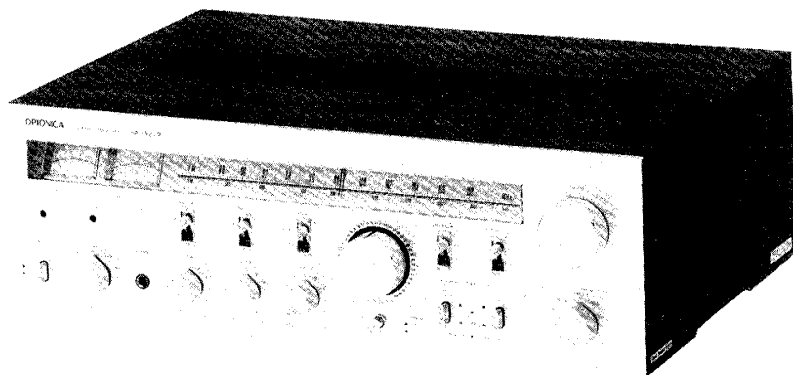




FM/AM,
FM STEREO RECEIVER

MODEL
SA-5202

(Silver Panel)

SA-5206

(Black Panel)

(PHOTO : SA-5202)

SIMULATED WALNUT GRAINED VINYL ON WOOD PRODUCT MATERIAL

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SPECIFICATIONS

● GENERAL DESCRIPTION

Power source:	120 V, 50/60 Hz
Circuit	
Tuner:	Superheterodyne system, AM /FM 2-band tuner, with P.L.L. stereo demodulation circuit, FM muting circuit, air check calibration circuit
Main (Power) amplifier:	Differential amplifier, semi-complimentary system, OCL (Output Capacitor-Less)
Tone amplifier:	"NF" type tone control circuit
Equalizer:	Dual power supply IC amplifier circuit
Semiconductors:	1-FET 8-IC (Integrated circuit) 12-Transistor 18-Diode (2-Zener diodes) 2-LED
Dimensions:	Width: 490 mm (19-9/32") Height: 163 mm (6-13/32") Depth: 382 mm (15-1/32")
Weight:	12.5 kg (27.5 lbs)

● MAIN (POWER) AMPLIFIER

Continuous power Output:	45 watts per channel, minimum RMS, at 8 ohms, from 20 Hz to 20 kHz, with no more than 0.04% total harmonic distortion
Total harmonic distortion:	0.03% at 30 W (Aux. in)
Intermodulation distortion:	0.04% at 45 W (Aux. in)
Damping factor:	46 (at 1 kHz 8 ohms)
Hum and noise level:	
Residual;	1 mV
Maximum volume;	Aux.: 1 mV Phono: 10 mV Tape: 1 mV
Signal to noise ratio (IHF, closed circuit "A" network):	Aux.: 96 dB Phono: 73 dB Tape: 96 dB

● PRE-AMPLIFIER

Input Sensitivity and Input Impedance:	
Phono;	2.5 mV/47K ohms
Aux.;	150 mV/47K ohms
Tape play back 1 and 2;	150 mV/47K ohms
Phono overload:	160 mV (RMS. 1 kHz 0.04% THD.)
RIAA curve deviation:	(30 ~ 20 kHz) ± 0.5 dB
Frequency response:	10Hz ~ 55 kHz ± 1.5 dB (Aux., Tape play back)
Tone control:	
Bass; ± 10 dB at 100 Hz	
Treble; ± 10 dB at 10 kHz	
Low cut filter:	30 Hz (-12 dB/oct)
High cut filter:	7 kHz (-6 dB/oct)

● FM SECTION

Tuning range:	87.6 ~ 108 MHz
Intermediate frequency:	10.7 MHz
Sensitivity (IHF):	10.8 dBf 1.9 μ V
Total harmonic distortion:	
Mono;	0.2%
Stereo;	0.4%
Image rejection ratio:	50 dB
IF rejection ratio:	80 dB
AM suppression ratio:	50 dB
Selectivity:	60 dB
Stereo separation:	45 dB (1 kHz)

● AM SECTION

Tuning range:	520 ~ 1620 kHz
Intermediate frequency:	455 kHz
Quieting sensitivity:	300 μ V/m
Image rejection ratio:	46 dB (1400 kHz)
IF rejection ratio:	30 dB (600 kHz)
Total harmonic distortion:	0.8%

Specifications are subject to change without prior notice.
--

DISASSEMBLY

Prior to removing the chassis, be sure to draw the power supply plug from a wall outlet. Then, proceed with the removal work in the following order after disconnecting all of the connection cords at the rear of the set.

1) To remove the cabinet:

Remove 4 screws ① retaining the cabinet (2 screws each for the right and left sides), then the cabinet can be detached.

2) To remove the bottom plate:

Turn over the set and remove 10 screws ② retaining the bottom plate, then the bottom plate can be detached.

3) To remove the front panel:

- (1) Pull out the knobs ③ (12 knobs).
- (2) Remove the nuts ④ retaining the speaker selector switch shaft and function selector switch shaft.
- (3) Finally remove 2 screws ⑤ retaining the front panel, then the front panel can be detached.

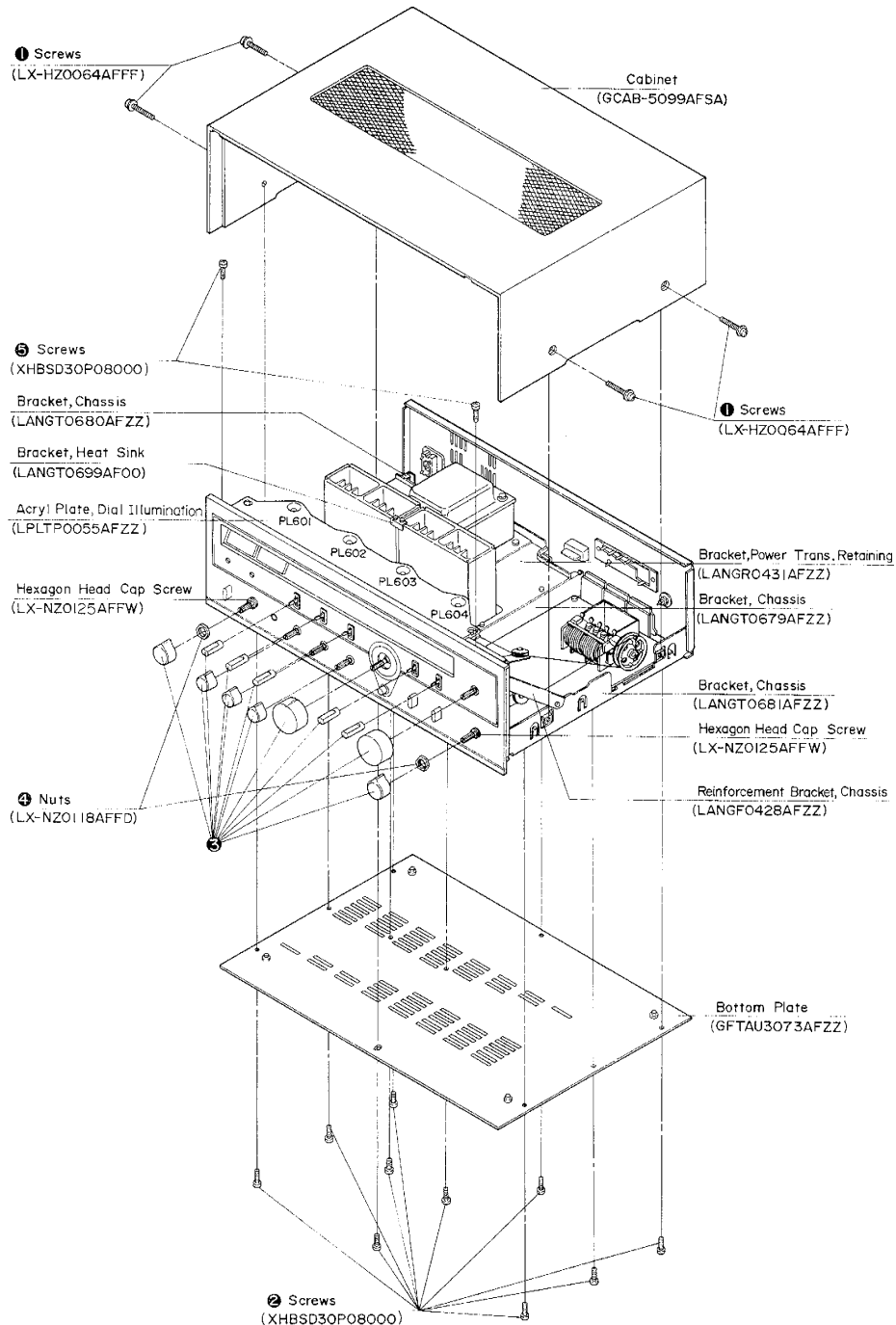


Figure 1 DISASSEMBLY

DIAL CORD STRINGING

1) Setting of the dial cord:

- (1) Turn the drum fully counterclockwise (at the highest frequency position).
- (2) Put a hook of the spring on the central hole of the drum.
- (3) Then proceed with stringing in the numerical order from ① to ⑧. At this work, while holding a hand at the position ⑥ to temporarily fix a dial string, wind the string on the drum by 1-½ turns at the position ⑦ (which

is an extension of the string wound at the position ⑥) and bring it through the position ⑧. Then release a hand from the position ⑥ and thus the stringing is completed.

2) Setting of the pointer:

- (1) Turn the tuning shaft fully counterclockwise (at the lowest frequency position).
- (2) Align the pointer to the extreme left (zero point) of the dial scale plate. (See Fig. 2-1.)

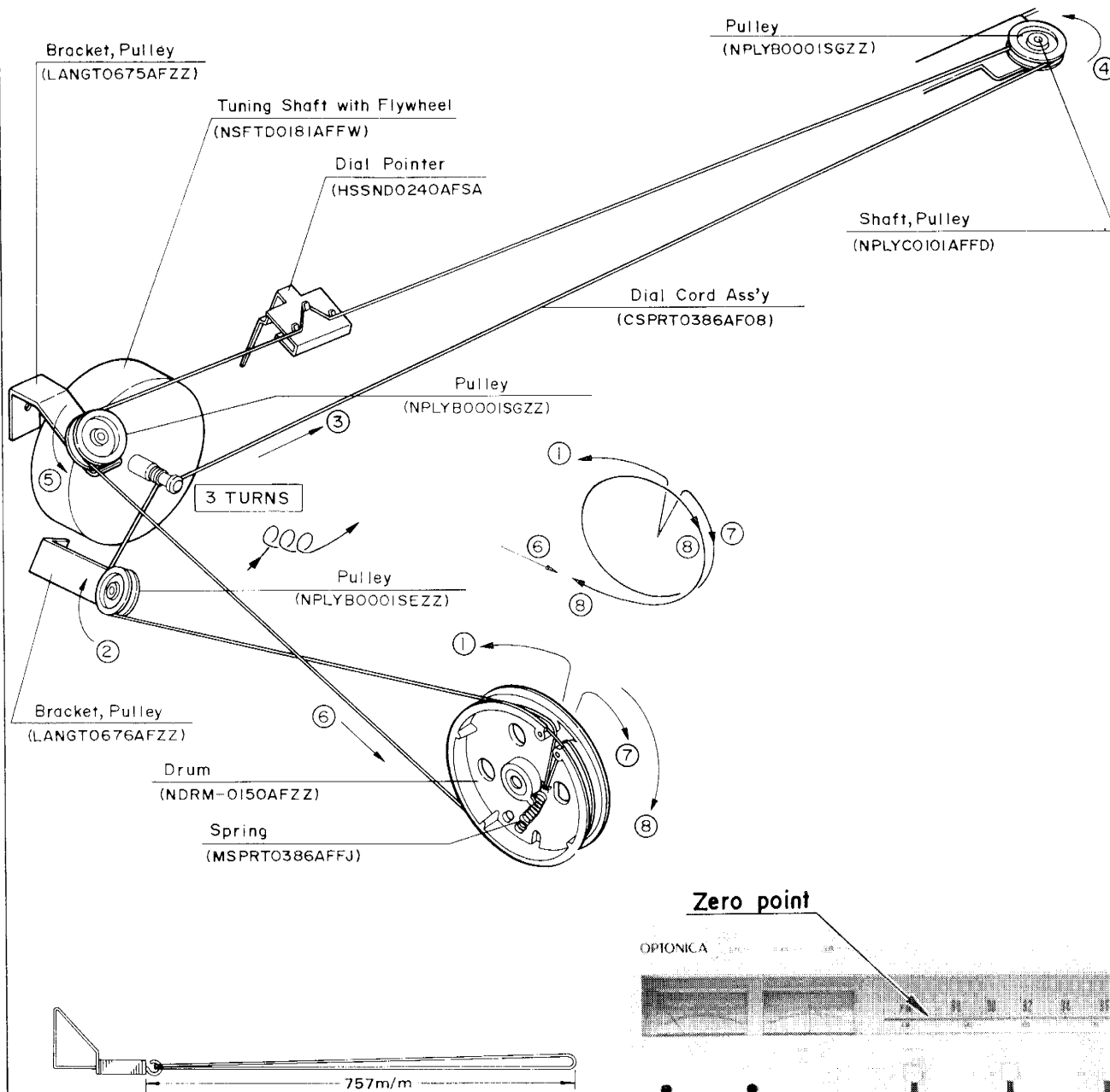
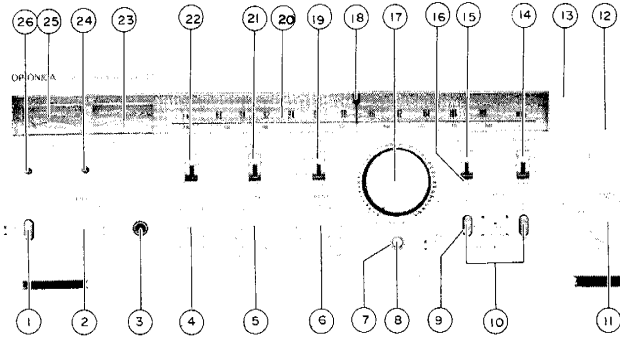


Figure 2-1

Figure 2 DIAL CORD STRINGING

FRONT PARTS LAYOUT

(PHOTO : SA-5202)

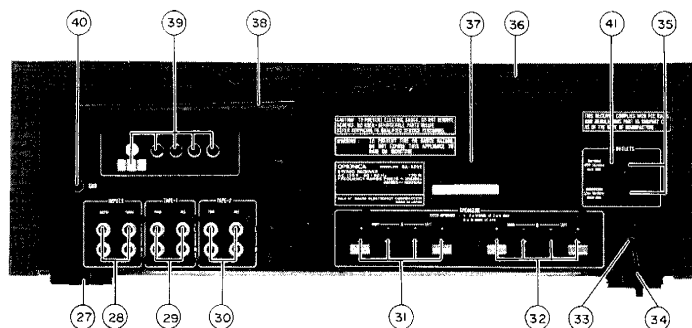


- | | |
|--|--|
| ① Power Switch Knob
(SA-5202 JKNBP0078AFSA, SA-5206 JKNBP0078AFSB) | ⑬ Front Panel
(SA-5202 HPNLC3372AFSA, SA-5206 HPNLC3373AFSA) |
| ② Speakers Selector Knob
(SA-5202 JKNBN0330AFSA, SA-5206 JKNBN0318AFSB) | ⑭ FM Muting Switch Knob
(SA-5202 JKNBP0070AFSA, SA-5206 JKNBP0070AFSB) |
| ③ Headphones Jack (QJAKJ0057AFZZ) | ⑮ Air Check Calibrator Switch Knob
(SA-5202 JKNBP0070AFSA, SA-5206 JKNBP0070AFSB) |
| ④ Bass Control Knob
(SA-5202 JKNBN0338AFSA, SA-5206 JKNBN0367AFSA) | ⑯ Guide, Lever Switch
(SA-5202 GCOVA1076AFSC, SA-5206 GCOVA1076AFSB) |
| ⑤ Treble Control Knob
(SA-5202 JKNBN0338AFSA, SA-5206 JKNBN0367AFSA) | ⑰ Volume Control Knob
(SA-5202 JKNBN0316AFSA, SA-5206 JKNBN0316AFSB) |
| ⑥ Balance Control Knob
(SA-5202 JKNBN0338AFSA, SA-5206 JKNBN0367AFSA) | ⑱ Dial Pointer (HSSND0240AFSA) |
| ⑦ Spacer, Loudness Switch
(SA-5202 PSPAS0008SGSA, SA-5206 PSPAS0008SGSB) | ⑲ Mode Selector Knob
(SA-5202 JKNBP0070AFSA, SA-5206 JKNBP0070AFSB) |
| ⑧ Loudness Switch Knob
(SA-5202 JKNBM0136AFSE, SA-5206 JKNBM0136AFSD) | ⑳ Dial Scale (HDALM0189AFSA) |
| ⑨ Spacer, Push Switch (PSPAS0066AF00) | ㉑ High Cut Filter Switch Knob
(SA-5202 JKNBP0070AFSA, SA-5206 JKNBP0070AFSB) |
| ⑩ Tape Monitor and Tape Dubbing Switch Knobs
(SA-5202 JKNBP0078AFSA, SA-5206 JKNBP0078AFSB) | ㉒ Low Cut Filter Switch Knob
(SA-5202 JKNBP0070AFSA, SA-5206 JKNBP0070AFSB) |
| ⑪ Function Selector Knob
(SA-5202 JKNBN0330AFSA, SA-5206 JKNBN0318AFSB) | ㉓ FM Tuning (center) Meter (RMTRL0134AFSA) |
| ⑫ Tuning Control Knob
(SA-5202 JKNBN0317AFSA, SA-5206 JKNBN0317AFSB) | ㉔ FM Stereo Indicator, Red, LED (VHPGL-52AR/1F) |
| | ㉕ Signal (strength) Meter (RMTRL0142AFSA) |
| | ㉖ Power Indicator, Green, LED (VHPGL-5PG5/1F) |

Figure 3 FRONT PARTS LAYOUT

REAR PARTS LAYOUT

(PHOTO : SA-5202)



- | | |
|---|--|
| ⑲ Leg (GLEGP0002SG00) | ⑳ Cabinet (GCAB-5099AFSA) |
| ㉑ Inputs (AUX (P) and PHONO) Socket (QSOCZ2472AFZZ) | ㉒ Rear Panel
(SA-5202 LANGQ0656AFSA, SA-5206 LANGQ0659AFSA) |
| ㉓ Tape-1 (PB (P) and REC) Socket (QSOCJ2264AFZZ) | ㉔ Built-In AM Bar Antenna (RCILA0429AFZZ) |
| ㉕ Tape-2 (PB (P) and REC) Socket (QSOCJ2264AFZZ) | ㉕ Antenna Terminals (QTANN0453AFZZ) |
| ㉖ Speakers Terminals-A (QTANZ0454AFZZ) | ㉖ Ground Terminal (QTANN0150AFZZ) |
| ㉗ Speakers Terminals-B (QTANZ0454AFZZ) | ㉗ Screw, AC Outlets Socket (LX-BZ0220AFFF) |
| ㉘ Bushing, AC Cord (LBSHC0007AFZZ) | |
| ㉙ AC Cord with Plug (QACCU0052AFZZ) | |
| ㉚ AC Outlets Socket (QSOCA0402SGZZ) | |

Figure 4 REAR PARTS LAYOUT

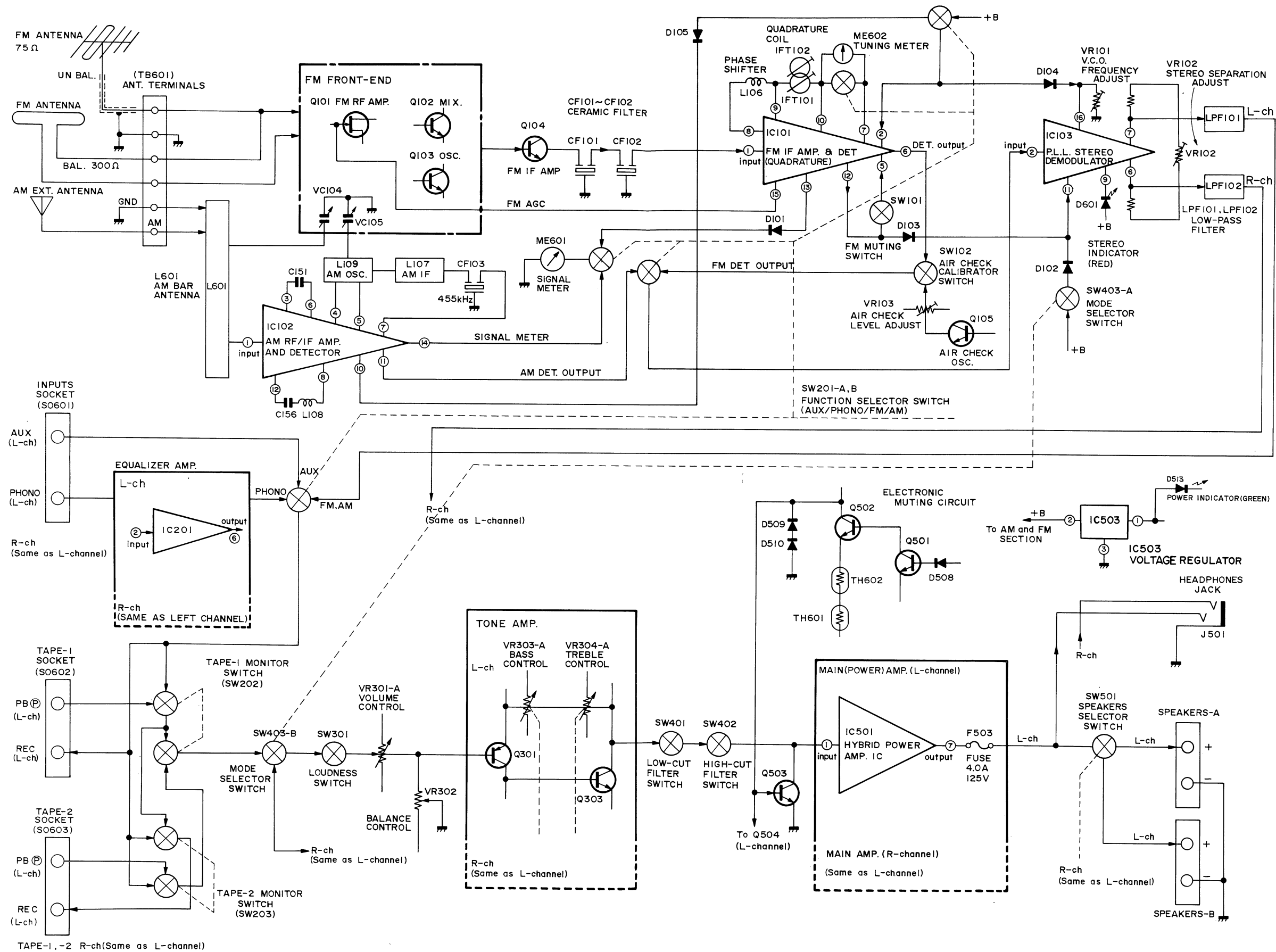


Figure 5 BLOCK DIAGRAM

CIRCUIT DESCRIPTION

FM RF SECTION

FM antenna input circuit has two input terminals (75ohms and 300ohms). The 75ohms input terminal is used when FM antenna is connected to the unit by using a coaxial cable. The 300 ohms input terminal is used when FM antenna is connected to the unit by using a balanced feeder. Figure 6 shows FM Front-End circuit. The front-end section consists of 1 FET and 2 transistors. Transistor Q101 is FET (Field Effect Transistor) and its function is nearly the same as of vacuum tube. Due to the adoption of FET, crossmodulation characteristic and spurious characteristic are remarkably improved compared with conventional transistor type.

