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ISO

Set using ISO screws

STR-6065

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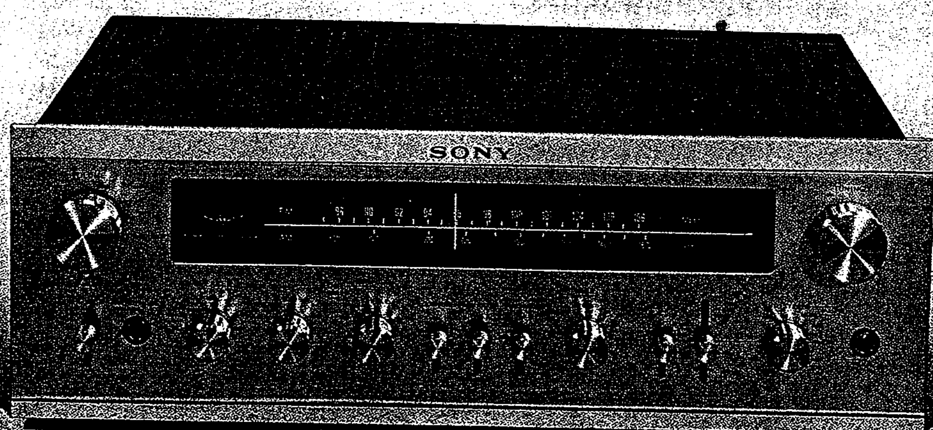


SONY

SERVICE MANUAL

TABLE OF CONTENTS

		Page
SECTION 1	**TECHNICAL DESCRIPTION**	
1-1.	Technical Specifications	1~2
1-2.	Detailed Circuit Analysis	2~12
1-3.	Level Diagram	10
1-4.	Block Diagram – Tuner Section –	11
1-5.	Block Diagram – Audio Section –	12
SECTION 2	**DISASSEMBLY AND REPLACEMENT PROCEDURES**	
2-1.	Tools Required	13
2-2.	Hardware Identification Guide	13
2-3.	Top Cover and Bottom Plate Removal	13
2-4.	Front Panel Removal	13~14
2-5.	Dial-Cord Restringing	14~16
2-6.	Mechanical Dial Calibration	16
2-7.	Dial Scale Replacement	16
2-8.	Pilot-Lamp Replacement	16~17
2-9.	Tuning Meter Replacement	17
2-10.	Control and Switch Replacement	17~18
2-11.	Rear Panel Removal	18
2-12.	Replacement of Components Secured to the Rear Panel by Rivets	18~19
2-13.	Power Transistor Replacement	19
2-14.	Chassis Layout	20
SECTION 3	**ALIGNMENT AND ADJUSTMENT PROCEDURES**	
3-1.	Fm I-f Strip Alignment	21~22
3-2.	Fm Discriminator Alignment	22~23
3-3.	Muting Adjustment	23
3-4.	Fm Frequency Coverage Alignment	23~24
3-5.	Fm Stereo Separation Adjustment	24~26
3-6.	A-m I-f Strip Alignment	27
3-7.	A-m Frequency Coverage and Tracking Adjustment	28~30
3-8.	Power-Amplifier Adjustment	30~31
SECTION 4	**REPACKING**	32
SECTION 5	**DIAGRAMS**	
	Mounting Diagrams	
	– Loudness Control Board –	33
	– Equalizer Board –	34
	– Fm Front End –	35
	– Fm I-f Board –	36~37
	– MPX Board –	38~39
	– A-m I-f Board –	40~41
	– Power Amplifier Board –	42~43
	– Power Supply Board –	44~45
	– Tone Control Board –	46
	Schematic Diagrams	
	– Tuner Section –	47~48
	– Audio Section –	49~50
SECTION 6	**EXPLODED VIEW**	51~54
SECTION 7	**ELECTRICAL PARTS LIST**	55~60

SECTION 1
TECHNICAL DESCRIPTION

1-1. TECHNICAL SPECIFICATIONS

Technical specifications for the STR-6065 are given in Table 1-1.

TABLE 1-1. TECHNICAL SPECIFICATIONS

Fm Tuner Section

Antenna:	300 ohms balanced
Tuning range:	87.5 to 108 MHz
Sensitivity:	2.2μV (IHF usable sensitivity) 1.8μV (S/N 30 dB) 1.4μV (S/N 20 dB)
S/N ratio:	70 dB
Capture ratio:	1.5 dB
Selectivity:	80 dB
Image rejection:	75 dB
I-f rejection:	90 dB
Spurious rejection:	100 dB
A-m suppression:	65 dB
Frequency response:	20 Hz to 15 kHz $\pm^{0.5}_{1}$ dB
Separation:	38 dB at 400 Hz
Harmonic distortion:	Mono: 0.2%, IHF (400 Hz 100% Mod) Stereo: 0.5%, IHF (400 Hz 100% Mod)
19 kHz, 38 kHz suppression:	60 dB
Muting level:	less than 5μV

A-m Tuner Section

Antenna:	Built-in ferrite bar antenna with external antenna terminal
Tuning range:	530 to 1,605 kHz
Sensitivity:	48 dB/m, built-in antenna (S/N: 20 dB) 20μV, external antenna
I-f rejection:	46 dB at 1,000 kHz
Harmonic distortion:	0.8%

Audio Amplifier Section

IHF Dynamic power:	255 watts (4Ω), both channels operating (constant power supply method) 220 watts (8Ω), both channels operating (constant power supply method)
Rated output: (RMS Power)	80 watts (4Ω) per channel, both channels operating 70 watts (8Ω) per channel, both channels operating 110 watts (4Ω), each channel 80 watts (8Ω), each channel
20 Hz ~ 20 kHz power:	50 watts (8Ω) both channels operating
Power band width:	15 Hz to 30 kHz, IHF
Harmonic distortion:	less than 0.2% at 1 kHz at rated output less than 0.05% at 1 W output
Frequency response:	PHONO : RIAA curve TAPE : 10 Hz to 60 kHz REC/PB : 10 Hz to 60 kHz
Input sensitivity and impedance:	PHONO-1, -2 : 1.8 mV 47 k AUX-1, -2 : 140 mV 100 k TAPE : 140 mV 100 k REC/PB : 140 mV 100 k
Signal output and output impedance:	REC OUT : 250 mV 10 k REC/PB : 30 mV 80 k CENTER CHANNEL OUT: 5 V 1 k
S/N ratio:	PHONO-1, -2 : greater than 70 dB (weighting network "B") TAPE AUX-1, -2 : greater than 90 dB (weighting network "A") REC/PB : greater than 90 dB (weighting network "A")
Tone controls:	BASS : 10 dB at 100 Hz TREBLE : 10 dB at 100 Hz
Filter:	HIGH : 6 dB/oct. above 5 kHz
Loudness:	50 Hz, +10 dB 10 kHz, +4 dB (with 30 dB attenuation)

General

Power consumption:	Approx. 120 watts (USA) Approx. 240 watts (CSA) Approx. 250 watts (General Export Model)
Power requirement:	100, 117, 220, 240 volts ac (General Export Model) 117V only (USA, CANADA Model)
Dimensions:	440 mm (width) x 148 mm (height) x 354.5 mm (depth) 17 5/16" (width) x 5 13/16" (height) x 13 15/16" (depth)
Net weight:	13.5 kg (29 lb 12 oz)
Shipping weight:	17.5 kg (38 lb 9 oz)

1-2. DETAILED CIRCUIT ANALYSIS

The following describes the function or operation of all stages and controls. The text sequence follows signal paths. Stages are listed by transistor reference designation at the left margin; major components are also listed in a similar manner. Refer to the block diagram on page 11 to 12 and the schematic diagram on page 47 to 50.

Stage/Control	*Function*
Fm Front End	
Balun B901	This transformer matches 300-ohm twin lead to the fm front-end's input stage and thereby couples the receiver signal to the front-end.
Passive rf circuit	A triple-tuned circuit is employed between the antenna and mixer transistor. This passive coupling circuit contains no active amplifiers, so it is perfectly linear and cannot produce distortion and overload components. Thus, the factors that contribute to spurious responses are eliminated ahead of the mixer.
Local oscillator Q102	Supplies heterodyning voltage to the mixer via L104. The circuit is a modified Hartley type with feedback applied to the emitter from the tap on L104.
AFC circuit D101, D102 C120	An automatic frequency control circuit is incorporated in the oscillator circuit to eliminate frequency drift and precise tuning difficulty. The principle of afc operation is as follows: When the tuner is correctly tuned, the intermediate frequency is 10.7 MHz and no dc correction voltage is produced by the ratio detector as shown in the "S" curve response of Fig. 1-1. Thus the voltage applied to diode D101 is determined solely by the positive fixed reverse bias voltage supplied by zener diode D102. Now assume that the local oscillator frequency changes by +Δf. This means that the new intermediate frequency is 10.7 +Δf. See Fig. 1-1. As the result a positive dc component is fed back to the anode of D101, decreasing the reverse voltage to it, and making D101's barrier capacitance increase. This decreases the local oscillator's frequency, since the series circuit composed of C120 and D101 is connected in parallel with the tank circuit of the local oscillator. Conversely, if the local oscillator frequency decreases a negative dc voltage is fed back to D101 increasing the local oscillator frequency.
Mixer Q101	RF signals and local oscillator voltage are heterodyned in the gate-source junction of mixer Q101 to produce 10.7 MHz i-f output signal.
IFT101	Transformer IFT101 and capacitor C106 and C107 form a 10.7 MHz "high-C" tuned circuit. This type of circuit has the advantage of reducing the higher order harmonics of 10.7 MHz which cause cross-modulation or spurious interference.

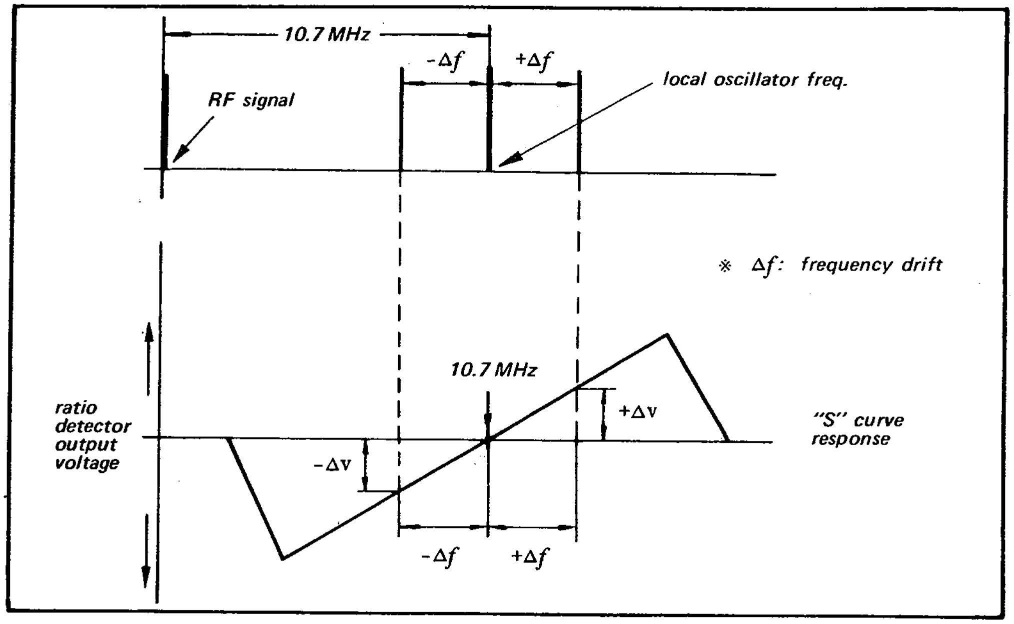


Fig. 1-1. Local oscillator's frequency drift and afc voltage relationship

Stage/Control	*Function*
I-f preamplifier Q103	The i-f signal coupled to the base of i-f preamplifier Q103 by the secondary winding of IFT101 is amplified to achieve a favorable signal-to-noise ratio before application to the filters in the i-f strip.

I-f Amplifier

Stage/Control	*Function*
I-f amplifiers Q201 to Q205 CF201 to CF206	These i-f stages are basically RC coupled amplifiers (except Q205) that provide essentially flat response. The selectivity of this section is determined by three pairs of filters CF201, CF202, CF203, CF204, CF205 and CF206 in the interstage coupling path. Each of these filters is a two-section ceramic filter that operates in the "trapped-energy" mode. The filters provide extremely-sharp skirt selectivity and flat response inside the passband. Thus, these filters largely determine overall tuner selectivity.
I-f output Q206	Signal at the base of Q206 has had all amplitude variations removed by the preceding limiters, and only selected signals have been passed by ceramic filters. Q206 provides power to drive the ratio detector.
Diode limiters D201 to D206 D209, D210	Limiting is accomplished by diode pairs, connected in parallel and poled in opposite directions. The diodes conduct when the signal across them exceeds the barrier potential of about 0.6 volts in the forward direction. Thus the signal is limited in both directions to 1.2 volts peak-to-peak. The diodes provide symmetrical limiting.
Ratio detector D207, D208	T201 and diodes D207 and D208 form a balanced ratio detector that transforms the frequency-modulated signal into an audio signal. Output appears across C216.
Muting circuit Q207, Q208, Q209, Q210 D211 to D213	The i-f signal is extracted from limiter diodes D203 and D204 to drive the muting circuit. The extracted i-f signal is amplified by Q208 (FET) enough to drive voltage doubler D212 and D211 through tuned transformer T202.

Stage/Control	Function
	D213 provides positive fixed bias for Q209 through D212 and D211. T202 determines the bandwidth necessary to control the muting circuit without generating interstation or detuning noise. The output of the voltage doubler is a positive dc voltage proportional to the carrier levels of weak rf signals. Q209 and Q210 form a switching circuit which is driven by the voltage doubler. Q209 is normally cut off, thus forcing Q210 into conduction. The collector of Q210 is connected to the gate of FET Q207 through MUTING switch S7. FET Q207 acts as an electronic switch which is inserted between the ratio detector and MPX decoder, and is controlled by the gate voltage applied. With the MUTING switch ON, fm signals of average strength keep Q209 saturated, thus cutting off Q210. This causes Q207 to conduct and maintain normal operation. Weak stations and interstation noise can not produce sufficient dc voltage at the base of Q209 to keep it conducting. As a result, Q209 cuts off. This saturates Q210 and cuts off Q207, accordingly, the audio output is muted. With the MUTING switch OFF, Q207 is kept conducting regardless of the strength of the fm signal by a positive bias voltage on its gate. RV201 adjusts the muting level.
Stereo-mono automatic-switching circuit Q210, D409	The collector of Q210 is also connected to the output terminal of the MPX decoder's frequency doubler through diode D409. This prevents noisy stereo reception by automatically switching the MPX decoder's operation into the monaural mode. This is needed because in fm stereo broadcasting, the S/N ratio of a demodulated stereo signal degrades much more rapidly than that of a mono signal when the input signal strength decreases. As Q210 is forced into conduction by weak stations, the frequency doubler's output is effectively grounded, stopping the operation of the stereo demodulator. Thus, automatic switching of stereo to mono according to the input rf signal level is achieved.
TUNING meter M901	Center-zero meter assures correct tuning by utilizing the ratio detector's characteristic.
R243, R244	As indicated in Fig. 1-1 no dc voltage is produced across connection of R243 and R244 and ground when the tuner is correctly tuned. Deflection on the meter indicates the amount of deviation from the carrier frequency received. Note that the meter will indicate zero-reading when the tuner is not receiving any off-the-air signal.
SCA trap L203, C220	The composite signal containing monaural information from 0 to 15 kHz, the 19 kHz pilot carrier, and the fm stereo signal at 38 kHz is fed to Q207 through trap L203-C220. This trap removes the unwanted SCA signal to the base of Q401 (the 19 kHz amplifier) through Q207.
MPX Decoder	
19 kHz amplifier Q401	This stage serves two functions. It extracts the 19 kHz pilot signal by means of a tuned circuit at its drain, and provides a low-impedance source of composite stereo signal (without pilot carrier) at its source. By using an FET, harmonics of the 19 kHz and 38 kHz components are reduced to a low level thereby causing less carrier leak or beat interferance.

Stage/Control	Function
Frequency doubler D401, D402	Signals developed at the drain of Q401 are transformer coupled to a fullwave rectifier consisting of D401 and D402. The output of this rectifier is not filtered, resulting in two positive pulses for each input cycle. Thus, the 19 kHz pilot-carrier frequency is effectively doubled by D401 and D402. However, the wave form is not sinusoidal at the base of Q402.
38 kHz amplifier Q402	The 38 kHz pulses produced by D401 and D402 are amplified by Q402. The tank circuit at the collector of Q402 is tuned to 38 kHz to restore these pulses to a sinusoidal waveform. This signal is transformer coupled to the bridge-type demodulator to supply sampling drive for the demodulator.
STEREO lamp circuit Q403	The STEREO indicator lights when the FUNCTION switch is set to the FM-AUTO STEREO position and an fm stereo signal is received. The emitter of Q402 is connected to the base of Q403 (which is normally cut off). The circuit operates as follows: When a composite stereo signal is applied to the multiplex decoder, the 38 kHz pulses produced at the output of the frequency doubler yield a higher average current flow through Q402. This forces Q403 into conduction, lighting STEREO indicator lamp PL904.
Multiplex demodulator D405, D406, D407, D408	The demodulator circuit employs four diodes in a balanced-bridge arrangement. This system has the advantage of cancelling residual rf components (38 kHz signal, some 19 kHz signal, and higher-order harmonics of these frequencies.) "L" and "R" components are developed at each side of the bridge as the result of demodulation, when the receiver is operated in the stereo mode. In the monaural mode, diodes D405 and D408 are forward biased by supply voltage through R405, the stereo indicator lamp, R412, R414, and R413, so these diodes merely act as small resistances. Under this condition, the monaural signal is applied to both "L" and "R" audio amplifiers.
De-emphasis capacitors C902, C903 C422, C423	These capacitors provide the roll off at high audio frequencies necessary to compensate for pre-emphasis at the transmitter. S10 should be set to the proper time constant. Specified de-emphasis time constant is 75 micro-seconds in USA and CANADA, 50 micro-seconds in Europe.
Audio preamplifier Q404, Q405 Q406, Q407	Demodulated L and R signals are amplified by these stages to the level required at the input of the following low pass filter.
Separation control RV401	The network that connects the emitters of Q404 and Q405 provides a form of negative feedback between left and right channels. Any residual "L" signal in the "R" channel (which is about 180° out of phase) is cancelled out by the "L" signal from the "L" channel. The same is true of residual "R" signal in the "L" channel. RV401 is therefore set for maximum separation.
LPF401	Filters out the unwanted higher-order harmonics of 19 kHz and 38 kHz leakage to obtain clear audio.

A-m Tuner

Stage/Control	Function
Local oscillator Q305	This stage supplies injection voltage to the mixer via L904. In this oscillator circuit feedback is applied to the emitter of Q305 from low-impedance winding on oscillator coil L304.

Stage/Control	Function
Mixer Q301	Incoming rf signals and local-oscillator voltage are heterodyned in the base-emitter junction of Q301 to produce the 455-kHz output. FET Q302 couples the output of the mixer to IFT-301. This stage functions as the gain control element of the AGC system as will be explained later. IFT301 is a transformer tuned to 455 kHz. It develops the i-f signal, and provides a path to ground through bypass capacitor C307 for the other heterodyne products. The low-impedance output winding of IFT301 provides link coupling to i-f amplifier Q303.
I-f amplifier Q303 CF301	This stage is basically an RC-coupled amplifier. The selectivity of the stage is determined by a double ceramic filter (CF301) in the interstage-coupling path. This filter provides extremely sharp skirt selectivity inside the passband.
I-f amplifier Q304	This circuit provides the power to drive diode detector D302.
Detector D302	The i-f signal from the secondary of IFT302 is rectified by diode D302. The i-f components of the output signal are filtered by C317, C318, and R320. The output appearing across R322, R323 is therefore clean audio.
TUNING METER	The a-m i-f signal is extracted from secondary winding of IFT302 to drive TUNING METER M901. The extracted i-f signal is rectified by D303. The negative dc component at the anode of D303 is filtered by C313, R336, and fed to the TUNING METER.
Agc circuit	The negative dc component at the anode of diode D302 is filtered by R325, C336, C335, R335, C322, R326, C323 and fed back to the gate of Q302 to control its gain. The time constants of the agc filter components remove audio variations from the agc voltage.

Preamplifier Section

Stage/Control	Function
Equalizer amplifier Q501, Q502, Q503	This direct-coupled three stage amplifier amplifies the small signal provided by the phono cartridge to the level required at the input of the following tone-control amplifier.
Bias circuit R503, R510	Dc bias voltage for Q501 is extracted from R510 in the emitter circuit of Q503 and fed back to the base of Q501 through R503 and R504. This dc negative feedback technique provides stable operation during temperature changes.
Equalization circuit R512, R513, R514 R506 C506, C507	RIAA equalization is achieved by the negative-feedback loop containing R512, R513, R514, R506, C506 and C507. Be sure to use replacement components with the exact same values.
Equalization circuit	R515 (R565) in the output circuit prevents interaction between left and right channel-equalization when the MODE switch is set to L+R.
MODE switch S4	In the STEREO position of S4, left and right input signals are routed to their respective amplifiers. In the L+R position, the left and right signals are added and the sum is then fed to both amplifier channels. A rotary switch having two sections is used to obtain L+R signal even if the MONITOR switch is set to the TAPE position.
VOLUME control RV601 (RV651)	The equalized phono signals and signals applied to the other input terminals are fed to the VOLUME control through the MONITOR and MODE switches. The level of the signal applied

Stage/Control	Function
	to the following tone-control amplifier is determined by the setting of RV601.
LOUDNESS switch S5	This switch and R601, R602, C601, C602 compensate for the characteristics of the human ear which vary according to the loudness of the sound being heard. When this switch is set to ON and the VOLUME control is set for 30 dB attenuation, the overall frequency response is increased 10 dB at 50 Hz and 4 dB at 10 kHz with reference to the level at 1 kHz.
Tone-control amplifier Q601, Q602 (Q651, Q652)	This direct-coupled two-stage amplifier has basically flat response, but it operates as a negative-feedback type tone-control circuit. The output generated at the collector circuit of Q602 is fed back to the emitter circuit of Q601 through the treble and bass tone-control network.
TREBLE control RV603 (RV653)	Increases or decreases the amount of negative feedback voltage determined by the setting of RV603. It has a range of 10 dB at 10 kHz.
BASS control RV604 (RV654)	Similar to the treble control except for filter components and frequency characteristics, however in this circuit the negative feedback voltage is determined by the setting of RV604. This has a range of 10 dB at 100 Hz.
HIGH FILTER S6	The high-cutoff filter (R616 and C613) eliminates unwanted high-frequency components (5 kHz and higher) from the input signal when this switch is ON.

Power Amplifier Section

Stage/Control	Function
Preamplifier Q701, Q702	Q701 and Q702 form a paraphase amplifier but signal output is extracted from the collector circuit of Q701. This circuit has a various advantages in direct coupling system. One is high stability despite temperature variations and another is high input impedance without reducing the amplifier's gain. The ac output appears across load resistor R707 (R757) in the collector circuit. An emitter decoupling dircuit is formed by the emitter-base resistance of Q702, C702 and R710 in the base circuit of Q702. This circuit forms a frequency-selective ac bypass circuit to reduce the amplifier's gain at very low frequencies. Common emitter-resistor R709 keeps the dc current flow constant in the Q701 and Q702, thus increasing dc stability.
Bias power supply D701, D702	These diodes are forward biased by positive and negative power supply voltage through RV701 and RV751. They provide a stabilized voltage to bias transistor Q701 that is used to make
Ac balance adj. RV701 (RV751)	the output terminal balance at zero dc through RV701.
Thermal compensation and noise suppressor D703	As all the stages are directly coupled, dc stability is required. The negative temperature co efficient of D703 provides thermal compensation for the following driver stage. It also acts as a noise suppressor to reduce the popping noise due to unbalanced current flow in the following stages when the power switch in turned off.
Driver Q703	Though this stage is a conventional flat amplifier, it determines the output voltage swings because the following stages are basically in the emitter-follower configuration. The ac load resistor for this stage is R716.

