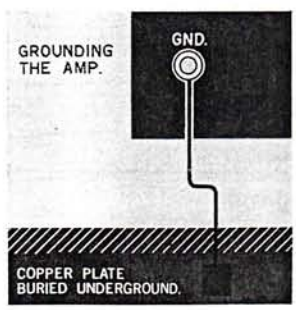
If the tuner fails to operate when the power is switched on, its power fuse may be blown. To check, turn the fuse holder at the rear of the tuner to the left. If it is blown, disconnect the tuner from its power source and replace the fuse with an *identical 1A fuse*, after finding and eliminating the source of trouble 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. If the new fuse blows when the power is switched on again, contact your nearest Sansui dealer or our Service Section.

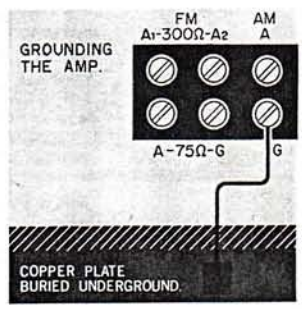
Level Adjustment Control

This control, labeled LEVEL ADJ. on the rear panel of the tuner, allows the TU-777's output level to match that of turntable, speakers and other components connected to an amplifier. Turned clockwise, it increases the output level of AM and FM broadcasts; turned counter-clockwise, it decreases the output level of both.

Grounding

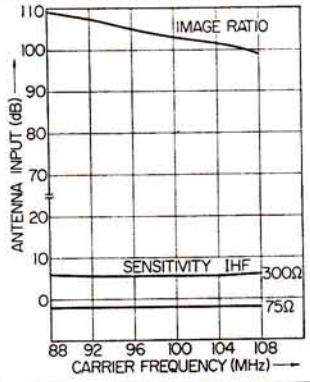
Connect one end of vinyl or enameled wire to the terminal screw marked GND at the rear of the tuner, attach a copper plate to the other end, and bury it underground. Whenever an outdoor AM antenna is used, grounding becomes necessary. In all cases, grounding is desireable since it allows a better S/N ratio to be obtained.



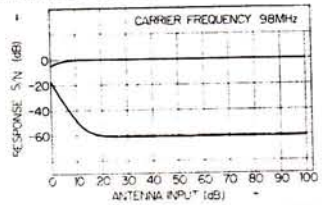


SPECIFICATIONS
CHARACTERISTICS

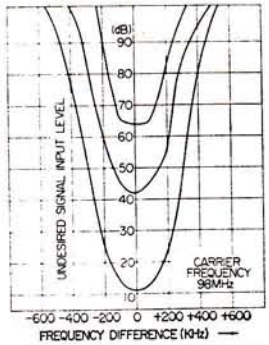
FM SENSITIVITY (IHF) & IMAGE RATIO



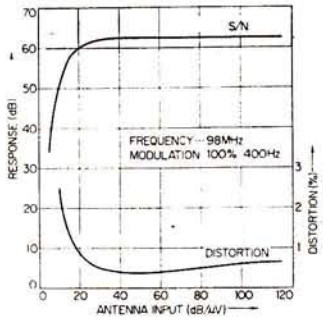
SIGNAL TO NOISE RATIO, OUTPUT LEVEL VS ANTENNA INPUT



FM SELECTIVITY



S/N & DISTORTION



FM SECTION

FREQUENCY RANGE: From 88 to 108 MHz

SENSITIVITY:

Antenna input 300Ω balanced 1.4μV
(S/N 20 dB, quieting)
1.8μV (IHF)

Antenna input 75Ω unbalanced 0.7μV
(S/N 20 dB, quieting)
1.0μV (IHF)

IMAGE REJECTION: Better than 80 dB (IHF)

SELECTIVITY: Better than 50 dB (IHF)

SIGNAL TO NOISE RATIO: Better than 65 dB (60 dB input, 100% mod.)

HARMONIC DISTORTION: Less than 0.8% (60 dB input, 100% mod.)

SPURIOUS RESPONSE REJECTION: Better than 90 dB

IF REJECTION: Better than 95 dB

SPURIOUS RADIATION: Less than 34 dB

CAPTURE RATIO: Less than 2.5 dB (IHF)

FM STEREO SEPARATION: 35 dB (60dB input, 100% mod.)

AM SECTION

FREQUENCY RANGE: From 535 to 1,605 kHz

SENSITIVITY: 15μV (at 1,000 kHz, S/N 20 dB)

SELECTIVITY: Better than 20dB (at 1,000 kHz, 60 dB input)

DISCRIMINATOR

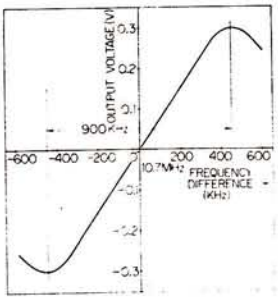


IMAGE FREQUENCY REJECTION: Better than 50 dB (at 1,000 kHz)

IF REJECTION: Better than 100dB (at 1,000kHz)

AUDIO OUTPUT 2V(from 0 to 2V variable)

LOAD IMPEDANCE: over 10 kΩ

OTHER SPECIAL FEATURES

Circular Dial. Muting. FM Stereo Auto. FM Stereo indicator. FM local/distant Switch. Fly wheel tuning. AM ferrite bar antenna. FET Front end. Function indicator. Audio output Adjustor. Signal Strength (meter). Tuning Meter. FM Stereo Noise Canceller. FM Antenna Input for 300 ohms Balanced and 75 ohms Unbalanced.

TRANSISTORS & DIODES

28 transistors and 1 FET

24 diodes and 1 Zener diode

POWER REQUIREMENTS

POWER VOLTAGE: AC 117, 220~240V, from 50 to 60 Hz

POWER CONSUMPTION: 10 VA

DIMENSIONS:

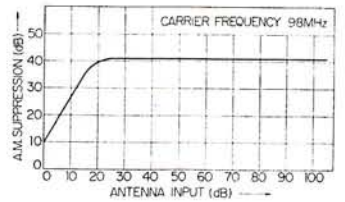
Width: 13 9/16″

Height: 6 1/8″

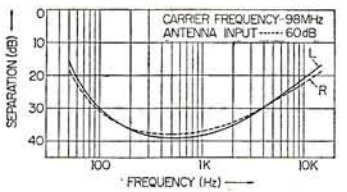
Depth: 13 1/8″

WEIGHT: 17.1 lbs.

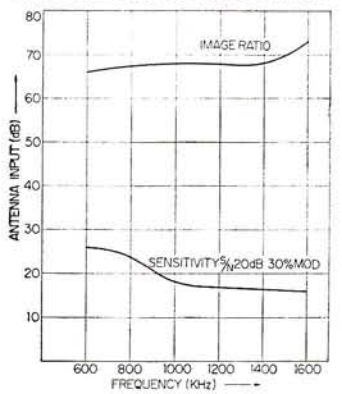
AMPLITUDE MODULATION SUPPRESSION RATIO



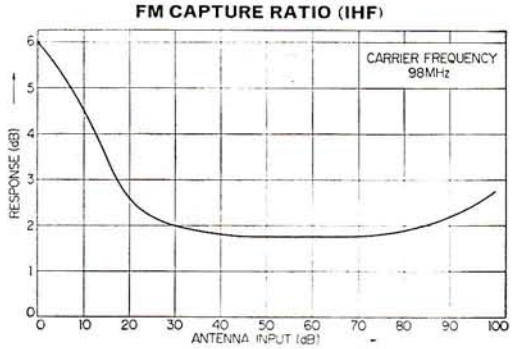
FM MPX SEPARATION



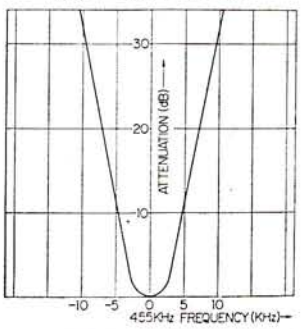
AM SENSITIVITY & IMAGE RATIO



FM CAPTURE RATIO (IHF)