It is so devised that AGC voltage is applied to the gate of FET Q101 of FM Front-End circuit.....this results in that when input signal to FM antenna is strong, amplification degree of FET Q101 is lowered so as to stabilize FM reception. The voltage applied to the gate of FET Q101 is at the level of about 4.3V when the antenna is receiving no input signal.

The voltage is decreased as the input signal to the antenna is increased and it becomes at the level of about less than 1V when the input signal to the antenna is of 100 dB. Therefore, the amplification degree of FET Q101 is attenuated by more than about 30 dB.

FET Q101 is FM high frequency amplifier. Transistor Q102 works as frequency mixer, in which high frequency signal coming from the FET Q101 and local oscillation frequency coming from the transistor Q103 are mixed to produce 10.7 MHz IF signal which will enter IF tuning transformer T101. The transistor Q103 is for the local oscillation and it applies oscillation voltage to the base of transistor Q102 via capacitor C112 (1.5pF).

Therefore, coil L101 is for antenna tuning, coil L102 is for FM RF amplification and tuning and coil L104 is for local oscillation.

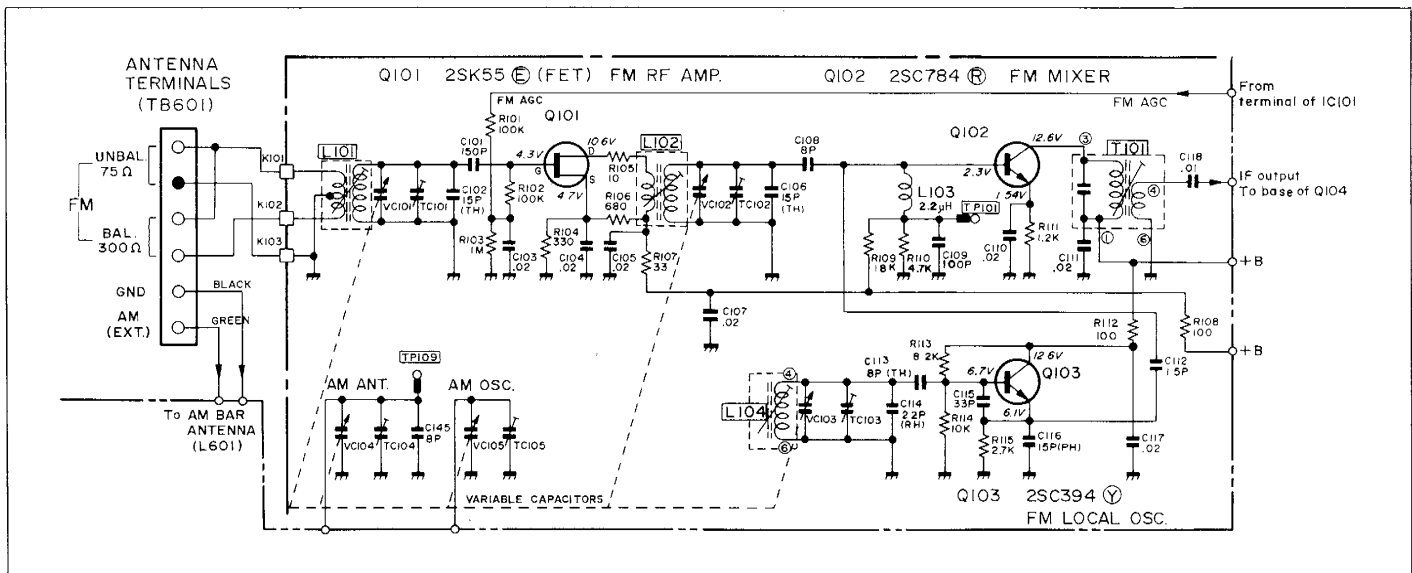


Figure 6 FM FRONT-END CIRCUIT

FM AGC

FM AGC voltage is developed at terminal (15) of IC101, and is applied to the gate of FET Q101 through resistors R102 and R101.

The AGC voltage is developed in IC101 as delayed AGC

voltage, and the AGC starts to operate when antenna input reaches approx. 60 dB and thus a voltage at terminal (15) of IC101 starts to drop.

FM IF SECTION

FM IF section consists of 1 IC (integrated circuit), 1 transistor and 2 ceramic filters. Transistor Q104 is FM IF amplification transistor, which is to amplify IF signal which has been converted into 10.7 MHz signal at FM front end section. This 10.7 MHz IF signal is given a higher selectivity since it runs through the concentrated selective elements, that is, ceramic filters CF101 and CF102. These filters function to amplify IF (intermediate frequency) signals giving no distortion and to assure a necessary selectivity. The IF signal is further supplied to the terminal (1) of IC101, in which the gain of this signal is increased by about 66 dB by the three-stage differential amplifier thus being subjected to an appropriate limiter function.

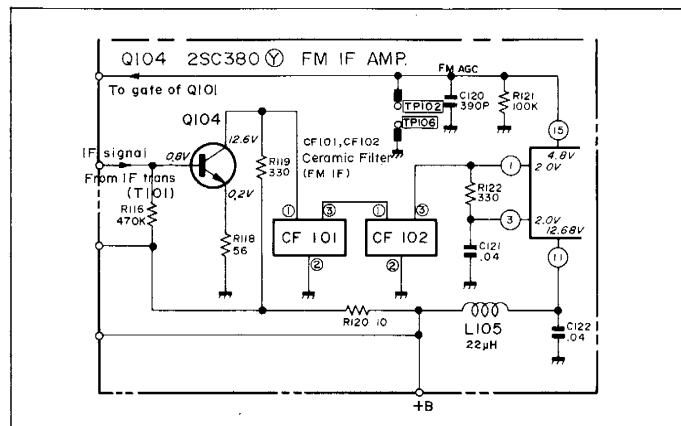


Figure 7 FM IF CIRCUIT

FM DETECTION SECTIONS (Quadrature Detector Circuit)

FM Detector Circuit

This unit employs 'Quadrature Detector' based on newly developed IC (Integrated Circuit), which is substituted

for ratio detector and Foster-Seeley's detector that have been so far used. The basic structure of quadrature detector circuit is as shown in Figure 8.

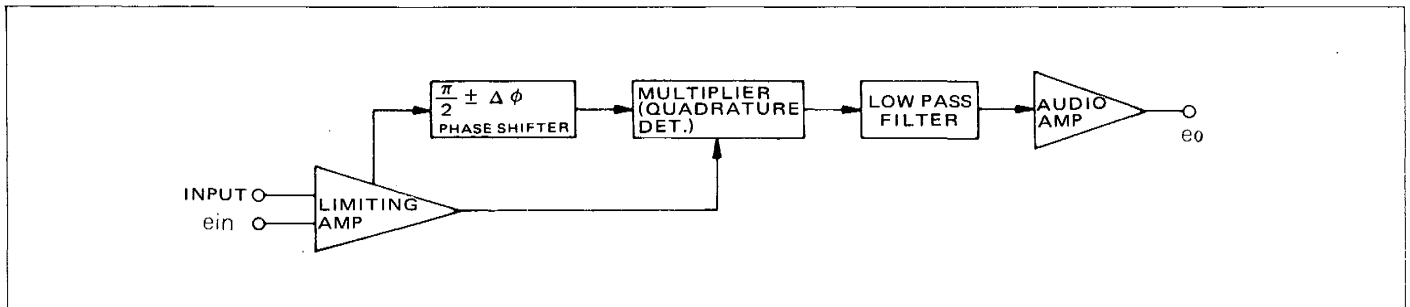


Figure 8 BASIC STRUCTURE OF QUADRATURE DETECTOR CIRCUIT

With this detection system, the multiplier (quadrature detector) circuit receives two types of input signals, one is the signal which has been amplified by the limiting amplifier and another which has passed through the phase shift circuit (about $\pi/2$). Thus, the quadrature detector circuit produces demodulation signal.

The term 'quadrature' is resulted from that the phase difference between these two signal is $\pi/2$. The multiplier consists of doubly balance circuit as shown in the following circuit drawing. Phase characteristic of the phase shift circuit is as shown in Figure 10.

This circuit is featured by:

- (1) Good linearity and low distortion.
- (2) Operates on small signal and less higher harmonics.
- (3) Wide-band detection of as much as 1.2MHz.

Therefore, this circuit assures low distortion even with the overmodulation of more than 100% thereby reproducing high quality sound.

Actually saying, the detecting circuit SA-5202 and SA-5206 uses L106 as phase-shift coil. IFT101 and IFT102 are 10.7 MHz tuning quadrature coil.

Detection output appears at the terminal ⑥ of IC101 and it is supplied to the terminal ② of P.L.L. multiplex integrated circuit IC103.

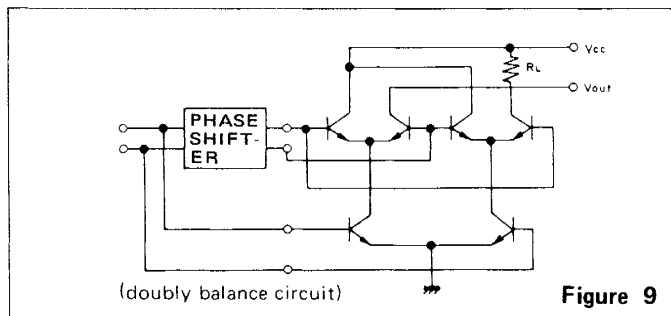


Figure 9

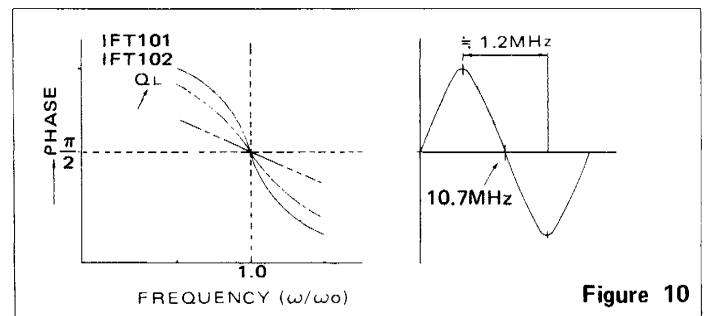


Figure 10

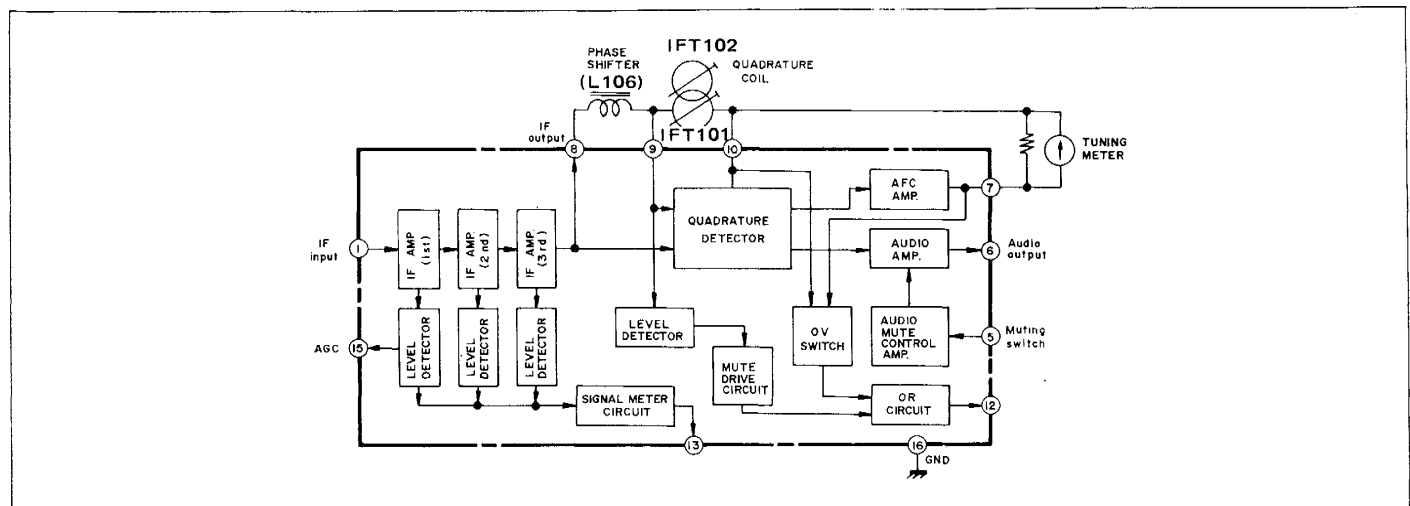


Figure 11 BLOCK DIAGRAM OF IC101

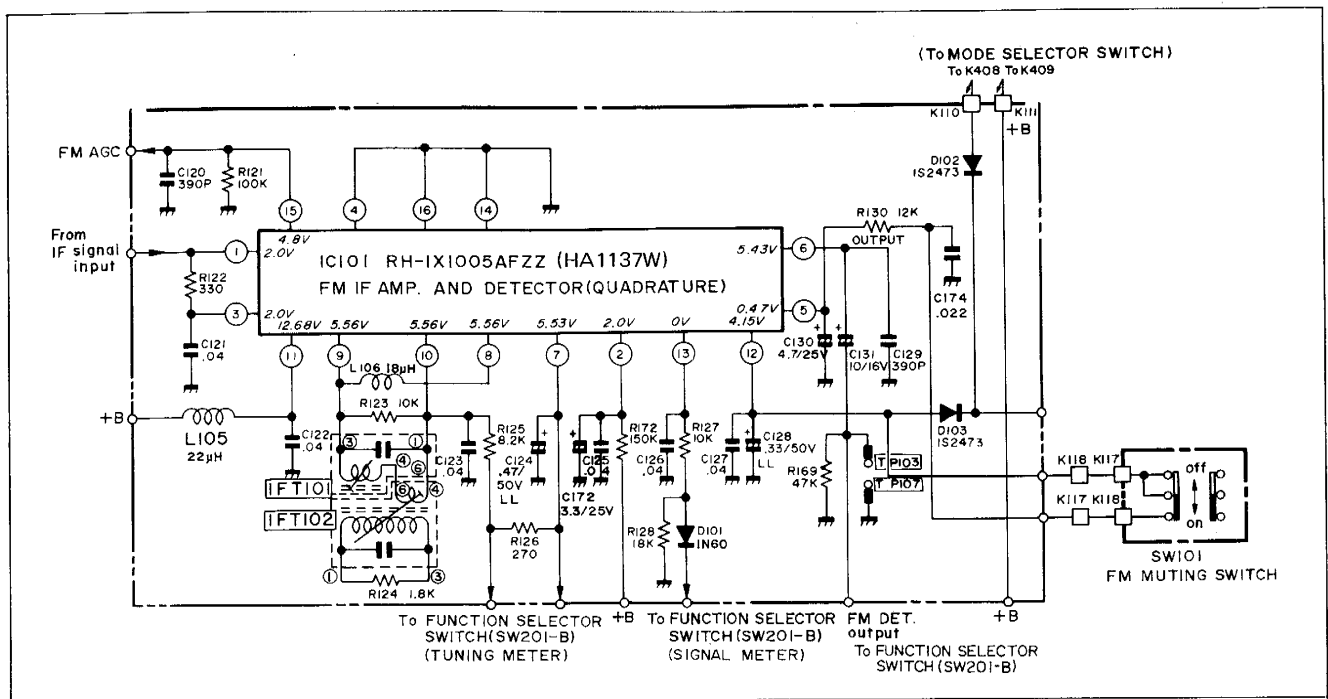


Figure 12 FM DETECTOR (QUADRATURE) CIRCUIT AND FM MUTING CIRCUIT

FM MUTING CIRCUIT

In these sets SA-5202 and SA-5206, IC101 incorporates a muting circuit and this circuit is so designed that if FM input signal caught by the antenna becomes about 10dB when the muting switch (SW101) has been set "on" position, the muting effect is released and thus the signal can appear at the output without undergoing muting. The muting release signal first develops at the terminal ⑫ of IC101, then to be applied through the muting switch (SW101) to the terminal ⑤ of IC101, so that the muting effect is able to become nil.

Figure 13 shows the output voltage of the terminal ⑫ of IC101. This signal (to release the muting) is then supplied to the terminal ⑪ of P.L.L. stereo multiplex demodulator integrated circuit IC103 to make stereo signal be forced to monaural signal.

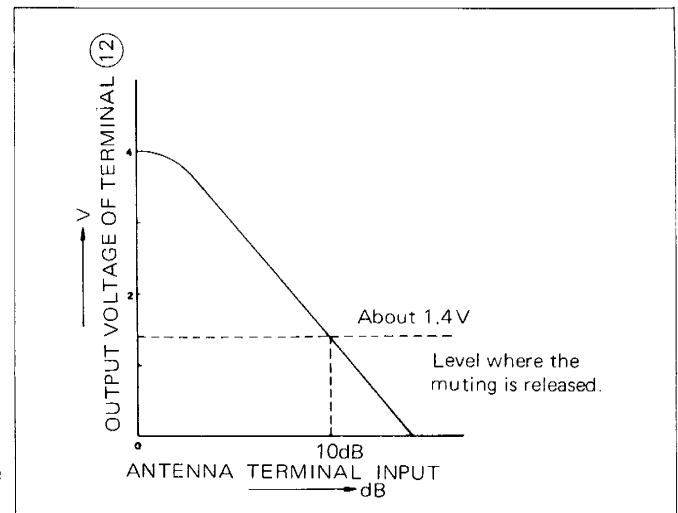


Figure 13

LOW-PASS FILTER

LPF101 and LPF102 are low-pass filters to remove carrier signals (19 kHz and 38 kHz) leaking from the stereo multiplex IC103. The characteristic is as shown in the Figure 14.

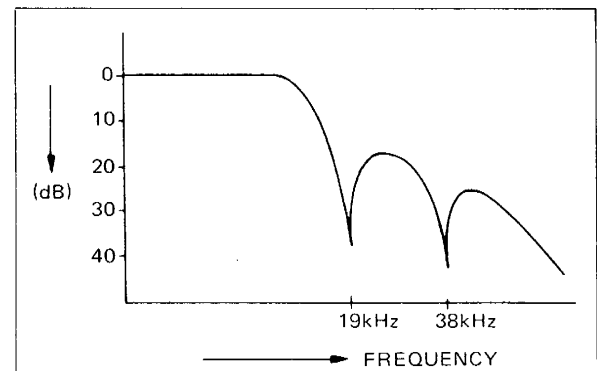


Figure 14

FM STEREO DEMODULATOR SECTION

1) Features of P.L.L. stereo demodulator circuit

This set incorporates a stereo demodulator circuit that comprises IC's with the P.L.L. (Phase Locked Loop) system applied. The P.L.L. stereo demodulator circuit is provided with such characteristics as mentioned below.

In order to demodulate stereo composite signals, it is necessary to take a 19kHz pilot signal out of the stereo composite signals and to make it a 38kHz signal.

Most of the conventional methods to obtain such a 38kHz signal are frequency doubling ones which utilize a nonlinearity of the elements. Compared with the conventional type, the recently developed IC-ed demodulator provides more sufficient separation effects. However, since it also requires 2 or 3 coils like the conventional one, if even one of them is dislocated from the initially adjusted point due to a secular change the separation effects will be deteriorated. Moreover there is such a contradiction that the more the efficiencies of the coils are increased enough to withstand the outer pulse signals like automobil ignition noises, the more the coils suffer secular changes.

To eliminate such disadvantages as above, P.L.L. system is employed in the method to make a 38kHz signal using a 19kHz pilot signal.

The P.L.L. system stereo demodulator gives such three merits as:

- ① Since the phases of a pilot signal and a 38kHz signal are automatically made the same with each other, the deterioration of separation effect is strongly minimized.
- ② Since only one of variable resistor, being newly employed, plays the role of 2 to 3 pieces of conventional coils, troubles of the parts due to secular changes are decreased.

In addition, even if this variable resistor is slightly dislocated, the separation effect will never be deteriorated because of the merit as mentioned in 1 by which the automatic phase adjustment is assured.

- ③ Compared with the conventional one, the P.L.L. system demodulator shows a more noise withstanding characteristic since it has such performances as the selection of frequencies and the continuity of oscillation frequencies (short-time memory); thus assuring a stable stereo demodulation.