Stage/Control	*Function*
Dc bias adj. (idling current) Q704, RV702	Q704 is forced to conduct and operates as a small resistance providing the necessary forward bias on the two cascaded emitter-followers. RV702 controls the base bias of Q704, determining the impedance between the emitter and collector of Q704, and thereby controls the dc bias voltage for the following complementary circuit.
Thermal compensator for dc bias D901	The negative temperature coefficient of D901 provides thermal compensation for the complementary and power transistor circuits. D901 is attached to the power transistor's heat sink to detect temperature increases in the power transistors.
Complementary circuit Q708, Q709	These transistors operate as emitter-followers to provide the current swings demanded of the output stages and also provide the necessary phase inversion. Phase inversion is performed by using PNP and NPN type transistors.
Power transistor Q901, Q902	The output transistors (Q901 and Q902) are connected directly to a power supply of about ±50 V. Q902 supplies power to the load during the positive half cycle and Q901 operates during the negative half cycle. As all the stages are directly coupled and designed to obtain zero potential at the output terminal, the large coupling capacitor at the output (which may cause power loss or distortion at low frequencies) is eliminated.
Protection circuit	To protect overloaded power transistors from destruction, a new protection circuit is employed. In the event of a short circuit at the output terminals, the protection circuit holds the current in the power transistor low enough not to make it overheat and also limit the input drive signals. Fig. 1-2 shows a partial schematic diagram detailing the protection circuit. With reference to this diagram, the protection circuit operates as follows: Since the protection circuit is identical for positive going half cycles and negative going half cycles, only the positive going half cycle operation is described here. Q705 limits the positive-going half cycle of the drive voltage applied to the base of Q708 when power consumption at the Q902 collector exceeds the safety margin. Since power dissipation at the collector can be considered a function of collector voltage and current, the trigger signal for Q705 is taken from the collector and emitter. Base voltage is partly determined by the ratio of resistance of R722 and series resistance of R729, R738 and RL (load). Base voltage is also determined by the current flow in the R738 and the collector voltage of Q902. During normal operation, Q705 is cut off.

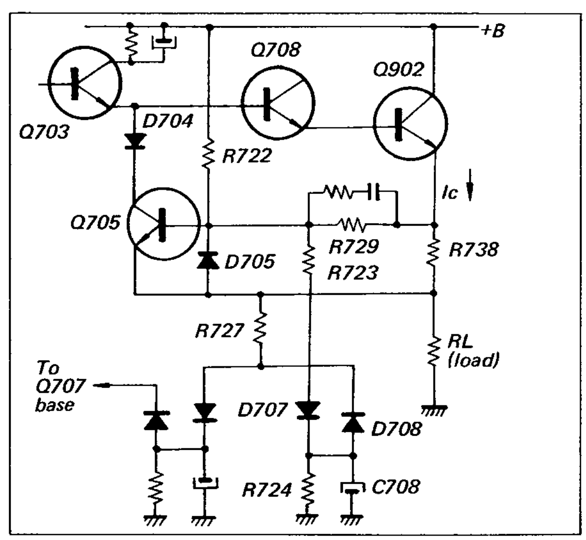


Fig. 1-2. Simplified protection circuit

Stage/Control	Function
	When excessive current flows in the power transistor or power dissipation at the collector of power transistor exceeds the specified value, Q705 turns on and limits the input drive voltage to the power transistor. Limiting operation is also actuated by the condition of the load. The base voltage of Q705 is determined by the resistances R738, R729, R723, R724 and RL (load). D707 is employed to stop reverse voltage from applied being during the negative going-half cycle. Q705 turns on limiting the input drive voltage to the power transistor when the load resistance decreases to some extent. Under reactive load conditions in class B amplifiers maximum current will flow when the voltage across the power transistor is maximum and this is the worst case for secondary breakdown. See Fig. 1-3. As all speakers have reactive properties, a protection circuit which oovers the reactive region is required. Fig. 1-3 shows the operating load lines for one half of a class B output stage under conditions of equal load impedance; in one case the load is purely resistive and in the other case purely reactive. It is apparent that the reactive load case could result in transistor failure. D708, C708 and R727 form a charging circuit charging the base voltage according to the reactive voltage induced in the load to obtain proper protection operation. C708 and R724 form a discharging circuit to detect reactive dc voltage. D705 protects Q705 from breakdown between base and emitter due to detected reactive voltage across C708. D704 protects Q705 from the breakdown between collector and emitter during the negative-going half cycle.
Q706	Q706 is inserted in the collector circuit of Q707 to increase protection sensitivity of negative going half-cycle.
Power supply rectifier D801	A full-wave bridge rectifier provides a positive and a negative dc power supply for the power amplifier.
Rectifier D802, D803	A half-wave rectifier D802 (D803) and ripple filter (C808, R801) supply well-filtered dc power to the complementary stage.
Ripple filter Q801 R804, R806 C810 Q802 R803, R805 C809	These components reduce the ripple voltage in the dc power supply for the pre-driver and driver stages of the power amplifier section to an extremely-low value. Q801 and Q802 serve as an electronic filter to supply well filtered dc of about ±54V to each stage.
Muting circuit for tone-amplifier and ripple filter Q803, Q804, Q805 R813, C814	This muting circuit prevents a loud "pop" (due to initial current flow to the tone amplifier) that might damage a delicate high-fidelity speaker system. R813 and C814 comprise an RC network with a long time

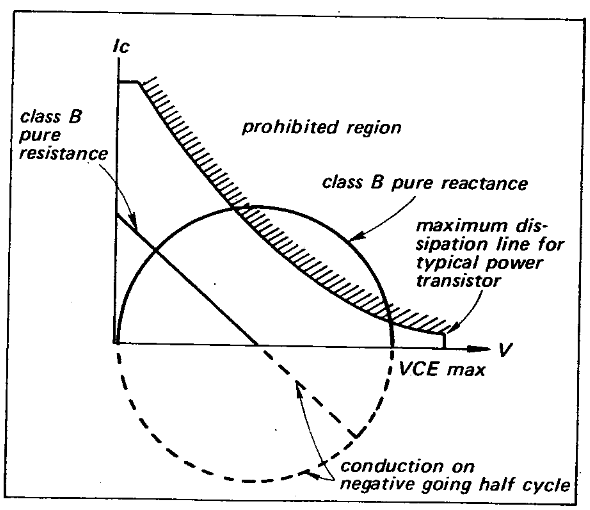
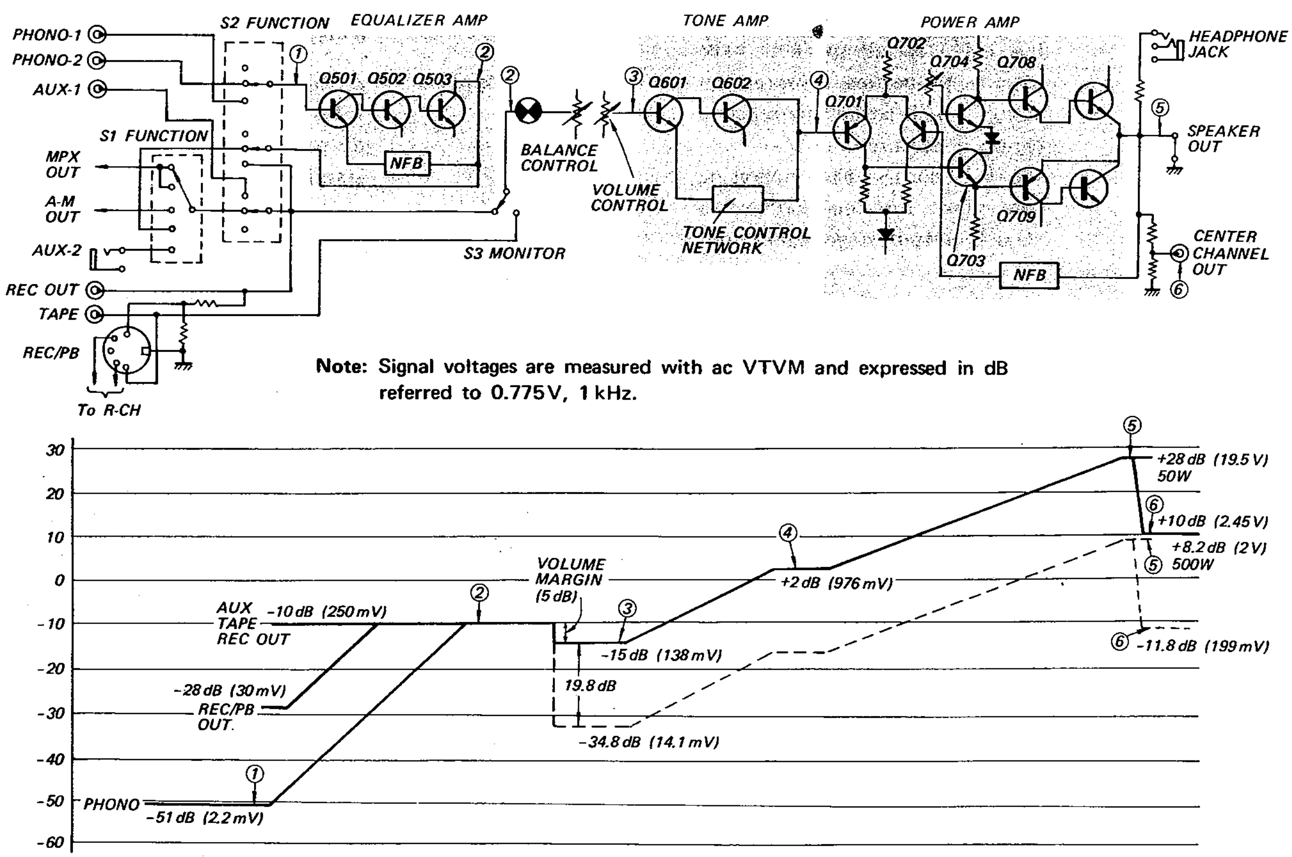


Fig. 1-3. Resistive and reactive load lines for class B output stage showing breakdown risk in purely resistive load

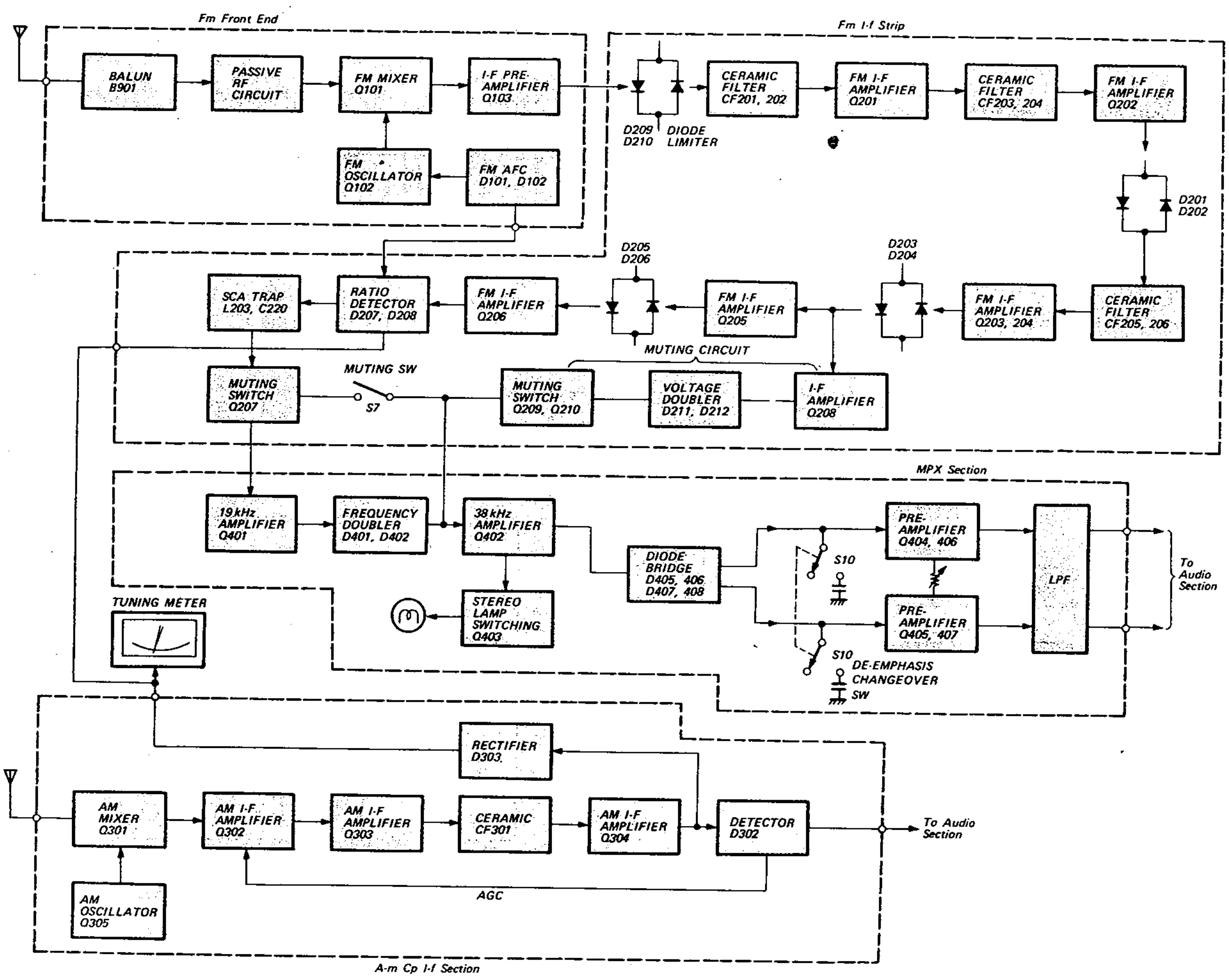
Stage/Control	Function
	constant. This eliminates poping because Q805 (ripple filter) is brought into conduction gradually. The base of Q805 is connected to the collector circuit of Q804 through R817, while the base of Q804 is directly coupled to the collector of Q803. At the instant of turning on the power switch S8, Q803 is off due to the long time constant of bias circuit, while Q804 is forward biased by R814 shorting the Q805's base to the ground. Thus, Q805 does not deliver power to the tone amplifier. As Q803 is gradually turned on due to its long time constant circuit Q804 is gradually cut off, turning on the Q805. As the result, Q805 is brought into conduction gradually.
Ripple filter Q805 R816, R817 C815, C816	Reduces the ripple voltages in the dc power supply for the tone amplifier stages to an extremely low value.
Power supply for tuner section D804 Q806 D805, D806	Dc output from the rectifier D804 is filtered by C819 and applied to series regulator Q806. Since the voltage at the base of Q806 is kept constant by means of zener diodes D805 and D806, the emitter voltage remains constant regardless of load or line-voltage variations. The regulated and well filtered output of 15V is supplied to the tuner section.

1-3. LEVEL DIAGRAM



Stage/Control	*Function*
Speaker protection circuit	In a direct-coupled power amplifier, some faults in the prior transistor appears as a large unbalanced dc voltage across output terminal. This might damage a delicate speaker system. Therefore, the STR-6065 incorporates speaker protection circuit which operates as follows (refer to Fig. 1-4): The output signal is extracted from the output terminal through a low-pass filter (R822 or R823, C823 and C824) and fed to the bridge rectifier (D807 ~ D810). Because of this filter, the voltage applied to the bridge rectifier is only the very-low frequency or dc component caused by transistor faults. When the rectified dc voltage becomes large enough, it starts the Hartley oscillator (Q807 and T801). The oscillator's output is rectified by D811 and thus provides trigger voltage for SCR D813. When the trigger voltage is applied to the gate of SCR, the SCR turns on and shorts the base voltage of Q708 to ground through R720, D814, the SCR,

1-4. BLOCK DIAGRAM – Tuner Section –



Stage/Control	*Function*
	and D815. The base voltage of Q709 is also shorted to ground through R719, D812, the SCR, and D816, stopping any current flow in the output stage and thus protecting the speaker system. Note that the direction of diodes D812, SCR D813 and D814 which also ensure the speaker protection operation even if one of the power transistors is damaged by accident, forcing the other power transistor into secondary break down.

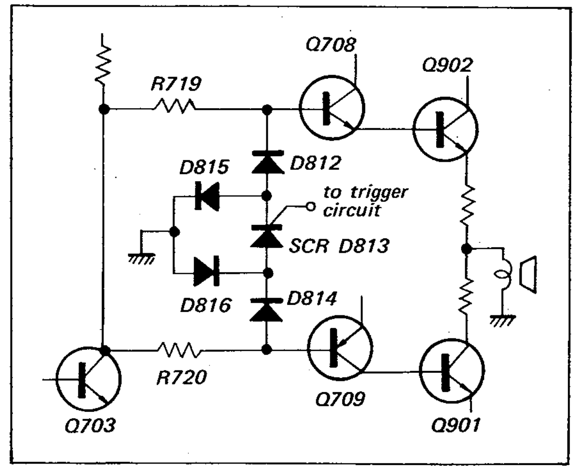
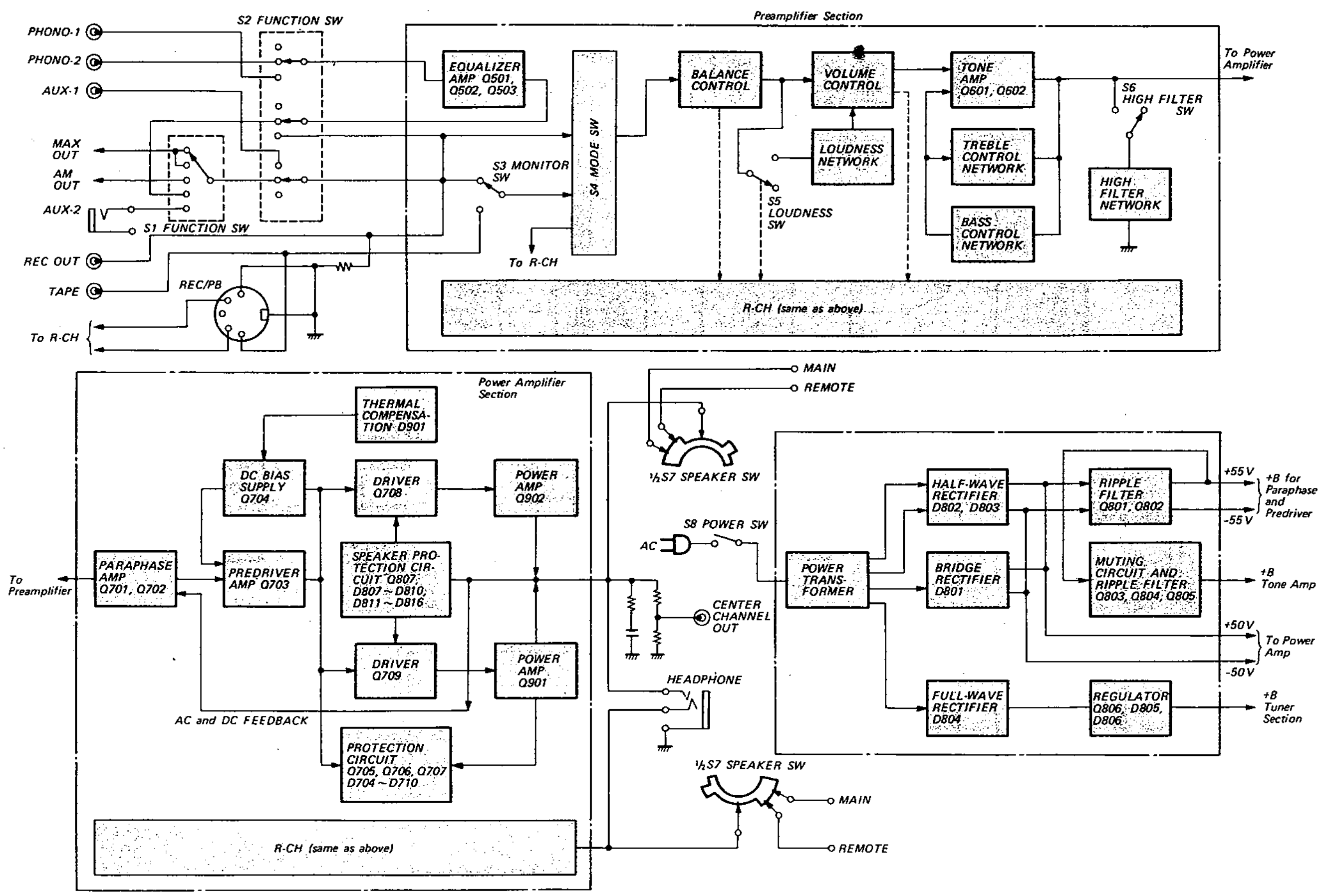


Fig. 1-4 Speaker protection circuit

1-5. BLOCK DIAGRAM – Audio Section –



SECTION 2
DISASSEMBLY AND REPLACEMENT PROCEDURES

WARNING

Unplug the ac power cord before starting any disassembly or replacement procedures.

2-1. TOOLS REQUIRED

The following tools are required to perform disassembly and replacement procedures on the STR-6065.

1. Screwdriver, Phillips-head
2. Screwdriver, 1/8" blade (3 mm)
3. Pliers, long-nose
4. Diagonal cutters
5. Wrench, adjustable
6. Tweezers
7. Electric drill
8. Drill bits
9. Prick punch
10. Hammer, ball-peen
11. Soldering iron, 40 ~ 150 watts
12. Solder, rosin core
13. Cement solvent
14. Cement, contact
15. Thermal compound or silicone grease

2-2. HARDWARE IDENTIFICATION GUIDE

The following chart will help you to decipher the hardware codes given in this service manual.

Note: All screws in the STR-6065 are manufactured to the specifications of the International Organization for Standardization (ISO). This means that the new and old screws are not interchangeable because ISO screws have a different number of threads per mm compared to the old ones. The ISO screws have an identification mark on their heads as shown in Fig. 2-1.

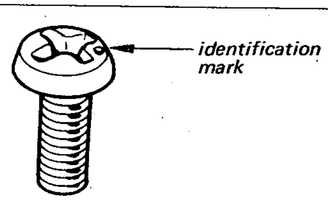


Fig. 2-1. ISO screw

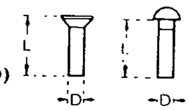
—— Hardware Nomenclature ——

- **P** – Pan Head Screw
- **PS** – Pan Head Screw with Spring Washer
- **K** – Flat Countersunk Head Screw
- **B** – Binding Head Screw
- **RK** – Oval Countersunk Head Screw
- **T** – Truss Head Screw
- **R** – Round Head Screw
- **F** – Flat Fillister Head Screw
- **SC** – Set Screw
- **E** – Retaining Ring (E Washer)

W – Washer
SW – Spring Washer
LW – Lock Washer
N – Nut

– Example –

⊕ P 3x10
- ⊕ – Type of Slot
- P – Type of Head
- 3 – Diameter in mm (D)
- 10 – Length in mm (L)



2-3. TOP COVER AND BOTTOM PLATE REMOVAL

1. Remove the two machine screws at each side of the receiver, and lift off the top cover.
2. Remove the ten self-tapping screws (⊕B 3x6) at the bottom of the receiver as shown in Fig. 2-2. This frees the bottom plate.

2-4. FRONT PANEL REMOVAL

1. Remove the top cover as described in Procedure 2-3.
2. Pull all the knobs off.

3. Remove the two self-tapping screws (⊕B 3x6) and two hex-nuts securing the front panel to the front sub-chassis as shown in Fig. 2-3. Place a piece of cardboard or cloth between the wrench and front panel to avoid marring the panel as shown in Fig. 2-4. Now the front panel is free for servicing.