AM IF SELECTIVITY



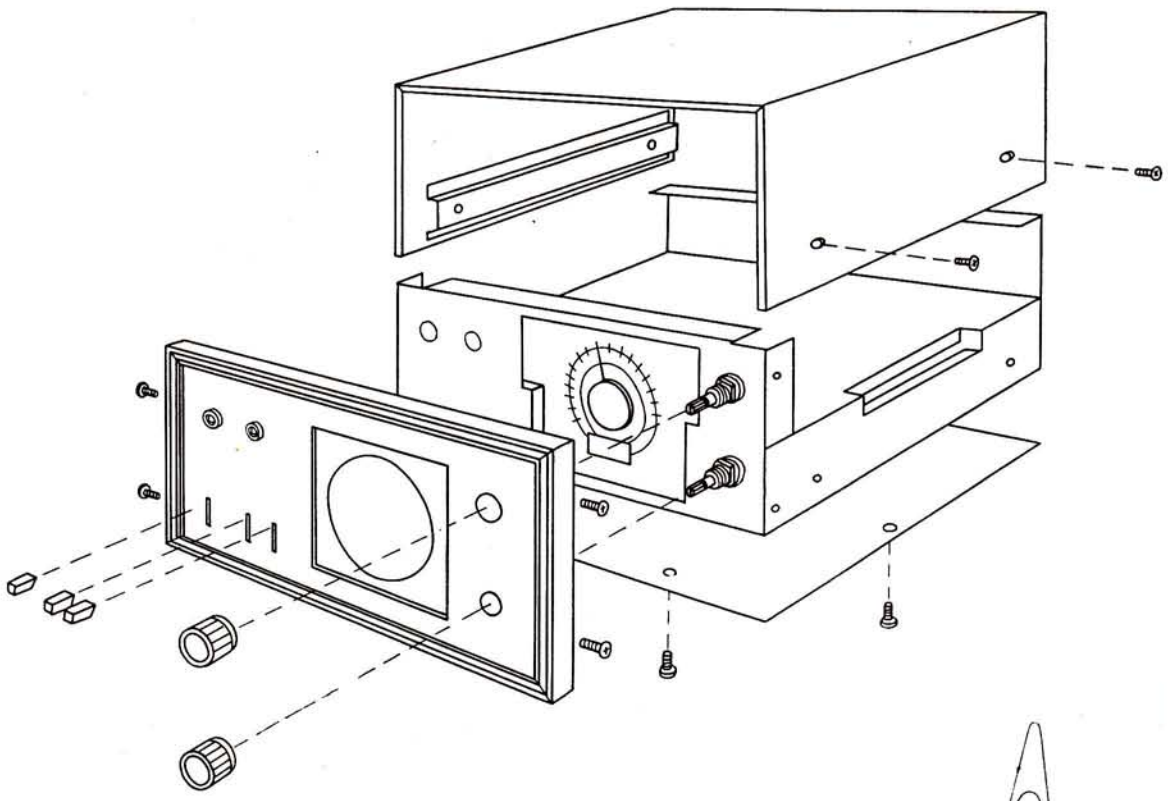
GENERAL TROUBLESHOOTING CHART

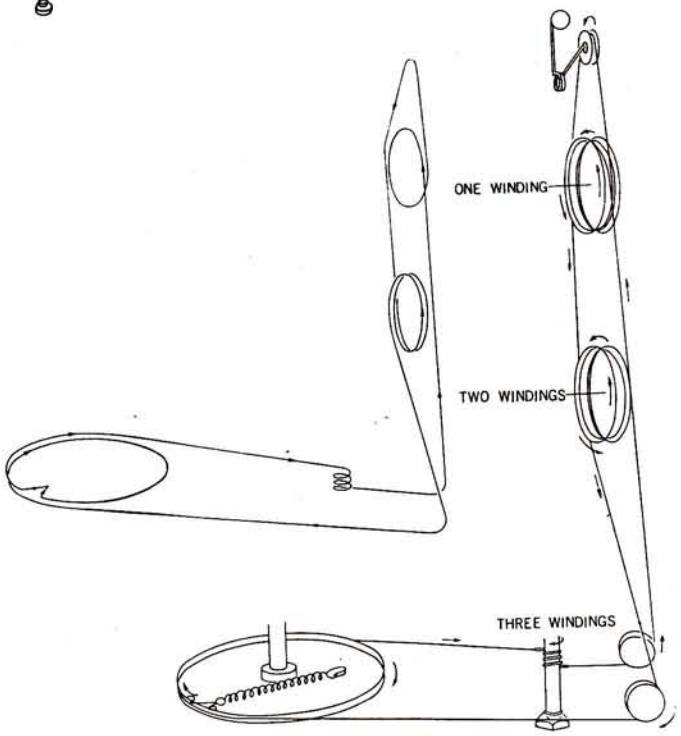
This section has been prepared to help you quickly and correctly determine the causes, reasons and remedies in situations where your tuner does not perform sasisfactorily. You will note that most of the causes result from improper handling or positioning of the receiver and not from internal defects. For situations that are not covered in this section however, and in instances where you are fairly sure that a breakdown in the tuner's circuitry has occurred, please consult your nearest Sansui dealer or our Service Center.

PROGRAM	SYMPTOM	PROBABLE CAUSE	WHAT TO DO
AM, FM or MPX reception	A. Constant or intermittent noise heard at times or in a certain area.	* Discharge or oscillation caused by electrical appliances, such as fluorescent lamps, TV sets, D.C. motors, rectifier and oscillator * Natural phenomena, such as atmospheric static, and thunderbolts * Insufficient antenna input due to thick reinforced concrete walls of the building or long distances 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 tuner. * Install an outdoor antenna and ground the tuner 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 a 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 tuner is another.	* Tune the set for maximum signal stength.
	C. The zero point of the meter diverges much.	* Regional difference in field intensity.	* The unit in not at fault.
AM reception	A. Noise heard at a particular time of a day, in a certain area or over a part of the dial.	* This results from the nature of AM broadcasts.	* Install the antenna for maximum antenna efficiency. See "ANTENNA" in the operating instructions section. * In some cases, the noise can be eliminated by grounding the tuner 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 turn the amplifier's TREBLE control properly from midpoint to left and switch on the HIGH FILTER * Keep the TV set a proper distance from the audio system.

PROGRAM	SYMPTOM	PROBABLE CAUSE	WHAT TO DO
FM reception	A Noisy	* Poor noise limiter effect or too low S/N ratio due to insufficient antenna input.	* Adjust the feeder wire antenna supplied for maximum signal strengh. * If this does not prove effective, use an outdoor antenna designed excluvely 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 effected. * An excessively long antenna may cause noise.
	NOTE: FM reception is affected considerably by the conditions of transmission by stations: power and antenna efficiency. As a result, having difficulty in receiving another station.		
	B. "Scratch-like" noise is heard.	* Ignition noise caused by the starting of an automobile engine and/or other motors	* Install the antenna and its lead-in wire a proper distance from the road or raise the antenna input as described above.
	C. Tuning noise between stations	* This noise results from the nature of 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 on the MUTING switch. In as much as it also reduces the sensitivity, it should be used sparingly.
FM-MPX reception	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 the NOISE CANCELER to its ON position.
	B. Clearness of channel separation is decreased during the reception.	* Excess heat	* Circulation of air is important to the tuner. Make sure that air can flow underneath.
	C. The stereo indicator goes on and off.	* Interference	* The indicator is not at fault. * Readjust VR_{502}
	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_{502}