2) FM stereo demodulator circuit

IC103 is an integrated circuit for P.L.L. stereo demodulation and its block diagram is as shown in Figure 15.

V.C.O. free-running frequency is to be adjusted to 76kHz by adjusting semi-fixed resistor VR101 (10Kohm). TP104 is the test point for frequency observation. (See the paragraph 'Adjustment' described later.)

During AM reception, +B voltage is supplied to the terminal ⑮ of IC103 through diode D104 and resistor R135 so that oscillation frequency of V.C.O. will be stopped.

Semi-fixed resistor VR102 (200K ohms) aim at the adjustment of stereo separation and with this resistor it is possible to minimize crosstalk to the opposite channel. +B voltage is supplied to the terminal ⑪ of IC103 to force stereo signals to become monaural ones.

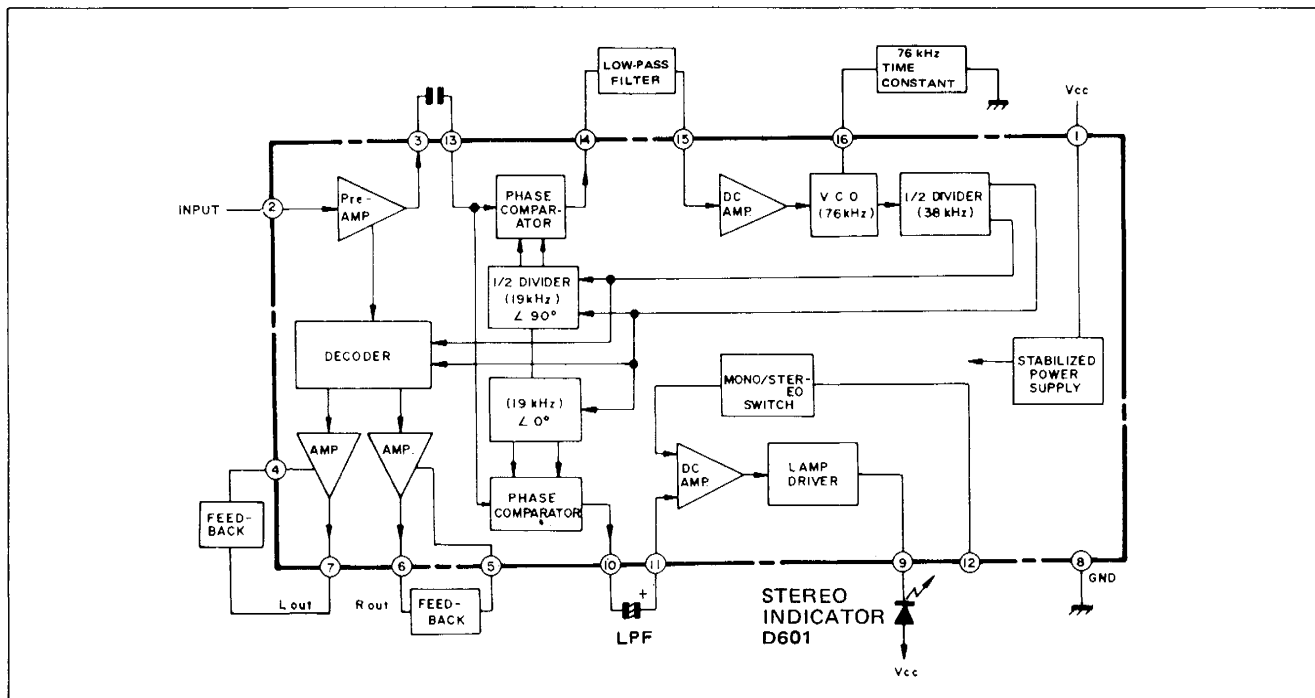


Figure 15 BLOCK DIAGRAM OF IC102

NOTE:

In the case of AM reception, in other words, when the function selector switch is kept to the position AM, air check level signal does not appear at the output terminal located at the rear of the set since the air check calibrator is not functioning at the time.

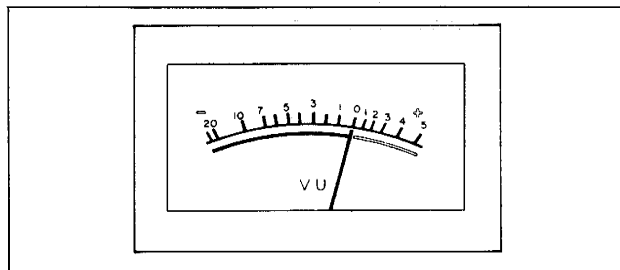


Figure 18 "0VU"

AM SECTION

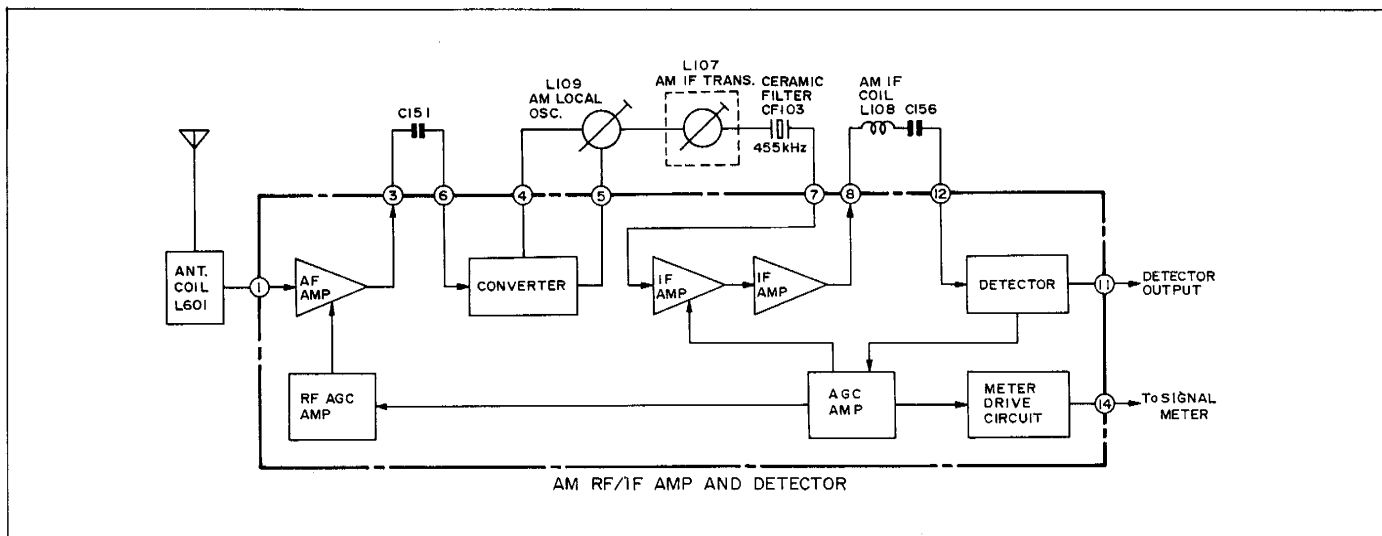


Figure 19 BLOCK DIAGRAM OF IC102

Figure 19 is a block diagram of IC102. The coil L601 is AM ferrite bar antenna and it serves as antenna tuning circuit. Being received by the coil L601, AM broadcast signal is applied to the terminal ① of the integrated circuit IC102 to be amplified by RF amplifier and then be supplied to the converter via the capacitor C151. L109 is an oscillation coil for AM local oscillation circuit. AM broadcast signal is thus converted to 455kHz IF signal by the converter to be applied to the ceramic filter (CF103) which works as

intermediate frequency selection element via the transformer L107 and the signal will further be amplified by 1st and 2nd IF amplifiers to be applied to the coil L108 and capacitor C156. Then the signal is finally detected by the detector circuit and it will be output at the terminal ⑪. This IC102 also includes signal meter drive circuit which enables easier tuning and the output at the terminal ⑭ is connected to the signal meter (ME601).

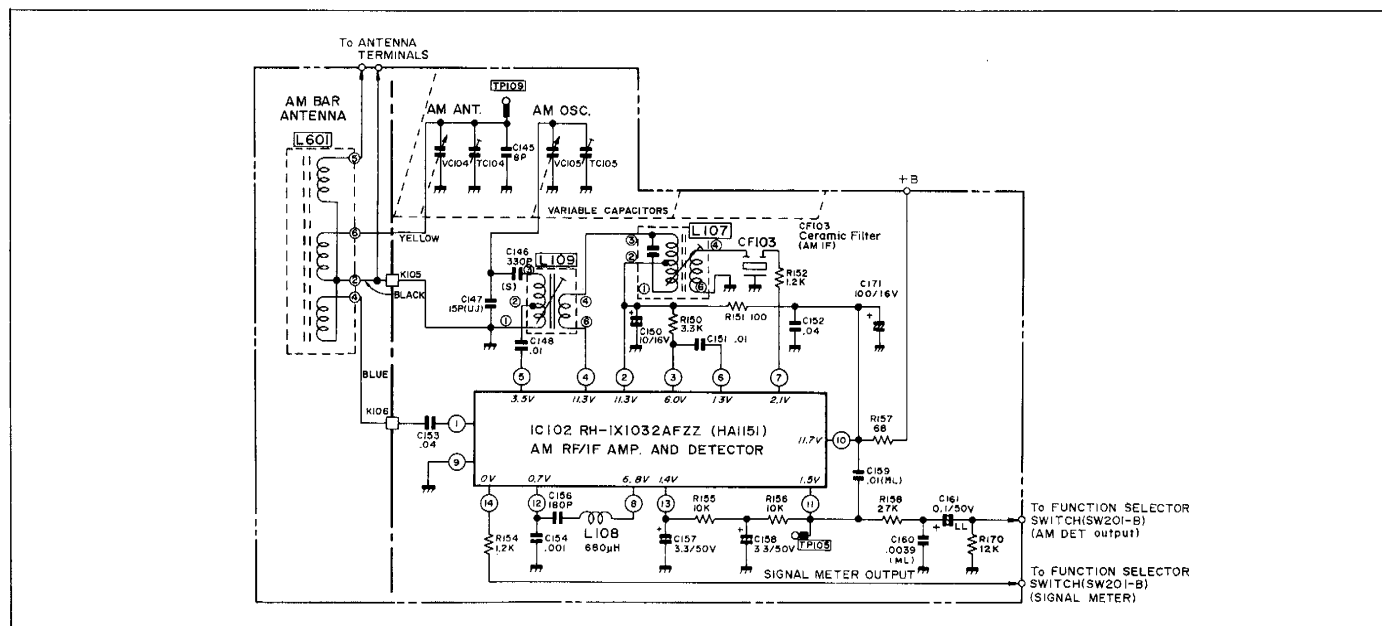


Figure 20 AM CIRCUIT

TONE AMPLIFIER CIRCUIT

The tone amplifier is an N.F. type direct coupled amplifier consisting of Q301 and Q303. Q301 at the first stage is a PNP type low noise transistor to assure satisfactory S/N ratio. The power supply is of 2-power (positive and negative) system, in which the voltage at the input and output terminals is designated to be 0V. The coupling capacitor used for input and output signals is of the low leak type which enables reduction of residual noises. The variable resistor aimed to control bass and treble is able to control the resistance in particular when the set is kept in "mechanical center" condition so that beat characteristic at the tone flat mode

can be minimized.

Input signal which has been applied to the base of Q301 (Q302) is taken out of the load resistor R319 (R320) at the collector of Q301 (Q302). The signal enters the base of Q303 (Q304), and amplified by Q303 (Q304) comes out of the collector.

The negative feedback circuit consists of parts of tone circuit. Tone control of low or high frequency band is made by varying NF amount by the variable resistor (VR303-A, B, VR304-A, B).

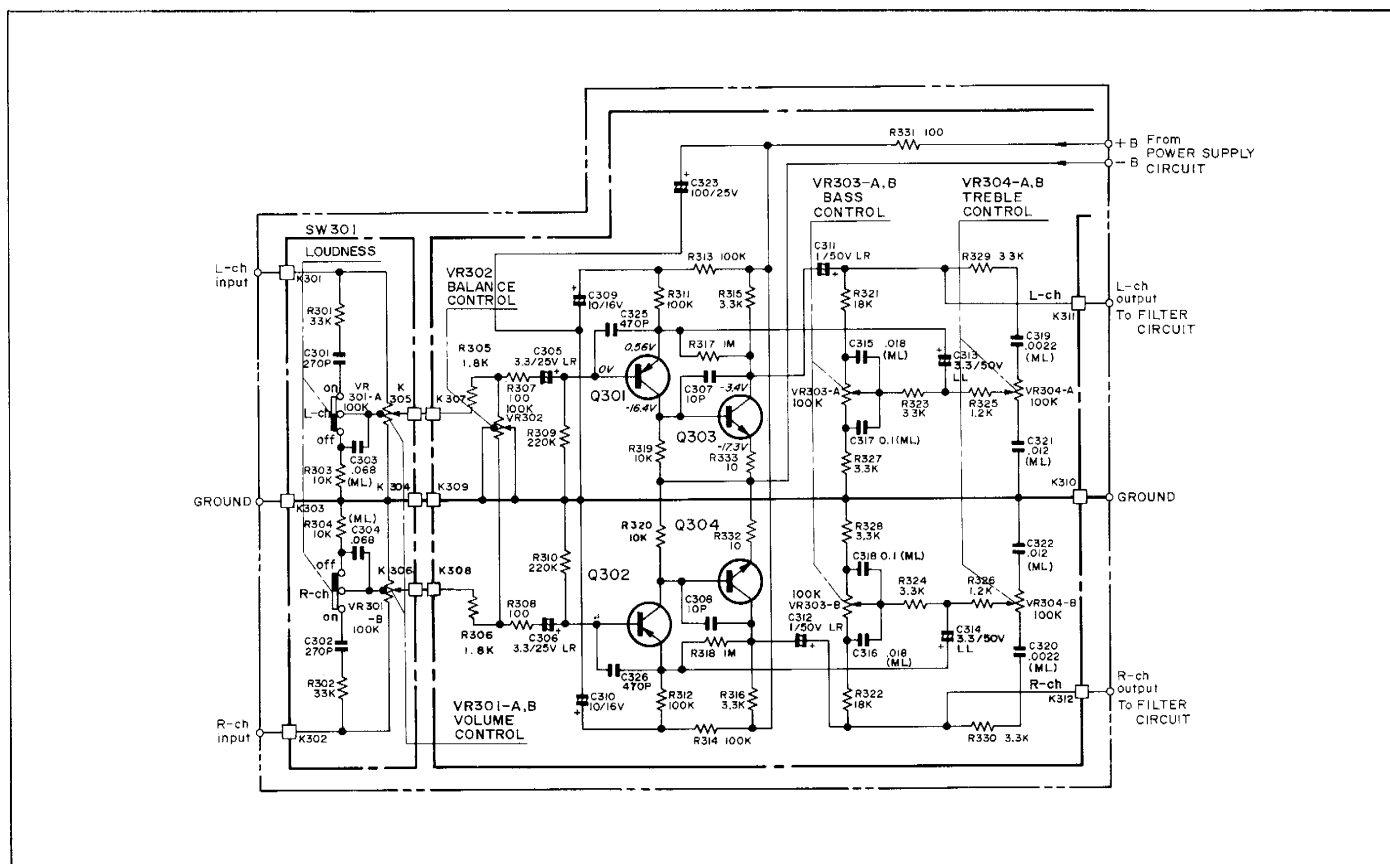


Figure 21 TONE AMP. CIRCUIT

EQUALIZER AMPLIFIER CIRCUIT

The equalizer circuit is an integrated circuit of differential 1-stage and directly-coupled 3-stage, which assures both higher gain and lower distortion factor.

The power supply is of 2-power (positive and negative) system, in which the voltage at the input and output terminals is designated to be 0V. The coupling capacitor used for input and output signals is of the low leak type which enables reduction of residual noises.

Signal coming from the terminal PHONO is applied, via the resistor R201 and capacitor C201, to the terminal ② of the integrated circuit IC201 to be amplified. The signal thus amplified comes out of the terminal ⑥ of IC201 and it will be applied, via the capacitor C215 and resistor R217, to the

function selector switch (SW201-A). By the way, a part of such output signal is applied to the terminal ③ of IC201 through the NF circuit used for increase of "RIAA" characteristic.

Composed of resistors R211 and R235 and capacitors C211 and C213 which are precision parts having too small error. NF element aiming at "RIAA" characteristic is able to restrict "RIAA" deviation to ± 1.5 dB.

Resistor R215 is respectively to prevent capacitor C215 from discharging and to eliminate noise generation caused at the time of selecting the switches.

Capacitors C207 and C209 are for the purpose to prevent interference noises due to SW broadcasts, etc.

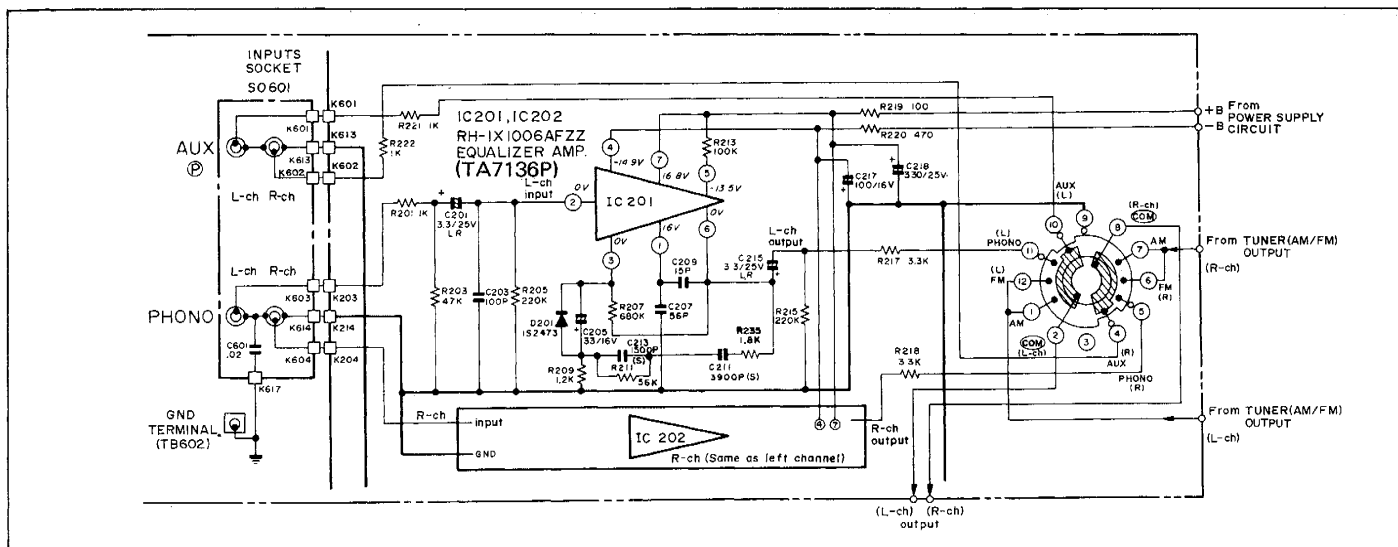


Figure 22 EQUALIZER (PHONO) CIRCUIT

MAIN (POWER) AMPLIFIER SECTION

The main amplifier consists of all-stage direct-coupled semi-complementary output capacitorless circuit. This main amplifier is designed to operate on the 2-power (positive and negative) supply system and so the speaker terminal output voltage becomes earth potential (0V) in terms of DC component. Therefore, with this amplifier it is not necessary to use a coupling capacitor for cutting off DC component although it has so far been required when the speaker is connected to the amplifier. Besides, it enables the amplification in a wider range from lower frequency to higher frequency. This is an origin of the term OCL (Output Capacitor-Less).

FEATURE OF SEMI-COMPLEMENTARY OCL CIRCUIT

Since this circuit is not using output capacitor, the frequency characteristic is kept uniform even at very low frequency band and the output impedance is low in any of frequency bands resulting in that the value of damping factor is made larger so that the braking efficiency of speaker is increased. With this circuit, since a 100 percent NF is assured when the frequency of signal is zero and the value of NF is determined at only one place when the frequency of signal is at low band, the function of circuit is stabilized.