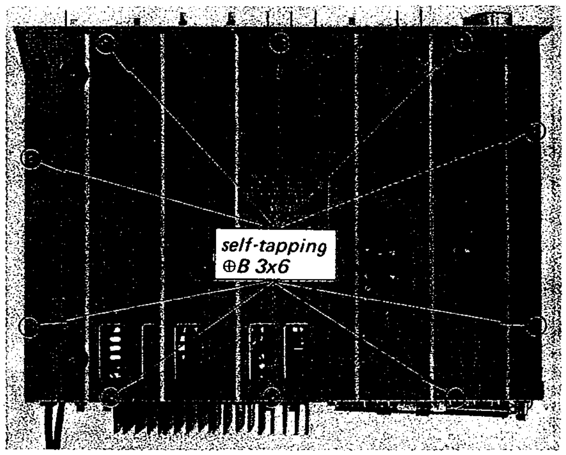


Fig. 2-2. Bottom plate removal

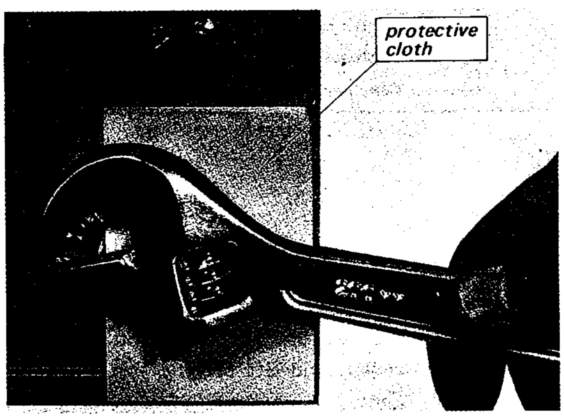


Fig. 2-4. Hex nut removal

2-5. DIAL-CORD RESTRINGING

Preparation

1. Remove the top cover as described in Procedure 2-3.
2. Cut a 1,500 mm (59") length of dial cord.
3. Tie the end of the cord to a spring as shown in Fig. 2-5.
4. Rotate the tuning-capacitor drive drum fully clockwise (minimum capacitance position).

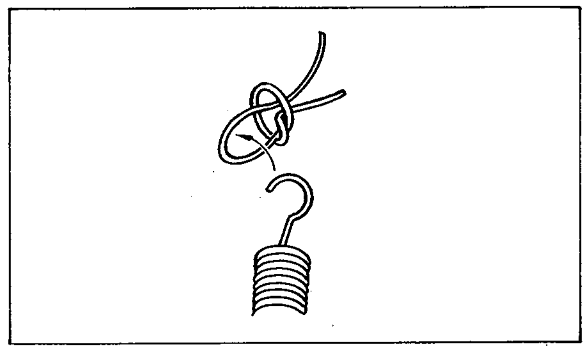


Fig. 2-5. Tying square knot to the coil spring

Procedure

While referring to Fig. 2-6, proceed as follows:

1. Hook the spring to one hole of the drive drum as shown in Fig. 2-7.
2. Run the cord through the slot in the rim of the drum and wrap a half clockwise turn in the inner groove.
3. Run the cord over pulley "A" and, then wrap two counterclockwise turns around the tuning shaft.

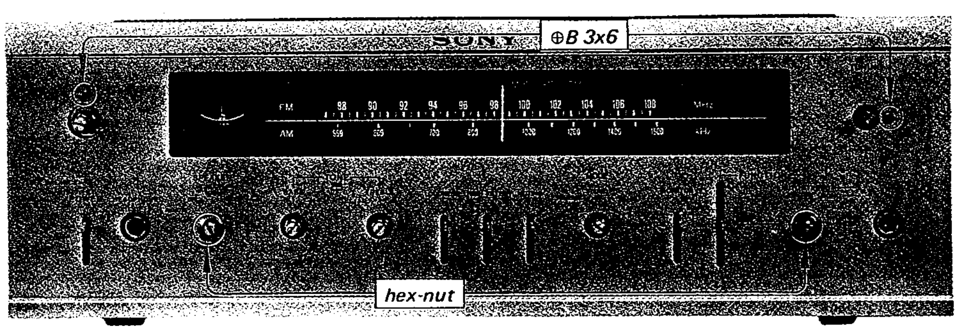


Fig. 2-3. Front panel removal

4. Run the cord over pulleys "B", "C" and "D", then wrap two clockwise turns around the drum from outer groove to inner groove as shown in Fig. 2-8.

5. Pass the doubled end of the cord through the eyelet, then hook it to the spring as shown in Fig. 2-9.

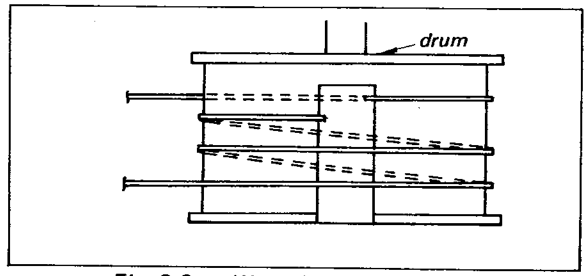


Fig. 2-8. Wrapping the dial cord

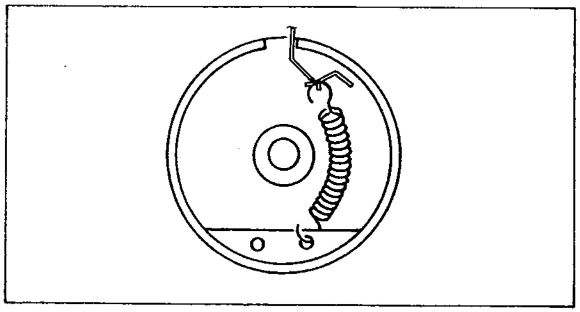


Fig. 2-7. Coil spring installation

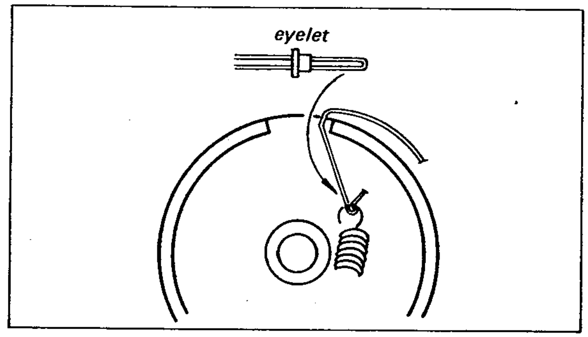


Fig. 2-9. Finishing dial cord stringing

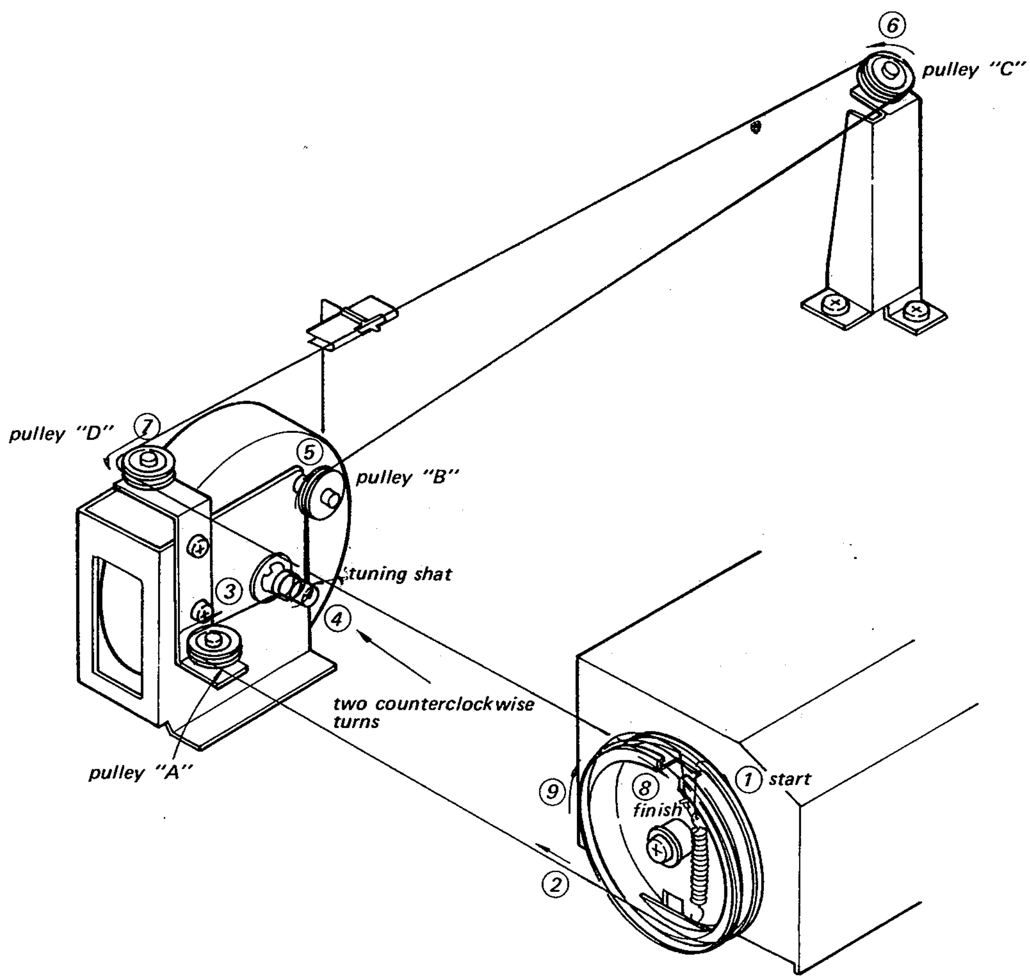


Fig. 2-6. Dial cord stringing

6. Tighten the cord, then squeeze the eyelet so that the spring is under tension. Make a knot in the cord end to keep it from slipping out of the eyelet.

7. After completing the dial-cord stringing, make sure that the tuning system works properly. Apply a drop of contact cement to the finish point.

2-6. MECHANICAL DIAL CALIBRATION

Note: This is required after replacing the dial cord, dial scale or front-end assembly.

1. Put the dial pointer on the cord as shown in Fig. 2-10 and move it to a position where the pointer coincides with the left gap on the dial scale as shown in Fig. 2-11, when the tuning capacitor is set to the maximum capacitance.

2. Apply a drop of contact cement to the tab of the dial pointer.

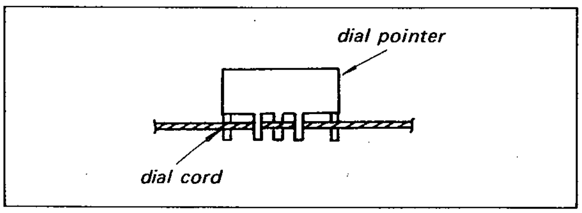


Fig. 2-10. Dial pointer installation

2-7. DIAL SCALE REPLACEMENT

1. Remove the top cover as described in Procedure 2-3.

2. Remove the front panel as described in Procedure 2-4.

3. Remove the two self-tapping screws (⊕B 3x6) securing the dial-scale holder to the front sub-chassis as shown in Fig. 2-12.

4. Remove the defective dial scale and then install the replacement scale.

2-8. PILOT-LAMP REPLACEMENT

Prepare for replacement any of the pilot lamps by removing the top cover as described in Procedure 2-3.

Meter Lamp

1. Straighten the tab of the meter-lamp holder to permit the removal of the meter-lamp socket.

2. Pull out the meter-lamp socket, and then unscrew the lamp from the socket and install the new lamp.

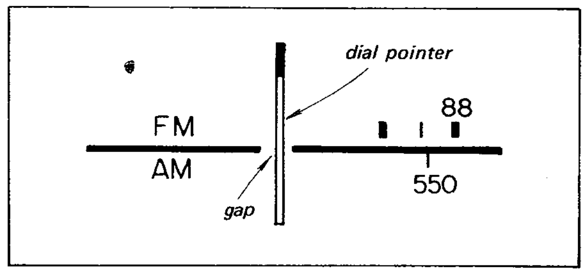


Fig. 2-11. Mechanical dial calibration

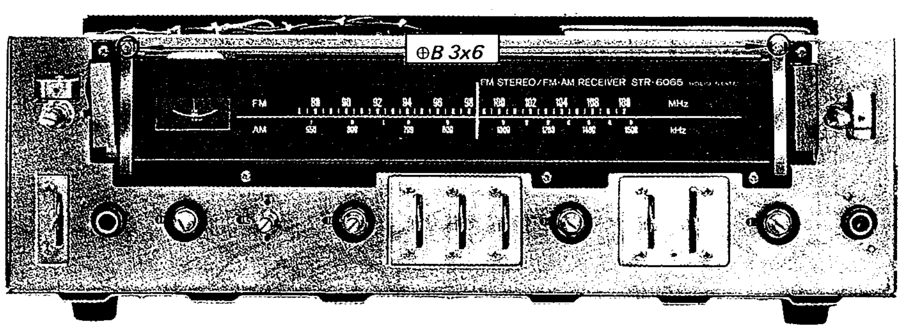


Fig. 2-12. Dial scale removal

Stereo Lamp

1. Pull the lamp and rubber grommet from its holder with tweezers as shown in Fig. 2-13.
2. Cut the lamp leads and solder the lead wires to the new lamp as shown in Fig. 2-14.
3. Wrap the soldered connections with electrical tape.
4. Install the new lamp in its holder.

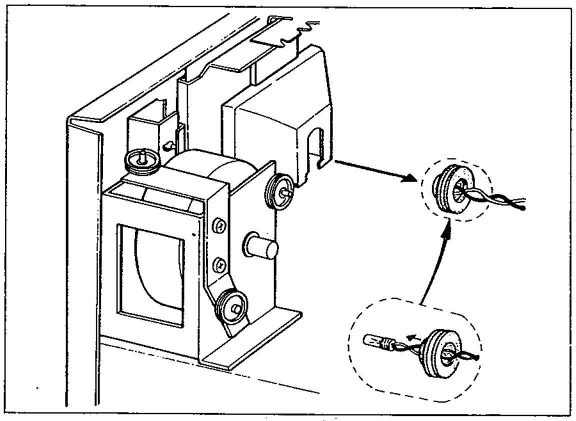


Fig. 2-13. Stereo lamp removal

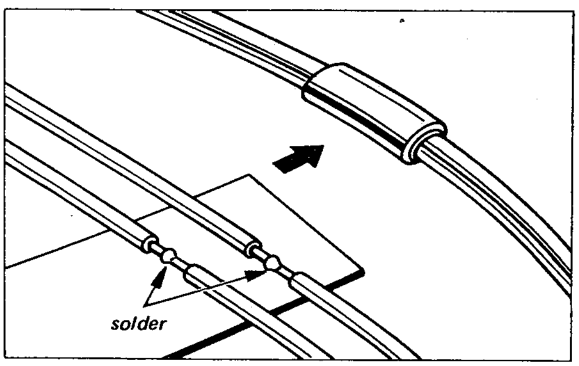


Fig. 2-14. Stereo lamp replacement

Dial Lamp

1. Remove the front panel as described in Procedure 2-4.
2. Pry out the fiber lamp shade, and then remove the lamp.

2-9. TUNING METER REPLACEMENT

1. Remove the top cover as described in Procedure 2-3.
2. Unsolder the leads from the defective meter.
3. Remove the two self-tapping screws (⊕B 3x6) securing the meter holder to the chassis as shown in Fig. 2-15.
4. Remove the meter, and install the new one.

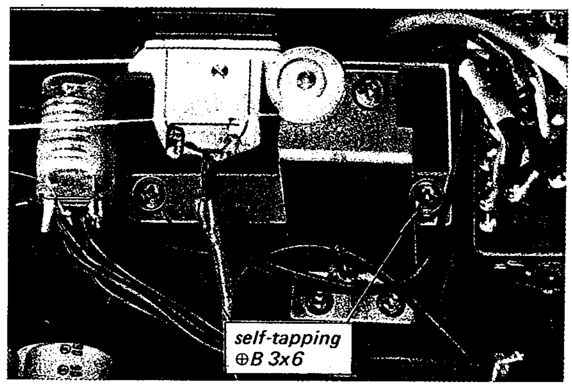


Fig. 2-15. Meter holder replacement

2-10. CONTROL AND SWITCH REPLACEMENT

Prepare for replacing any of the controls or switches by removing the wooden case as described in Procedures 2-3 and 2-4. Refer to Fig. 2-16.

TONE Controls

1. Apply a drop of cement solvent to the ring spacer on the TREBLE control. Wait a few seconds for the cement to dissolve, and pry out the spacer with a screw driver.
2. Remove the hex nuts that secure the BASS and TREBLE controls to the front-subchassis.
3. Carefully remove them along with the tone-control circuit board.
4. Cut each lug of the defective control on the board to remove the part.
5. Unsolder and remove the cipped lugs, and clean out the holes of the circuit board.
6. Install the replacement control.

POWER, HIGH FILTER, MUTING, MONITOR, FUNCTION (2), LOUDNESS Switches

1. Remove the two screws (⊕PS 3x6) securing switches to the front subchassis as shown in Fig. 2-16.
2. Unsolder the lead wires from the defective switch, and then install the replacement switch.

SPEAKER, MODE, FUNCTION (1) Switches

1. Apply a drop of cement solvent to the ring spacer on the switches. Wait a few seconds for the cement to dissolve, and pry out the spacer with a screw driver.
2. Remove the hex nuts that secure the switches to the front-subchassis as shown in Fig. 2-16.
3. Unsolder the lead wires from the defective switch, and then install the replacement switch.

2-11. REAR PANEL REMOVAL

1. Remove the top cover and bottom plate as described in Procedure 2-3.
2. Unsolder the lead wire connecting between ground terminal and chassis.
3. Unsolder the coaxial cable from fm antenna terminal.
4. Remove the six self-tapping screws (⊕B 3x6), two of them secure the bar antenna holder to the chassis along with rear panel and others secure the rear panel to the chassis as shown in Fig. 2-17. This frees the rear panel.

2-12. REPLACEMENT OF COMPONENTS SECURED TO THE REAR PANEL BY RIVETS

1. Remove the rear panel as described in Procedure 2-11.
2. Bore out the rivets using a drill bit slightly larger in diameter than the rivet. See Fig. 2-18.
3. Punch out the remainder of the rivet with a nail set or prick punch.
4. Remove the defective component, and install the new one.
5. Secure the new component with a suitable screw and nut, or a repair rivet screw (Part No. 3-701-402).

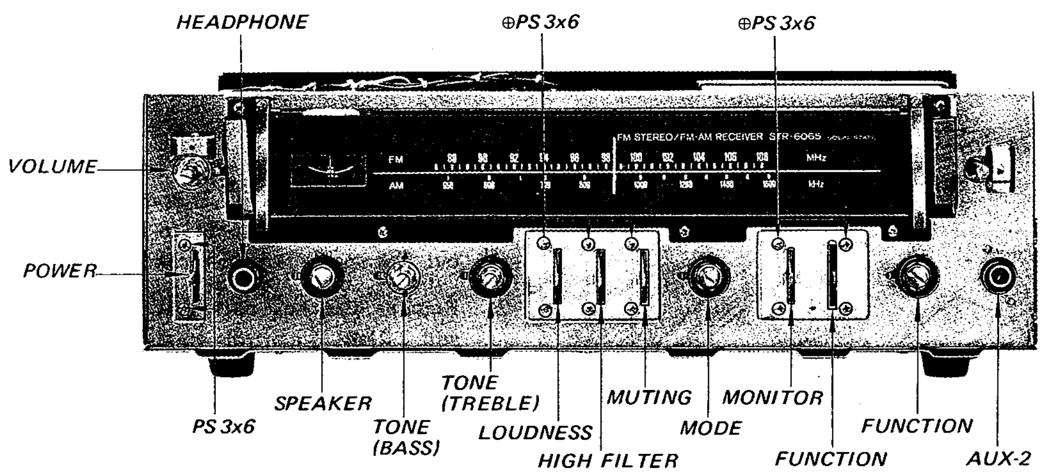


Fig. 2-16. Control and switch replacement

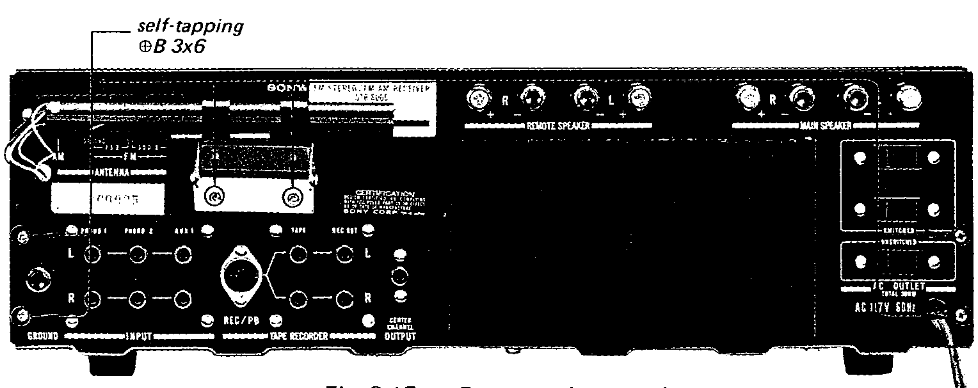


Fig. 2-17. Rear panel removal

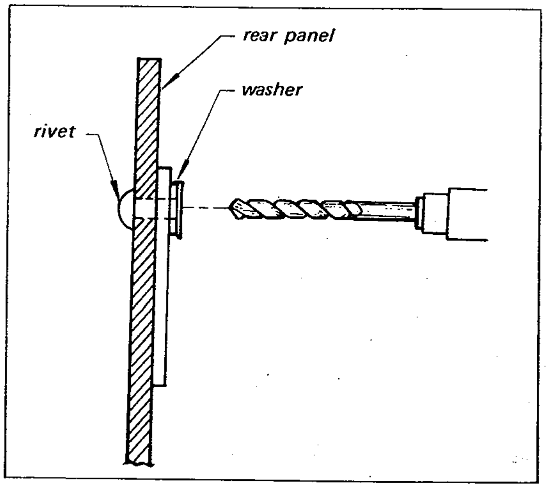


Fig. 2-18. Rivet replacement

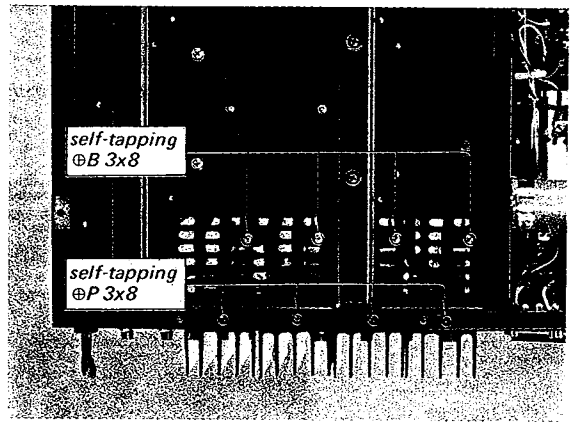
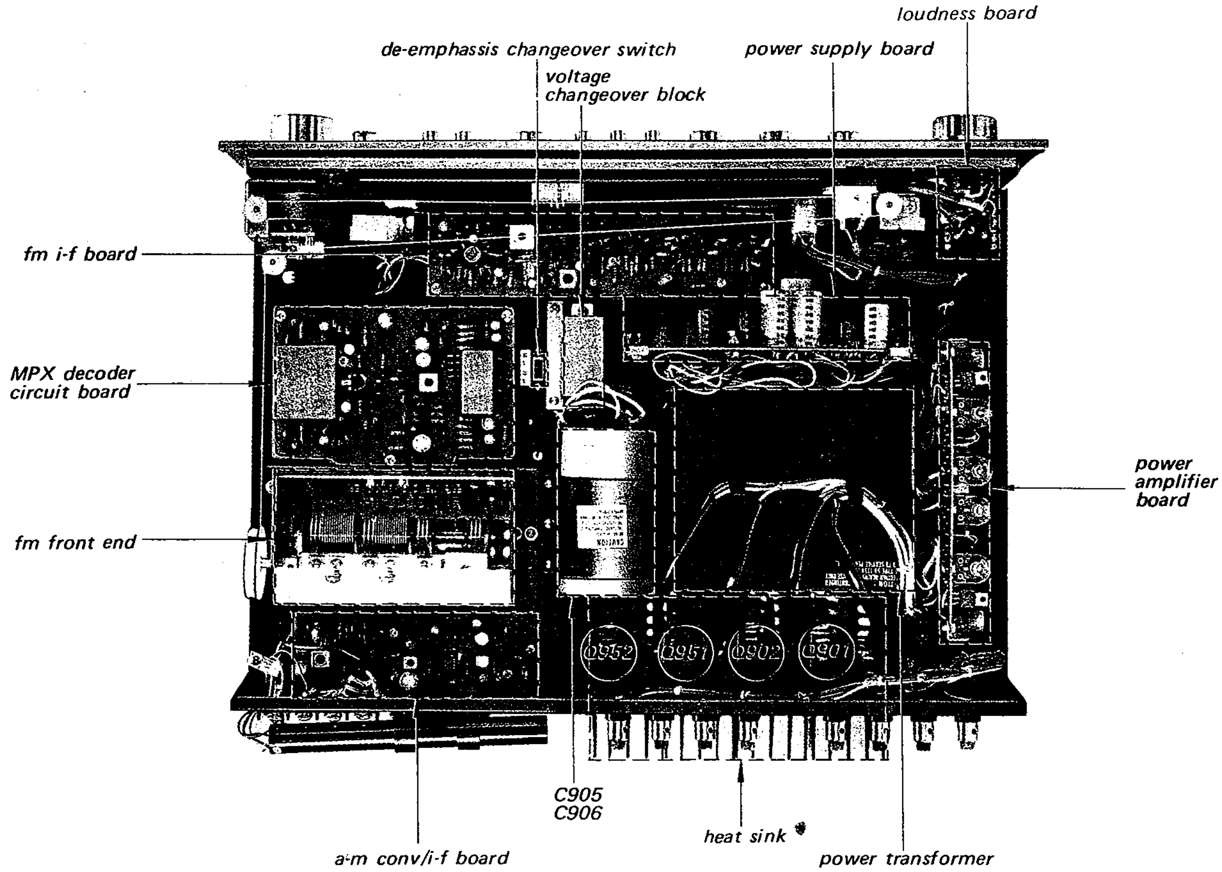