DISASSEMBLY PROCEDURE
DIAL MECHANISM

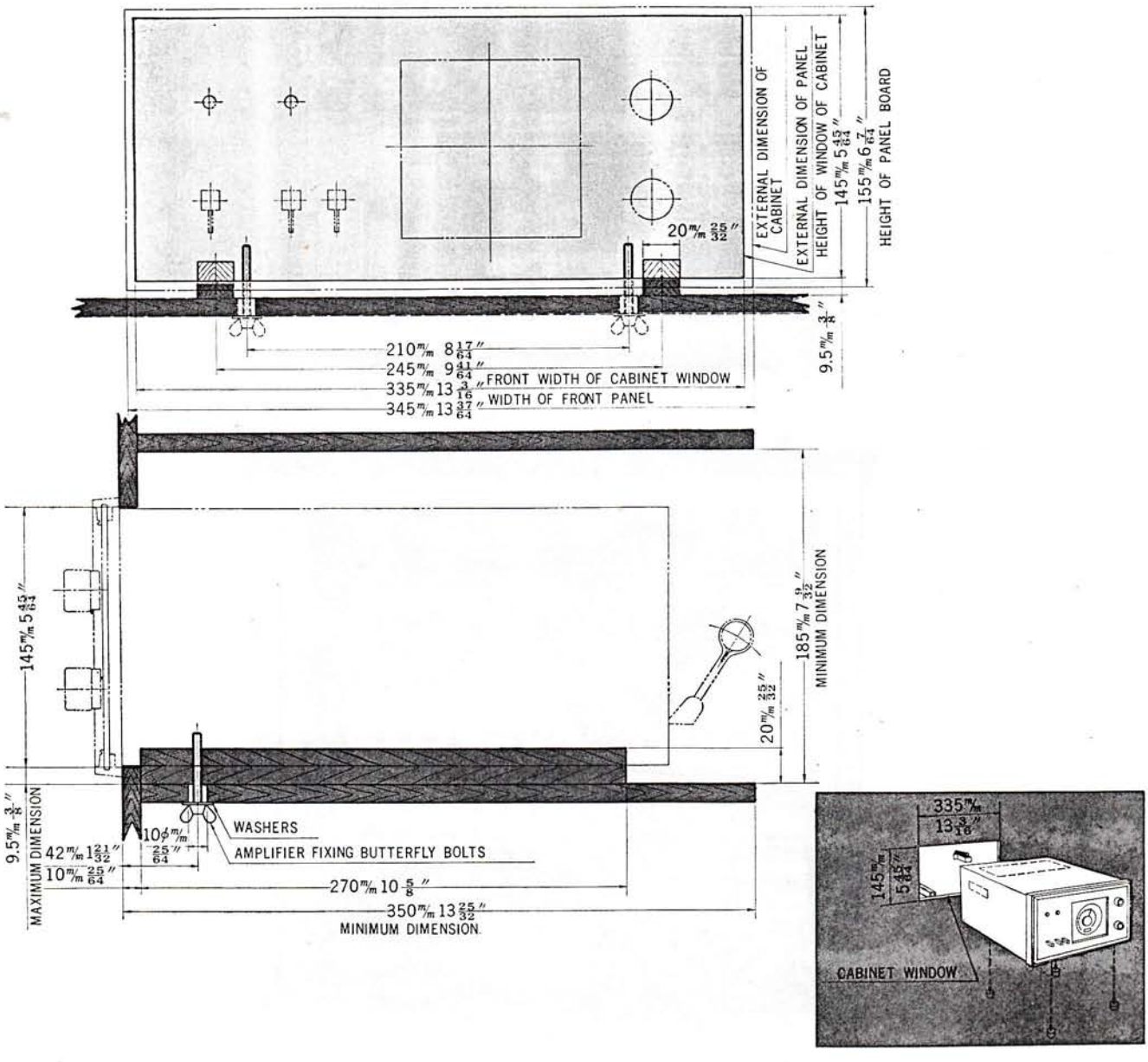




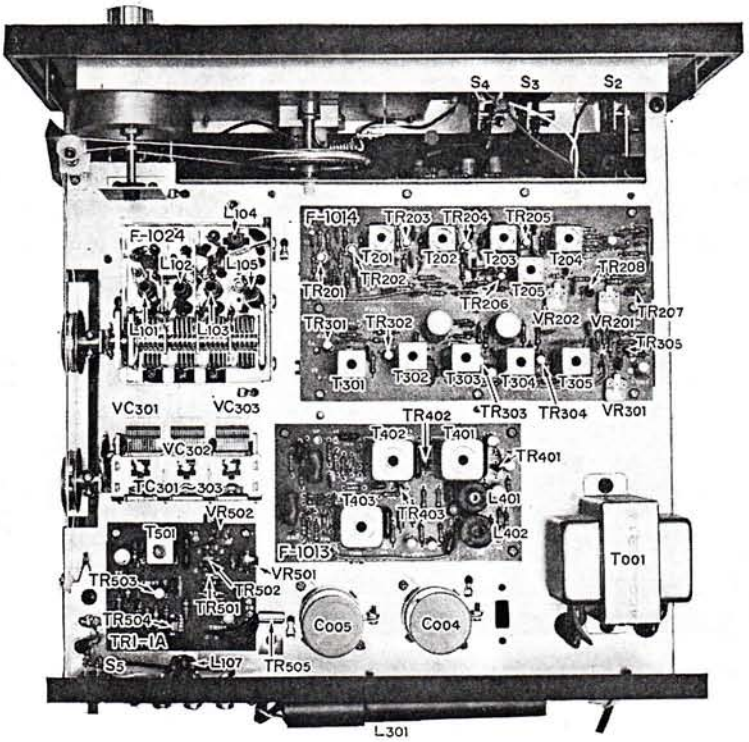
CUSTOM MOUNTING

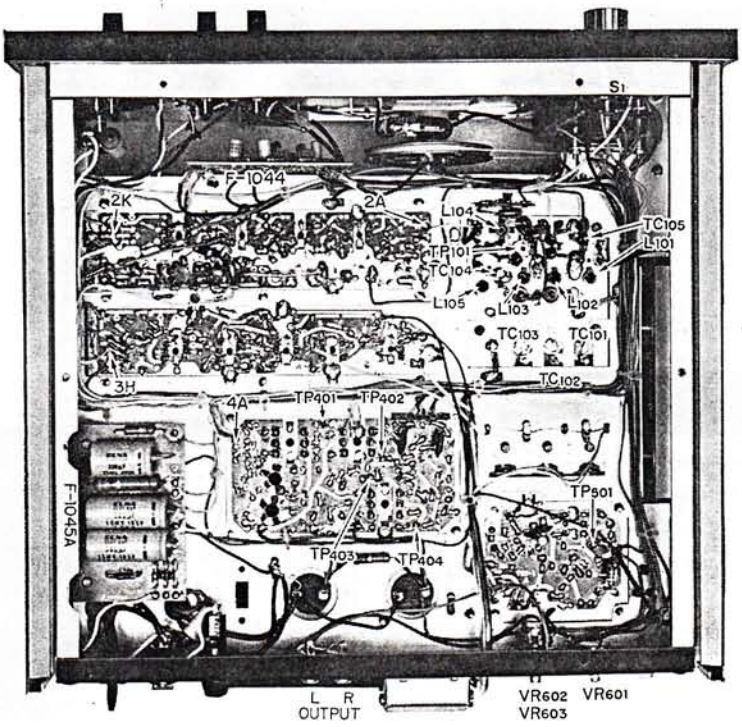
This diagram shows the size and dimensions required for mounting the TU-777 into a custommade cabined. Note that ample space is provided for complete air circulation above and below the tuner

1. Be sure the cabinet window measures $13\frac{3}{16}'' \times 5\frac{15}{64}''$ mm as indicated in the diagram.
2. Place two boards on the floor of the cabinet as ilustrated. Boards should measure $\frac{25}{32}'' \times \frac{25}{32}'' \times 10\frac{5}{8}''$ mm
3. Drill two holes in the bottom of the cabinet at points corresponding to holes in the bottom of the tuner.
4. Remove the four rubber feet from the TU-777. (Retain for future use.)
5. Insert the TU-777 into the cabinet through the window until the edges of its front panel are flush with the cabinet, and secure both tuner and cabinet with washers and butterfly bolts provided.



TEST POINTS CHART





ALIGNMENT PROCEDURE

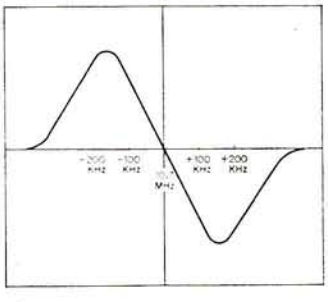
Any internal parts replacemert or changes, you make in the TU-777 requires proper adjustment again. Approprate test points and adjustments are given on the following pages.

FM ALIGNMENT PROCEDURE

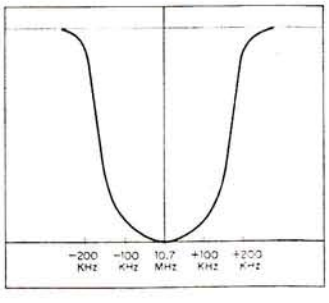
NOTE: To align, set the FM signal generator level to minimum
Turn tuning gang fully.
Center carrir wave.
Set pointer at reference mark

STEP	ALIGN	GENERATOR	FEED SIGNAL	OUTPUT INDICATOR	DIAL SETTING	ADJUST	ADJUST FOR
1.	IF Transformer	10.7 MHz ±200 kHz	Sweep signal is sent to TP_{101} via the 0.02pF ceramic capacitor	Oscilloscope is connected to TR_{202} emitter, and then TR_{205} collector to ground via the 0.05μF ceramic capacitor		Primary and secondary sides of L_{104}, T_{201}, T_{202} and T_{203}	Best I.F.T. wave from
2.	Discriminator	10.7 MHz ±200 kHz	Sweep signal is sent to 2A via the 0.05μF ceramic capacitor	Oscilloscope is connected to 2k via the 0.05μF capacitor		FM Discriminator transformer T_{204} primary and secondary	S curve
3.	O.S.C.	88 MHz 400 Hz 100% Modulation	To antenna terminals	Oscilloscope and V.T.V.M. at output load	88 MHz	O.S.C. coil L_{105}	Maximum
4.	O.S.C.	108 MHz 400 Hz 100% Modulation	To antenna terminals	Oscilloscope and V.T.V.M. at output load	108 MHz	O.S.C. trimmer TC_{104}	Maximum
5.	Repeat 3 and 4						
6.	RF Amp. Circuit	90 MHz 400 Hz 100% Modulation	To antenna terminals	Oscilloscope and V.T.V.M. at output load	90 MHz	Antenna coil L_{101}, L_{102} and L_{103}	Maximum
7.	RF Amp. Circuit	106 MHz 400 Hz 100% Modulation	To antenna terminals	Oscilloscope and V.T.V.M. at output load	106 MHz	Trimmer TC_{101}, TC_{102} and TC_{108}	Maximum
8.	Repeat 6 and 7.						