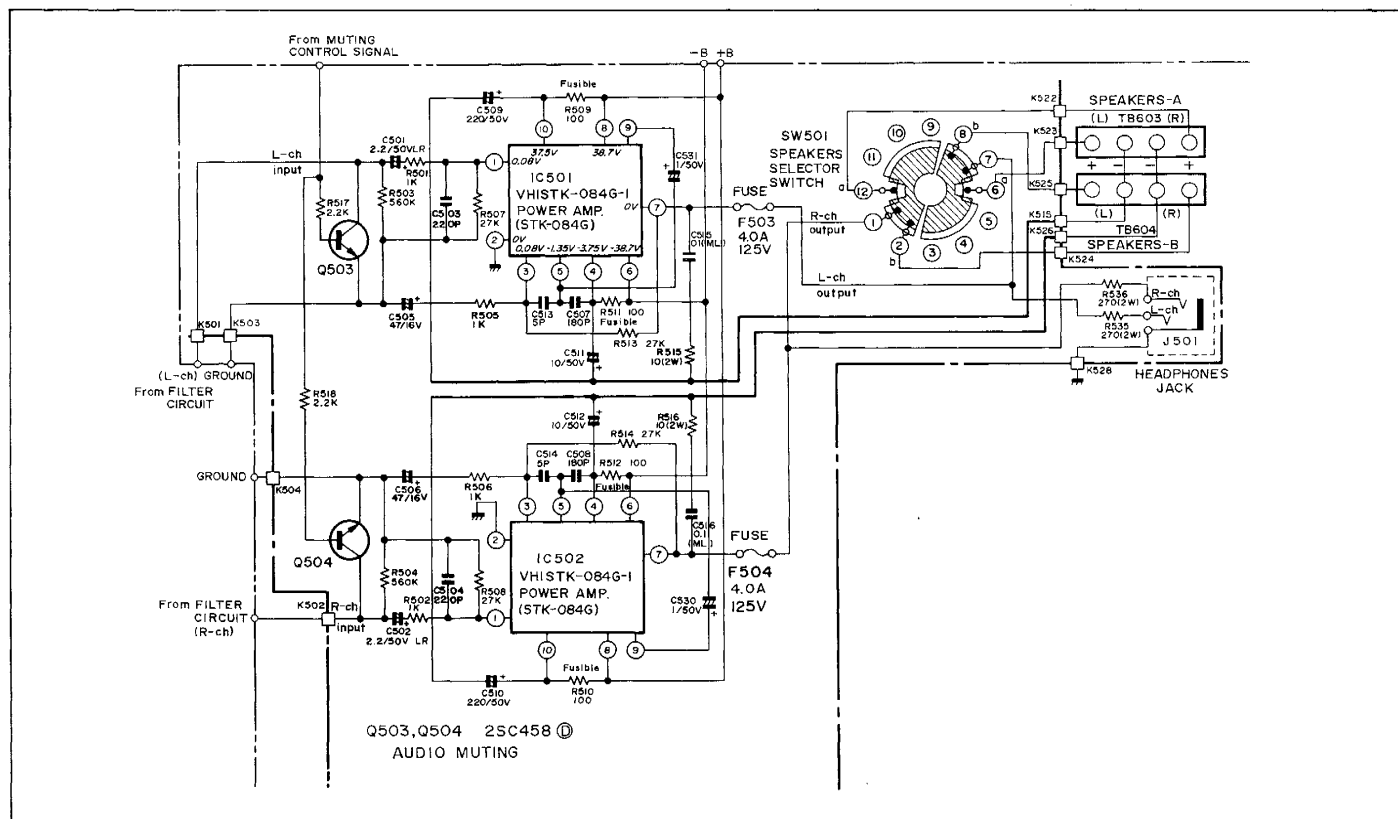


Figure 23 MAIN (POWER) AMPLIFIER CIRCUIT

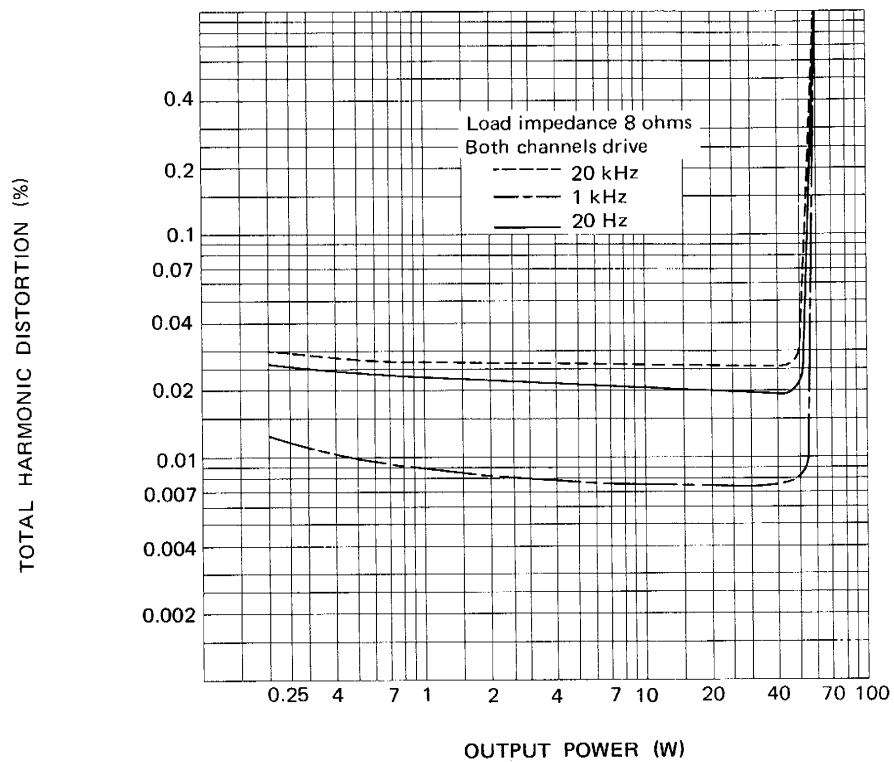


Figure 24 OUTPUT POWER VS TOTAL HARMONIC DISTORTION

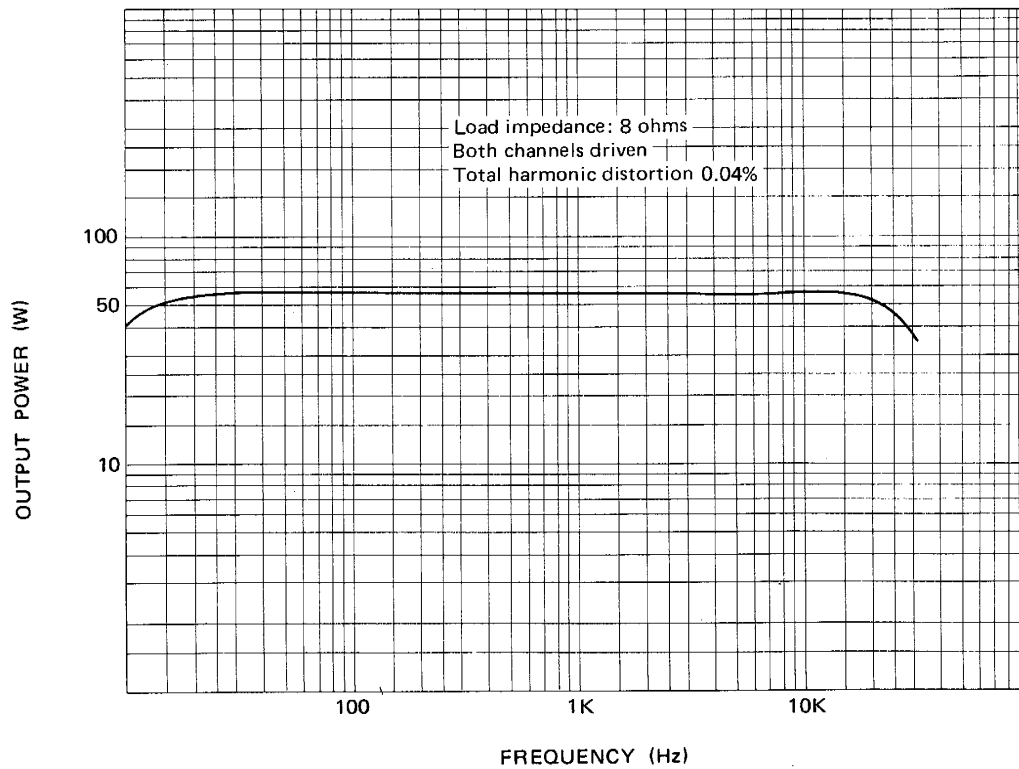


Figure 25 POWER BANDWIDTH CHARACTERISTIC

ELECTRONIC MUTING CIRCUIT

The electronic muting circuit is composed of transistors Q501 to Q504, diodes D507 to D510 and other resistors and capacitors and it works to prevent an occurrence of noises when the power switch SW601 is turned on or off, and to eliminate an abnormal thermal increase of the heat sink.

- **When the power switch is turned "ON"**

The electronic muting circuit works as follows;
A current runs in the bases of Q503 and Q504 through R531 and thus inputs to the main amplifier are shorted so that the signals of the tone amplifier won't enter the main amplifier. At the same time, a current also runs in R528 and C528 and so the base potential of Q502 increases until the Q502 is eventually turned on, so that a collector current will be produced. As a result, a voltage drop of R531 becomes drastic so that there will be no current caused at the bases of Q503 and Q504. Thus it is allowed for the main amplifier to receive signals.

- **When the power switch is turned "OFF"**

The electronic muting circuit works as follows;
The negative potential which has been charged in C527 becomes zeronized instantly and so the emitter potential of Q502 is increased to turn off the Q502. As a result, a current runs in the bases of Q503 and Q504 so that these transistors are turned on; this results in that no signal will enter the main amplifier.

Q501 is to discharge the C528 which has been once charged up when the power switch was turned off.

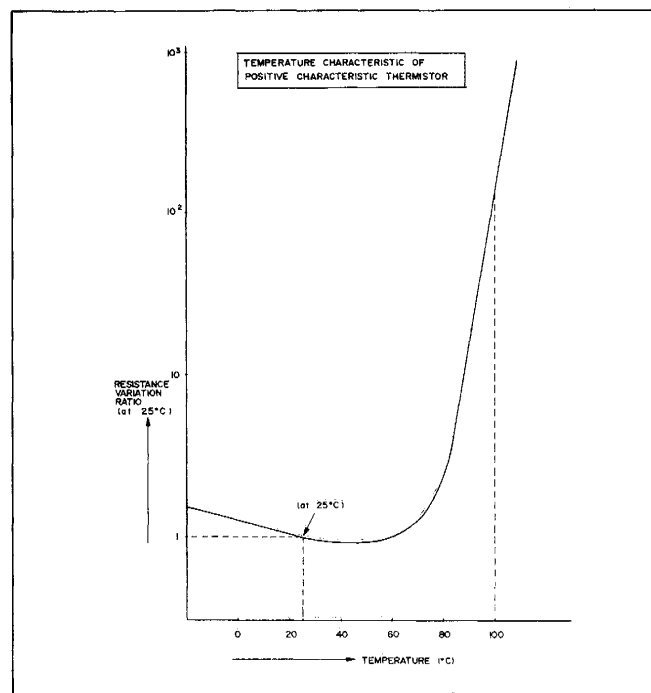


Figure 26

- **When temperature of the heat sink abnormally increases**

The electronic muting circuit works as follows;
If the heat sink of IC501 and IC502 are over-heated, the resistance of TH601 and TH602 are suddenly increased. As a result, the current of Q502 is reduced while its collector potential is increased so that the transistors Q503 and Q504 are turned on; this results in that no signals will enter the main amplifier so that an abnormal thermal increase of the heat sink can be eliminated.

POWER SUPPLY CIRCUIT

Power supply to the main (power) amplifier section is depended upon the 2-power supply system. With this 2-power supply system, AC voltage coming from the power transformer T601 is subjected to rectification by the bridge full-wave rectifier circuit consisting of diodes D501, D502, D503 and D504 and then be smoothed by the low impedance capacitor C521 and C522 to become DC voltage to finally be supplied to the main amplifier circuit section. The DC voltage thus smoothed is further applied to the ripple filter circuit to become stabilized so that it will be supplied to the tone circuit and equalizer circuit. Capacitors C517 and C518 are for the purpose

to eliminate switching noises due to diodes D501 to D504 and further to remove noises coming from the power supply primary side. Power supply voltage to the tuner circuit is depended upon the fact that: AC voltage coming from the power transformer is rectified by the half-wave rectifier circuit with diode D511 to become DC voltage and it is further smoothed by the capacitor C529. Besides, to the tuner circuit (FM circuit section and AM circuit section) the supply voltage (DC) is regulated through the integrated circuit (IC503). These regulator circuits all function to effectively suppress fluctuations of the power supply voltage.

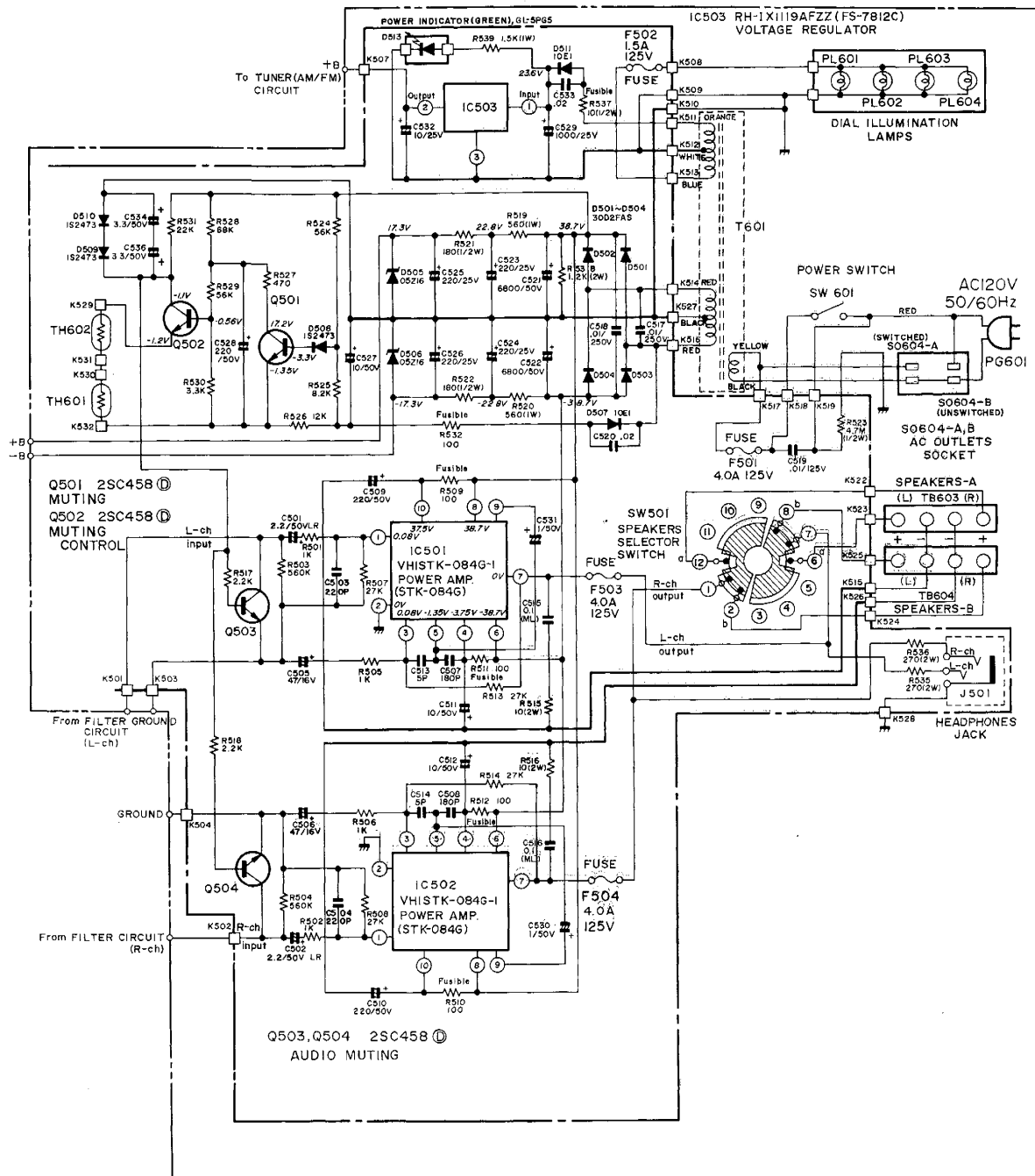


Figure 27 ELECTRONIC MUTING CIRCUIT AND POWER SUPPLY CIRCUIT

ALIGNMENT INSTRUCTIONS

Alignment is an exacting procedure and should be undertaken only when necessary. If alignment of AM and FM is required, either section may be done first.

REQUIRED EQUIPMENT

1. Signal generator with a frequency range of 450kHz to 1,650kHz; AM
2. Signal generator with a frequency range of 86.1MHz to 109.2MHz; FM
3. Vacuum tube voltmeter (AC-VTVM)
4. Sweep signal generator with a sweep range of at least 500kHz and center frequency of 10.7MHz with at least a 10.7MHz marker may be used. (For FM)
5. Sweep signal generator with a sweep range of at least 50kHz and center frequency of 455kHz with at least a 455kHz marker may be used. (For AM)
6. Oscilloscope with a wide range amplifier of approximately 100kHz.
7. Test loops, a coil of any size wire, one turn or more; AM
8. Vacuum tube voltmeter (DC-VTVM)
9. FM stereo signal generator.
10. Audio signal generator with a frequency range of 20Hz to 100kHz.
11. Frequency counter with a frequency range of approximately 100kHz.

The FM stereo section, however, should be done only if the FM monaural section is properly adjusted.

Notes:

Allow the set at least five minutes to warm up before attempting alignment. During alignment keep the signal generator output at the lowest level that will maintain a usable output from the set.

For the adjustment of stereo separation, the FM stereo generator output is usually 1,000 μ V. Incorrect grounding to the metal chassis may pick up an unwanted 10.7MHz signal from the final IF stage, which will cause a regenerative sweep response on the sweep curve and result in misalignment.

Therefore always connect a ground to point.

Ground connection of

signal generator:	Chassis ground
Generator modulation (AM):	30%, 400Hz
Generator modulation (FM):	75kHz, 1,000Hz
Generator modulation (FM stereo):	Ch. L. or Ch. R. 67.5kHz, 1,000Hz Mod.

AM IF ALIGNMENT

PROCEDURE NUMBER	SWEEP GENERATOR		DIAL POINTER SETTING	SELECTOR SETTING	SCOPE CONNECTION	ADJUSTMENT	REMARKS
	CONNECTION	FREQUENCY					
1	Connect AM sweep generator to the test point TP109 (VC104) and variable capacitor case (ground). Keep the input be closed as much as possible.	455 kHz (Central frequency of ceramic filter)	High end of Dial	Function selector switch (AM)	Oscilloscope is connected between TP105 and K105 (ground)	L107	Maximum response at 455 kHz Repeat 2 or 3 times

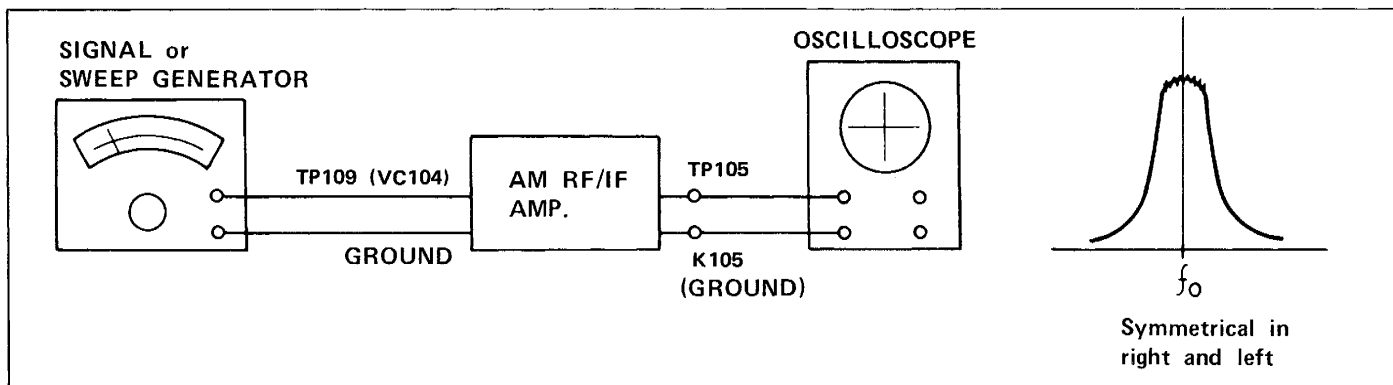


Figure 28 AM IF ALIGNMENT EQUIPMENT CONNECTIONS

AM RF ALIGNMENT

PROCEDURE NUMBER	TEST STAGE	SIGNAL GENERATOR		DIAL POINTER SETTING	SELECTOR SETTING	SCOPE CONNECTION	ADJUSTMENT	REMARKS
		CONNECTION	FREQUENCY					
1	Band Coverage	Connect AM signal generator to the loop antenna and place this assembly at near the bar antenna coil (L601) (Keep the input be closed as much as possible).	515 kHz Modulated	Low end of Dial	Function selector switch (AM)	Oscilloscope is connected between TP105 and K105 (ground)	Oscillator Coil L109.	Adjust for maximum output
2		Same as above	1650 kHz Modulated	High end of Dial	Same as above	Same as above	Oscillator Trimmer TC105.	Same as above. Repeat steps 1 and 2, 2 or 3 times.
3	Tracking	Same as above	1400 kHz Modulated	Tuning in 1400 kHz	Same as above	Same as step 1	Antenna Trimmer TC104	Same as step 1
4		Same as above	600 kHz Modulated	Tuning in 600 kHz	Same as above	Same as step 1	Antenna Coil L601	Same as above. Repeat steps 3 and 4, 2 or 3 times.

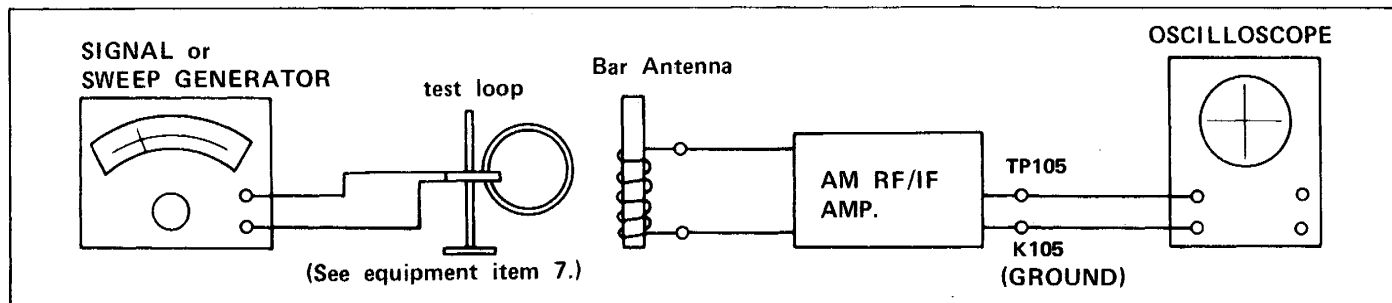


Figure 29 AM RF ALIGNMENT EQUIPMENT CONNECTIONS

FM ALIGNMENT

Set the FM Muting switch (SW101) at "OFF" position and MODE switch (SW403-A, B) at "mono" position.