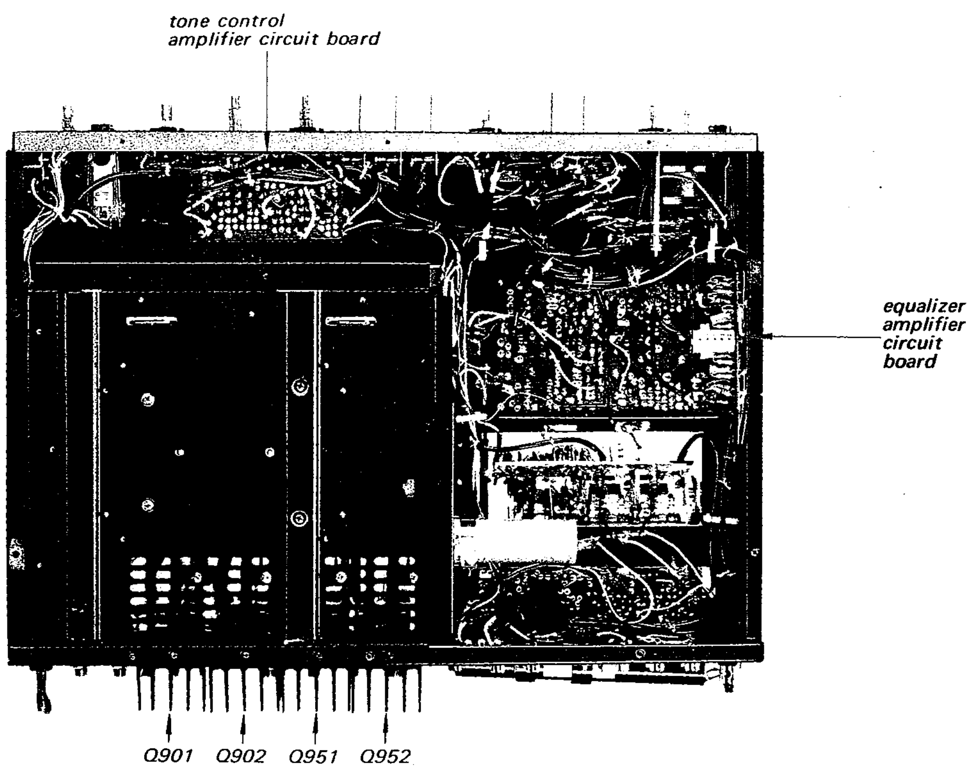
Fig. 2-19. Heat sink removal

2-13. POWER TRANSISTOR REPLACEMENT

1. Remove the top cover and bottom plate as described in Procedure 2-3.
2. Remove the eight self-tapping screws (⊕B 3x8), (⊕P 3x8) securing the heat sink to the chassis as shown in Fig. 2-19, and then remove the four self-tapping screws (⊕B 3x8) securing the heat sink support to the top of the heat sinks.
3. Cut the emitter and base leads of the defective power transistor with a diagonal cutter. This prevents damage to the mica washer when remove the defective power transistor.
4. Carefully draw back the heat sink, and then remove the two screws (⊕B 3x14) and nuts securing the power transistor to the heat sink.
5. When replacing the power transistor, apply a coating of a thermal compound or a heat-transferring grease to both sides of the insulating mica washer. Any excess compound or grease squeezed out when the mounting bolts are tightened should be wiped off with a clean cloth. This prevents accumulation of conductive dust particles that might eventually cause a short.

2-14. CHASSIS LAYOUT





SECTION 3
ALIGNMENT AND ADJUSTMENT PROCEDURES

3-1. FM I-F STRIP ALIGNMENT

CAUTION

The ceramic filters in the fm i-f circuit are selected according to their specified center frequencies and color coded as shown in Fig. 3-1 and listed in Table 3-1. Check the color code of the filters to to identify the same center frequency when replacing any of these filters.

TABLE 3-1.

FM I-F CERAMIC FILTERS

Part No.	Color	Specified Center Freq.
1-403-562-11	red	10.70 MHz
1-403-562-21	black	10.66 MHz
1-403-562-31	white	10.74 MHz
1-403-562-41	green	10.62 MHz
1-403-562-51	yellow	10.78 MHz

Test Equipment Required

1. Standard fm signal generator
2. Ac VTVM
3. Oscilloscope
4. Alignment tools

Note: This alignment is needed only after IFT101 in the front end or T201 (discriminator transformer) has been replaced.

Preparation

1. Remove the top cover as described in Procedure 2-3.
2. Remove the front-end cover by loosening the two screws securing it to the chassis.
3. Connect the input cable of the ac VTVM to the REC OUT terminal (J105).

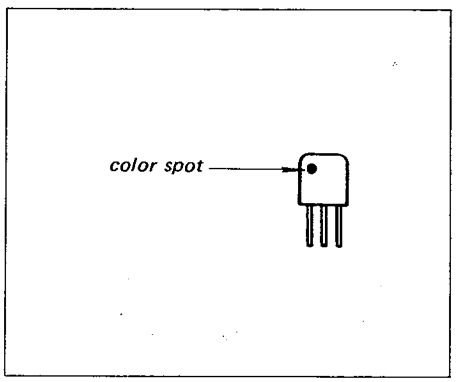


Fig. 3-1. Fm i-f ceramic filter

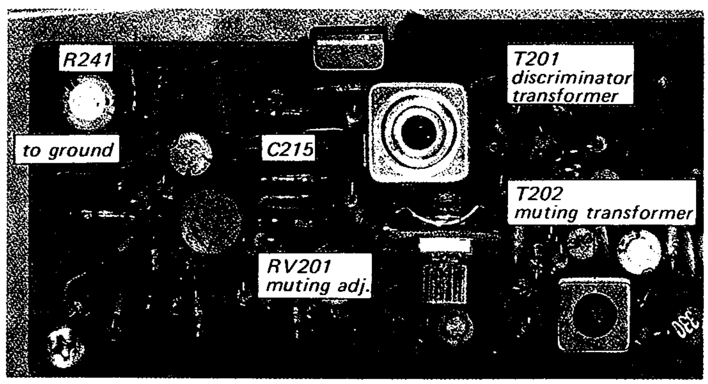


Fig. 3-2. Interruption of afc circuit and parts location

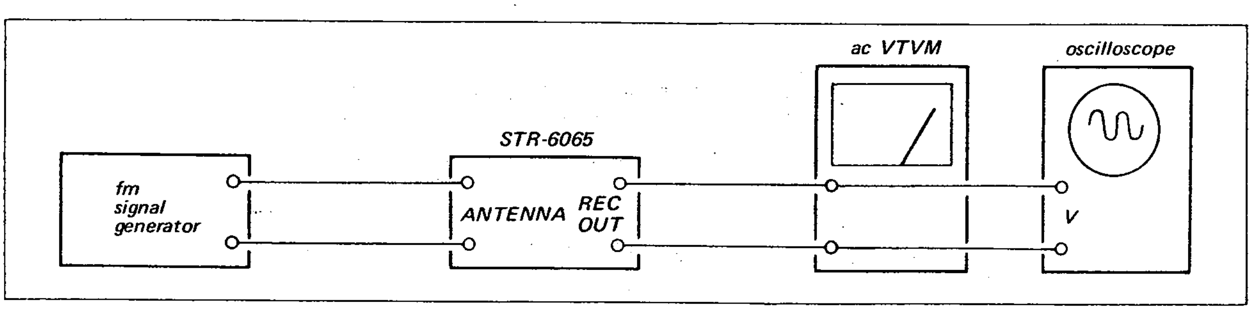


Fig. 3-3. Fm i-f, muting and front end alignment test setup

4. Connect the signal-generator's output to the fm antenna terminal.

5. Short the connection point of R242 and C215 (AFC circuit) to ground as shown in Fig. 3-2.

Procedure

1. With the equipment connected as shown in Fig. 3-3, set the signal-generator's controls as follows:
   Carrier frequency .... 98 MHz
   Modulation .... Fm, 400 Hz, 100%
   Output level .... 30μV (30 dB)

2. Set the receiver's controls as follows:
   FUNCTION switch .... FM MONO
   MODE switch .... STEREO
   VOLUME control .... Minimum

3. Turn the core of transformer IFT101 or T201 (bottom core) (See Fig. 3-2 or Fig. 3-4) with the alignment tool to obtain maximum output.

3-2. FM DISCRIMINATOR ALIGNMENT

Note: Before starting this alignment, the fm i-f alignment should be performed. There are two or three methods of discriminator alignment, but only the simplified method using the tuner's TUNING meter is described here.

Test Equipment Required

1. Oscilloscope

2. Alignment tools

Preparation

1. Remove the top cover as described in Procedure 2-3.

2. Connect the input cable of the oscilloscope to REC OUT (J105) terminal.

3. Short the connection point of R242 and C215 (AFC circuit) to ground as shown in Fig. 3-2.

Procedure

1. With the equipment connected as shown in Fig. 3-5, set the receiver's control as follows:
   FUNCTION switch .... FM MONO
   MODE switch .... STEREO
   No signal should be received.

2. Adjust the controls of the oscilloscope to provide a visible indication of noise. Always watch the oscilloscope to confirm that the tuner is not receiving any off-the-air signals.

3. Turn the top core (secondary side) of discriminator transformer T201 (see Fig. 3-2) with a hex-head alignment tool to obtain a null-point reading on the tuning meter. If the discriminator transformer (T201) is not aligned correctly, some deviation on the tuning meter will be observed.

Note: Turn the core carefully and slowly. At both extreme positions of the top core, a null point will be observed. The real null point should be obtained in the middle of the core's thread length.

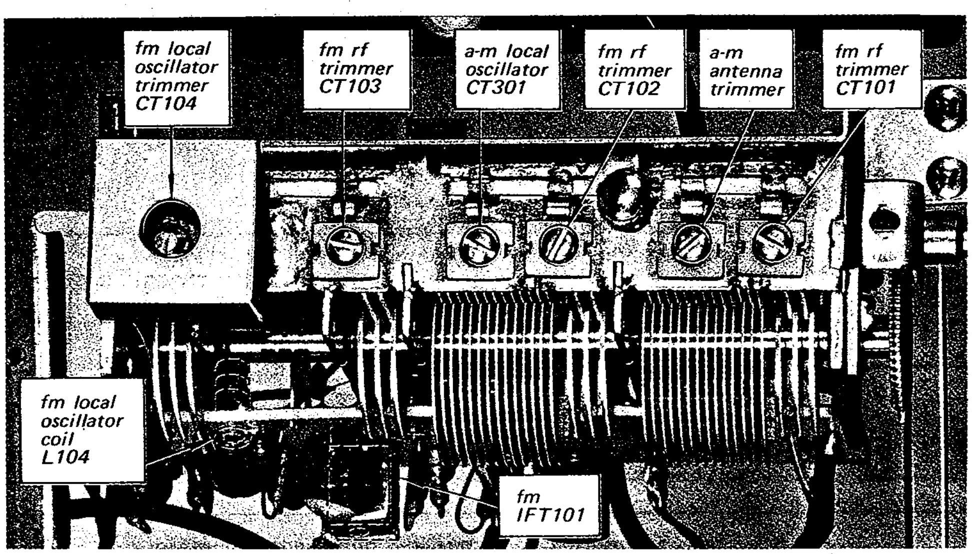


Fig. 3-4. Parts location

4. Repeat the above mentioned steps and fm i-f strip alignment two or three times.

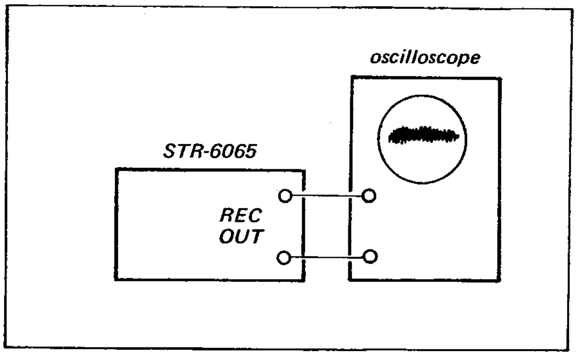


Fig. 3-5. Discriminator alignment test setup

3-3. MUTING ADJUSTMENT

Note: Two methods of muting alignment are available, signal generator alignment and alignment by using an off-the-air signal. You can use either of them.

Signal Generator Alignment

Test Equipment Required

1. Fm standard signal generator
2. Ac VTVM or oscilloscope
3. Alignment tool

Preparation

1. Remove the top cover as described in Procedure 2-3.
2. Turn the knob of RV201 (see Fig. 3-2) fully clockwise on the fm i-f and discriminator board.
3. Short the connection point of R242 and C215 (AFC circuit) to ground as shown in Fig. 3-2.

Procedure

1. With the equipment connected as shown in Fig. 3-3, set the receiver's controls as follows:

   FUNCTION switch .... FM MONO
   MODE switch .... STEREO
   MUTING switch .... ON

2. Follow the procedure given in Table 3-2. Note that the muting circuit should begin to operate at the symmetrical deflection point of TUNING meter when detuning the tuner to higher or lower than the reference carrier frequency.

Off-the-Air Signal Alignment

Accurate muting circuit adjustment can also be performed by utilizing off-the-air local fm signals instead of the fm S.S.G.

Note that a weak signal is best for this purpose.

3-4. FM FREQUENCY COVERAGE ALIGNMENT

CAUTION

Never attempt alignment of the front-end section except for the frequency-coverage and dial-calibraion adjustments. The front-end section of the tuner has been carefully adjusted at the factory, so very little adjustment is necessary in the field. Alignment need not be performed when the front-end FET is replaced since changes in FET parameters have little effect upon tuning. If an rf-stage adjustment is required, ask your nearest SONY Service Station to send your unit to the Factory Service Center for a complete front-end alignment.

Exercise caution when returning the faulty unit so that it is not damaged in transit. The warranty will not cover damage incurrent in transit to the Factory Service Center.

Note: Before starting this alignment, the discriminator-transformer alignment should be performed.

TABLE 3-2. MUTING ADJUSTMENT

Coupling Between Front End and SSG	SSG Frequency and Output Level	Tuner Dial Indication	Adjust	Remarks
Direct coupling	98 MHz 400 Hz. 30% Mod.	98 MHz	T202 See Fig. 3-2	Turn the core of T202 to obtain proper muting operation.

TABLE 3-3. FM FREQUENCY COVERAGE ADJUSTMENT

Step	Coupling Between Front End and SSG	SSG Frequency and Output Level	Tuner Dial Indication	Scope Connection	Adjust	Indication
1.	Direct coupling	87.5 MHz 400 Hz 100% Mod. 30μV (30 dB)	87.5 MHz	REC OUT (J105)	OSC coil L104 See Fig. 3-4	Maximum VTVM reading
2.	Same as above	108 MHz 400 Hz 100% Mod. 30μV (30 dB)	108 MHz	Same as above	OSC trimmer CT104 See Fig. 3-4	Same as above

Signal Generator Alignment

Test Equipment Required

1. Standard fm signal generator
2. Ac VTVM
3. Alignment tools

Preparation

1. Remove the top cover as described in Procedure 2-3.
2. Connect the equipment as shown in Fig. 3-3.
3. Set the receivers controls as follows:
   FUNCTION switch .... FM MONO
   MODE switch .... STEREO
4. Short the connection point of R242 and C215 (AFC circuit) to ground as shown in Fig. 3-2.

Generator Alignment

Follow the procedures given in Table 3-3 when performing this alignment with an fm signal generator. Be sure that the dial is mechanically calibrated as described in Procedure 2-6.

Off-the-Air Alignment

Accurate dial calibration and a frequency-coverage test can also be performed by utilizing off-the-air local fm signals. However, before performing the following procedure, be sure that the dial pointer is correctly positioned, as described in Procedure 2-6.

Procedure

1. Short the connection point of R242 and C215 (AFC circuit) to ground as shown in Fig. 3-2.
2. Tune the receiver to the lowest-frequency station.
3. Check the dial scale for a calibration accuracy of ±200 kHz from the carrier frequency of the station. If the dial-accuracy deviation exceeds this limit, turn the local-oscillator coil L104 slightly as shown in Fig. 3-4 until optimum dial calibration is obtained.
4. Tune the receiver to the highest-frequency station in your locality. If the dial-calibration error is excessive, adjust local-oscillator trimmer CT104 (see Fig. 3-4) to obtain maximum calibration accuracy.
5. Repeat Steps 3 and 4.

3-5. FM STEREO SEPARATION ADJUSTMENT

Test Equipment Required

1. MPX generator
2. Fm signal generator
3. Audio oscillator
4. Ac VTVM
5. Oscilloscope
6. Alignment tools

Preparation

Before starting the stereo-separation adjustment, check and adjust the phase between the 19-kHz pilot signal and the sub-channel signal in the MPX stereo generator as follows:

(1) With the equipment connected as shown in Fig. 3-6, set the MPX and audio signal-generator's control as follows:
   MAIN CHANNEL .... OFF
   SUB CHANNEL .... ON
   PILOT (19 kHz) .... OFF

AUDIO OSCILLATOR
OUTPUT .... 400 Hz, 250 mV

(2) Adjust the oscilloscope controls to obtain a visible indication. Be sure the scope's horizontal display switch is set for external input.

(3) Turn the pilot-signal (19 kHz) phase control to obtain an in-phase and stable lissajous pattern as shown in Fig. 3-7.

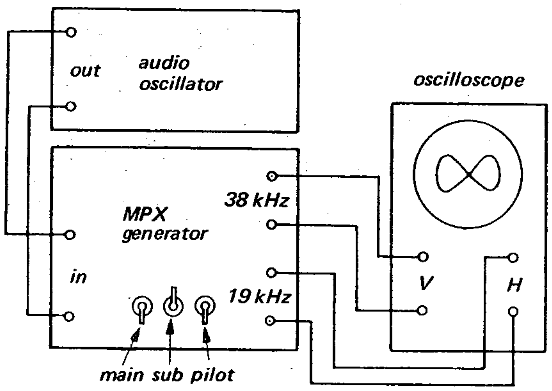


Fig. 3-6. MPX generator preadjustment

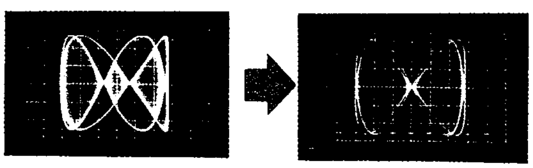


Fig. 3-7. Lissajous pattern

Procedure

1. Connect the equipment as shown in Fig. 3-8. Set the fm signal-generator's control as follows:
   Carrier frequency .... 98 MHz
   Output level .... 1,000 μV (60 dB)
   Modulation:
   Main channel (400 Hz) ... 33.75 kHz (45%)
   Sub channel (38 kHz) .... 33.75 kHz (45%)
   Pilot (19 kHz) .... 7.5 kHz (10%)

The above mentioned modulation levels can be set as follows:

(a) With the equipment connected as shown in Fig. 3-8 set the MPX stereo generator controls as follows.
MAIN CHANNEL .... OFF
SUB CHANNEL .... OFF
19 kHz (PILOT) .... ON

(b) Adjust the 19-kHz signal level to obtain a 7.5-kHz deviation on the FM SSG modulation indicator.

(c) Reset the MPX stereo-generator's control as follows:
MAIN CHANNEL .... ON
SUB CHANNEL .... OFF
19 kHz (PILOT) .... OFF
INPUT SELECTOR .... L-CH

(d) Adjust the audio-oscillator output (400 Hz) to obtain a 33.75-kHz deviation on the FM SSG modulation indicator.

(e) Set all controls to ON.

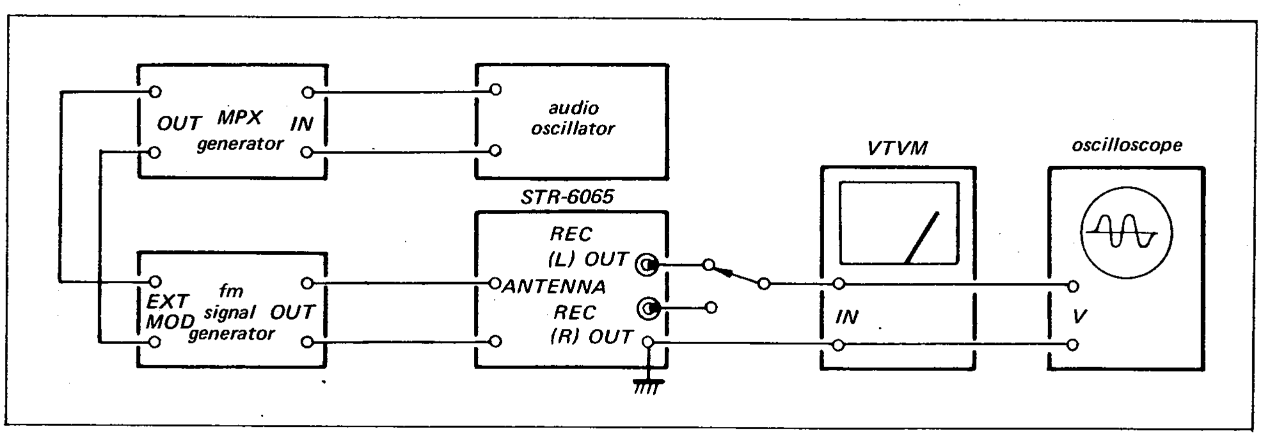


Fig. 3-8. Fm stereo separation adjustment test setup

2. Precisely tune the set to the S.S.G's carrier frequency then turn the top core of switching transformer T401 (see Fig. 3-9) to obtain maximum output at the left channel. Note that this adjustment is closely related to stereo distortion.