FM DISCRIMINATOR CHARACTERISTIC



FM IF CHARACTERISTIC



ALIGNMENT PROCEDURE

FM MULTIPLEX ALIGNMENT PROCEDURE

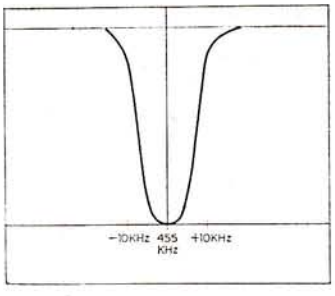
1. Do not attempt to align the Multiplex Circuit unless the following equipment is available:
a. Multiplex Stereo Generator b. Oscilloscope c. AC V.T.V.M. d. Audio Oscillator e. FM Signal Generator

STEP	ALIGN	GENERATOR	FEED SIGNAL	OUTPUT INDICATOR	ADJUST	ADJUST FOR
1.	67 kHz Trap	67 kHz Audio Signal	Connect to TP_{4A}	V.T.V.M. at TP_{404}	L_{401}(MFC-A)	Minimum
2.	71 kHz Trap	71 kHz Audio Signal	Connect to TP_{4A}	V.T.V.m. at TP_{404}	L_{402}(MFC-B)	Minimum
3.	19 kHz Transformer	FM Signal Gen. Modulated 30% by STEREO Gen. sub-channel	Antenna terminals Tune to signal	V.T.V.M. and Oscilloscope at TP_{401}	T_{401}(MPT-20A)	Maximum
4.	19 kHz Transformer	FM Signal Gen. Modulated 30% by STEREO Gen. sub-channel	Antenna terminals Tune to signal	V.T.V.M. and Oscilloscope at TP_{403}	T_{402}(MPT-20B)	Smaller peak value of two peak values
5.	38 kHz Transformer	FM Signal Gen. Modulated 30% by STEREO Gen. sub-channel	Antenna terminals Tune to signal	V.T.V.M. and Oscilloscope at TP_{403}	T_{403}(MPT-20B)	Smaller peak value of two peak values
6.	38 kHz Transformer and Separation VR	FM Signal Gen. Modulated 30% by STEREO Signal Gen. channel-L	Antenna terminals Tune to signal	V.T.V.M. and Oscilloscope at output load channel-R	T_{403}(MPT-20B) within ¼ turn and separation VR(VR_{601})	Channel-R Minimum

AM ALIGNMENT PROCEDURE

NOTE: To align, set the AM signal generator level to minimum.

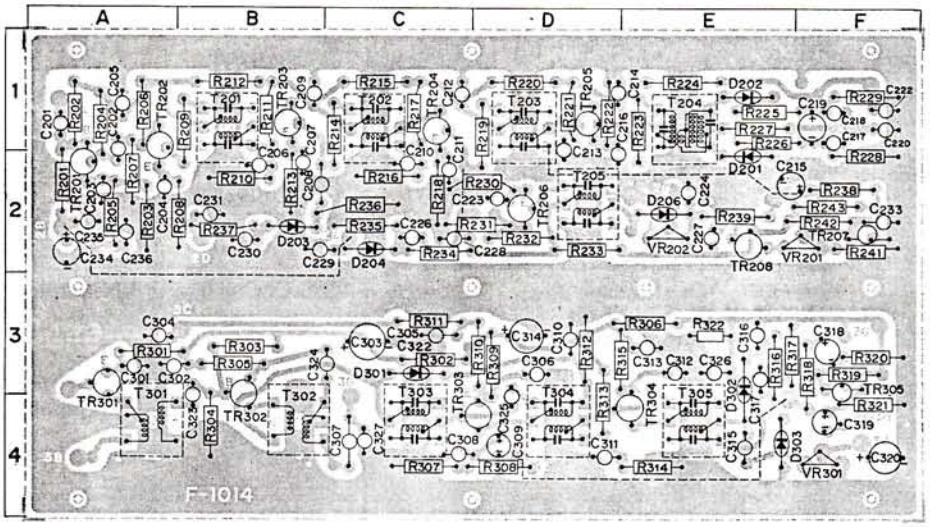
STOP	ALIGN	GENERATOR	FEED SIGNAL	OUTPUT INDICATOR	DIAL SETTING	ADJUST	ADJUST FOR
1.	I.F. Transformer	455 kHz ±30 kHz Sweep-generator	Antenna terminals	Oscilloscope and V.T.V.M. at TP_{302}		Primary and secondary sides from the lst I.F.T. (T_{302}) to the 3rd I.F.T. (T_{304})	Best I.F.T. wave form
2.	O.S.C	AM-generator 533 kHz 30% 400 Hz 30% Modulation	Antenna terminals	Oscilloscope and V.T.V.M. at output load	535 kHz	O.S.C. Coil T_{302}	Maximum
3.	O.S.C	AM-generator 1600 kHz 400 Hz 30% Modulation	Antenna terminals	Oscilloscope and V.T.V.M. at output load	1600 kHz	O.S.C. Trimmer cap. TC_{303}	Maximum
4.	Reiterate 2 and 3						
5.	RF amp.	AM-generator 600 kHz 400 Hz 30% Modulation	Antenna terminals	Oscilloscope and V.T.V.M. at output load	600 kHz	RF transformer T_{301}	Maximum
6.	Antenna circuit	AM-generator 500 kHz 400 Hz 30% Modulation	Antenna terminals	Oscilloscope and V.T.V.M. at output load	1400 kHz	Ferrite bar Antenna coil L_{301}	Maximum
7.	RF amp.	AM-generator 1400 kHz 400 Hz 30% Modulation	Antenna terminals	Oscilloscope and V.T.V.M. at output load	1400 kHz	RF Trimmer TC_{302}	Maximum
8.	Antenna circuit	AM-generator 1400 kHz 400 Hz 30% Modulation	Antenna terminals	Oscilloscope and V.T.V.M. at output load	1400 kHz	Antenna circuit Trimmer TC_{301}	Maximum
9.	Reiterate 5, 6, 7, 8						



AM IF CHARACTERISTIC

PRINTED-CIRCUIT SHEETS & PARTS LIST

FM, AM IFT F-1014



X	Y	Z
R201	3.3kΩ ¼W ±10% PREC. Fixed	2 A
R202	6.8kΩ ¼W ±10% PREC. Fixed	1 A
R203	1kΩ ¼W ±10% PREC. Fixed	2 A
R204	1kΩ ¼W ±10% PREC. Fixed	1 A
R205	1kΩ ¼W ±10% PREC. Fixed	2 A
R206	10kΩ ¼W ±10% PREC. Fixed	1 A
R207	5.6kΩ ¼W ±10% PREC. Fixed	1 A
R208	1.5kΩ ¼W ±10% PREC. Fixed	2 B
R209	470Ω ¼W ±10% PREC. Fixed	1 B
R210	5.6kΩ ¼W ±10% PREC. Fixed	2 B
R211	8.2kΩ ¼W ±10% PREC. Fixed	2 B
R212	22Ω ¼W ±10% PREC. Fixed	1 B
R213	1kΩ ¼W ±10% PREC. Fixed	2 B
R214	680Ω ¼W ±10% PREC. Fixed	2 C
R215	22Ω ¼W ±10% PREC. Fixed	1 C
R216	6.8kΩ ¼W ±10% PREC. Fixed	2 C
R217	8.2kΩ ¼W ±10% PREC. Fixed	1 C
R218	1kΩ ¼W ±10% PREC. Fixed	2 C
R219	1kΩ ¼W ±10% PREC. Fixed	1 D
R220	22Ω ¼W ±10% PREC. Fixed	1 D
R221	10kΩ ¼W ±10% PREC. Fixed	1 D
R222	1kΩ ¼W ±10% PREC. Fixed	1 D
R223	1kΩ ¼W ±10% PREC. Fixed	1 E
R224	22Ω ¼W ±10% PREC. Fixed	1 E
R225	1kΩ ¼W ±10% PREC. Fixed	1 E
R226	1kΩ ¼W ±10% PREC. Fixed	1 E
R227	68Ω ¼W ±10% PREC. Fixed	1 E
R228	10kΩ ¼W ±10% PREC. Fixed	2 E
R229	10kΩ ¼W ±10% PREC. Fixed	1 F
R230	1kΩ ¼W ±10% PREC. Fixed	2 D
R231	10kΩ ¼W ±10% PREC. Fixed	2 D
R232	22kΩ ¼W ±10% PREC. Fixed	2 D