PROCEDURE NUMBER	TEST STAGE	SIGNAL GENERATOR		DIAL POINTER SETTING	SELECTOR SETTING	METER CONNECTION	ADJUSTMENT	REMARKS
		CONNECTION	FREQUENCY					
1	IF (Note 1)	Connect FM sweep generator, through 6PF capacitor, to the test point TP101 . Connect the ground to the shield plate.	Central frequency of ceramic filter (as small as possible)	High end of Dial	Function selector switch (FM)	Connect an oscilloscope to the test points TP102 and TP106 (ground)	T101	Rotate the core of T101 to adjust so that the waveform becomes symmetrical in right and left and attains the maximum in height and width
2	Detector	Connect FM sweep generator, through 6PF capacitor, to the test point TP101 . Connect the ground to the shield plate.	Same as above	Same as above	Function selector switch (FM)	Connect an oscilloscope to the test points TP103 and TP107 (ground)	IFT101, IFT102	Rotate the core to adjust so that the waveform (Fig. 32) becomes symmetrical in the upper and lower with the best linearity.
3	Repeat the steps 1 and 2 until no further improvement can be made.							
4	Band Coverage	Connect FM signal generator to the FM antenna terminals. (Keep the input be closed as much as possible)	87.0 MHz (Modulated) as small as possible	Low end of Dial	Function selector switch (FM)	Connect VTVM to the test points TP103 and TP107 (ground)	Oscillator Coil L104	Adjust for maximum output
5		Same as above	109 MHz (Modulated) as small as possible	High end of Dial	Same as step 4	Same as above	Oscillator Trimmer TC103.	Same as above
6	Tracking	Same as above	90 MHz (Modulated) as small as possible	Tuning in 90 MHz	Same as step 4	Same as step 4	Antenna Coil L101 and RF Coil L102.	Same as step 4
7		Same as above	106 MHz (Modulated) as small as possible	Tuning in 106 MHz	Same as step 4	Same as step 4	Antenna Trimmer TC101 and RF Trimmer TC102.	Same as above
8	Repeat the steps 4 to 7 until no further improvement can be made.							

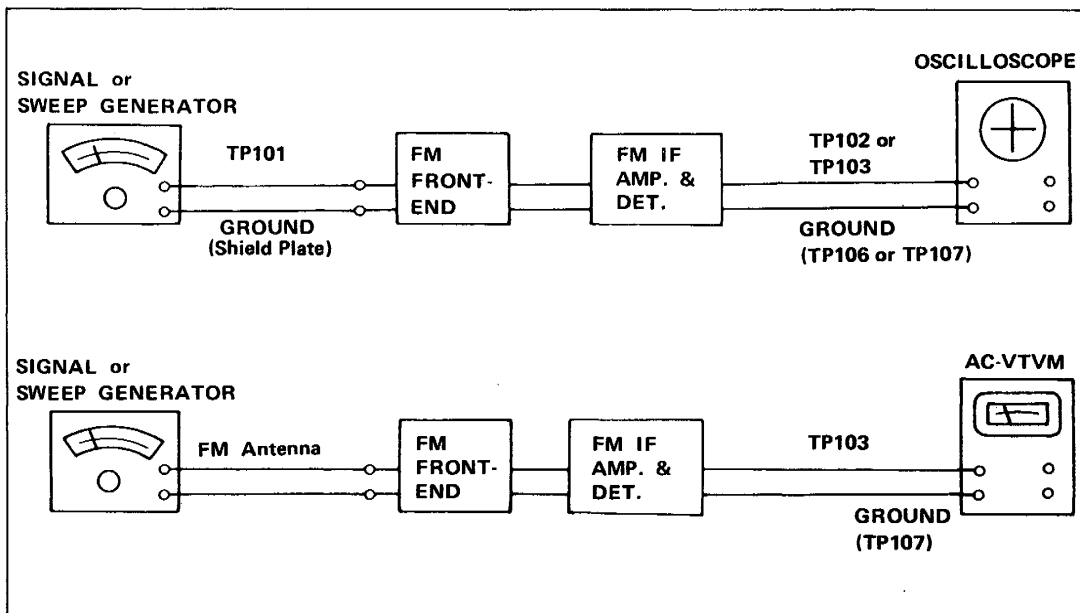


Figure 30 FM ALIGNMENT EQUIPMENT CONNECTIONS

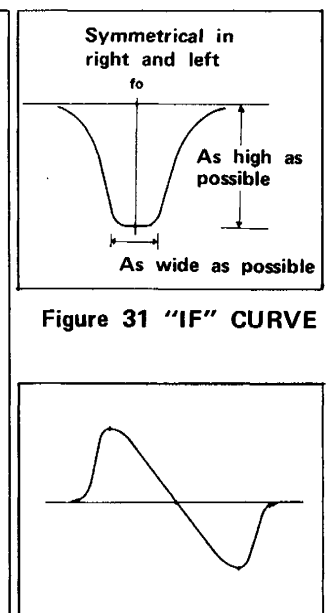


Figure 32 "S" CURVE

Note 1

The ceramic filter used for this set is available in 5 types and each of them is given a color indication to differentiate the central frequency from that of the others, as described below. In the actual use, be sure to make 2 ceramic filters of the same type (the same color) as a pair to put them in the set. When other ceramic filters than that given red color indication (with the central frequency of 10.7MHz) are used, note that with such filters the marker (10.7MHz) of FM sweep generator will be deviated; therefore be sure to cut off the marker at the time of the adjustment.

Central frequency (fo)	D	Black	10.64MHz $\pm$ 0.03MHz
	B	Blue	10.67MHz $\pm$ 0.03MHz
	A	Red	10.70MHz $\pm$ 0.03MHz
	C	Orange	10.73MHz $\pm$ 0.03MHz
	E	White	10.76MHz $\pm$ 0.03MHz

(2 ceramic filters to be used in a set as a pair should be of the same type (the same color).)

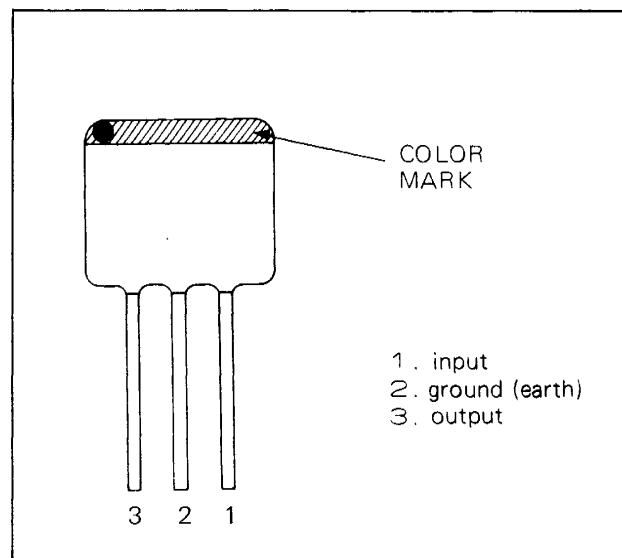


Figure 33

FM TUNING METER ADJUSTMENT AND DISTORTION FACTOR ADJUSTMENT

- 1) Set the frequency of FM signal generator to 98 MHz (75 kHz deviation, 1000 Hz), fully close the output and connect such signal to the FM antenna terminal of the set through a dummy resistor of 300 ohms.
- 2) Connect a dummy resistor of 8 ohms to the speaker terminal of the set.
- 3) Set the switches and controls of the set to the respective positions shown below and turn on the power switch. [Low cut filter—off, High cut filter—off, Bass, Treble and Balance controls—center (zero), Mode—mono, Loudness—off, Volume control—min., Tape-1 and-2—source, Function selector—FM, FM muting—off, air check—off]
- 4) Keeping the output of FM signal generator be fully closed (that is, with no signal given), rotate the core of IFT101 to have the pointer of the tuning meter indicate the center (around "98 MHz" position).
- 5) Adjust the output of FM signal generator to 60 dB, make the set be tuned to this signal so that the tuning meter indicates its center and under the condition, adjust the core of IFT102 so that the distortion will be minimized.
- 6) Fully close the output of FM signal generator and make sure the pointer of the tuning meter is at the center.
- 7) Repeat the steps 1) to 6) until the best point will be found.

ADJUSTMENT OF AIR CHECK CAL.

Produce 98 MHz, 60 dB FM mono signal (modulation 100%, 400 Hz) by a signal generator to apply it to the antenna of the unit and read the output voltage. Next, set AIR CHECK switch to "ON" position, then the

output voltage will vary. Adjust semi-fixed resistor VR103 so that the output voltage with AIR CHECK switch set to "ON" becomes about 60% (−4.4 dB), of that with AIR CHECK switch kept at "OFF".

FM STEREO V.C.O. AND SEPARATION ADJUSTMENT

- 1) Connect FM signal generator, through a dummy resistor of 300 ohms, to the FM antenna terminal of the set.
- 2) As to setting of the switches and controls, take the same procedures as in the step 3 "FM TUNING METER ADJUSTMENT AND DISTORTION FACTOR ADJUSTMENT".
- 3) Set the frequency of FM signal generator to 98 MHz (75 kHz deviation, 1000 Hz) and the output to 60 dB (mono signal), place the mode switch of the set to the position "stereo" and let the set be exactly tuned to such signal. (FM muting switch is kept to the position "muting off".)
- 4) Connect VTVM, through a 3.3 Meg. ohm resistor, to the test point TP104 and a frequency counter to the output terminal of VTVM. Make the test points TP103 and TP107 (ground) of the set be connected (shorted). Rotate the semi-fixed resistor VR101 to adjust so that the frequency counter will read $76.00 \text{ kHz} \pm 200 \text{ Hz}$. (After the adjustment; reset the connection between the test points TP103 and TP107).
- 5) Connect FM stereo modulator to FM signal generator. At

the time, the following should be set: modulation frequency; 1 kHz (L + R; 33.75 kHz, L - R; 33.75 kHz, pilot (19 kHz); 7.5 kHz deviation).

- 6) Set the frequency of FM signal generator to 98 MHz and its output to 60 dB, tune the set in such signal so that the tuning meter will indicate the position "center". Set the modulator so as to cause modulation only in L-channel and consider the output of L-channel as 0 dB. Connect VTVM to the output terminal (R-channel side only) of the set and adjust semi-fixed resistor VR102 so that the separation becomes maximum (the output leaking to the opposite channel is minimized.)

Take the above procedures also for checking the separation of R-channel, then, adjust so that the separations of both channels will be equal to each other.

[If without the frequency counter, proceed with the alignment as follows. While receiving a FM stereo signal, turn the VR101 until the P.L.L. will be locked (when it is locked, the stereo indicator will be lit). Then, reversely turn the VR101 halfway and fix it.]

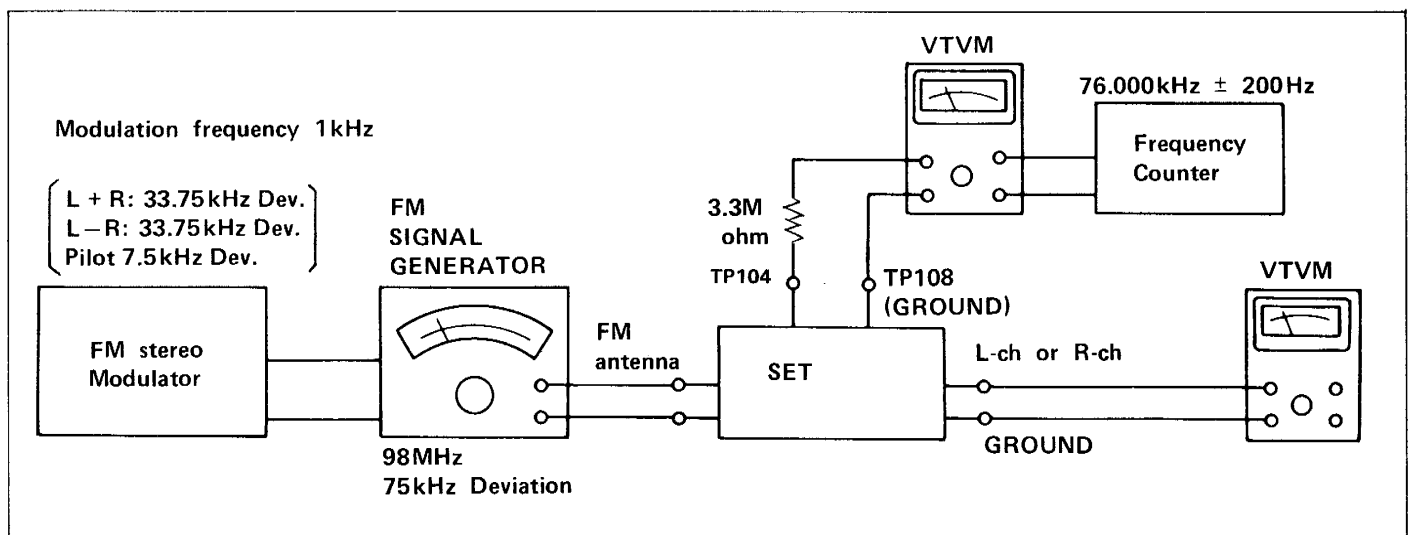
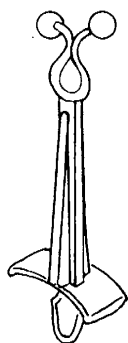


Figure 34 FM STEREO ALIGNMENT EQUIPMENT CONNECTIONS

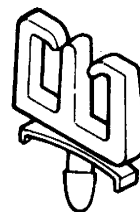
Figure 35 ALIGNMENT POINTS OF RF/IF P.W. BOARD



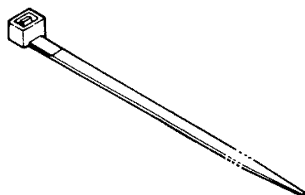
LHLDW1053AFZZ



LHLDW1062AFZZ

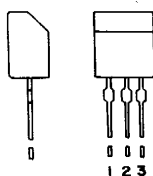


LHLDW1060AFZZ



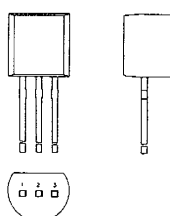
LHLDW1075AFZZ

Figure 36 WIRE HOLDER



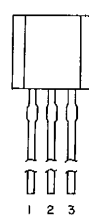
1. DRAIN
2. SOURCE
3. GATE

2SK55 (OLD TYPE)



1. GATE
2. SOURCE
3. DRAIN

2SK55
(NEW TYPE)



2SC380
2SC394
2SC784
2SC732

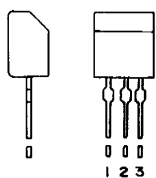
NEW TYPE



1. EMITTER
2. COLLECTOR
3. BASE

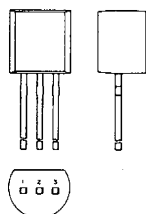
2SC732
2SC380
2SC394
2SC784
2SA842

OLD TYPE



1. EMITTER
2. COLLECTOR
3. BASE

2SC458 (OLD TYPE)



1. EMITTER
2. COLLECTOR
3. BASE

2SC458 (NEW TYPE)

Figure 37 TRANSISTOR TYPES

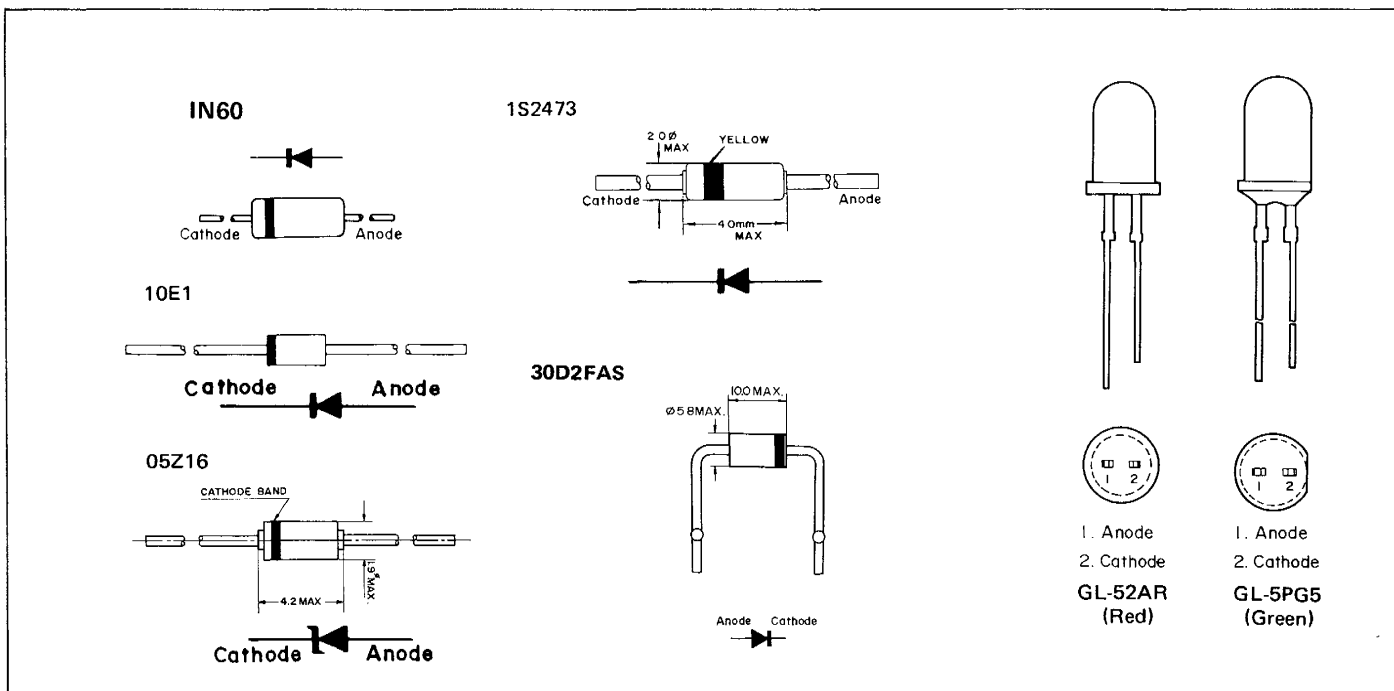


Figure 38 DIODE TYPES

REPLACEMENT OF POWER AMPLIFIER IC (IC501 and IC502)

To replace the Power amplifier IC with a new one, remove the two screws retaining the Power amplifier IC and its legs from the printed wiring board.

Then apply silicon grease to a new Power amplifier IC (at the surface which will be in contact with the heat sink) and insert its legs to the printed wiring board and tighten it by using the two screws. After that, solder the said legs to the printed wiring board.