3. Record the output level of the left channel when the MPX generator input selector is set to the left channel.

4. Switch the input selector to the right channel and read the residual signal level in the left channel.

5. The output-level to residual-level ratio represents the separation. Adjust separation adj. control RV401 (see Fig. 3-9) for minimum residual level. Check the right channel for separation. Usually, about an 8 to 9 dB difference in channel separation exists. Re-adjust RV401 for minimum difference between left-and right-channel separation. While doing this, remember that the output level also changes according to the setting of RV401.

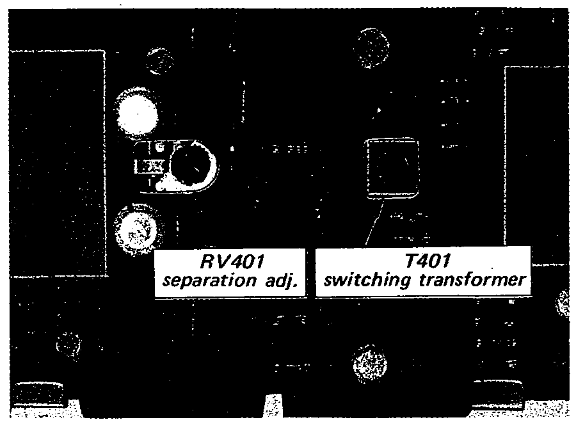


Fig. 3-9. Parts location

MEMO

3-6. A-M I-F STRIP ALIGNMENT

Preparation

Remove the top cover as described in Procedure 2-3. Then set the receiver's FUNCTION selector to AM.

Note: To perform this alignment, the local oscillator should be killed. To do this, shunt the local oscillator capacitor with a 0.02-μF capacitor as shown in Fig. 3-10.

Sweep Generator Alignment

Test Equipment Required

1. Sweep generator, 455 kHz
2. Oscilloscope
3. Alignment tools

Procedure

1. Connect the sweep generator's output directly to the a-m antenna terminal.
2. Connect the input cable of the oscilloscope to R321 (see Fig. 3-10) and ground on the a-m cp i-f board with alligator clips as shown in Fig. 3-10.
3. Set the sweep generator's control as follows:
   Center frequency .... 455 kHz
   Sweep width .... 25 kHz
   Output .... as low as possible
4. With the equipment connected as shown in Fig. 3-12, adjust the oscilloscope controls and generator output to provide a visible indication.
5. Turn the top core of IFT301 (see Fig. 3-10) to obtain a maximum and symmetrical response as shown in Fig. 3-11.

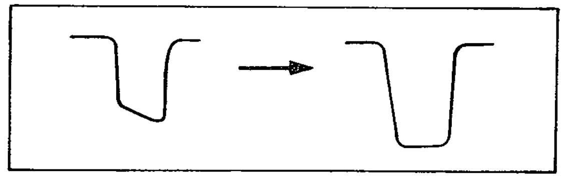


Fig. 3-11. A-m i-f strip alignment by sweep generator

Rf Signal Generator Alignment

Test Equipment Required

1. Signal generator, 455 kHz, a-m modulation
2. Oscilloscope or VTVM
3. Alignment tools

Procedure

1. Set the rf signal generator's controls as follows:
   Modulation .... INTERNAL
   Frequency .... 455 kHz
   OUTPUT level 1,000μV
2. Connect the rf signal-generator's output to a-m antenna terminal.
3. With the equipment connected as shown in Fig. 3-13, turn the top core of IFT301 (see Fig. 3-10) to obtain maximum output.

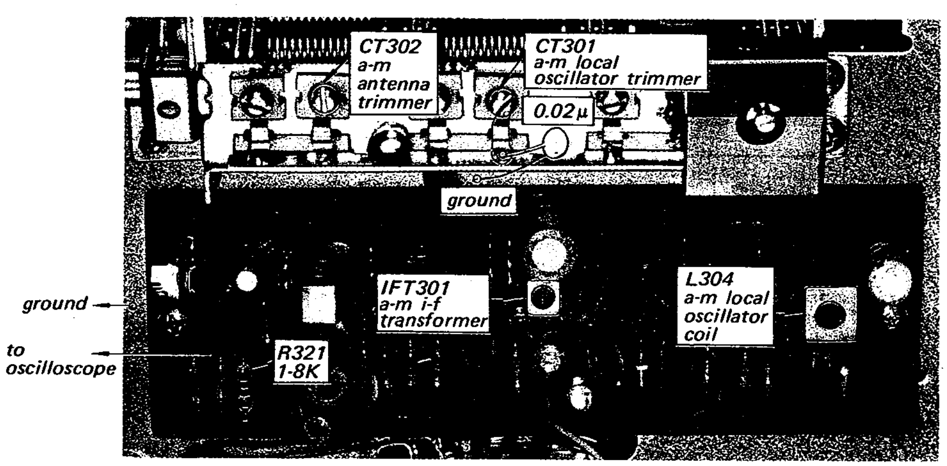


Fig. 3-10. Disabling the a-m local oscillator, a-m detector output connection and parts location

3-7. A-M FREQUENCY COVERAGE AND TRACKING ADJUSTMENT

Preparation

Remove the top cover as described in Procedure 2-3. Then, set the FUNCTION switch to AM.

Signal Generator Method

Test Equipment Required

1. Standard a-m signal generator
2. Loop antenna
3. Ac VTVM or oscilloscope

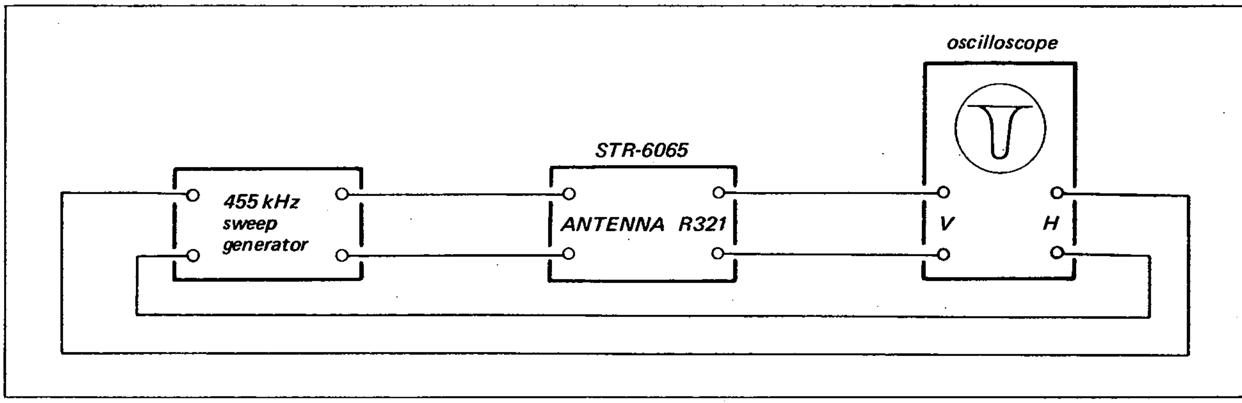


Fig. 3-12. A-m i-f strip alignment by sweep generator

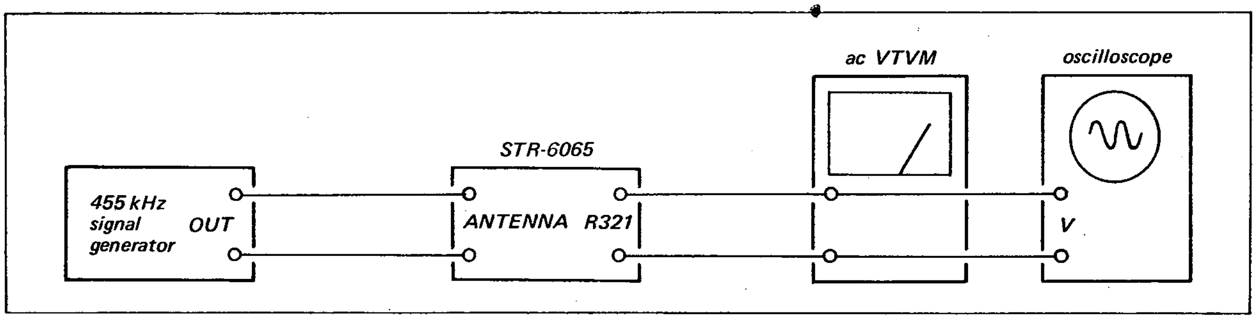


Fig. 3-13. A-m i-f strip alignment by rf generator

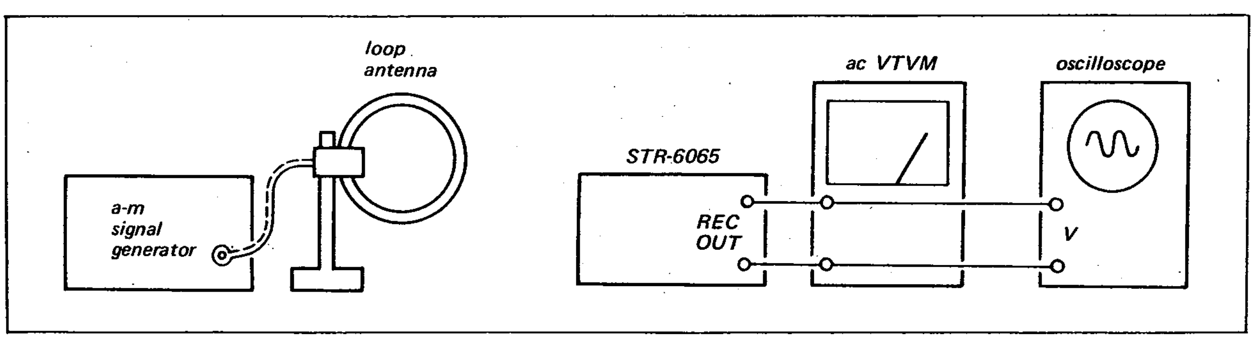


Fig. 3-14. A-m frequency coverage and tracking alignment test setup

Procedure

With the equipment connected as shown in Fig. 3-14, follow the procedures given in Tables 3-4 and 3-5 when performing this alignment with an a-m signal generator.

Off-the-Air Signal Method

Accurate dial calibration, and a frequency-coverage and tracking test can also be performed by utilizing off-the-air local a-m signals. However, before performing the following procedure, be sure that the dial pointer is correctly positioned, as in the Procedure 2-6.

Frequency Coverage Adjustment

Procedure

1. Tune the receiver to the lowest-frequency station in your locality.
   Check the dial scale for a calibration accuracy of ±20 kHz from the carrier frequency. If the dial calibration error exceeds this limit, turn the local oscillator-coil L304 (see Fig. 3-10) slightly until optimum dial calibration is obtained.
2. Tune the receiver to the highest-frequency station in your locality. If the dial calibration error exceeds ±30 kHz from the carrier frequency, adjust local-oscillator trimmer-capacitor CT301 (see Fig. 3-10) to obtain maximum calibration accuracy. Repeat the above steps two or three times.

Tracking Adjustment

1. Tune the set to the station whose carrier frequency is closest to 620 kHz and adjust the position of antenna core L904 as shown in Fig. 3-15 to obtain maximum output.
2. Tune the set to the station whose carrier frequency is closest to 1,400 kHz and adjust antenna trimmer CT302 to obtain maximum output. See Fig. 3-10.
3. Repeat the above steps two or three times.

TABLE 3-4. A-M FREQUENCY COVERAGE ALIGNMENT

SSG Coupling	SSG Frequency and Output Level	Tuner Dial Indication	Scope Connection	Adjust	Indication
Loop antenna	530 kHz 400 Hz 30% Mod. 3,000 μV (70 dB)	530 kHz	REC OUT (J105)	OSC coil L304 See Fig. 3-10	Maximum VTVM reading
Loop antenna	1,600 kHz Same as above	1,600 kHz	Same as above	OSC trimmer CT301 See Fig. 3-10	Same as above

TABLE 3-5. A-M TRACKING ALIGNMENT

SSG Coupling	SSG Frequency and Output Level	Tuner Dial Indication	Scope Connection	Adjust	Indication
Loop antenna	620 kHz 400 Hz 30% Mod. Output level as low as possible	620 kHz	REC OUT (J105)	Position of antenna core L904 See Fig. 3-15	Maximum VTVM reading
Loop antenna	1,400 kHz Same as above	1,400 kHz	Same as above	Antenna trimmer CT302 See Fig. 3-10	Same as above

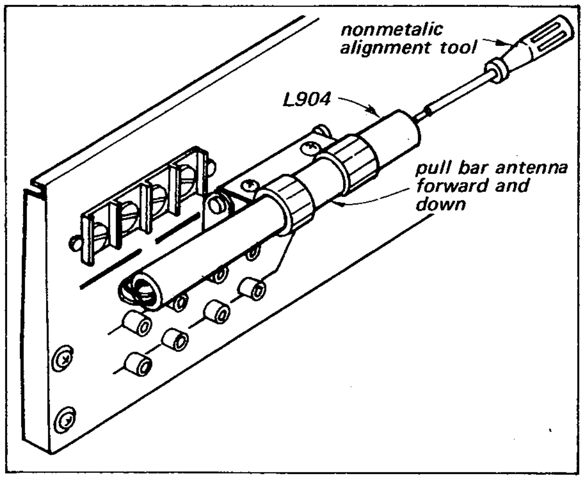


Fig. 3-15. A-m bar antenna core adjustment

3-8. POWER-AMPLIFIER ADJUSTMENT

Note: There are two adjustment items in the power amplifier. One is dc-bias adjustment and the other is dc-balance adjustment. These adjustments should be repeated alternately two or three times after replacing any of the power transistors until the best operation is obtained.

Dc-Bias Adjustment

Serious deficiencies in performance, such as thermal runaway of power transistors, will result if this adjustment is improperly set.

CAUTION

To avoid accidental power transistor damage, increase the ac line voltage gradually, using a variable transformer, while measuring the voltage across emitter resistor R738 or R788 as shown in Fig. 3-16.
Check to see that the reading does not exceed 25 mV. If it does, turn off the power as soon as possible, then check and repair the trouble in the power-amplifier board.

Test Equipment Required

1. Dc millivoltmeter
2. Variable transformer
3. Screwdriver with 3 mm (1/8") blade

Preparation

1. Remove the top cover as described in Procedure 2-3.
2. Connect the dc millivoltmeter across emitter resistor R738 or R788 as shown in Fig. 3-16.

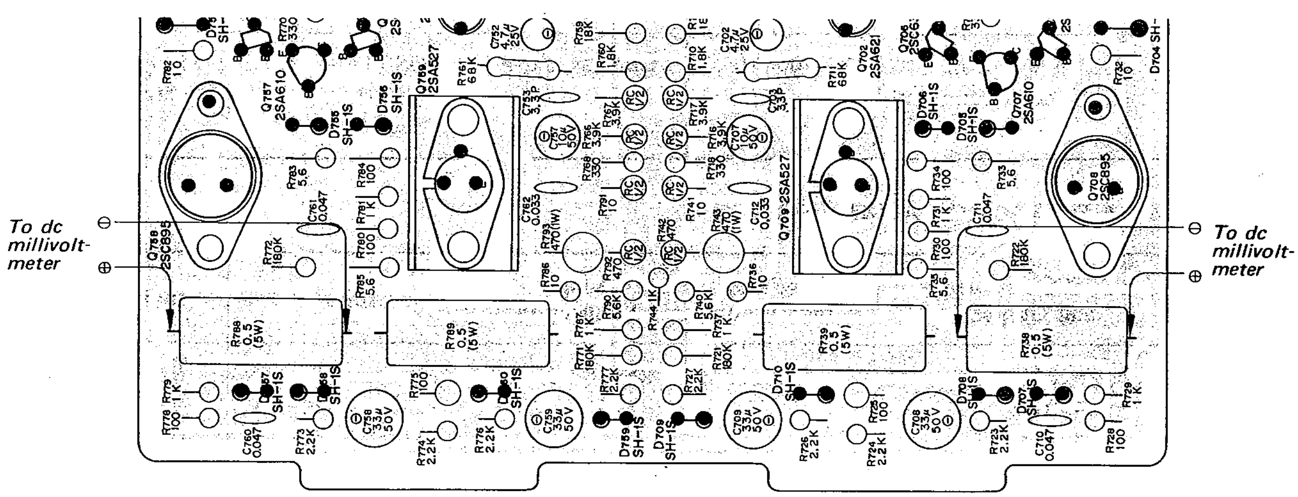


Fig. 3-16. Dc millivoltmeter connection

Procedure

1. Set the semifixed resistors (Fig. 3-17) on the power-amplifier board as follows:

RV702 (L-CH, dc bias)	fully counterclockwise
RV752 (R-CH, dc bias)	fully clockwise
RV701, RV751 (dc balance)	mid-position

2. Set the SPEAKER switch to MAIN.
3. Set the variable transformer for minimum output.
4. Turn the POWER switch ON, and then increase the line voltage up to the rated value.
5. Apply a drop of cement solvent to the RV701, RV702, RV751 and RV752 then wait a few seconds for the cement to dissolve.
6. Adjust RV702 and RV752 to obtain a 25 mV reading on the meter, and then perform the dc-balance adjustment.

Dc-Balance Adjustment

Excessive harmonic distortion at high levels will result if this adjustment is improperly set.

Test Equipment Required

1. Dc null meter or dc millivoltmeter
2. Screwdriver with 3 mm (1/8") blade

Preparation

1. Set the SPEAKER switch to MAIN.
2. Connect the dc null meter or dc millivoltmeter to the MAIN speaker output terminal.

Procedure

1. Turn the POWER switch ON, and then adjust RV701 (RV751) to obtain a 0 V reading on the meter.
2. After 10 minutes warm-up, alternately repeat this and the dc bias adjustment two or three times.
3. After completing the adjustment, apply a drop of lock paint to RV701 and RV702 (RV751 and RV752).

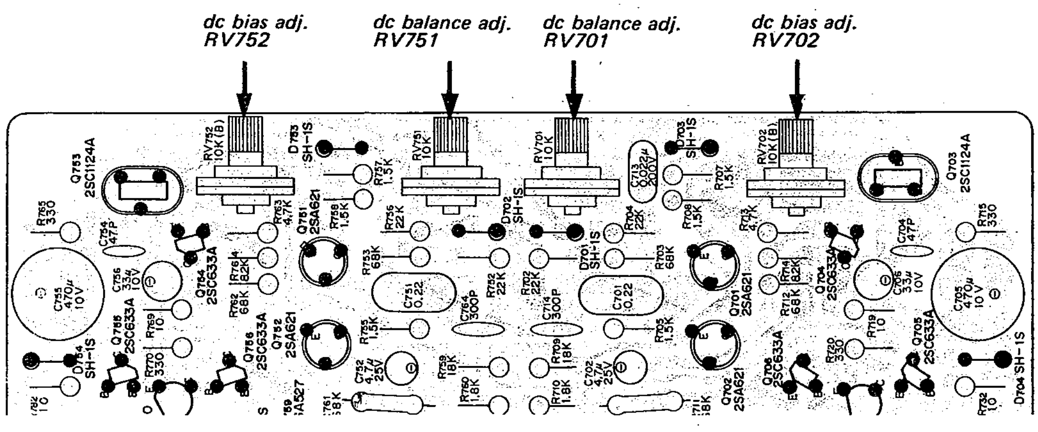


Fig. 3-17. Parts location

SECTION 4
REPACKING

The STR-6065's original shipping carton and packing material are the ideal container for shipping the unit. However to secure the maximum protection, the STR-6065 must be repacked in these materials precisely as before. The proper repacking procedures are shown in Fig. 4-1.

X-37930-04 warranty card ass'y (USA Model only)	*3-790-941-11 manual, instruction (General Export Model)*
X-44900-02-1 cloth, polishing	*3-790-941-31 manual, instruction (USA Model)*
1-501-083 ribbon antenna, fm	*3-790-941-41 manual, instruction (CANADA Model)*
1-506-138-11 phono plug, red	*3-792-941 tag, price (CANADA Model only)*
1-506-138-12 phono plug, white	*3-793-105 list, warranty station (CANADA Model only)*
1-506-191 plug, binaural	*3-793-183 card, inspection*
3-701-020 bag, polyethylene	*3-796-836 SONY Hi-Fi warranty (CANADA Model only)*
3-701-026 tack label	*4-802-201 bag, polyethylene (CANADA Model only)*

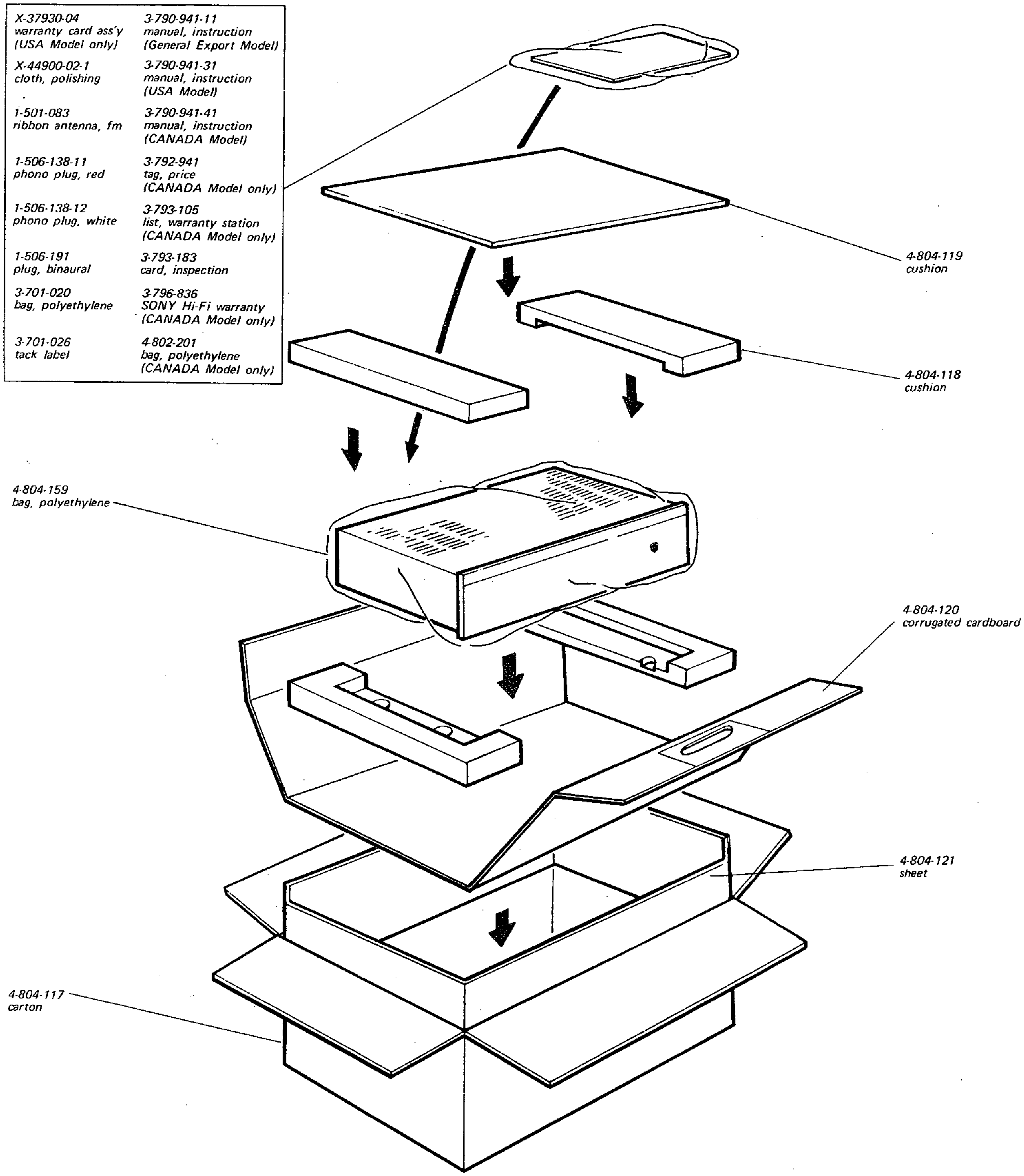
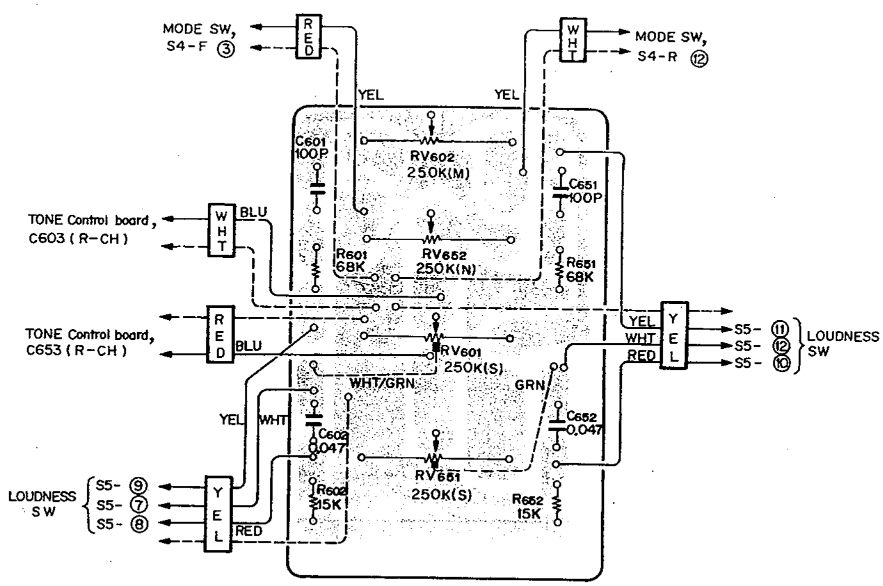