X	Y	Z
R233	22Ω ¼W ±10% PREC. Fixed	2 D
R234	47kΩ ¼W ±10% PREC. Fixed	2 C
R235	18kΩ ¼W ±10% PREC. Fixed	2 C
R236	12kΩ ¼W ±10% PREC. Fixed	2 C
R237	39kΩ ¼W ±10% PREC. Fixed	2 B
R238	6.8kΩ ¼W ±10% PREC. Fixed	1 F
R239	100kΩ ¼W ±10% PREC. Fixed	2 E
R240		
R241	2.2kΩ ¼W ±10% PREC. Fixed	2 F
R242	560kΩ ¼W ±10% PREC. Fixed	2 F
R243	10kΩ ¼W ±10% PREC. Fixed	2 F
R301	1kΩ ¼W ±10% PREC. Fixed	3 A
R302	120Ω ¼W ±10% PREC. Fixed	3 C
R303	4.7kΩ ¼W ±10% PREC. Fixed	3 B
R304	22kΩ ¼W ±10% PREC. Fixed	4 B
R305	1.5kΩ ¼W ±10% PREC. Fixed	3 B
R306	100Ω ¼W ±10% PREC. Fixed	3 E
R307	68kΩ ¼W ±10% PREC. Fixed	4 C
R308	5.6kΩ ¼W ±10% PREC. Fixed	4 D
R309	1kΩ ¼W ±10% PREC. Fixed	3 D
R310	1kΩ ¼W ±10% PREC. Fixed	3 D
R311	1kΩ ¼W ±10% RREC. Fixed	3 C
R312	1kΩ ¼W ±10% PREC. Fixed	3 D
R313	4.7kΩ ¼W ±10% PREC. Fixed	3, 4 D
R314	15kΩ ¼W ±10% PREC. Fixed	4 E
R315	1kΩ ¼W ±10% PREC. Fixed	3 D, E
R316	1kΩ ¼W ±10% PREC. Fixed	3 E
R317	5.6kΩ ¼W ±10% PREC. Fixed	3 E
R318	15kΩ ¼W ±10% PREC. Fixed	3 F
R319	68kΩ ¼W ±10% PREC. Fixed	3 F
R320	12kΩ ¼W ±10% PREC. Fixed	3 F

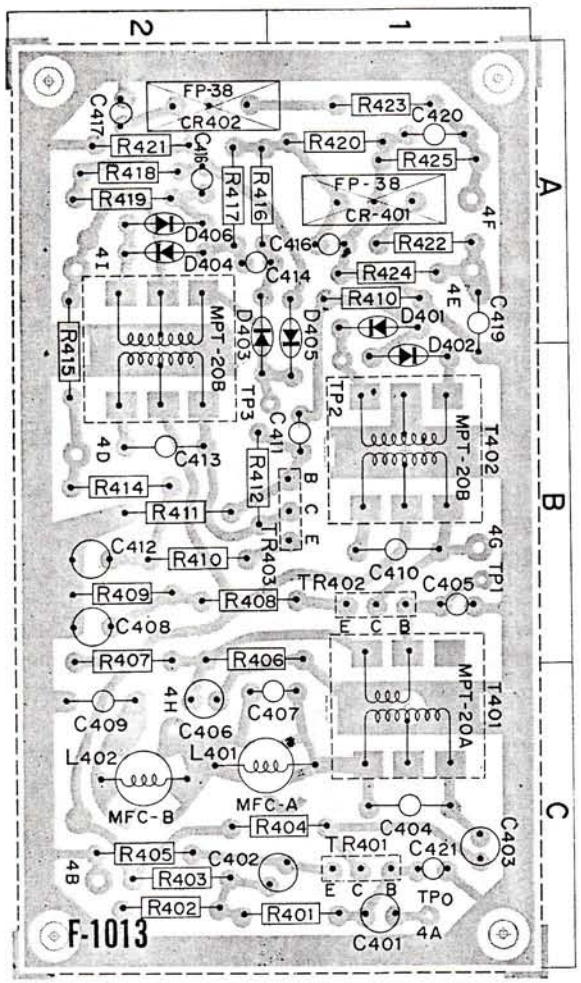
X: Parts No
Y: Parts Name
Z: Position of Parts
(Co-ordinate number and letter in printed circuit)

X	Y	Z
R321	1 kΩ ¼W ±10% PREC. Fixed	4 F
R322	1.5 kΩ ½W ±10% PREC. Fixed	3 E
C201	0.01 μF +100 −0 % 50 VDCW. CER.	1 A
C202	0.01 μF +100 −0 % 50 VDCW. CER.	1, 2 A
C203	0.02 μF +100 −0 % 50 VDCW. CER.	2 A
C204	0.02 μF +100 −0 % 50 VDCW. CER.	2 A
C205	0.02 μF +100 −0 % 50 VDCW. CER.	1 A
C206	0.02 μF +100 −0 % 50 VDCW. CER.	2 B
C207	0.02 μF +100 −0 % 50 VDCW. CER.	2 B
C208	10 pF ±10% 50 VDCW. CER.	2 B
C209	0.02 μF +100 −0 % 50 VDCW. CER.	1 B
C210	0.02 μF +100 −0 % 50 VDCW. CER.	2 C
C211	0.02 μF +100 −0 % 50 VDCW. CER.	2 C
C212	0.02 μF +100 −0 % 50 VDCW. CER.	1 C
C213	0.02 μF +100 −0 % 50 VDCW. CER.	1, 2 C
C214	0.02 μF +100 −0 % 50 VDCW. CER.	1 D
C215	1 μF 50 WV ELECT.	2 E, F
C216	0.02 μF +100 −0 % 50 VDCW. CER.	1, 2 D
C217	200 pF ±10% 50 VDCW. CER.	1 F
C218	200 pF ±10% 50 VDCW. CER.	1 F
C219	10 μF 10 VDCW. ELECT.	1 F
C220	50 pF ±10% 50 VDCW. CER.	1 F
C221		1 F
C222	0.02 μE +100 −0 % 50 VDCW. CEP.	1 F
C223	0.02 μF +100 −0 % 50 VDCW. CER.	2 F
C224	0.02 μF +100 −0 % 50 VDCW. CER.	2 E
C225		
C226	10 pF ±10% 50 VDCW. CER.	2 C
C227	0.02 μF +100 −0 % 50 VDCW. CER.	2 E
C228	0.02 μF +100 −0 % 50 VDCW. CER.	2 C
C229	0.02 μF +100 −0 % 50 VDCW. CER.	2 B
C230	0.02 μF +100 −0 % 50 VDCW. CER.	2 B
C231	0.02 μF +100 −0 % 50 VDCW. CER.	2 B
C232		
C233	0.02 μF +100 −0 % 50 VDCW. CER.	2 F
C234	10 μF 10 WV ELECT.	2 A
C235	0.01 μF +100 −0 % 50 VDCW. CER.	2 A
C236	0.02 μF +100 −0 % 50 VDCW. CER.	2 A
C301	0.03 μF +100 −0 % 50 VDCW. CER.	3 A
C302	0.02 μF +100 −0 % 50 VDCW. CER.	3 A, B
C303	200 μF 15 WV ELECT.	3 C
C304	0.02 μF +100 −0 % 50 VDCW. CER.	3 A
C305	0.02 μF +100 −0 % 50 VDCW. CER.	3 C
C306	0.02 μF +100 −0 % 50 VDCW. CER	2 D
C307	430 pF ± 5 % 50 VDCW. Mc.	4 C

X	Y	Z
C308	0.02 μF +100 −0 % 50 VDCW. CER.	4 C
C309	10 μF 15 WV ELECT.	4 D
C310	0.02 μF +100 −0 % 50 VDCW. CER.	3 D
C311	0.02 μF +100 −0 % 50 VDCW. CER.	4 D
C312	0.02 μF +100 −0 % 50 VDCW. CER.	3 E
C313	0.02 μF +100 −0 % 50 VDCW. CER.	3 E
C314	200 μF 15 WV ELECT.	3 D
C315	0.01 μF +100 −0 % 50 VDCW. CER.	4 E
C316	0.01 μF +100 −0 % 50 VDCW. CER.	3 E
C317	0.02 μF +100 −0 % 50 VDCW. CER.	3 E
C318	1 μF 25 WV ELECT.	3 F
C319	10 μF 15 WV ELECT.	4 F
C320	10 μF 15 WV ELECT.	4 F
C321	200 μF 15 WV ELECT.	3 E
C322		
C323	0.02 μF +100 −0 % 50 VDCW. CER.	3, 4 B
C324	0.01 μF +100 −0 % 50 VDCW. CER.	3 C
C325	1 pF ±10% 50 VDCW. CER.	3, 4 D
C326		3 E
C327	20 pF ±10% 50 VDCW. CER.	4 C
TR201	2SC645B Si N-P-N	1, 2 A
TR202	2RC645C Si N-P-N	1, 2 A
TR203	2SC645C Si N-P-N	1 B
TR204	2SC645C Si N-P-N	1 C
TR205	2SC645C Si N-P-N	1 D
TR206	2SC645B Si N-P-N	2 D
TR207	2SC828 Si N-P-N	2 F
TR208	2SC828 Si N-P-N	2 E
TR301	2SC102CA Ge P-N-P	3 A
TR302	2SA102CA Ge P-N-P	3, 4 B
TR303	2SA101X Ge P-N-P	4 C, D
TR304	2SA101Y Ge P-N-P	4 D, E
TR305	2SC536E Si N-P-N	3 F
D201	IN-60 Ge diod FM detector	2 E
D202	IN-60 Ge diod FM detector	1 E
D203	IN-60 Ge diod AGC	2 B
D204	IN-60 Ge diod FM detector	2 C
D205		
D206	IN-60 Ge diod Muting	2 E
D301	IN-34A Ge diod AGC	3 C
D302	IN-34A Ge diod AM detector	3, 4 C
D303	IN-34A Ge diod Meter	4 E
VR201	5 kΩ (B) Muting ADJ. (103018)	2 E, F
VR202	50 kΩ (B) FM Meter ADJ. (103020)	2 E
VR301	10 kΩ (B) AM Meter ADJ. (103019)	4 F
T201	FM IFT 10.7MHz (423522)	1 B
T202	FM IFT 10.7MHz (423524)	1 C
T203	FM IFT 10.7NHz (423523)	1 D
T204	FM IFT 10.7MHz Discriminator (423525)	1 E
T205	FM IFT 10.7MHz (423515)	2 D
T301	AM RF (421003)	4 A
T302	AM OSC (422004)	4 B
T303	AM IFT 455 kHz (423011)	4 C
T304	AM IFT 455 kHz (423012)	4 D
T305	AM IFT 455 kHz (423013)	4 E