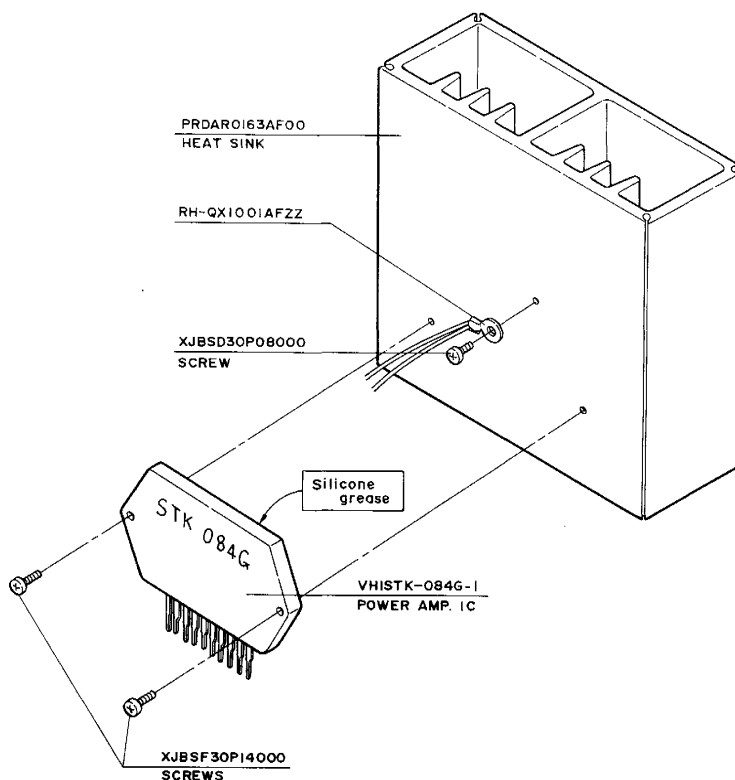


Figure 39 POWER AMPLIFIER IC REPLACEMENT

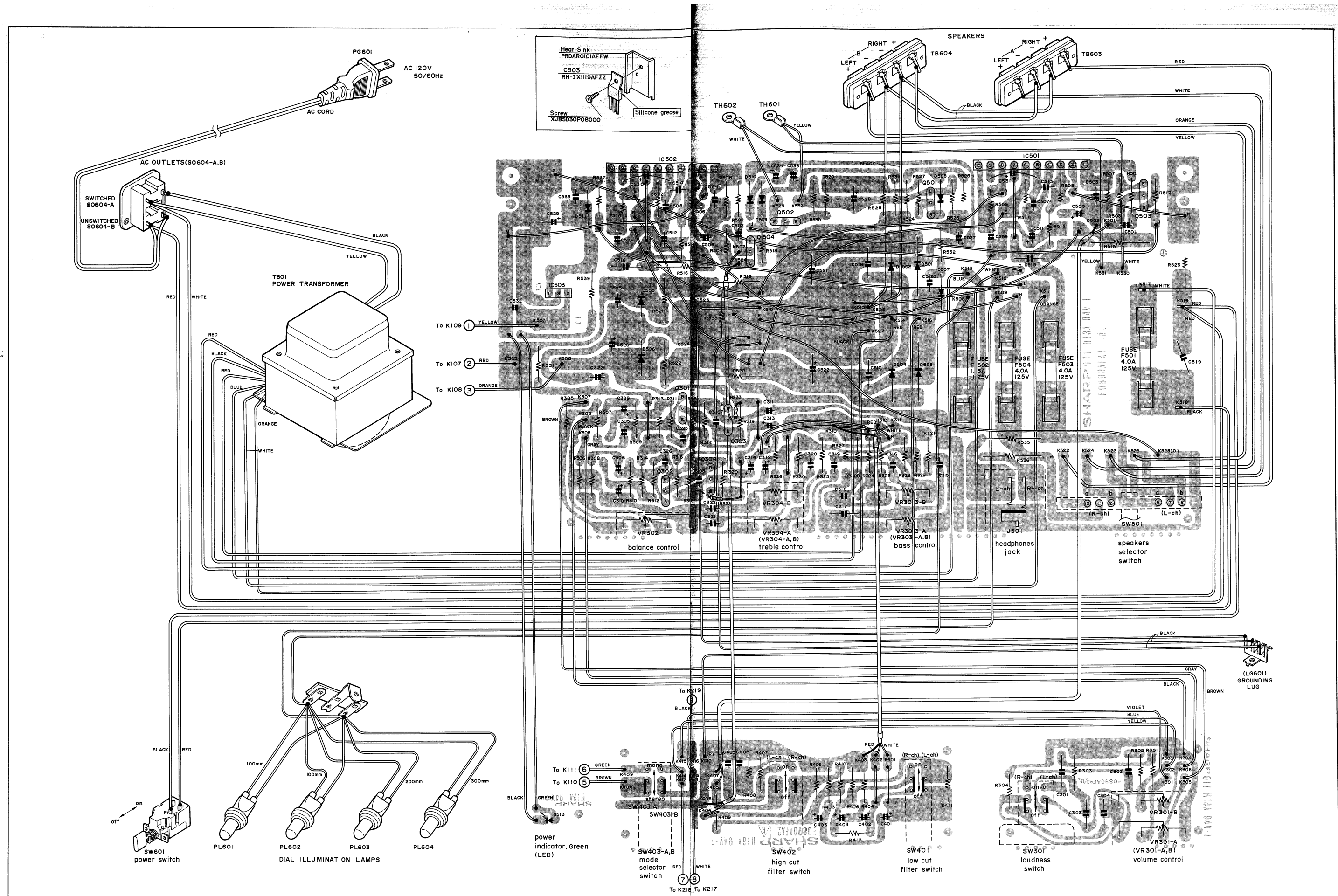


Figure 40 WIRING SIDE OF AUDIO AMPLIFIER CIRCUIT BOARD

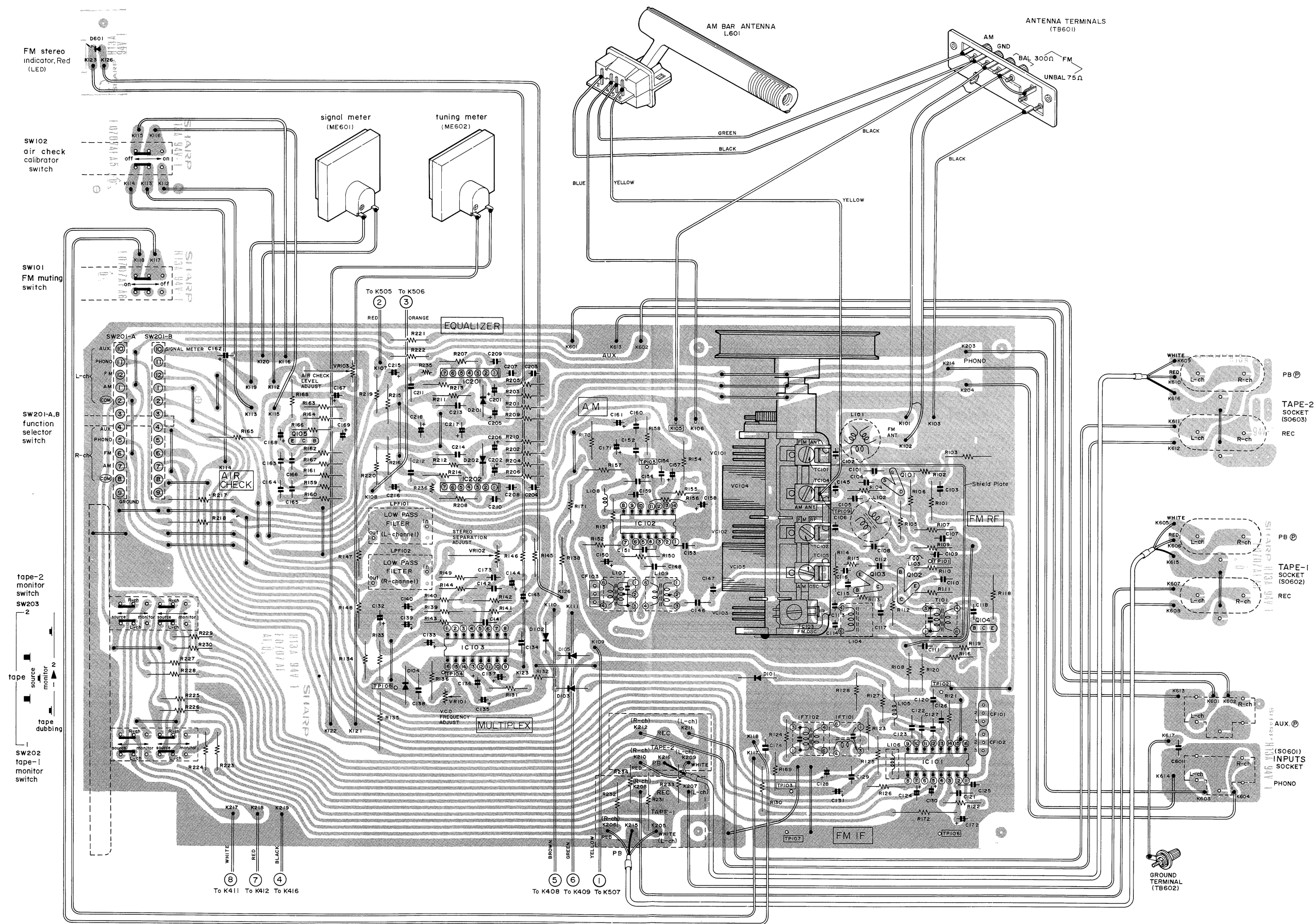
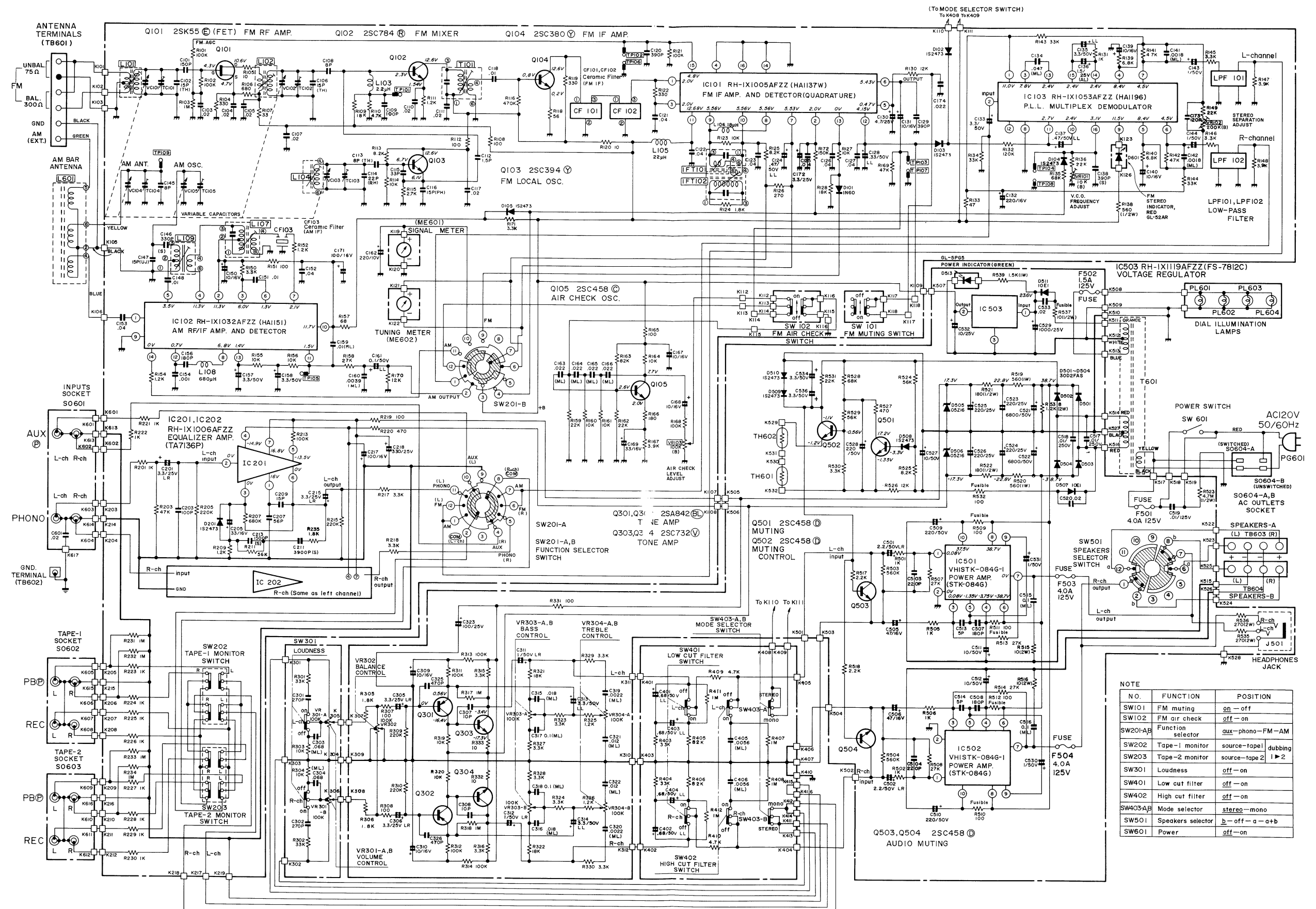


Figure 41 WIRING SIDE OF RF/IF/MULTIPLEX CIRCUIT BOARD



Specifications or wiring diagrams of this model are subject to change for the improvement without prior notice.

Figure 42 SCHEMATIC DIAGRAM

NOTES ON SCHEMATIC DIAGRAM

1. Frequency range: FM; 87.6 to 108 MHz
AM; 520 to 1620 kHz
2. IF: FM 10.7 MHz, AM 455 kHz
3. Resistor: To differentiate the units of resistors, such symbols as K and M are used: the symbol K means 1000Ω and the symbol M means $1000K\Omega$ and the resistor without any symbol is Ω -type resistor. Besides, the one with "Fusible" is a fuse type.
4. Capacitor: To indicate the unit of capacitor, a symbol P is used; this symbol P means pF and the unit of the capacitor without such symbol is μF . As to electrolytic capacitor, the expression "capacitance/withstand voltage" is used. The symbols LL and LR for the electrolytic capacitor respectively mean low-leak type.
5. SW101: It is FM muting (on/off) switch ("on" position).
6. SW102: It is Air check (off/on) switch ("off" position).
7. SW201-A, B: It is Function selector (aux./phone/FM/AM) switch ("aux." position).
8. SW202: It is Tape-1 (source/monitor) switch ("source" position).
- SW203: It is Tape-2 (source/monitor) switch ("source" position).
(Pushing the switches Tape-1 and Tape-2 at the same time allows the operator to make tape dubbing from the tape deck 1 to the tape deck 2.....in this case, monitoring is to be made through the tape deck 1.
9. SW301: It is Loudness (off/on) switch ("off" position).
10. SW401: It is Low cut filter (off/on) switch ("off" position).
11. SW402: It is High cut filter (off/on) switch ("off" position).
12. SW403-A, B: It is Mode selector (stereo/mono) switch ("stereo" position).
13. SW501: It is Speaker selector (b/off/a/a+b) switch ("b" position).
14. SW601: It is Power (on/off) switch ("off" position).
15. The indicated voltage in each section is the one measured by VTVM between such a section and the chassis with no signal being given.

RH-IX1119AFZZ

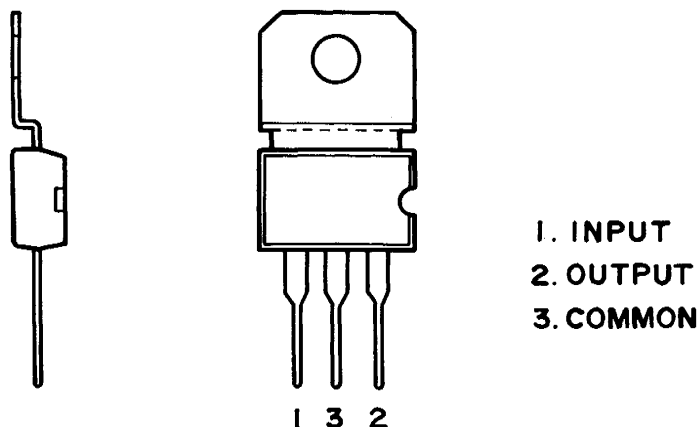


Figure 43 OUTER VIEW OF INTEGRATED CIRCUIT (IC503)

-34-

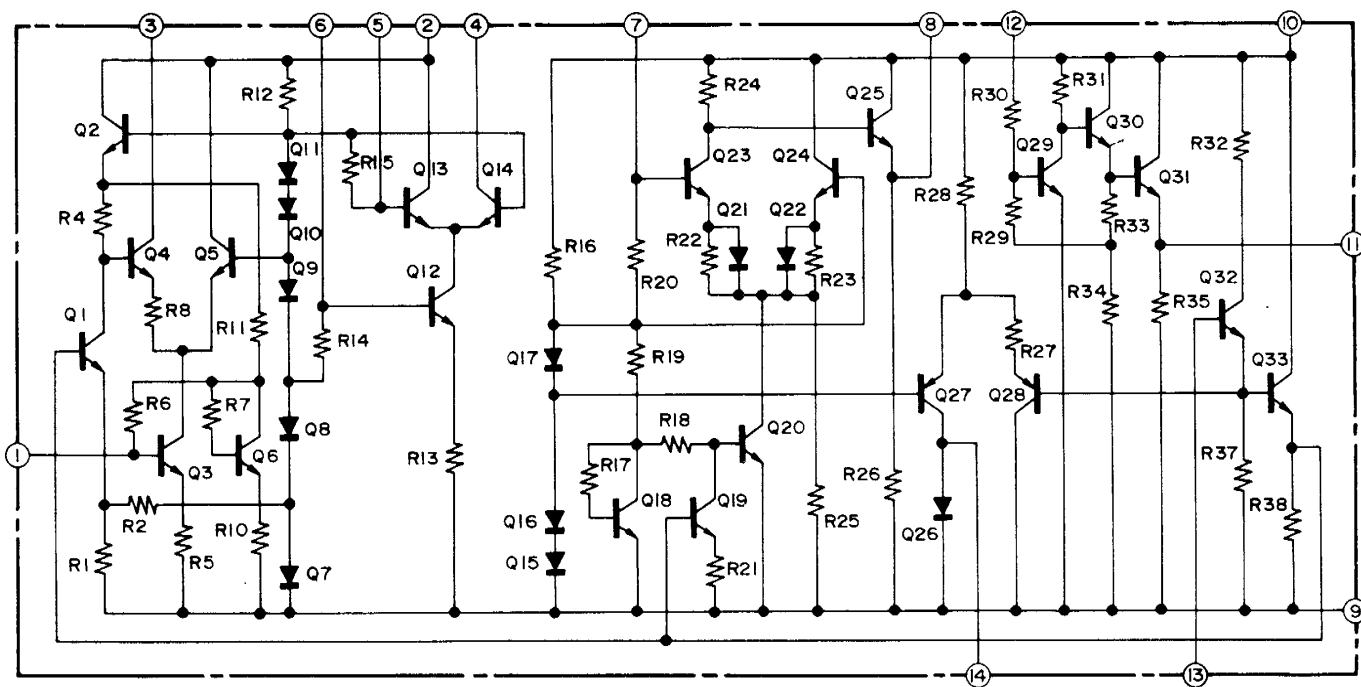
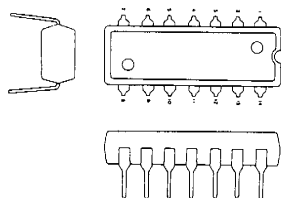
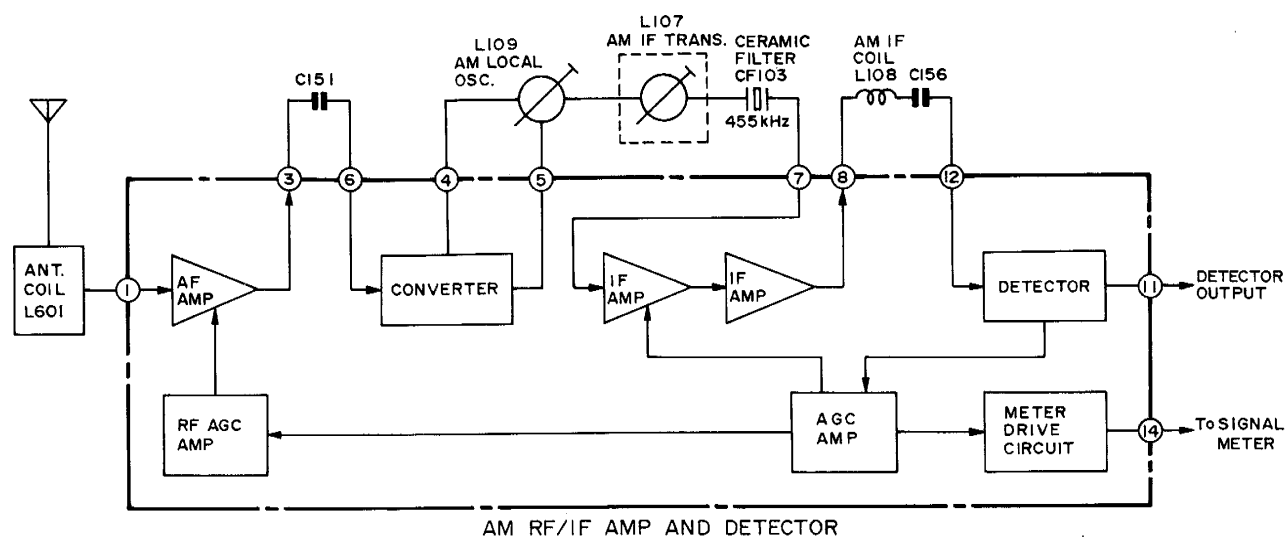


Figure 45 EQUIVALENT CIRCUIT OF INTEGRATED CIRCUIT (IC102)

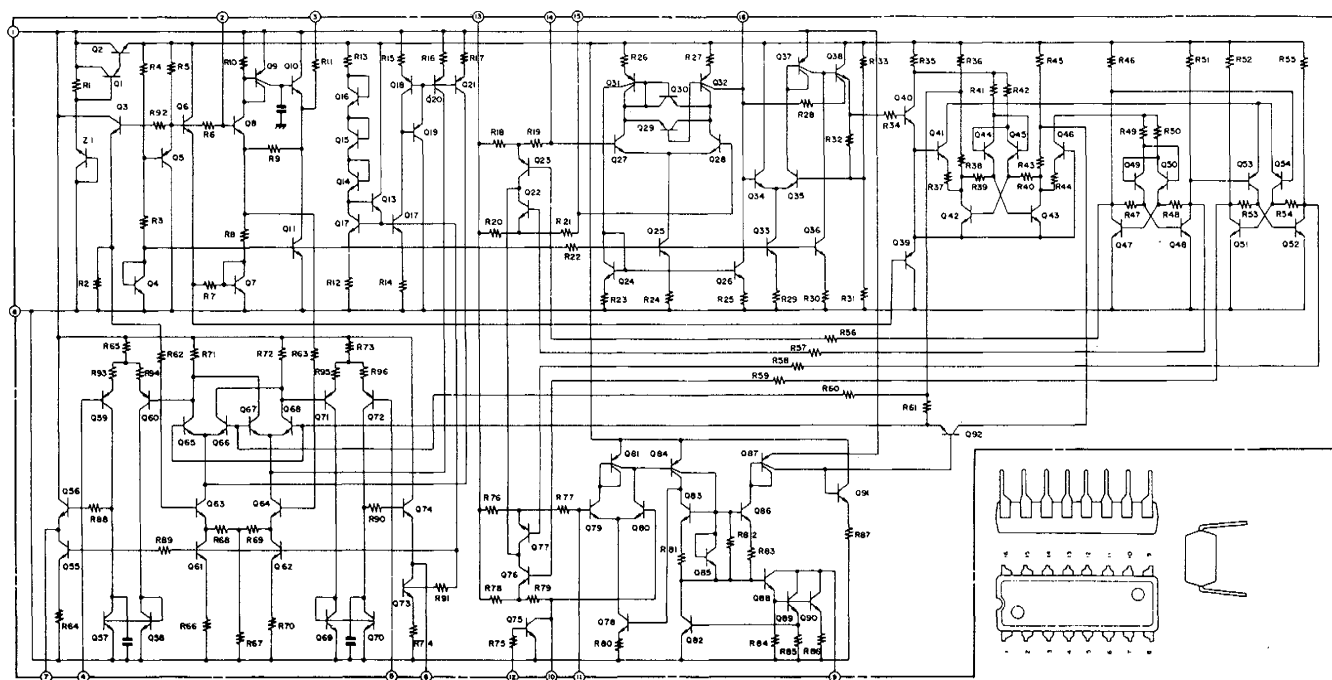
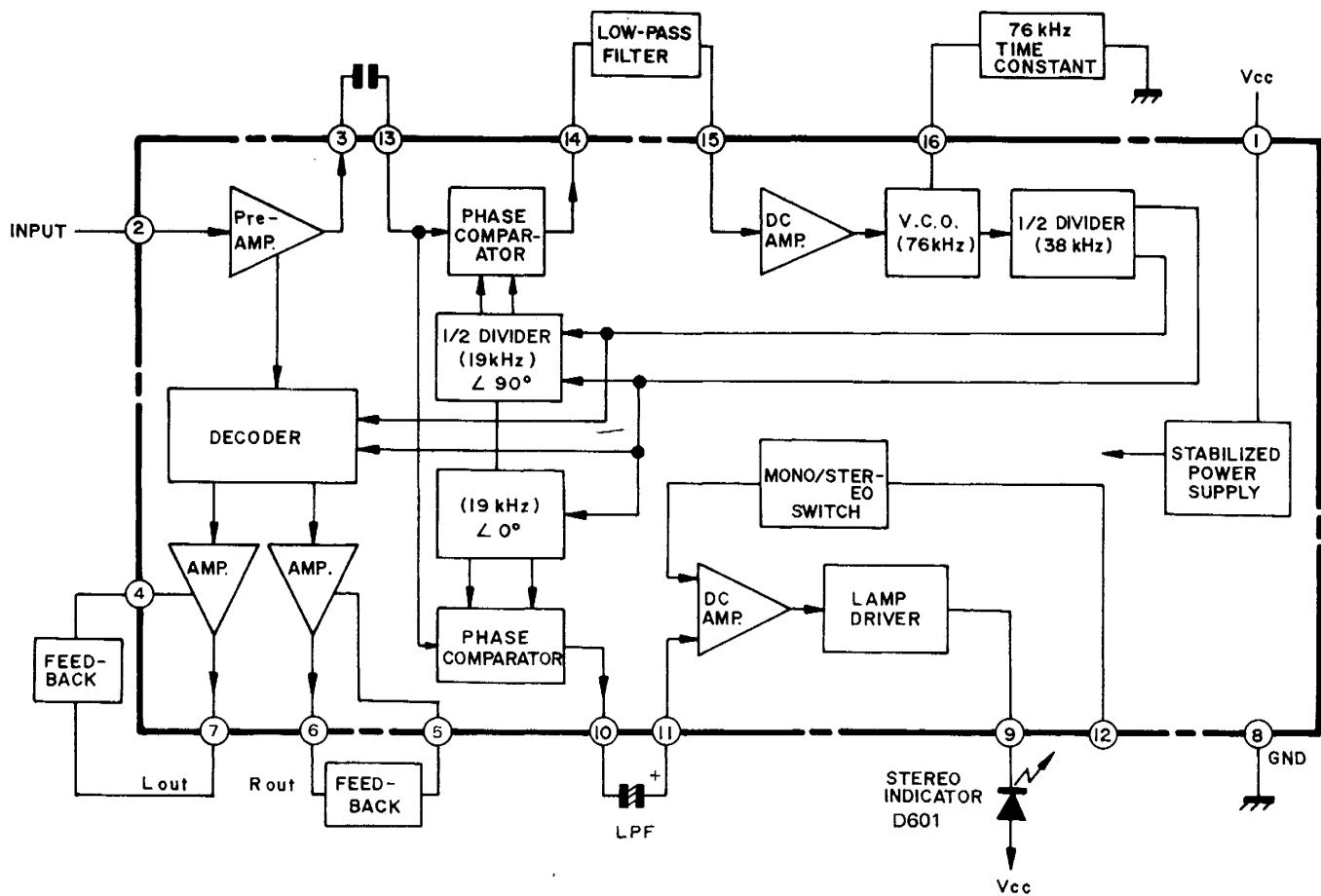