Fig. 4-1. Repacking

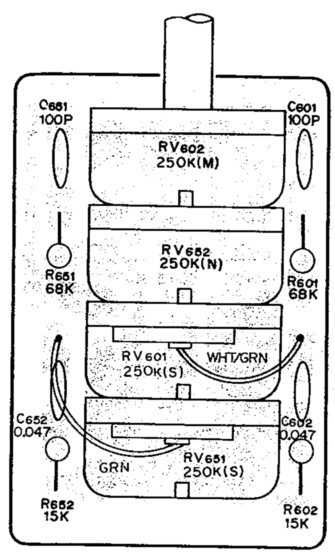
SECTION 5
DIAGRAMS

MOUNTING DIAGRAM —Loudness Control Board —

— Conductor Side —

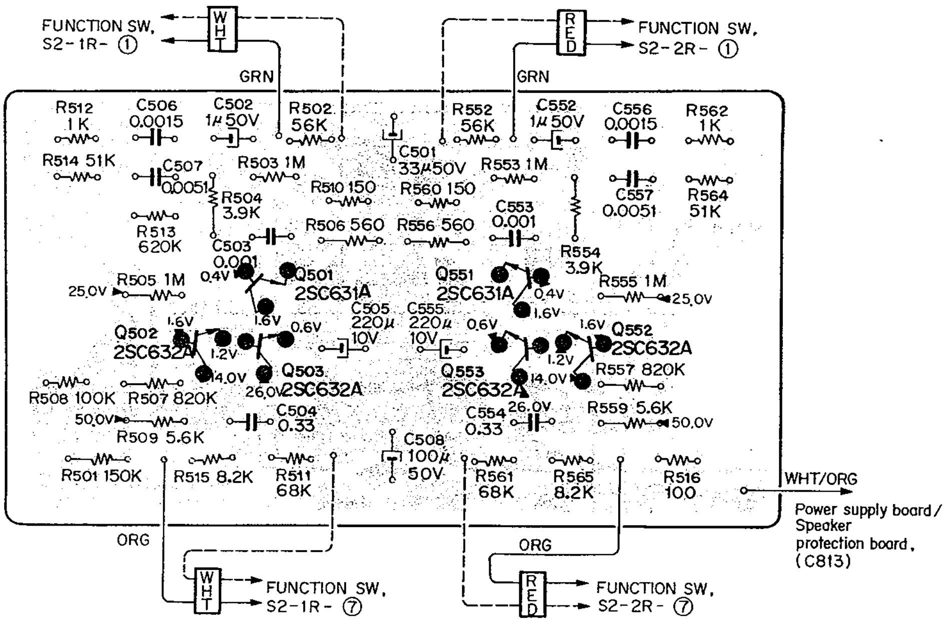


— Component Side —

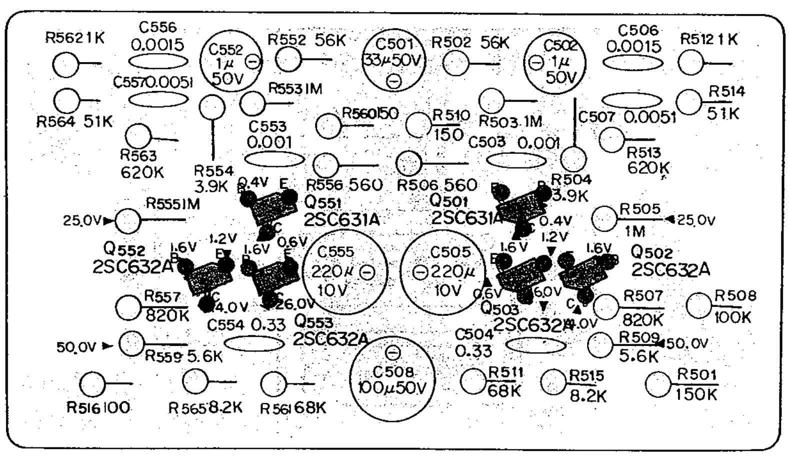


MOUNTING DIAGRAM – Equalizer Board –

– Conductor Side –

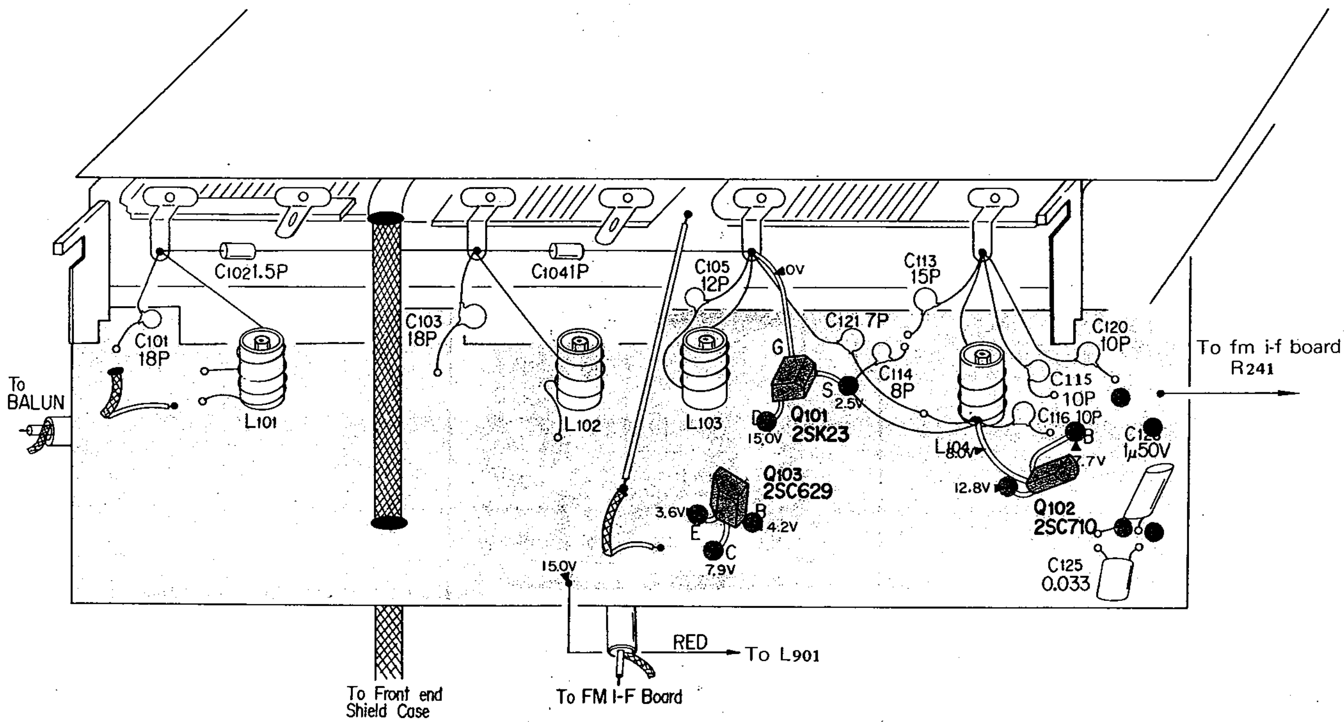


– Component Side –

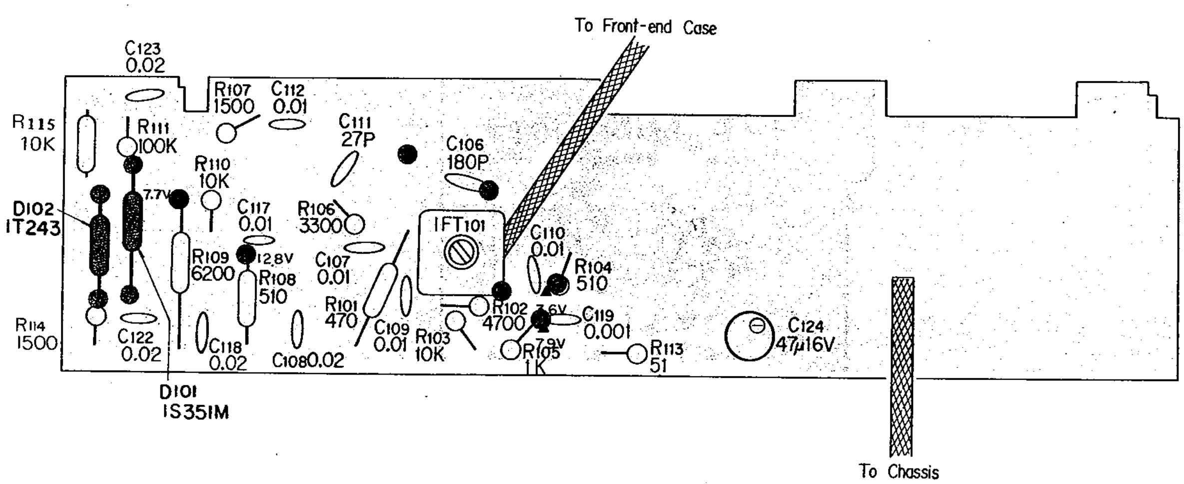


MOUNTING DIAGRAM – Fm Front End –

– Conductor Side –

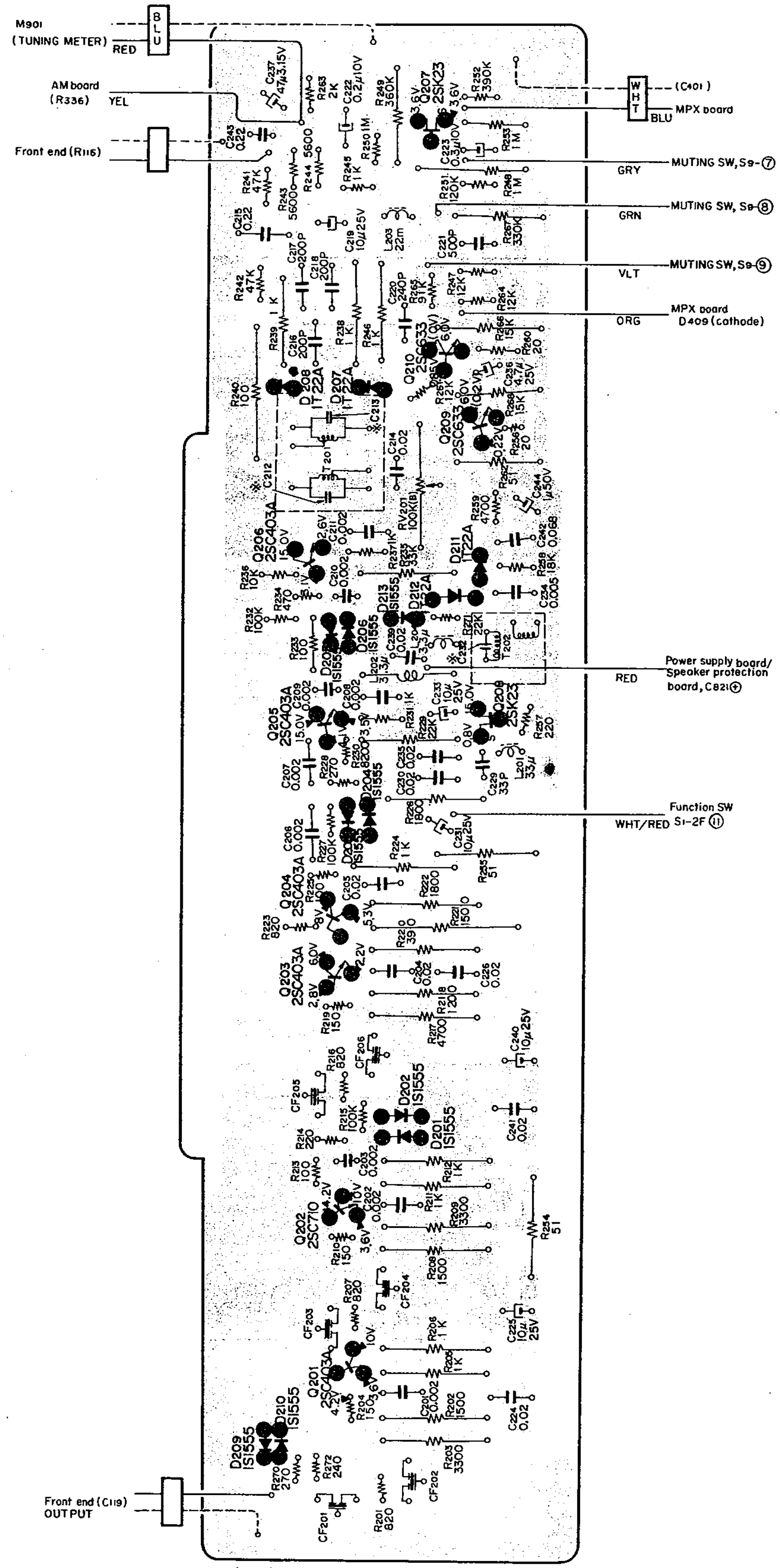


– Component Side –



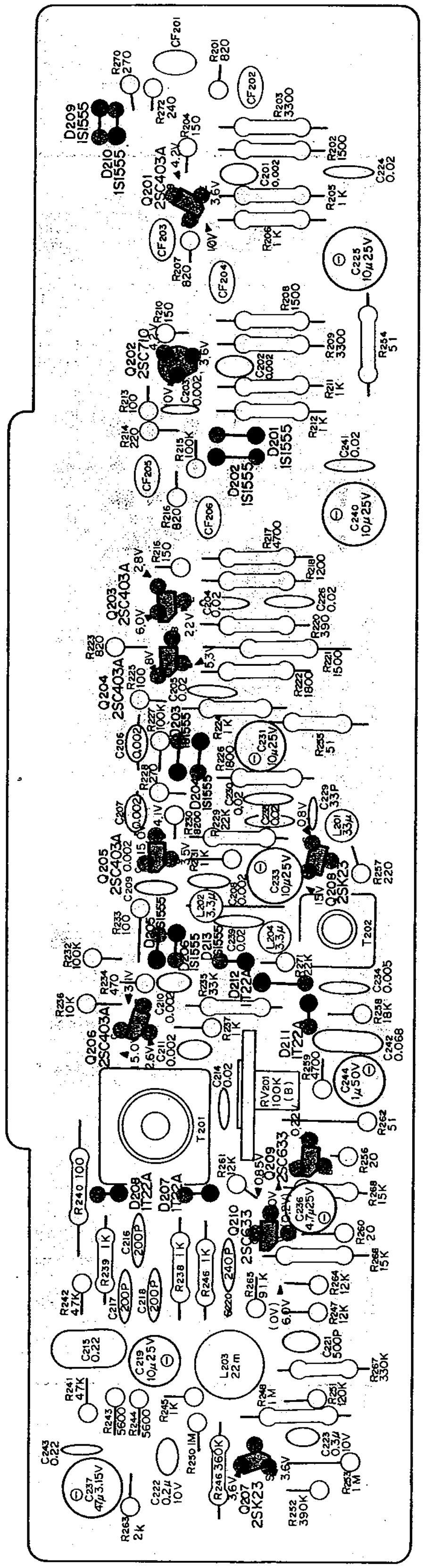
MOUNTING DIAGRAM – Fm I-f Board –

– Conductor Side –



( ):MUTING Operation

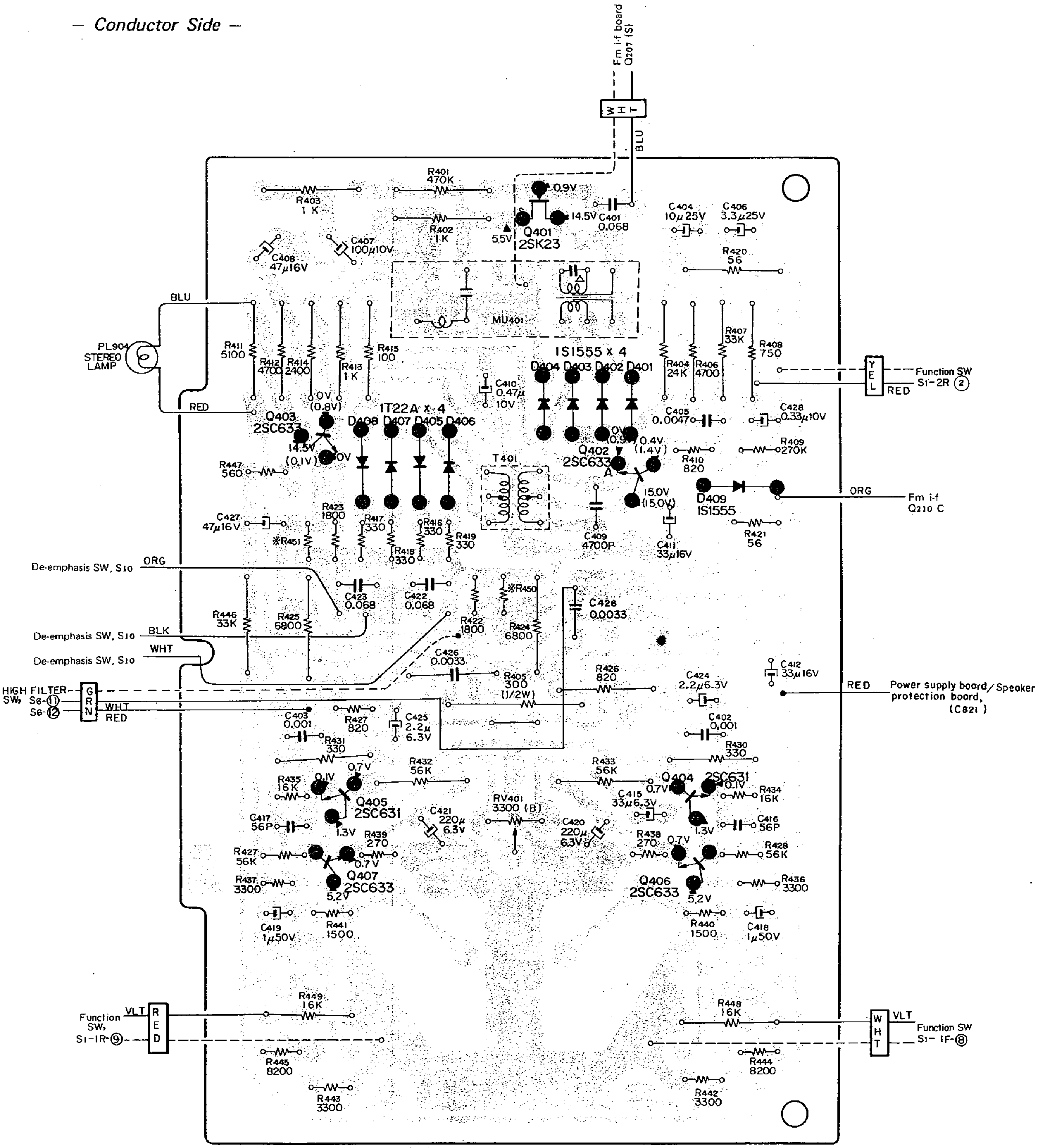
— Component Side —



( ):MUTING Operation

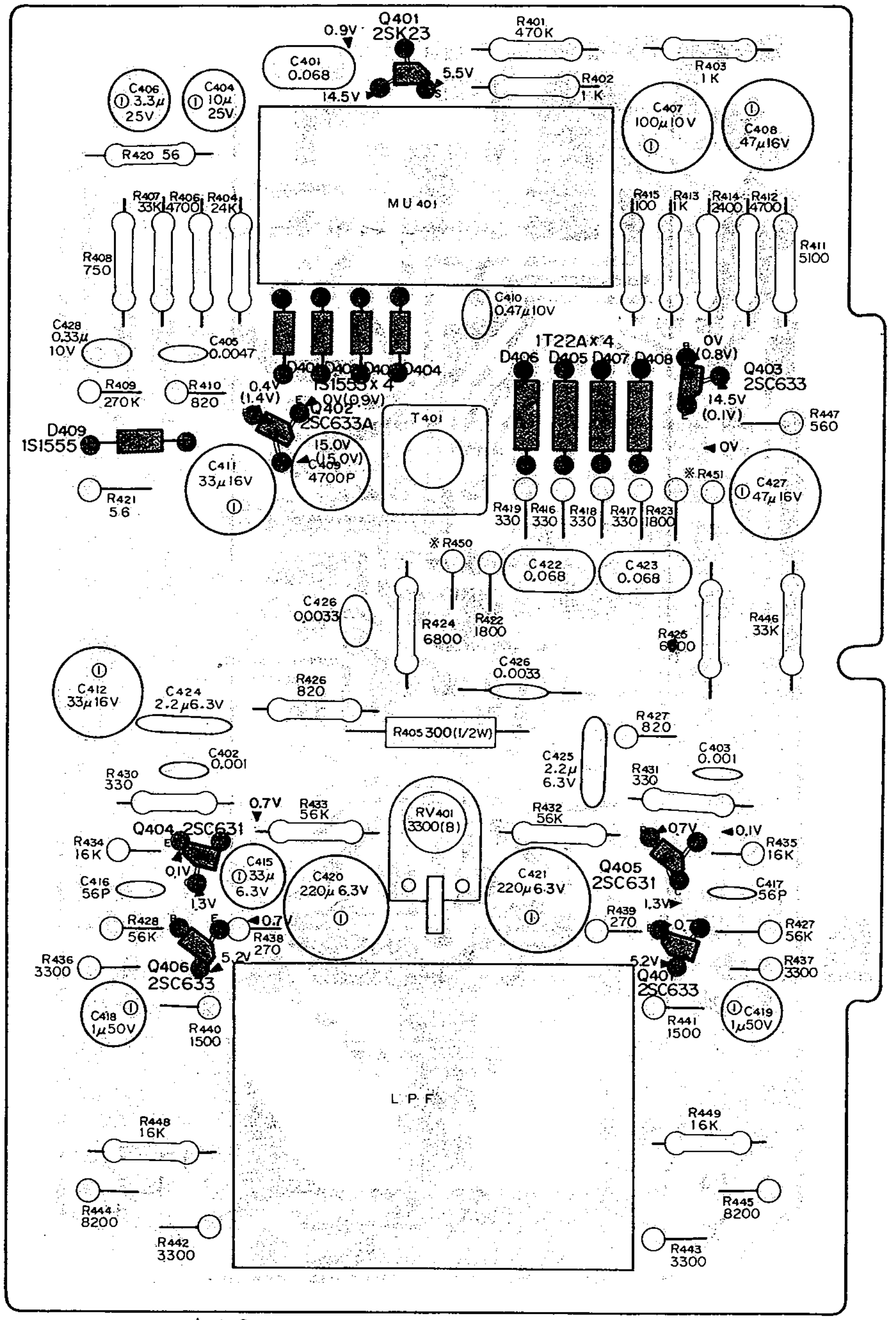
MOUNTING DIAGRAM – MPX Board –

– Conductor Side –



( ); Stereo Operation

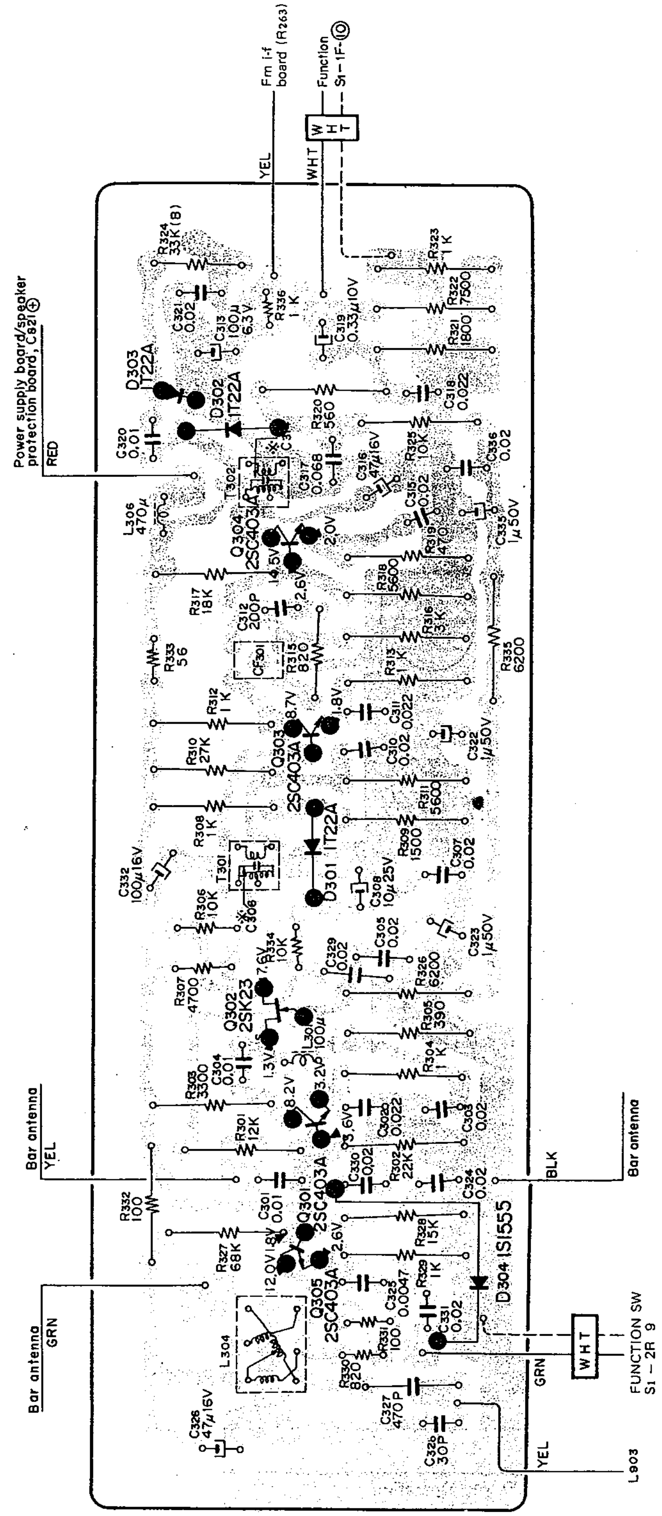
– Component Side –



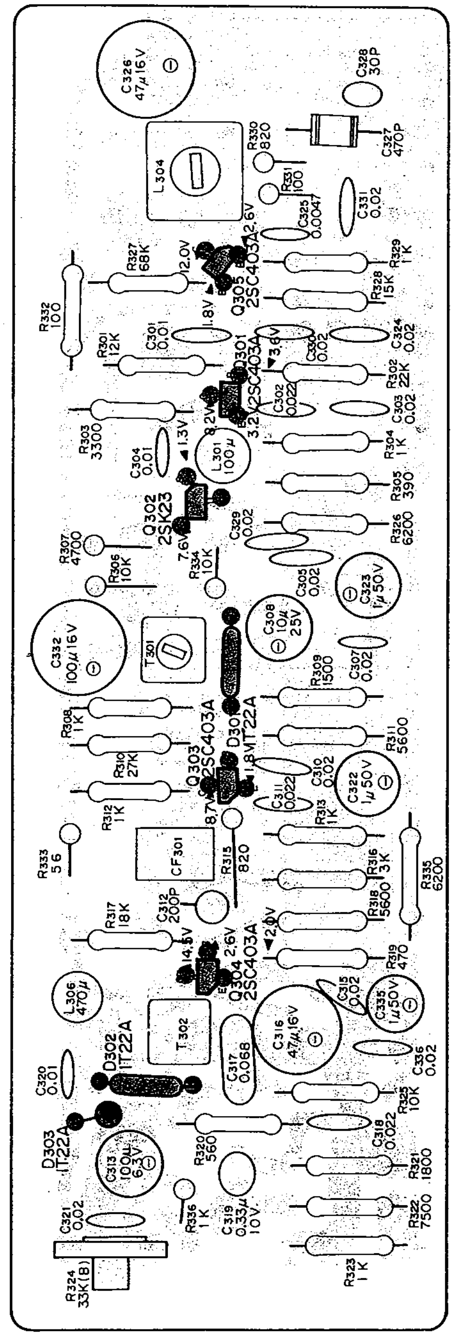