PRINTED-CIRCUIT SHEETS & PARTS LIST

FM MULTIPLEX F-1013

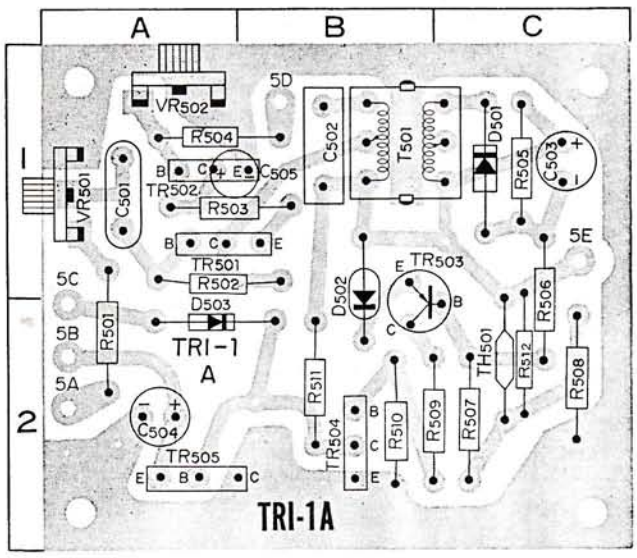


X	Y	Z
R401	47kΩ ¼W ±10% PREC. Fixed	1C
R402	100kΩ ¼W ±10% PREC. Fixed	2C
R403	220kΩ ¼W ±10% PREC. Fixed	2C
R404	3.3kΩ ¼W ±10% PREC. Fixed	1, 2C
R405	1.5kΩ ¼W ±10% PREC. Fixed	2C
R406	27kΩ ¼W ±10% PREC. Fixed	2B
R407	270kΩ ¼W ±10% PREC. Fixed	2B
R408	22Ω ¼W ±10% PREC. Fixed	2B
R409	15kΩ ¼W ±10% PREC. Fixed	2B
R410	68kΩ ¼W ±10% PREC. Fixed	1A
R411	27kΩ ¼W ±10% PREC. Fixed	2B
R412	270kΩ ¼W ±10% PREC. Fixed	2B
R413	120Ω ¼W ±10% PREC. Fixed	2B

X	Y	Z
R414	1.2kΩ ¼W ±10% PREC. Fixed	2B
R415	150kΩ ¼W ±10% PREC. Fixed	2A, B
R416	10kΩ ¼W ±10% PREC. Fixed	2A
R417	10kΩ ¼W ±10% PREC. Fixed	2A
R418	10kΩ ¼W ±10% PREC. Fixed	2A
R419	10kΩ ¼W ±10% PREC. Fixed	2A
R420	100kΩ ¼W ±10% PREC. Fixed	1A
R421	100kΩ ¼W ±10% PREC. Fixed	2A
R422	330kΩ ¼W ±10% PREC. Fixed	1A
R423	330kΩ ¼W ±10% PREC. Fixed	1A
R424	330kΩ ¼W ±10% PREC. Fixed	1A
R425	330kΩ ¼W ±10% PREC. Fixed	1A
C401	10μF 15 WV ELECT.	1C
C402	50μF 6 WV ELECT.	1, 2C
C403	10μF 15 WV ELECT.	1C
C404	5000 pF ± 5 % 50 VDCW. Mc.	1C
C405	0.002μF +100 −0 % 50 VDCW. CER.	1B
C406	1μF 25 WV ELECT.	2C
C407	450 pF 50 VDCW. ± 5 % Mc.	1, 2B
C408	1μF 25 WV ELECT.	2B
C409	120 pF 50 VDCW. ± 5 % Mc.	1C
C410	6600 pF 50 VDCW. ± 5 % Mc.	1B
C411	0.05μF 50 VDCW. ±10% My.	2B
C412	1μF 25 WV ELECT.	2B
C413	1700 pF ± 5 % 50 VDCW. Mc.	2B
C414	100 pF ±10% 50 VDCW. CER.	2A
C415	100 pF ±10% 50 VDCW. CER.	2A
C416	100 pF ±10% 50 VDCW. CER.	1A
C417	100 pF ±10% 50 VDCW. CER.	1A
C418		
C419	650 pF ±10% 50 VDCW. Mc.	1A
C420	650 pF ±10% 50 VDCW. Mc.	1A
C421	50 pF ±10% 50 VDCW. CER.	1C
CR401	FP-38 38kHz Filter & de-emphasis	1A
CR402	FP-38 38kHz Filter & de-emphasis	2A
TR401	2SC536D Si N-P-N	1C
TR402	2SC536E Si N-P-N	2B
TR403	2SC536E Si N-P-N	2B
D401	IN-34A Ge diod 19kHz Rectifier	1A
D402	IN-34A Ge diod 19kHz Rectifier	1B
D403	IN-34A Ge diod 38kHz Rectifier	1A, B
D404	IN-34A Ge diod 38kHz Rectifier	2A
D405	IN-34A Ge diod 38kHz Rectifier	1A, B
D406	IN-34A Ge diod 38kHz Rectifier	2A
L401	10mH 67kHz Filter (424014)	1, 2C
L402	39mH 71kHz Filter (424015)	2C
T401	19kHz Tuning trap (424012)	1C
T402	19kHz Tuning trap (424012)	1B
T403	38kHz Tuning trap (424014)	2A, B

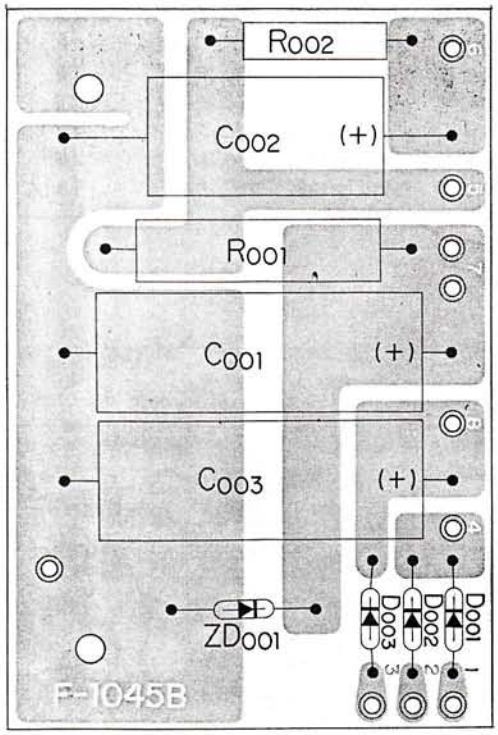
X: Parts No
Y: Parts Name
Z: Position of Parts
(Co-ordinate number and letter in printed circuit)