Figure 46 EQUIVALENT CIRCUIT OF INTEGRATED CIRCUIT (IC103)

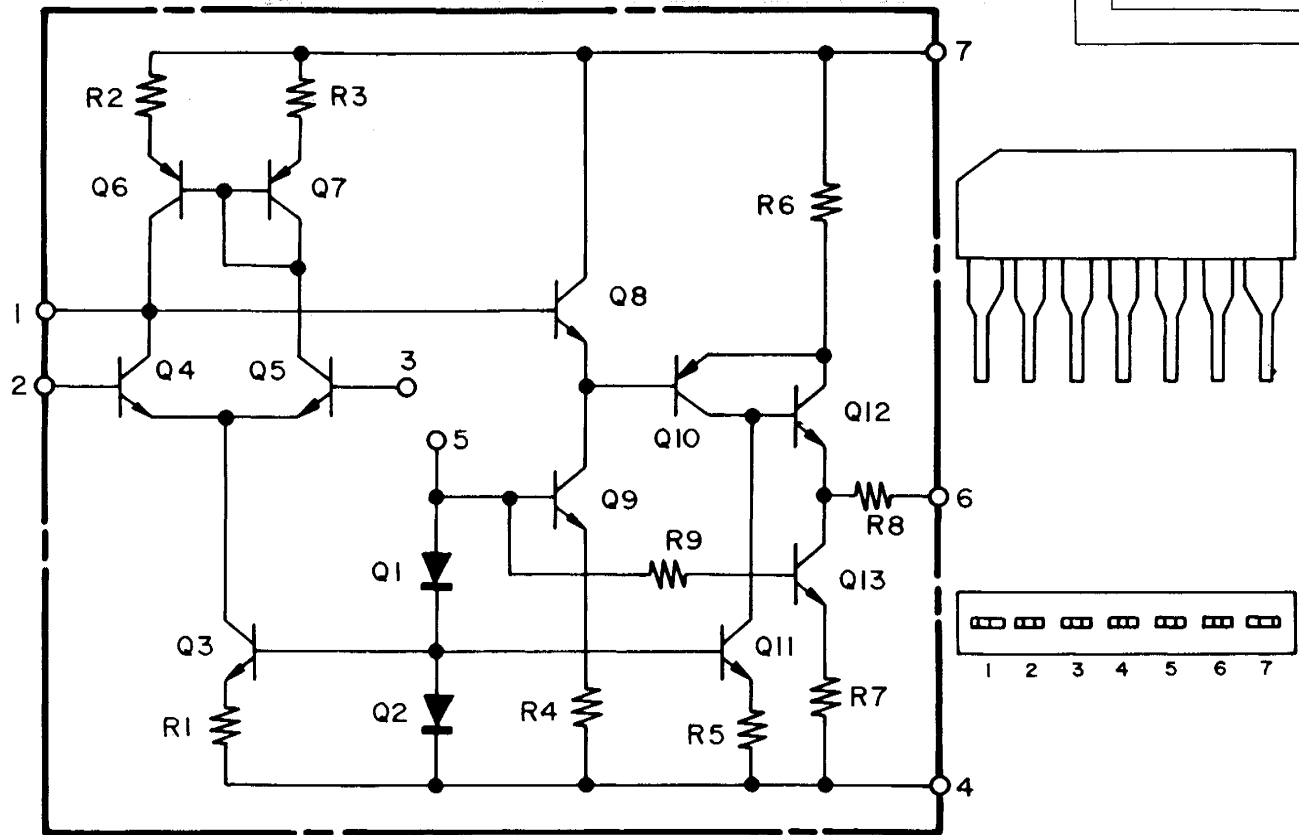


Figure 47 EQUIVALENT CIRCUIT OF INTEGRATED CIRCUIT (IC201 and IC202)

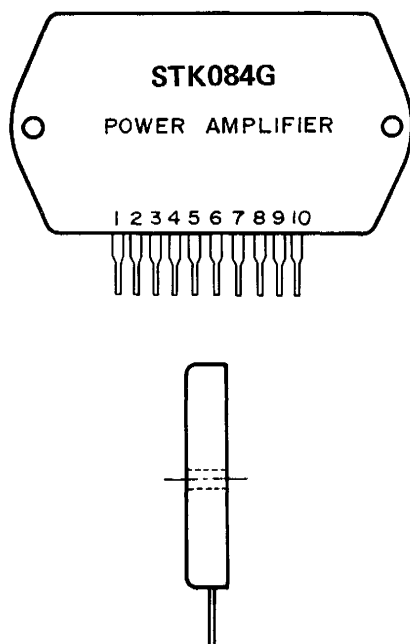


Figure 48 EQUIVALENT CIRCUIT OF INTEGRATED CIRCUIT (IC501 and IC502)

REPLACEMENT PARTS LIST

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly,
please furnish the following informations.

1. MODEL NUMBER
2. REF. NO.
3. PART NO.
4. DESCRIPTION

Order to : Parts Center

P.O. Box 664 Paramus, New Jersey 07652 (201) 262-9000

P.O. Box 20394 Long Beach, Calif. 90801 (213) 830-4470

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
INTEGRATED CIRCUITS							
IC101	RH-IX1005AFZZ	FM IF Amplifier and Detector (Quadrature) (HA1137W)	AT	D501, D502, D503, D504	30D2FAS	Power Rectifier (VHD30D2FAS/-1)	AE
IC102	RH-IX1032AFZZ	AM RF/IF Amplifier and Detector (HA1151)	AK	D505	05Z16	Zener Diode, Voltage Regulator, 15.4V ~ 17.1V (VHE05Z-16//1)	AC
IC103	RH-IX1053AFZZ	P.L.L. Multiplex Stereo Demodulator (HA1196)	AP	D506	05Z16	Zener Diode, Voltage Regulator, 15.4V ~ 17.1V (VHE05Z-16//1)	AC
IC201	RH-IX1006AFZZ	Equalizer Amplifier (TA7136P)	AH	D507	10E1	Power Rectifier (VHD10E1////1)	AC
IC202	RH-IX1006AFZZ	Equalizer Amplifier (TA7136P)	AH	D508	1S2473	Protection, Transistor Q501 (VHD1S2473//1)	AB
IC501	VHISTK-084G-1	Power Amplifier, Hybrid (STK-084G)	BA	D509, D510	1S2473	Protection, Transistors Q503 and Q504 (VHD1S2473//1)	AB
IC502	VHISTK-084G-1	Power Amplifier, Hybrid (STK-084G)	BA	D511	10E1	Power Rectifier (VHD10E1////1)	AC
IC503	RH-IX1119AFZZ	Voltage Regulator, +12V, Tuner Circuit (FS-7812C)	AH	D513	GL-5PG5	Light Emitting Diode, Power Indicator, Green (VHPGL-5PG5/1F)	AD
TRANSISTORS				D601	GL-52AR	Light Emitting Diode, FM Stereo Indicator, Red (VHPGL-52AR/1F)	AD
Q101	2SK55 (E)	FET (Field Effect Transistor), FM RF Amplifier (VS2SK55-E/-1)	AF	THERMISTORS			
Q102	2SC784 (R)	FM Mixer (VS2SC784-R/1F)	AD	TH601	RH-QX1001AFZZ	Positive Characteristic Thermistor	AF
Q103	2SC394 (Y)	FM Local Oscillation (VS2SC394-Y/-1)	AD	TH602	RH-QX1001AFZZ	Positive Characteristic Thermistor	AF
Q104	2SC380 (Y)	FM IF Amplifier (VS2SC380-Y/-1)	AD	COILS			
Q105	2SC458 (C)	Air Check Oscillation (VS2SC458-C/-1)	AC	L101	RCILA0407AFZZ	FM Antenna	AE
Q301, Q302	2SA842 (BL)	Tone Amplifier (VS2SA842-BL-1)	AC	L102	RCILR0335AFZZ	FM RF	AE
Q303, Q304	2SC732 (V)	Tone Amplifier (VS2SC732-V/1F)	AD	L103	VP-LH2R2M0000	AF Choke, 2.2μH	AB
Q501	2SC458 (D)	Muting Signal, Discharge, Protection Circuit (VS2SC458-D/-1)	AC	L104	RCILB0434AFZZ	FM Local Oscillation	AD
Q502	2SC458 (D)	Muting Control, Protection Circuit (VS2SC458-D/-1)	AC	L105	VP-LH220M0000	+B Choke, 22μH	AB
Q503, Q504	2SC458 (D)	Audio Muting, Protection Circuit (VS2SC458-D/-1)	AC	L106	RCILZ0052AFZZ	Phase Shifter, 18μH	AB
DIODES				L107	RCILI0236AFZZ	AM IF, 455kHz	AD
D101	1N60	Signal Meter, FM (VHD1N60////1)	AB	L108	VP-LH681M0000	AM IF, 680μH	AB
D102	1S2473	Switching (VHD1S2473//1)	AB	L109	RCILB0395AFZZ	AM Local Oscillation	AD
D103	1S2473	FM Muting (VHD1S2473//1)	AB	L601	RCILA0429AFZZ	AM Bar Antenna	AN
D104	1S2473	V.C.O. Frequency Killer (VHD1S2473//1)	AB	FILTERS			
D105	1S2473	Switching (VHD1S2473//1)	AB	CF101	RFILF0062AFZZ	FM IF, Ceramic	AF
D201	1S2473	Speed-up (VHD1S2473//1)	AB	CF102	RFILF0062AFZZ	FM IF, Ceramic	AF
D202	1S2473	Speed-up (VHD1S2473//1)	AB	CF103	RFILA0057AFZZ	AM IF, Ceramic	AD
				LPF101	RFILL0051AFZZ	Low Pass Filter	AH
				LPF102	RFILL0051AFZZ	Low Pass Filter	AH
				TRANSFORMERS			
				T101	RCILI0237AFZZ	FM IF	AE

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
IFT101	RCILD0058AFZZ	Quadrature (10.7MHz)	AD	C305,	VCEALU1EC335A	3.3MFD, 25V, +75 —10%,	AC
IFT102	RCILD0059AFZZ	Quadrature (10.7MHz)	AD	C306		Orange	
T601	RTRNP0601AFZZ	Power	BL	C309,	VCEAAU1CW106Y	10MFD, 16V, +50 —10%	AB
				C310			
CONTROLS				C311,	VCEALU1HC105M	1MFD, 50V, ±20%, Orange	AC
				C312			
VR101	RVR-B0052AGZZ	10K (B) ohm, V.C.O.	AE	C313,	VCEALU1HW335M	3.3MFD, 50V, ±20%, Yellow	AC
		Frequency Adjust		C314			
VR102	RVR-M0132AFZZ	200K (B) ohm, Stereo	AC	C323	VCEAAU1EW107Y	100MFD, 25V, +50 —10%	AC
		Separation Adjust		C401,	VCEALU1HW684M	.68MFD, 50V, ±20%, Yellow	AB
VR103	RVR-M0131AFZZ	100K (B) ohm, Air Check	AC	C402			
		Level Adjust		C403,	VCEALU1HW684M	.68MFD, 50V, ±20%, Yellow	AB
				C404			
VR301- A, B	RVR-B0159AFZZ	100K ohm, Volume Control	AN	C501,	VCEALU1HC225M	2.2MFD, 50V, ±20%, Orange	AC
VR302	RVR-Z0061AFZZ	100K ohm, Balance Control	AF	C502			
VR303- A, B	RVR-C0066AFZZ	100K ohm, Bass Control	AM	C505,	RC-EZ1038AFZZ	47MFD, 16V, +50 —10%	AB
				C506			
VR304- A, B	RVR-C0066AFZZ	100K ohm, Treble Control	AM	C509,	RC-EZS227AF1H	220MFD, 50V, ±20%, Small	AC
				C510	Type		
VC101,	RVC-C0050AFZZ	Variable Capacitors, Tuning with Trimmers TC101; FM Antenna Trimmer TC102; FM RF Trimmer TC103; FM Oscillation Trimmer TC104; AM Antenna Trimmer TC105; AM Oscillation Trimmer	AT	C511,	RC-EZ1013AFZZ	10MFD, 50V, +50 —10%	AB
VC102,				C512			
VC103,				C521,	RC-EZ1068AFZZ	6800MFD, 50V, +50 —10%	AR
VC104,				C522			
VC105,				C523,	VCEAAU1EW227Y	220MFD, 25V, +50 —10%	AC
TC101,				C524			
TC102,				C525,	VCEAAU1EW227Y	220MFD, 25V, +50 —10%	AC
TC103,				C526			
TC104,				C527	VCEAAU1HW106Y	10MFD, 50V, +50 —10%	AC
TC105				C528	VCEAAU1HW227Y	220MFD, 50V, +50 —10%	AD
				C529	VCEAAU1EW108Y	1000MFD, 25V, +50 —10%	AF
				C530,	VCEAAU1HW105Y	1MFD, 50V, +50 —10%	AB
				C531			
				C532	VCEAAU1EW106Y	10MFD, 25V, +50 —10%	AB
				C534	VCEAAU1HW335A	3.3MFD, 50V, +75 —10%	AB
				C536	VCEAAU1HW335A	3.3MFD, 50V, +75 —10%	AB
ELECTROLYTIC CAPACITORS				CAPACITORS			
C124	VCEALU1HW474M	.47MFD, 50V, ±20%, Yellow	AB	(Unless otherwise specified capacitors are 50V, +80 —20%, Ceramic Type.)			
C128	VCEALU1HW334M	.33MFD, 50V, ±20%, Yellow	AB				
C130	VCEAAU1EW475A	4.7MFD, 25V, +75 —10%	AB				
C131	VCEAAU1CW106Y	10MFD, 16V, +50 —10%	AB				
C132	VCEAAU1CW227Y	220MFD, 16V, +50 —10%	AC				
C133	VCEAAU1HW335A	3.3MFD, 50V, +75 —10%	AB				
C135	VCEALU1HW335M	3.3MFD, 50V, ±20%, Yellow	AC				
C136	VCAAAU1EB155K	1.5MFD, 25V, ±10%, Aluminum	AC	C101	VCCSPU1HL151K	150PF, 50V, ±10%, Ceramic	AA
C137	VCEALU1HW474M	.47MFD, 50V, ±20%, Yellow	AB	C102	VCCTPU1HH150J	15PF (TH), 50V, ±5%, Ceramic	AB
C139,	VCEAAU1CW106Y	10MFD, 16V, +50 —10%	AB	C103,			
C140				C104,	VCKZPU1HF203Z	.02MFD	AA
C143,	VCEAAU1HW105A	1MFD, 50V, +75 —10%	AB	C105			
C144				C106	VCCTPU1HH150J	15PF (TH), 50V, ±5%, Ceramic	AB
C150	VCEAAU1CW106Y	10MFD, 16V, +50 —10%	AB	C107	VCKZPU1HF203Z	.02MFD	AA
C157,	VCEAAU1HW335A	3.3MFD, 50V, +75 —10%	AB	C108	VCCSPU1HL8R0C	8PF, 50V, ±0.25PF, Ceramic	AA
C158				C109	VCCSPU1HL101K	100PF, 50V, ±10%, Ceramic	AA
C161	VCEALU1HW104M	.1MFD, 50V, ±20%, Yellow	AB	C110,	VCKZPU1HF203Z	.02MFD	AA
C162	VCEAAU1AW227Y	220MFD, 10V, +50 —10%	AC	C111			
C167	VCEAAU1CW106Y	10MFD, 16V, +50 —10%	AB	C112	VCCSPU1HL1R5C	1.5PF, 50V, ±0.25PF, Ceramic	AA
C168	VCEAAU1CW106Y	10MFD, 16V, +50 —10%	AB	C113	VCCTPU1HH8R0D	8PF (TH), 50V, ±0.5PF, Ceramic	AA
C169	VCEAAU1CW336Y	33MFD, 16V, +50 —10%	AC	C114	VCCRP1HH220J	22PF (RH), 50V, ±5%, Ceramic	**
C171	VCEAAU1CW107Y	100MFD, 16V, +50 —10%	AC				
C172	VCEAAU1EW335A	3.3MFD, 25V, +75 —10%	AB	C115	VCCSPU1HL330K	33PF, 50V, ±10%, Ceramic	AA
C201,	VCEALU1EC335A	3.3MFD, 25V, +75 —10%, Orange	AC	C116	VCCPPU1HH150J	15PF (PH), 50V, ±5%, Ceramic	AB
C202							
C205,	VCEAAU1CW336Y	33MFD, 16V, +50 —10%	AC	C117	VCKZPU1HF203Z	.02MFD	AA
C206				C118	VCKZPU1HF103P	.01MFD, 50V, +100 —0%, Ceramic	AE
C215,	VCEALU1EC335A	3.3 MFD, 25V, +75 —10%, Orange	AC				
C216				C120	VCCSPU1HL391K	390PF, 50V, ±10%, Ceramic	AB
C217	VCEAAU1CW107Y	100MFD, 16V, +50 —10%	AC				
C218	VCEAAU1EW337Y	330MFD, 25V, +50 —10%	AD				