( ); Stereo Operation

MOUNTING DIAGRAM — A-m I-f Board —

— Conductor Side —

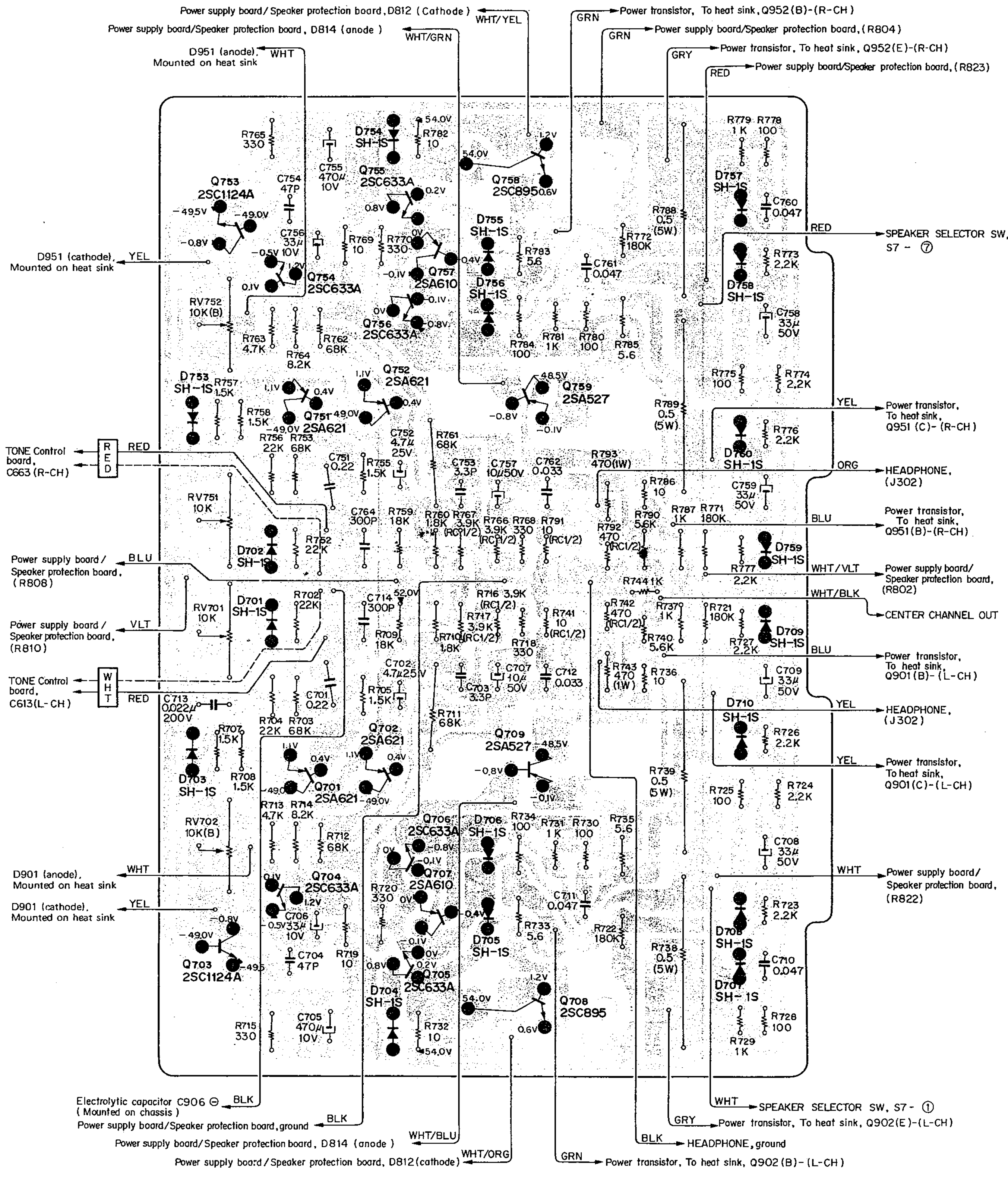


— Component Side —

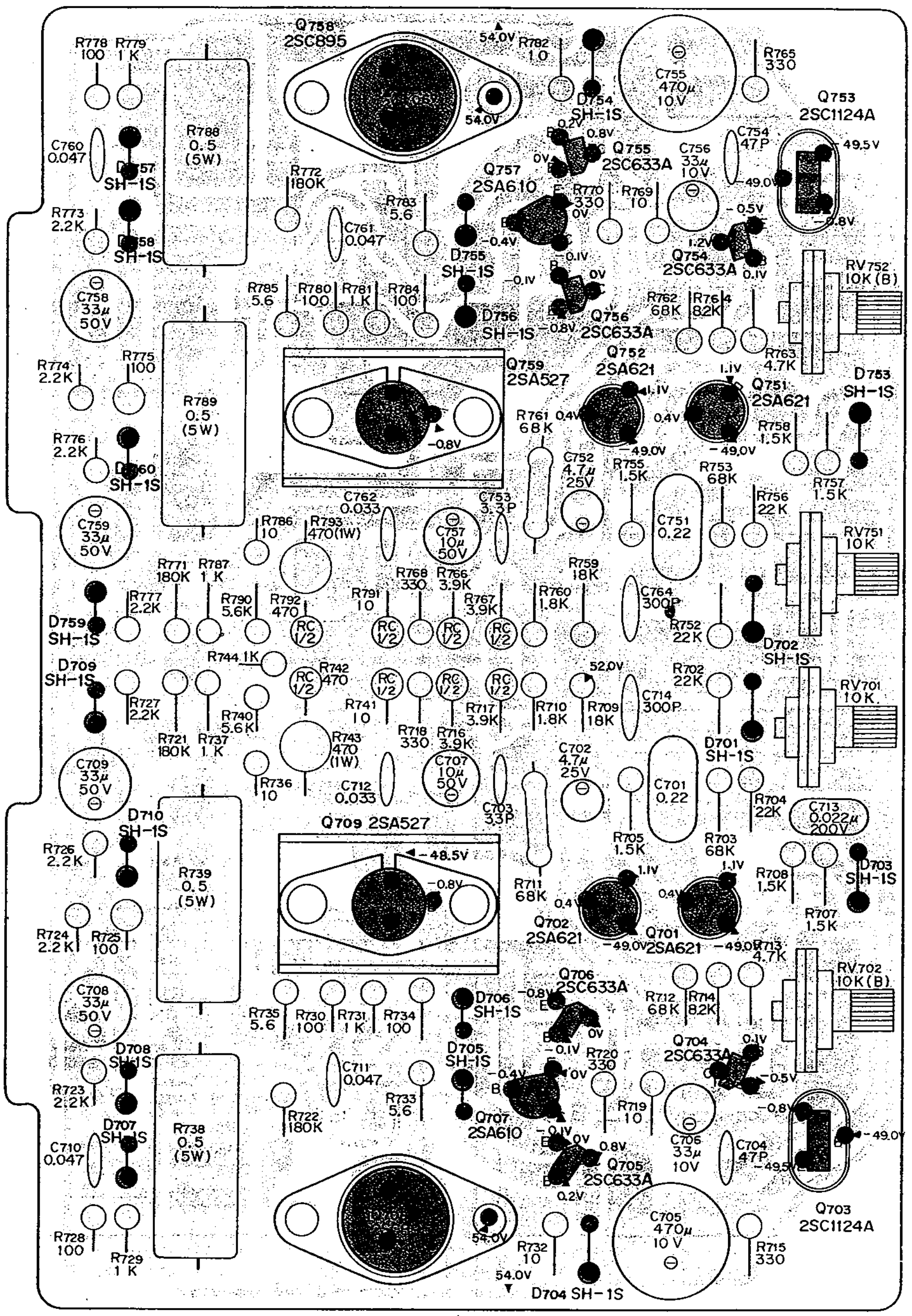


MOUNTING DIAGRAM – Power Amplifier Board –

– Conductor Side –

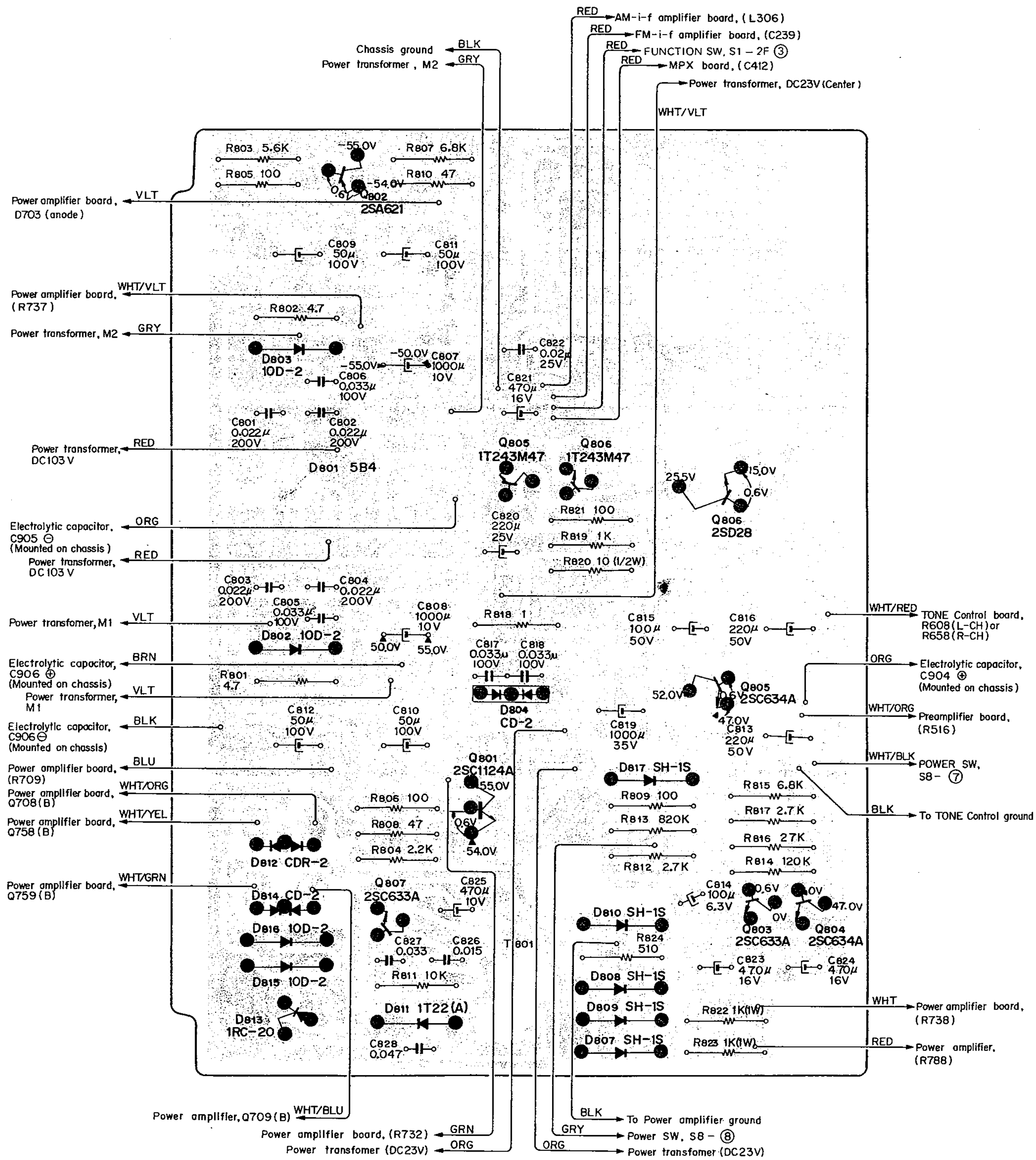


— Component Side —

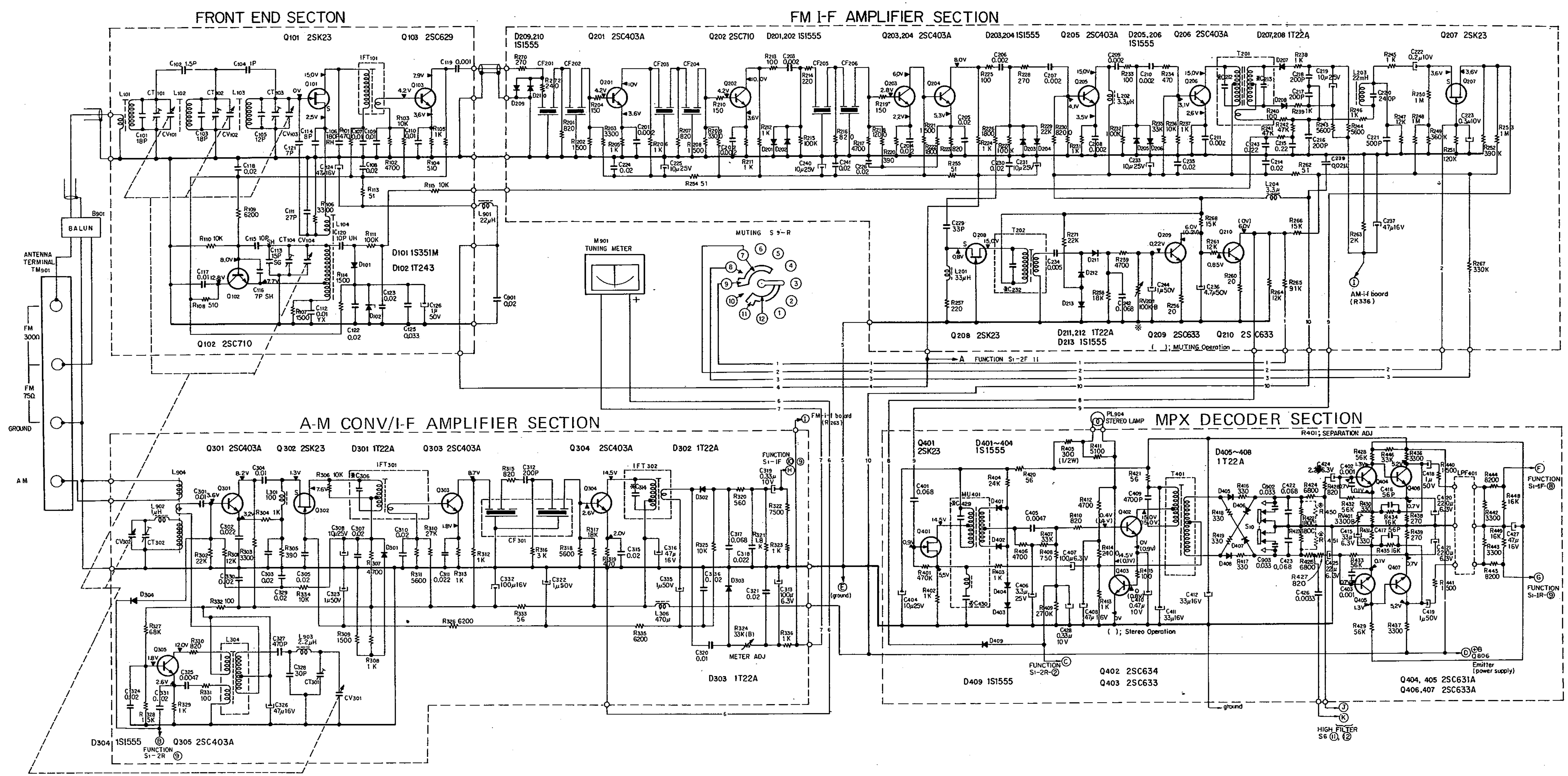


MOUNTING DIAGRAM — Power Supply Board —

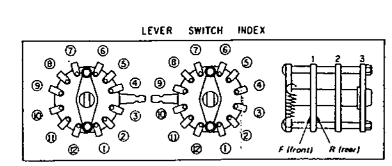
— Conductor Side —

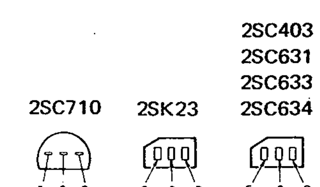


CHEMATIC DIAGRAM – Tuner Section –



Ref. No.	Description	Position
S9	MUTING SW	ON
S10	DE-EMPHASIS SW	75μsec

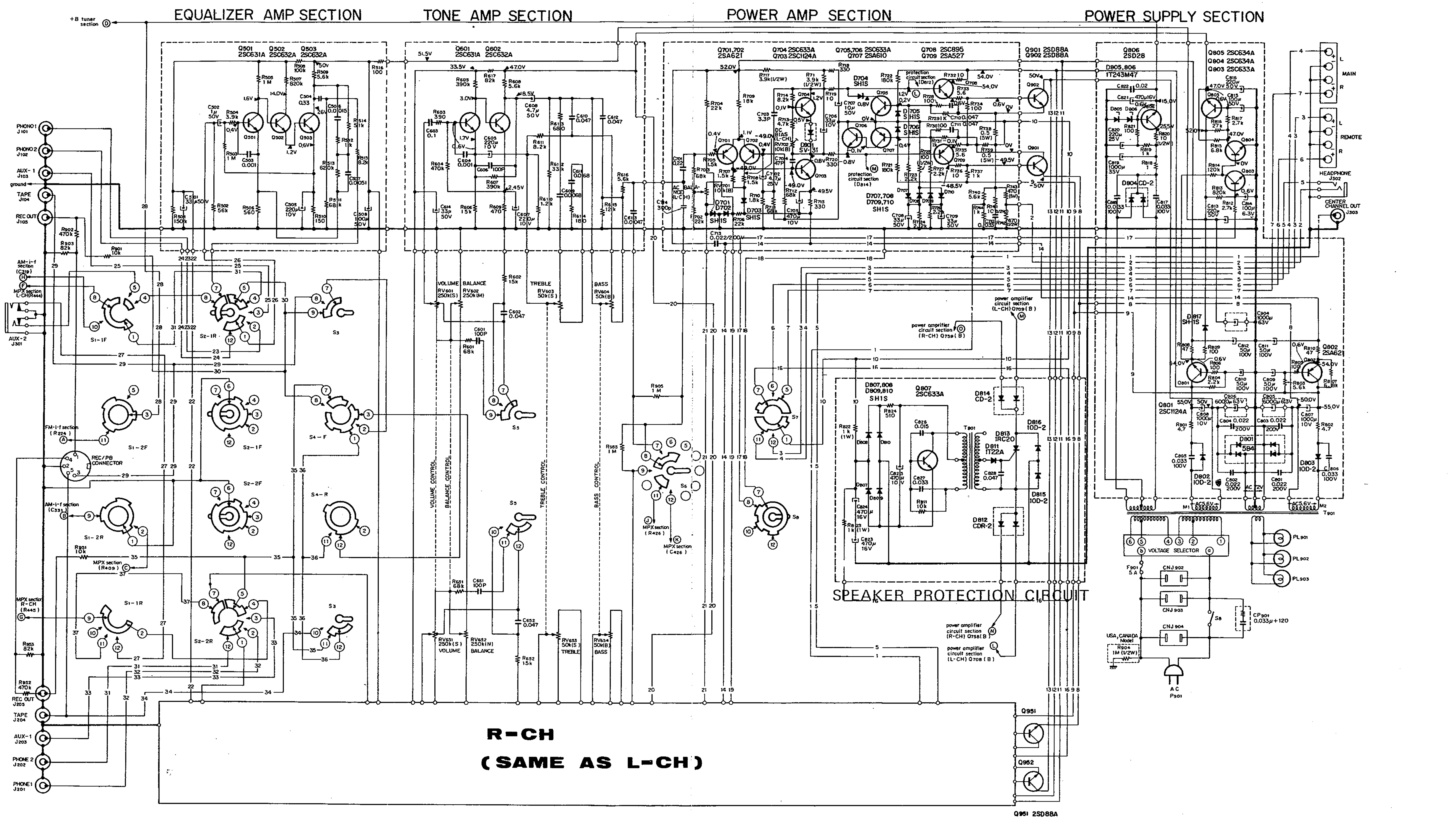




Note:
All resistance values are in ohms. k = 1,000, M = 1,000k
All capacitance values are in μF except as indicated with p, which means μμF.
All voltages represent an average value and should hold within ±20%.
All voltages are dc measured with a VOM which has an input impedance of 20k ohms/volt. No signal in.