FM STEREO INDICATOR TRI-1A



X	Y		Z
R501	3.3kΩ ½W ±10%	COMP. Fixed	2A
R502	1MΩ ½W ±10%	COMP. Fixed	1A
R503	1kΩ ½W ±10%	COMP. Fixed	1A
R504	39kΩ ½W ±10%	COMP. Fixed	1A
R505	27kΩ ½W ±10%	COMP. Fixed	1C
R506	10kΩ ½W ±10%	COMP. Fixed	1C
R507	15kΩ ½W ±10%	COMP. Fixed	2C
R508	8.2kΩ ½W ±10%	COMP. Fixed	2C
R509	22kΩ ½W ±10%	COMP. Fixed	2C
R510	3.3kΩ ½W ±10%	COMP. Fixed	2C
R511	22kΩ ½W ±10%	COMP. Fixed	2B
R512	390Ω ½W ±10%	COMP. Fixed	2C
C501	0.1μF ±10%	50 VDCW. My.	1A
C502	5000pF ±5%	50 VCVW. Mc.	1B
C503	30μF	15 WV ELECT.	1C
C504	10μF	15 WV ELECT.	2A
C505	1μF	25 WV ELECT.	1A
T501	19kHz	Tuning trap	1B
VR501	50kΩ(B)	Stereo indicator ADJ.	1A
VR502	100kΩ(B)	Stereo indicator ADJ.	1A
TH501	D-22A	Thermistor	2C
TR501	2SC-458	Si N-P-N	1A
TR502	2SC-458	Si N-P-N	1A
TR503	2CB-54	Ge P-N-P	2B
TR504	2SC-458	Si N-P-N	2B
TR505	2CB-324	Ge P-N-P	2A
D501	OA-91(IN-60)	Ge diod	1C
D502	SM-150(10D-2)	Si diod	1B
D503	OA-91(IN-60)	Ge diod	2A

POWER CIRCUIT F-1045B



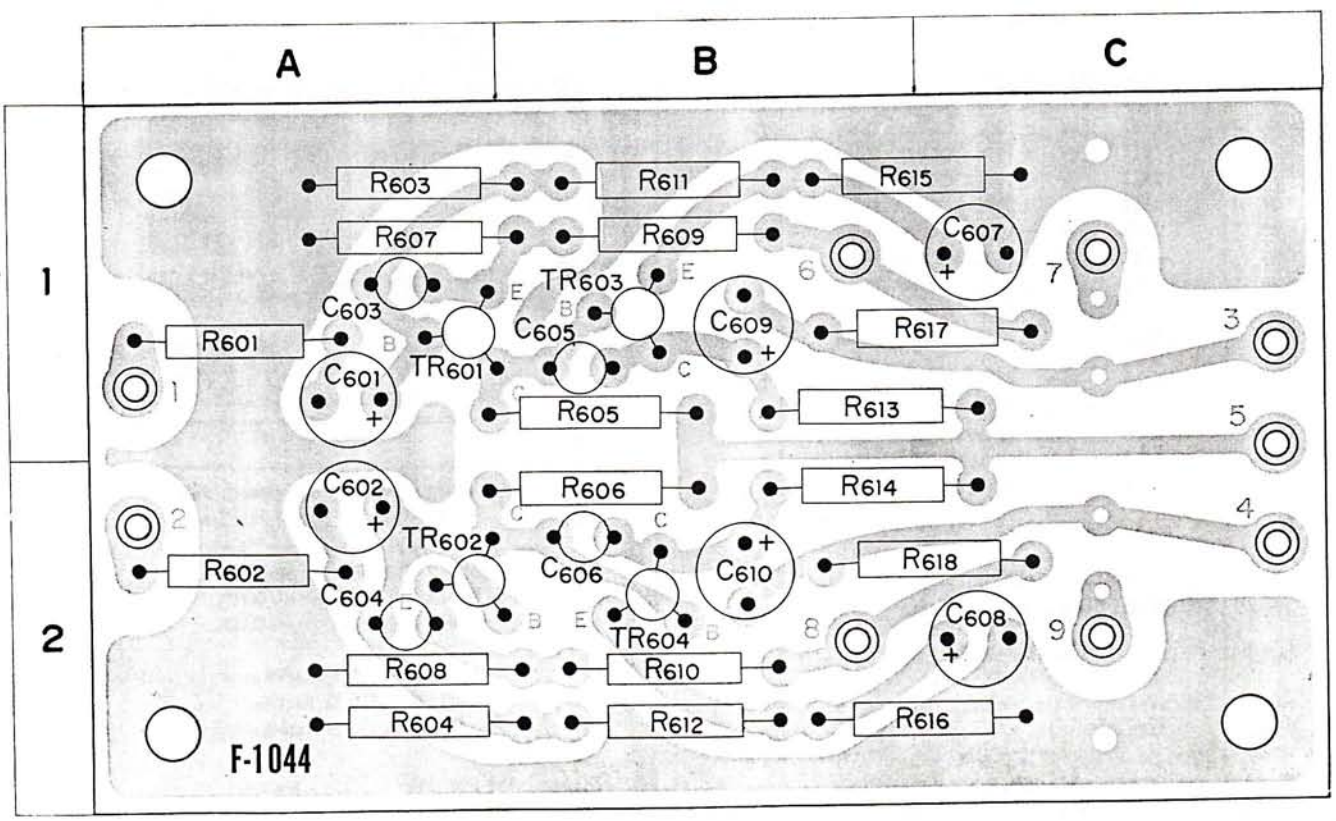
X	Y		Z
R001	330Ω 2W ±10%	PREC. Fixed	
R002	220Ω 1W ±10%	PREC. Fixed	
C001	500μF 15 WV	ELECT.	
C002	200μF 25 WV	ELECT.	
C003	500μF 15 WV	ELECT.	
D001	10D-2(SW-0502)	Si Rectifier	
D002	10D-2(SW-0502)	Si Rectifier	
D003	10D-1(SW-0501)	Si Rectifier	
ZD001	SR-212 12V $\pm^{10}_{5}$%	2-diod	

PRINTED-CIRCUIT SHEETS & PARTS LIST

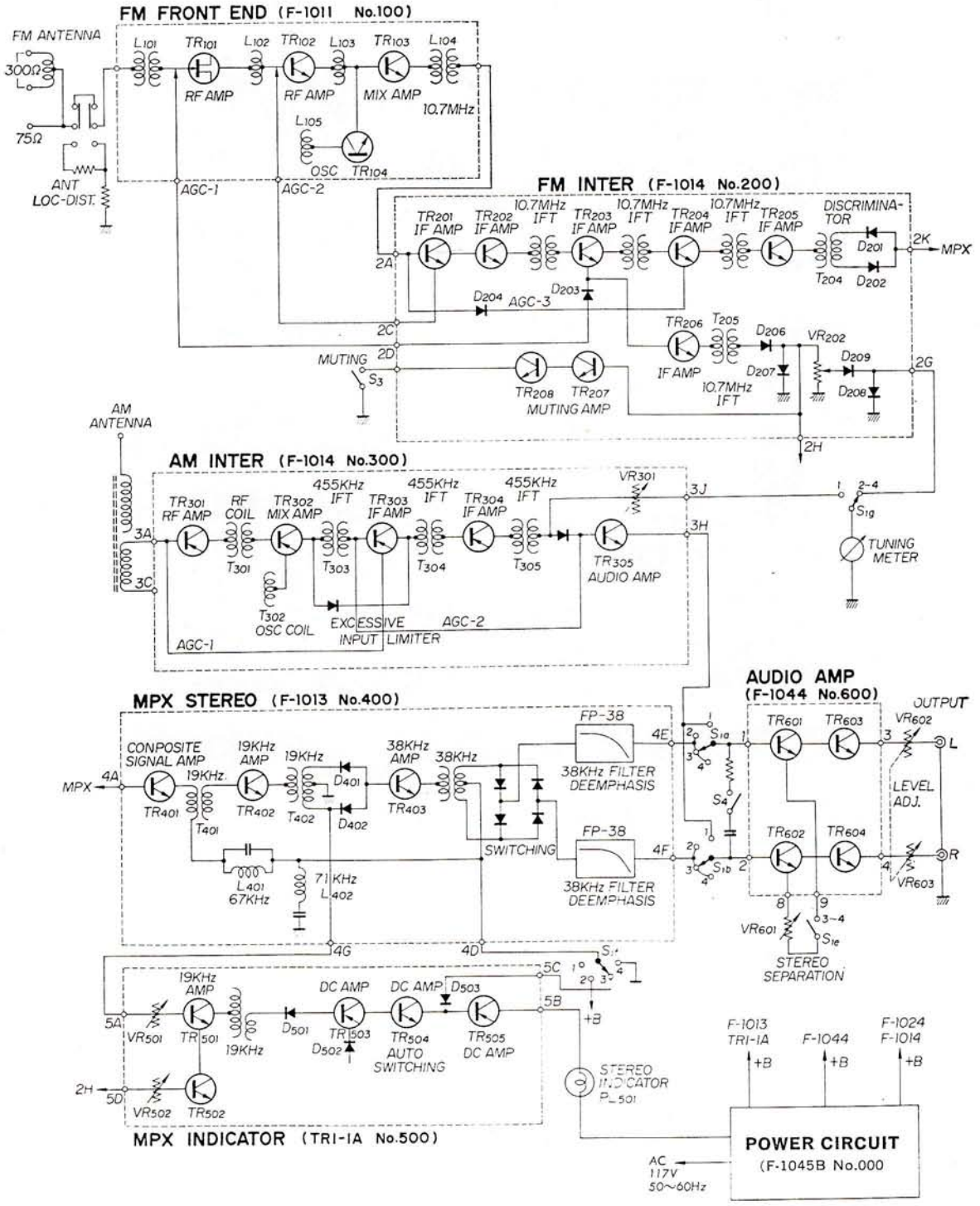
X: Parts No
Y: Parts Name
Z: Position of Parts
(Co-ordinate number and letter in printed circuit)