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REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
C121, C122, C123, C125, C126, C127	VCKZPU1HF403Z	.04MFD	AB	C515, C516	VCQYSH1HM104K	.1MFD, 50V, ±10%, Mylar	AC
C129	VCCSPU1HL391K	390PF, 50V, ±10%, Ceramic	AB	C517, C518	VCKZPU2EE103Z	.01MFD, 250V, +80 —20%, Ceramic	**
C134	VCQYSH1HM473J	.047MFD, 50V, ±5%, Mylar	AB	C519	RC-KZ020UAFZZ	.01MFD, AC 125V, +80 —20%, Ceramic	AE
C138	VCQSMU1HS391J	390PF, 50V, ±5%, Styrol	AB	C520	VCKZPU1HF203Z	.02MFD	AA
C141	VCQYSH1HM182J	.0018MFD, 50V, ±5%, Mylar	AB	C533	VCKZPU1HF203Z	.02MFD	AA
C142	VCQYSH1HM182J	.0018MFD, 50V, ±5%, Mylar	AB	C601	VCKZPU1HF203Z	.02MFD	AA
C145	VCCSPU1HL8R0C	8PF, 50V, ±0.25PF, Ceramic	AA	RESISTORS (Unless otherwise specified resistors are 1/4W, ±5%, Carbon Type.)			
C146	VCQSMU1HS331J	330PF, 50V, ±5%, Styrol	AC				
C147	VCCUPU1HJ150K	15PF (UJ), 50V, ±10%, Ceramic	AB	R101	VRD-ST2EE104J	100K ohm	AA
C148	VCKZPU1HF103P	.01MFD, 50V, +100 —0%, Ceramic	AE	R102	VRD-ST2EE104J	100K ohm	
C151	VCKZPU1HF103P	.01MFD, 50V, +100 —0%, Ceramic	AE	R103	VRD-ST2EE105J	1Meg ohm	
C152	VCKZPU1HF403Z	.04MFD	AB	R104	VRD-ST2EE331J	330 ohm	
C153	VCKZPU1HF403Z	.04MFD	AB	R105	VRD-ST2EE100J	10 ohm	
C154	VCKZPU1HF102Z	.001MFD	AA	R106	VRD-ST2EE681J	680 ohm	
C156	VCCSPU1HL181K	180PF, 50V, ±10%, Ceramic	AA	R107	VRD-ST2EE330J	33 ohm	
C159	VCQYSH1HM103J	.01MFD, 50V, ±5%, Mylar	AC	R108	VRD-ST2EE101J	100 ohm	
C160	VCQYKU1HM392J	.0039MFD, 50V, ±5%, Mylar	AC	R109	VRD-ST2EE183J	18K ohm	
C163, C164, C165, C166	VCQYSH1HM223J	.022MFD, 50V, ±5%, Mylar	AC	R110	VRD-ST2EE472J	4.7K ohm	
C173	VCCSPU1HL121K	120PF, 50V, ±10%, Ceramic	AA	R111	VRD-ST2EE122J	1.2K ohm	
C174	VCKZPU1HF223Z	.022MFD	AA	R112	VRD-ST2EE101J	100 ohm	
C203, C204	VCCSPU1HL101K	100PF, 50V, ±10%, Ceramic	AA	R113	VRD-ST2EE822J	8.2K ohm	
C207, C208	VCCSPU1HL560J	56PF, 50V, ±5%, Ceramic	AA	R114	VRD-ST2EE103J	10K ohm	
C209, C210	VCCSPU1HL150K	15PF, 50V, ±10%, Ceramic	AA	R115	VRD-SU2EY272J	2.7K ohm	
C211, C212	VCQSMU1HS392J	3900PF, 50V, ±5%, Styrol	AC	R116	VRD-ST2EE474J	470K ohm	
C213, C214	VCQSMU1HS152J	1500PF, 50V, ±5%, Styrol	AB	R118	VRD-ST2EE560J	56 ohm	
C301, C302	VCKYAT1HB271K	270PF, 50V, ±10%, Ceramic	**	R119	VRD-ST2EE331J	330 ohm	
C303, C304	VCQYSH1HM683J	.068MFD, 50V, ±5%, Mylar	AC	R120	VRD-ST2EE100J	10 ohm	
C307, C308	VCCSPU1HL100K	10PF, 50V, ±10%, Ceramic	AA	R121	VRD-ST2EE104J	100K ohm	
C315, C316	VCQYSH1HM183J	.018MFD, 50V, ±5%, Mylar	AB	R122	VRD-ST2EE331J	330 ohm	
C317, C318	VCQYSH1HM104J	.1MFD, 50V, ±5%, Mylar	AC	R123	VRD-ST2EE103J	10K ohm	
C319, C320	VCQYSH1HM222J	.0022MFD, 50V, ±5%, Mylar	AB	R124	VRD-ST2EE182J	1.8K ohm	
C321, C322	VCQYSH1HM123J	.012MFD, 50V, ±5%, Mylar	AB	R125	VRD-ST2EE822J	8.2K ohm	
C325, C326	VCCSPU1HL471K	470PF, 50V, ±10%, Ceramic	AB	R126	VRD-ST2EE271J	270 ohm	
C405, C406	VCQYSH1HM562J	.0056MFD, 50V, ±5%, Mylar	AB	R127	VRD-ST2EE103J	10K ohm	
C503, C504	VCCSPU1HL221K	220PF, 50V, ±10%, Ceramic	AB	R128	VRD-ST2EE183J	18K ohm	
C507, C508	VCCSPU1HL181K	180PF, 50V, ±10%, Ceramic	AA	R130	VRD-ST2EE123J	12K ohm	
C513, C514	VCCSPU1HL5R0C	5PF, 50V, ±0.25PF, Ceramic	AA	R131	VRD-ST2EE102J	1K ohm	
				R132	VRD-ST2EE124J	120K ohm	
				R133	VRD-ST2EE470J	47 ohm	
				R134	VRD-ST2EE333J	33K ohm	
				R135	VRD-ST2EE683J	68K ohm	
				R136	VRD-ST2EE223J	22K ohm	
				R138	VRD-ST2HD561J	560 ohm, 1/2W, ±5%, Carbon	
				R139	VRD-ST2EE682J	6.8K ohm	
				R140	VRD-ST2EE682J	6.8K ohm	
				R141	VRD-ST2EE473J	47K ohm	
				R142	VRD-ST2EE473J	47K ohm	
				R143	VRD-ST2EE333J	33K ohm	
				R144	VRD-ST2EE333J	33K ohm	
				R145	VRD-ST2EE332J	3.3K ohm	
				R146	VRD-ST2EE332J	3.3K ohm	
				R147	VRD-ST2EE392J	3.9K ohm	
				R148	VRD-ST2EE392J	3.9K ohm	
				R149	VRD-ST2EE223J	22K ohm	
				R150	VRD-ST2EE332J	3.3K ohm	
				R151	VRD-ST2EE101J	100 ohm	
				R152	VRD-ST2EE122J	1.2K ohm	

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PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
R154	VRD-ST2EE122J	1.2K ohm		R311,	VRD-ST2EE104J	100K ohm	
R155	VRD-ST2EE103J	10K ohm		R312			
R156	VRD-ST2EE103J	10K ohm		R313,	VRD-ST2EE104J	100K ohm	
R157	VRD-ST2EE680J	68 ohm		R314			
R158	VRD-ST2EE273J	27K ohm		R315,	VRD-ST2EE332J	3.3K ohm	
R159	VRD-ST2EE223J	22K ohm		R316			
R160	VRD-ST2EE103J	10K ohm		R317,	VRD-ST2EE105J	1Meg ohm	
R161	VRD-ST2EE103J	10K ohm		R318			
R162	VRD-ST2EE223J	22K ohm		R319,	VRD-ST2EE103J	10K ohm	
R163	VRD-ST2EE823J	82K ohm		R320			
R164	VRD-ST2EE103J	10K ohm		R321,	VRD-ST2EE183J	18K ohm	
R165	VRD-ST2EE101J	100 ohm		R322			
R166	VRD-ST2EE181J	180 ohm		R323,	VRD-ST2EE332J	3.3K ohm	
R167	VRD-ST2EE392J	3.9K ohm		R324			
R168	VRD-ST2EE104J	100K ohm		R325,	VRD-ST2EE122J	1.2K ohm	
R169	VRD-ST2EE473J	47K ohm		R326			
R170	VRD-ST2EE123J	12K ohm		R327,	VRD-ST2EE332J	3.3K ohm	
R171	VRD-ST2EE332J	3.3K ohm		R328			
R172	VRD-ST2EE154J	150K ohm		R329,	VRD-ST2EE332J	3.3K ohm	
R201	VRD-ST2EE102J	1K ohm		R330			
R202	VRD-ST2EE102J	1K ohm		R331	VRD-ST2EE101J	100 ohm	
R203	VRD-ST2EE473J	47K ohm		R332,	VRD-SU2EE100J	10 ohm	
R204	VRD-ST2EE473J	47K ohm		R333			
R205	VRD-ST2EE224J	220K ohm		R403,	VRD-ST2EE333J	33K ohm	
R206	VRD-ST2EE224J	220K ohm		R404			
R207	VRD-ST2EE684J	680K ohm		R405,	VRD-ST2EE823J	82K ohm	
R208	VRD-ST2EE684J	680K ohm		R406			
R209	VRD-ST2EE122J	1.2K ohm		R407,	VRD-ST2EE105J	1Meg ohm	
R210	VRD-ST2EE122J	1.2K ohm		R408			
R211	VRD-ST2EE563J	56K ohm		R409,	VRD-ST2EE472J	4.7K ohm	
R212	VRD-ST2EE563J	56K ohm		R410			
R213	VRD-ST2EE104J	100K ohm		R411	VRD-ST2EE105J	1Meg ohm	
R214	VRD-ST2EE104J	100K ohm	AA	R412	VRD-ST2EE105J	1Meg ohm	
R215	VRD-ST2EE224J	220K ohm		R501,	VRD-ST2EE102J	1K ohm	
R216	VRD-ST2EE224J	220K ohm		R502			
R217	VRD-ST2EE332J	3.3K ohm		R503,	VRD-ST2EE564J	560K ohm	
R218	VRD-ST2EE332J	3.3K ohm		R504			
R219	VRD-ST2EE101J	100 ohm		R505,	VRD-ST2EE102J	1K ohm	
R220	VRD-ST2EE471J	470 ohm		R506			
R221	VRD-ST2EE102J	1K ohm		R507,	VRD-ST2EE273J	27K ohm	
R222	VRD-ST2EE102J	1K ohm		R508			
R223	VRD-ST2EE102J	1K ohm		R509,	VRG-ST2EA101J	100 ohm, 1/4W, $\pm 5\%$, Fusible	AB
R224	VRD-ST2EE102J	1K ohm		R510			
R225	VRD-ST2EE102J	1K ohm		R511,	VRG-ST2EA101J	100 ohm, 1/4W, $\pm 5\%$, Fusible	AB
R226	VRD-ST2EE102J	1K ohm		R512			
R227	VRD-ST2EE102J	1K ohm		R513,	VRD-ST2EE273J	27K ohm	AA
R228	VRD-ST2EE102J	1K ohm		R514			
R229	VRD-ST2EE102J	1K ohm		R515,	VRS-PT3DB100K	10 ohm, 2W, $\pm 10\%$, Oxide Film	AB
R230	VRD-ST2EE102J	1K ohm		R516			
R231	VRD-ST2EE105J	1Meg ohm		R517,	VRD-ST2EE222J	2.2K ohm	AA
R232	VRD-ST2EE105J	1Meg ohm		R518			
R233	VRD-ST2EE105J	1Meg ohm		R519,	VRS-PT3AB561K	560 ohm, 1W, $\pm 10\%$, Oxide Film	AB
R234	VRD-ST2EE105J	1Meg ohm		R520			
R235,				R521,	VRD-ST2HD181J	180 ohm, 1/2W, $\pm 5\%$, Carbon	
R236	VRD-SU2EY182J	1.8K ohm		R522			
R301,				R523	VRD-ST2HD475J	4.7Meg ohm, 1/2W, $\pm 5\%$, Carbon	
R302	VRD-ST2EE333J	33K ohm					
R303,				R524	VRD-ST2EE563J	56K ohm	
R304	VRD-ST2EE103J	10K ohm		R525	VRD-ST2EE822J	8.2K ohm	
R305,				R526	VRD-ST2EE123J	12K ohm	AA
R306	VRD-ST2EE182J	1.8K ohm		R527	VRD-ST2EE471J	470 ohm	
R307,				R528	VRD-ST2EE683J	68K ohm	
R308	VRD-ST2EE101J	100 ohm		R529	VRD-ST2EE563J	56K ohm	
R309,				R530	VRD-ST2EE332J	3.3K ohm	
R310	VRD-ST2EE224J	220K ohm		R531	VRD-ST2EE223J	22K ohm	

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
R532	VRG-ST2EA101J	100 ohm, 1/4W, $\pm 5\%$, Fusible	AB		JKNBP0070AFSB	Knob, Low Cut Filter Switch, High Cut Filter Switch, Mode Selector, Air Check Calibrator Switch and FM Muting Switch (SA-5206)	AG
R535, R536	VRS-PT3DB271K	270 ohm, 2W, $\pm 10\%$, Oxide Film	AB		JKNBP0078AFSA	Knob, Power Switch and Tape Monitor/Tape Dubbing Switch (SA-5202)	AE
R537	VRG-ST2HA100J	10 ohm, 1/2W, $\pm 5\%$, Fusible	AB		JKNBP0078AFSB	Knob, Power Switch and Tape Monitor/Tape Dubbing Switch (SA-5206)	AC
R538	VRS-PT3DB122K	1.2K ohm, 2W, $\pm 10\%$, Oxide Film	AC		LANGF0428AFZZ	Reinforcement Bracket, Chassis, Right and Left Sides (Refer to Fig. 1)	AB
R539	VRS-PT3AB152K	1.5K ohm, 1W, $\pm 10\%$, Oxide Film	AB		LANGQ0656AFSA	Rear Panel (SA-5202)	AS
MISCELLANEOUS					LANGQ0659AFSA	Rear Panel (SA-5206)	AS
	CPNLC3372AF01	Front Panel Assembly (SA-5202)	**		LANGQ0581AFZZ	Bracket, Power Switch (SW601) and Loudness Switch (SW301)	AB
	HPNLC3372AFSA	Front Panel	BC		LANGR0431AFZZ	Bracket, Power Transformer Retaining	AL
	PSPA10141AF00	Spacer, Fiber	AA		LANGR0432AFZZ	Bracket, Front Panel	AP
	PSPAS0066AF00	Spacer, Push Switch, Ellipse Type	AA		LANGT0675AFZZ	Bracket, Pulley } Refer to Fig. 2	AC
	PSPAS0008SGSA	Spacer, Loudness Switch, Round Type	AB		LANGT0676AFZZ	Bracket, Pulley }	AB
	GCOVA1076AFSC	Guide, Lever Switch	AC		LANGT0677AFZZ	Backplate, Dial Scale	AG
	CPNLC3373AF01	Front Panel Assembly (SA-5206)	**		LANGT0678AFZZ	Bracket, Heat Sink Retaining	AB
	HPNLC3373AFSA	Front Panel	BC		LANGT0679AFZZ	Bracket, Chassis, Center	AF
	PSPA10141AF00	Spacer, Fiber	AA		LANGT0680AFZZ	Bracket, Chassis, Left Side	AE
	PSPAS0066AF00	Spacer, Push Switch, Ellipse Type	AA		LANGT0681AFZZ	Bracket, Chassis, Right Side	AF
	PSPAS0008SGSB	Spacer, Loudness Switch, Round Type	AB		LANGT0699AF00	Bracket, Heat Sink	AC
	GCOVA1076AFSB	Guide, Lever Switch	AC		LBSHC0007AFZZ	Bushing, AC Cord	AB
	CSPRT0386AF08	Dial Cord Assembly	-		LHLDW1053AFZZ	Wire Holder	AB
	MSPRT0386AFFJ	Spring, Dial Cord	AB		LHLDW1060AFZZ	Wire Holder } Refer to Fig. 36	AA
	GCAB-5099AFSA	Cabinet	BD		LHLDW1062AFZZ	Wire Holder	AA
	GFTAU3073AFZZ	Bottom Plate, Cabinet	AT		LHLDW1075AFZZ	Wire Holder	AA
	GLEGP0002SG00	Leg	AD		LPLTP0055AFZZ	Acryl Plate, Dial Illumination (Part of PREFL0065AFZZ)	AR
	HDALM0189AFSA	Dial Scale	AM		LX-BZ0211AFZZ	Screw (Special), Acryl Plate of Dial Illumination Lamps	AA
	HSSND0240AFSA	Dial Pointer	AE		LX-BZ0220AFFF	Screw (Special), AC Outlets Socket	AA
	JKNBM0136AFSD	Knob, Loudness Switch (SA-5206)	AC		LX-HZ0053AFFD	Flange Head Screw, P.W. Board Retaining	-
	JKNBM0136AFSE	Knob, Loudness Switch (SA-5202)	AC		LX-HZ0064AFFF	Screw, Cabinet	-
	JKNBN0316AFSA	Knob, Volume Control (SA-5202)	AK		LX-LZ0055AF00	Push Rivet, LED Printed Wiring Board Retaining	-
	JKNBN0316AFSB	Knob, Volume Control (SA-5206)	AK		LX-NZ0118AFFD	Nut, Headphones Jack, Speakers Selector Switch Shaft and Function Selector Switch Shaft	AA
	JKNBN0317AFSA	Knob, Tuning Control (SA-5202)	AK		LX-NZ0125AFFW	Hexagon Head Cap Screw, Speakers Selector Switch Shaft and Function Selector Switch Shaft	AD
	JKNBN0317AFSB	Knob, Tuning Control (SA-5206)	AK		LX-WZ0019AFFW	Washer (Special), Ground Terminal	AA
	JKNBN0318AFSB	Knob, Function Selector and Speakers Selector (SA-5206)	AH		LX-WZ9056AFZZ	Washer (Special), Acryl Plate of Dial Illumination Lamps	AA
	JKNBN0330AFSA	Knob, Function Selector and Speakers Selector (SA-5202)	AH		NDRM-0150AFZZ	Drum, Dial Cord	AF
	JKNBN0338AFSA	Knob, Bass Control, Treble Control and Balance Control (SA-5202)	AH		NPLYB0001SEZZ	Pulley (Small), Dial Cord	AC
	JKNBN0367AFSA	Knob, Bass Control, Treble Control and Balance Control (SA-5206)	AH		NPLYB0001SGZZ	Pulley (Large), Dial Cord	AB
	JKNBP0070AFSA	Knob, Low Cut Filter Switch, High Cut Filter Switch, Mode Selector, Air Check Calibrator Switch and FM Muting Switch (SA-5202)	AH		NPLYC0101AFFD	Shaft, Pulley	AA

**: Price will be quoted upon receipt of order.

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
	NSFTD0181AFFW	Tuning Shaft with Flywheel	AN	SW102	QSW-B0051AFZZ	Switch, FM Air Check Calibrator	AK
	PCUSG0094AF00	Cushion (Rubber), RF/IF P.W. Board, 12mm x 12mm x 10t (Black)	AA	SW201-A, B	QSW-R0153AFZZ	Switch, Function Selector	AR
	PCOVU3112AF00	Cushion, Bracket of Front Panel, LED	AA	SW202, SW203	QSW-P0170AFZZ	Switch, Tape Monitor and Tape Dubbing	AN
	PCUSU0224AFZZ	Cushion, Meter	AA	SW301	QSW-P0139AFZZ	Switch, Loudness	AG
	PRDAR0101AFFW	Heat Sink, IC503	AB	SW401	QSW-B0051AFZZ	Switch, Low Cut Filter	AK
	PRDAR0163AF00	Heat Sink, Power Amplifier IC	AW	SW402	QSW-B0051AFZZ	Switch, High Cut Filter	AK
	PSHEF0114AF00	Felt, Lever Switch	AA	SW403-A, B	QSW-B0051AFZZ	Switch, Mode Selector	AK
	PREFL0065AFZZ	Dial Illumination Lamps Assembly (PL601 ~ PL604)	—	SW501	QSW-R0140AFZZ	Switch, Speakers Selector	AP
	PSLDM3106AFZZ	Shield Plate, FM Front-End	AB	SW601	QSW-P0129AFZZ	Switch, Power	AL
	PSPAI0128AF09	Spacer, LED (Light Emitting Diode), D601	AA	TB601	QTANN0453AFZZ	Antenna Terminals, FM (75 ohms and 300 ohms) and AM	AH
	PSPAI0129AF00	Spacer, LED (Light Emitting Diode), D513	AA	TB602	QTANN0150AFZZ	Ground Terminal	AD
	PSPAS0054AFZZ	Spacer, Headphones Jack	AC	TB603	QTANZ0454AFZZ	Speakers Terminals-A	AG
	QANTW0051AFZZ	FM Indoor Antenna, T-shape	AH	TB604	QTANZ0454AFZZ	Speakers Terminals-B	AG
PG601	QACCU0052AFZZ	AC Cord with Plug	AG	PL601, PL602	RLMPM0086AFZZ	Lamp, 8V 0.3A, 100 mm	AG
F501	QFS-B402AAGNB	Fuse, 4.0A 125V	AE	PL603	RLMPM0085AFZZ	Lamp, 8V 0.3A, 200 mm	AG
F502	QFS-B152AAFNB	Fuse, 1.5A 125V	AE				
F503	QFS-B402AAGNB	Fuse, 4.0A 125V	AE	PL604	RLMPM0081AFZZ	Lamp, 8V 0.3A, 300 mm	AG
F504	QFS-B402AAGNB	Fuse, 4.0A 125V	AE				
	QFSHD1001SEZZ	Holder, Fuse	AA	ME601	RMTRL0142AFSA	Meter, Signal Strength	AT
J501	QJAKJ0057AFZZ	Jack, Headphones	AG	ME602	RMTRL0134AFSA	Meter, Tuning (Center)	AV
	QLUGL0251AFZZ	Terminal Strip, 2-Lug, Dial Illumination Lamps (Part of PREFL0065AFZZ)	AC		SPAKA0506AFZZ	Packing Add. (Cushion)	AH
					SPAKC1286AFZZ	Packing Case (SA-5202)	AN
LG601	QLUGZ011AAFFZZ	Lug, Grounding	AA		SPAKC1288AFZZ	Packing Case (SA-5206)	AN
	QLUGZ016AAFFZZ	Jumper, AC Outlets Socket	AA		SPAKF0002AGZZ	Packing Material, AC Cord	AA
SO601	QSOCZ2472AFZZ	Socket, INPUTS (AUX (P) and PHONO)	AH		SSAKA0007SEZZ	Polyethylene Bag, Owner's Manual	AA
SO602	QSOCJ2264AFZZ	Socket, TAPE-1 (REC and PB (P))	AE		SSAKZ0055AFZZ	Dust Cover, Set	AG
SO603	QSOCJ2264AFZZ	Socket, TAPE-2 (REC and PB (P))	AE		TINSE0606AFZZ	Owner's Manual	AG
SO604-A, B	QSOCA0402SGZZ	Socket, AC Outlets	AF		TMAPC0564AFZZ	Schematic Diagram	—
SW101	QSW-B0051AFZZ	Switch, FM Muting	AK		XJBSF30P14000	Screw, Power Amplifier IC Retaining	—
					XWUSE84-08000	Shakeproof Lockwasher Internal Type, Ground Terminal	—

PWB ASSEMBLY (Not Replacement Item)

REF. NO.	PART NO.	DESCRIPTION	CODE
PWB-A1 PWB-A2 PWB-A3 PWB-A4	DUNTM0055AF02 (Combined Assembly)	Audio Amplifier Filter Circuit Volume Circuit Power Indicator, LED	**

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