AUDIO AMP. F-1044

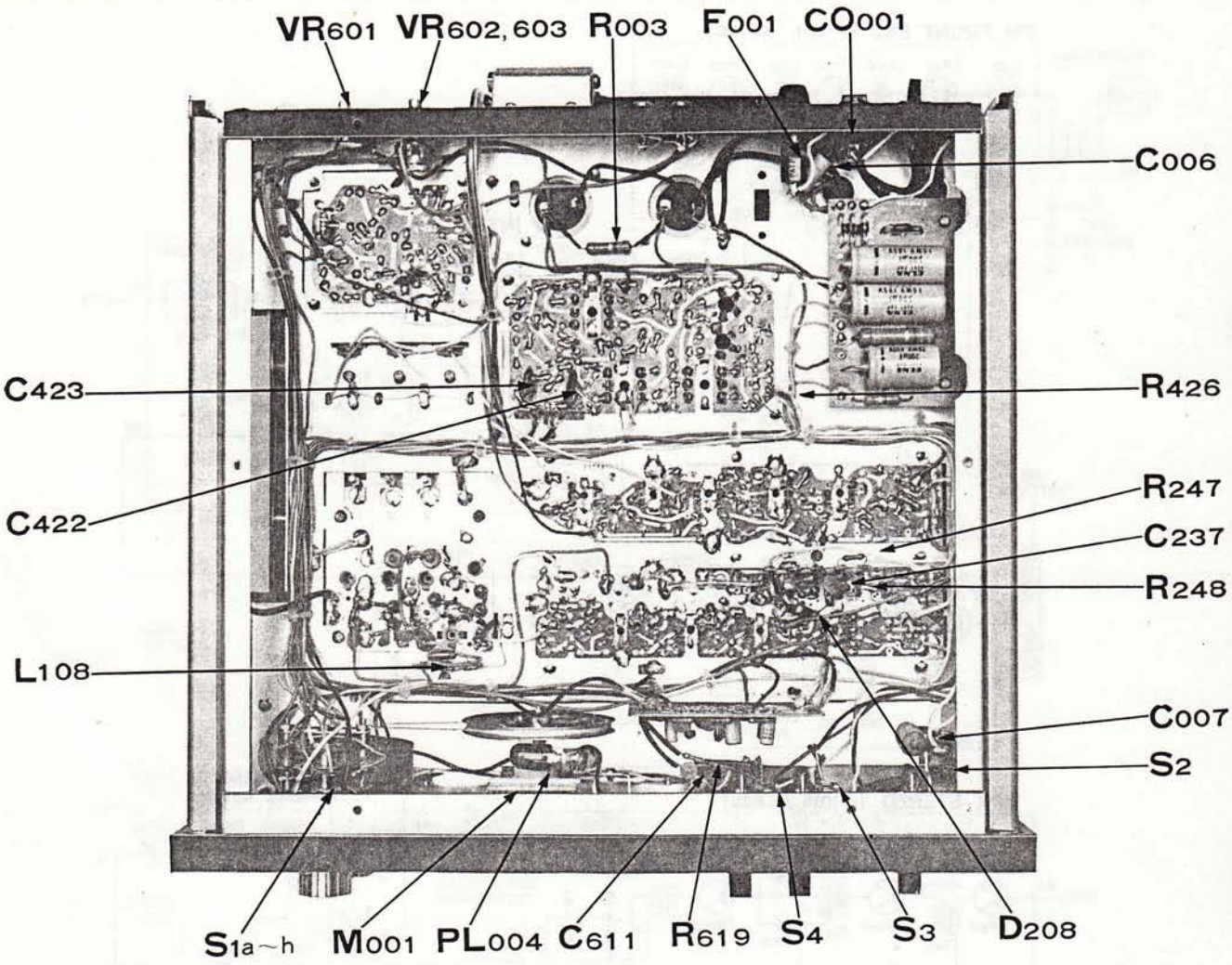
X	Y	Z
R601	1kΩ ¼W ±10% PREC. Fixed	1 A
R602	1kΩ ¼W ±10% PREC. Fixed	2 A
R603	270kΩ ¼W ±10% PREC. Fixed	1 A
R604	270kΩ ¼W ±10% PREC. Fixed	2 A
R605	100kΩ ¼W ±10% PREC. Fixed	1 B
R606	100kΩ ¼W ±10% PREC. Fixed	2 B
R607	1kΩ ¼W ±10% PREC. Fixed	1 A
R608	1kΩ ¼W ±10% PREC. Fixed	2 A
R609	220Ω ¼W ±10% PREC. Fixed	1 B
R610	220Ω ¼W ±10% PREC. Fixed	2 B
R611	270kΩ ¼W ±10% PREC. Fixed	1 B
R612	270kΩ ¼W ±10% PREC. Fixed	2 B
R613	5.6kΩ ¼W ±10% PREC. Fixed	1 B
R614	5.6kΩ ¼W ±10% PREC. Fixed	2 B
R615	820Ω ¼W ±10% PREC. Fixed	1 B, C
R616	820Ω ¼W ±10% PREC. Fixed	2 B, C
R617	22kΩ ¼W ±10% PREC. Fixed	1 B, C
R618	22kΩ ¼W ±10% PREC. Fixed	2 B, C
C601	1μF 15 WV ELECT.	1 A
C602	1μF 15 WV ELECT.	2 A
C603	100pF ±10% 50 VDCW. CER.	1 A
C604	100pF ±10% 50 VDCW. CER.	2 A
C605	100pF ±10% 50 VDCW. CER.	1 B
C606	100pF ±10% 50 VDCW. CER.	2 B
C607	30μF 6 WV ELECT.	1 C
C608	30μF 6 WV ELECT.	2 C
C609	10μF 25 WV ELECT.	1 B
C610	10μF 25 WV ELECT.	2 B
TR601	2SC693F Si N-P-N (030517-1)	1 A
TR602	2SC693F Si N-P-N (030517-1)	2 A
TR603	2SC536E Si N-P-N (030515-4)	1 B
TR604	2SC536E Si N-P-N (030515-4)	2 B



BLOCK DIAGRAM



OTHER PARTS & THEIR POSITION ON CHASSIS



X: Parts No
Y: Parts Name

X	Y
L107	300Ω : 75Ω FM ANT coil
L108	3.5μH FM RF coil (429001-1)
L301	AM Antenna coil (420001)
F1011	FM Frontend
T001	Power Transformer 400-5291B (400027-1)
VC301 ~303	AM 3-gang variable capacitor B-6369 GS-212 (120002)
M001	Tuning meter 100μA 1.2kΩ A-82
VR602 VR603	50kΩ(B) 16φ Level adjust (101501)
VR601	5kΩ(B) 16φ MPX separation adjustment (100501)
S1a~h	Y-3-8-4 Selector switch (110316)
S2	S221BM2A Power switch (117005)
S3	S221B122 Muting switch (117003)
S4	S221B122 NOISE CANCERER (117003)
S5	SL13-1-10H-622 Antenna switch (111004)
F001	Fuse 1A (043002)
CO001	AC Outlet MAX 150VA (245001)
R003	68Ω 1W ±10% Carbon Fixed Resistor
R116	820Ω ¼W ±10% Carbon Fixed Resistor
R117	68Ω ¼W ±10% Carbon Fixed Resistor
R247	2.2kΩ ¼W ±10% Carbon Fixed Resistor
R248	2.2kΩ ¼W ±10% Carbon Fixed Resistor
R422	1kΩ ¼W ±10% Carbon Fixed Resistor
R619	27kΩ ¼W ±10% Carbon Fixed Resistor
C006	0.0047μF 600WV ±10% Oil capacitor
C007	0.0033μF 600WV ±10% Oil capacitor
C128	0.02μF 50WV $^{+100}_{-0}$% Ceramic capacitor
C237	0.02μF 50WV $^{+100}_{-0}$% Ceramic capacitor
C238	0.02μF 50WV $^{+100}_{-0}$% Ceramic capacitor
C422	0.05μF 50WV ±10% Mylar capacitor
C423	0.05μF 50WV ±10% Mylar capacitor
C611	200pF 50WV ±10% Ceramic capacitor
C004	2000μF 35WV Electrolytic capacitor
C005	2000μF 35WV Electrolytic capacitor
D206	IN-60 Ge Diode
D207	IN-60 Ge Diode
D208	SV-02 Si Diode (031049)

Sansui

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Printed in Japan (D9510M8)