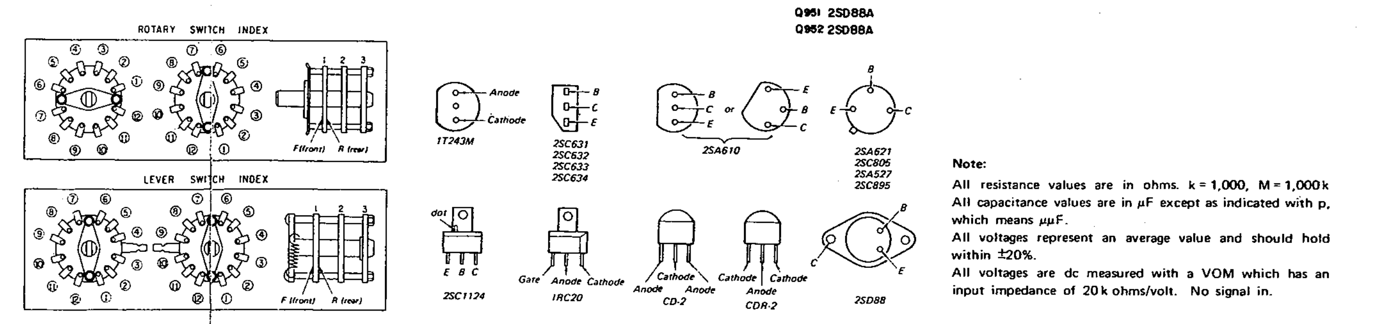
SONY
STR-6065

HEMATIC DIAGRAM – Audio Section –



Ref. No.	Description	Position
S1	FUNCTION (1) (FM AUTO STEREO - FM MONO - AM - PHONO-2 - AUX-2)	AUTO STEREO
S2	FUNCTION (2) SW (AUX-1 - FUNCTION (1) - PHONO-1)	FUNCTION (1)
S3	MONITOR SW (SOURCE - TAPE)	SOURCE
S4	MODE SW (REVERSE - STEREO - L+R - LEFT - RIGHT)	STEREO

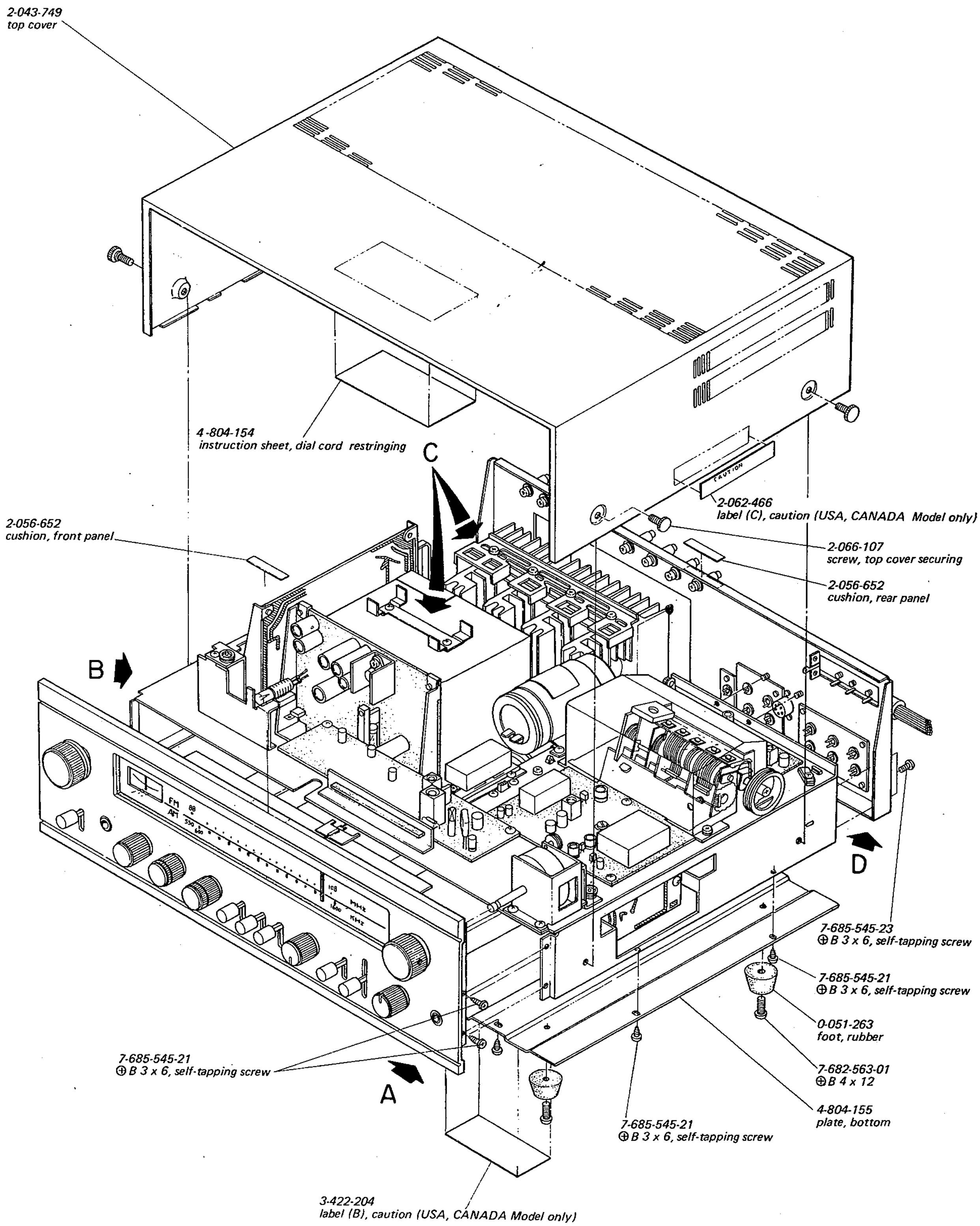
Ref. No.	Description	Position
S5	LOUDNESS SW	ON
S6	HIGH FILTER	OFF
S7	SPEAKER SW (REMOTE - OFF - MAIN - BOTH)	BOTH
S8	POWER SW	OFF



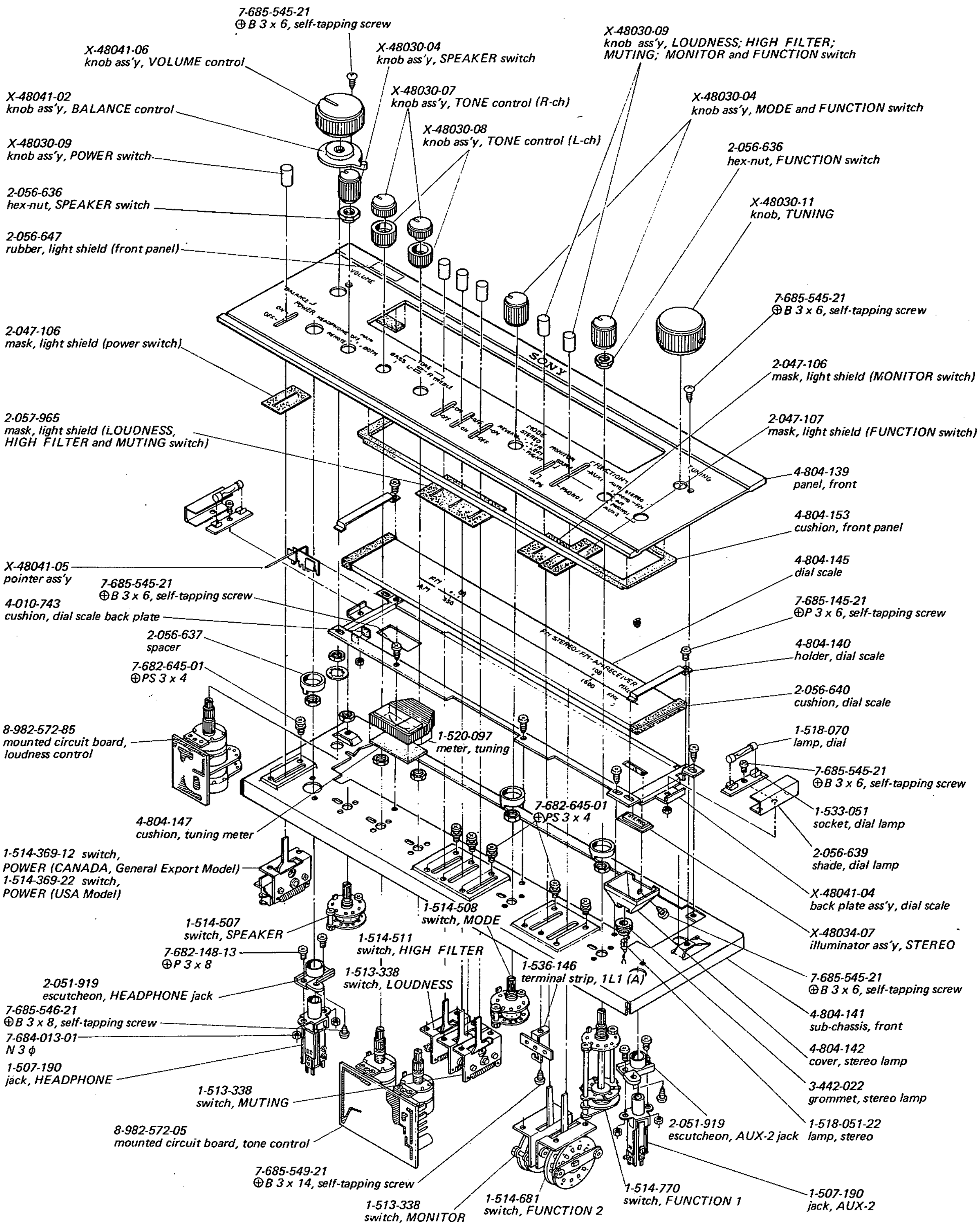
Note:
All resistance values are in ohms. k = 1,000, M = 1,000k
All capacitance values are in μF except as indicated with p, which means μμF.
All voltages represent an average value and should hold within ±20%.
All voltages are dc measured with a VOM which has an input impedance of 20 k ohms/volt. No signal in.

SONY
STR-6065

SECTION 6
EXPLODED VIEW

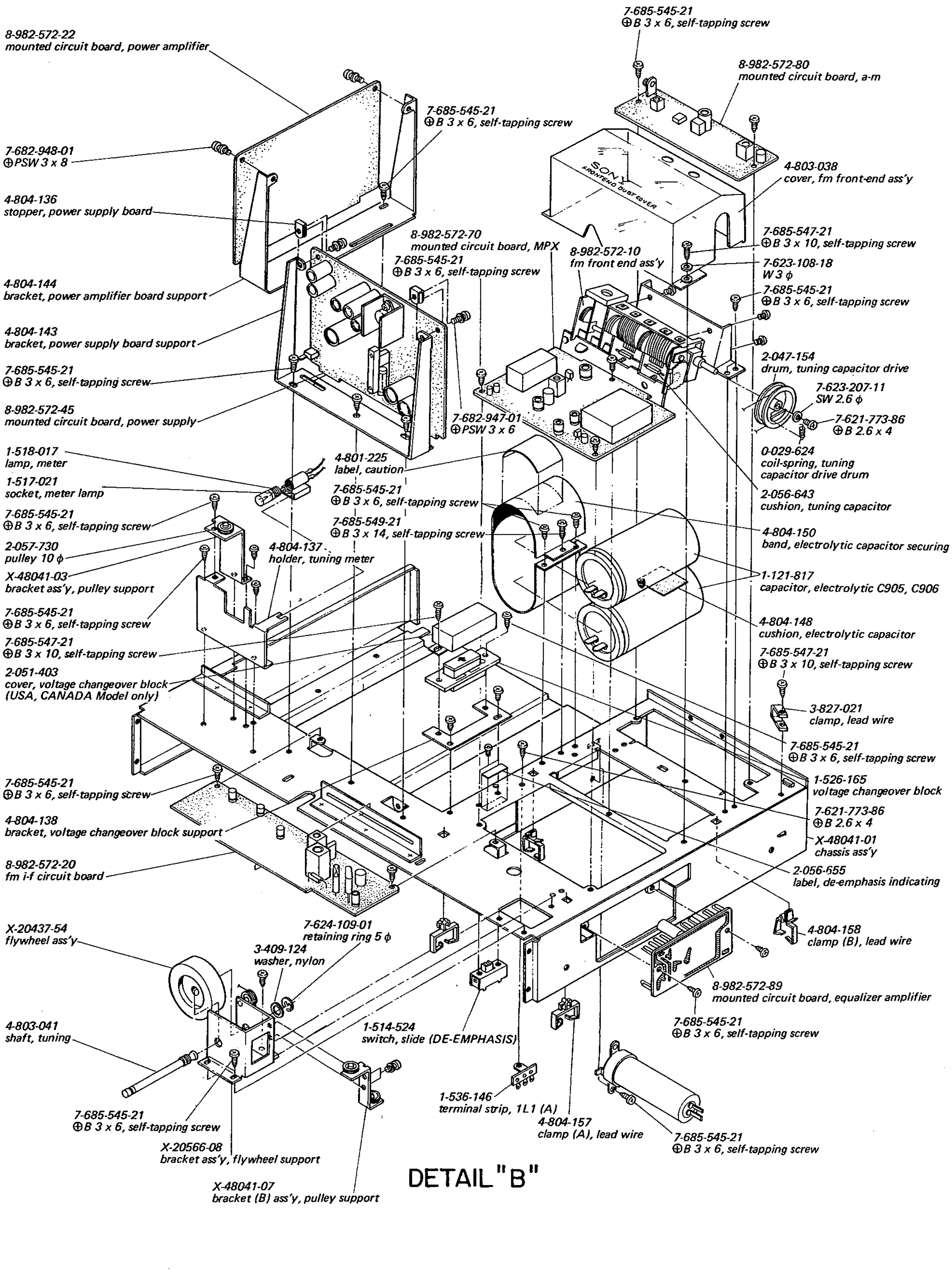


EXPLODED VIEW

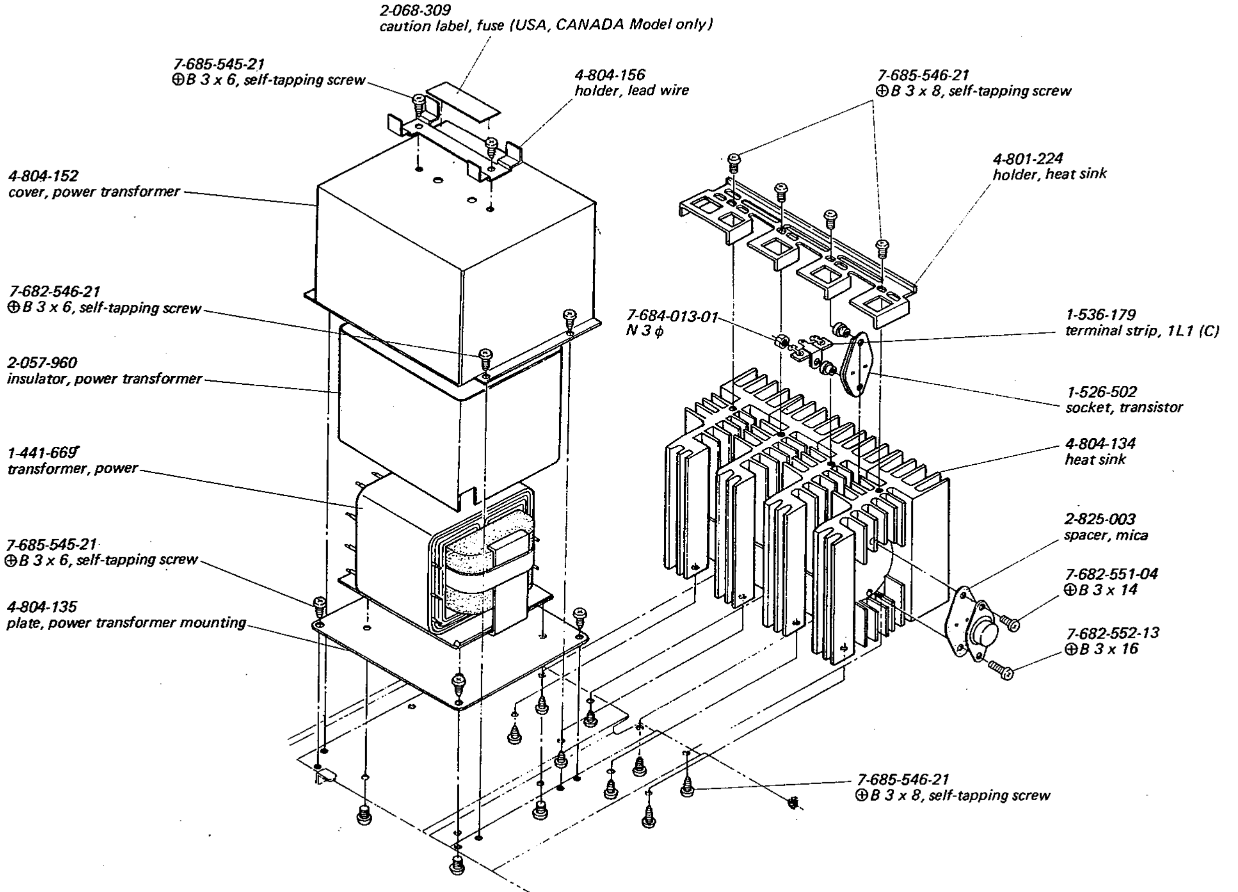


DETAIL "A"

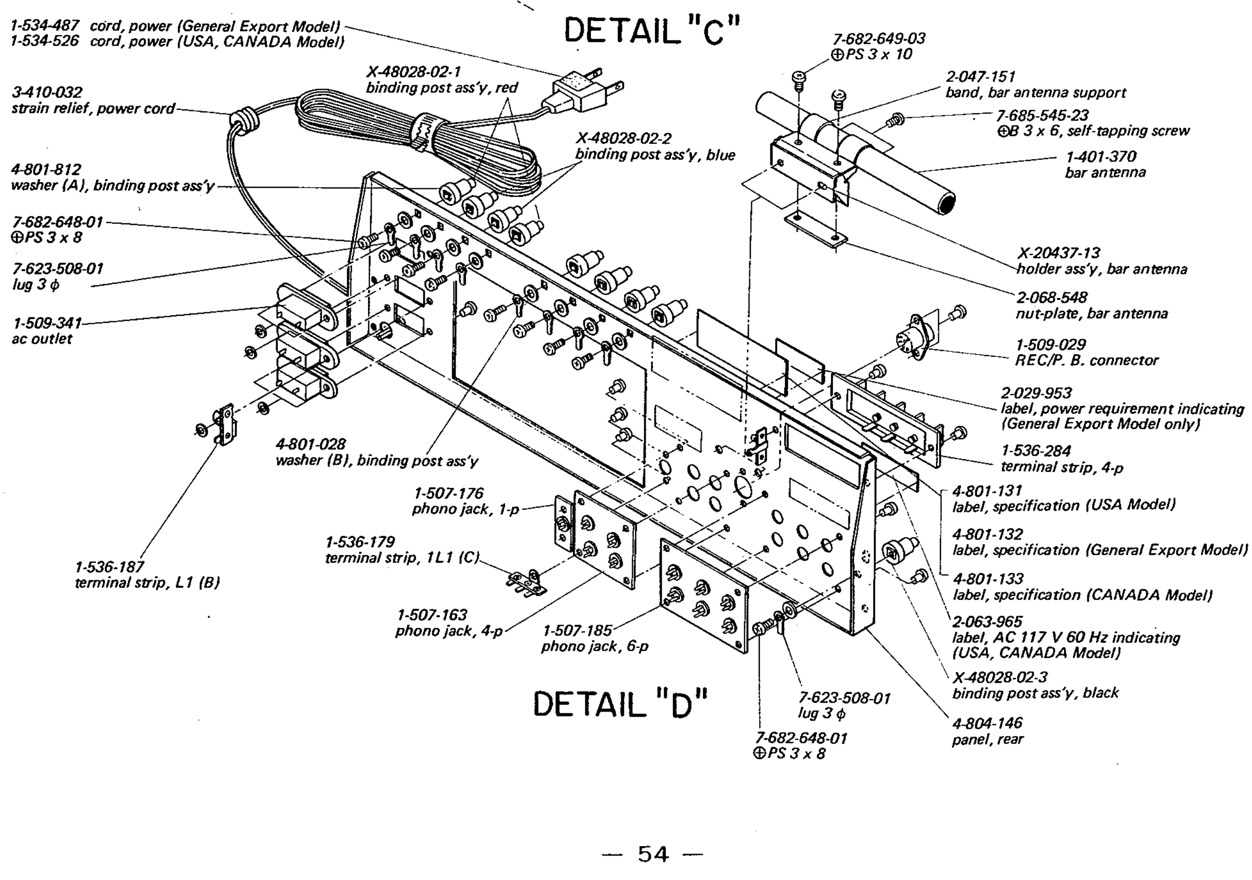
EXPLODED VIEW



EXPLODED VIEW



DETAIL "C"



DETAIL "D"

SECTION 7
ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description
		MOUNTED CIRCUIT BOARDS
	8-982-572-05	tone control circuit board
	8-982-572-85	loudness control circuit board
	8-982-572-22	power amplifier circuit board
	8-982-572-45	power supply circuit board
	8-982-572-89	equalizer amplifier circuit board
	8-982-572-70	MPX circuit board
	8-982-572-80	a-m circuit board
	8-982-572-20	fm i-f circuit board
	8-982-572-10	fm front-end ass'y, FAF-013BW
		SEMICONDUCTORS
D101		diode, 1S351
D102		diode, 1T243
D201		diode, 1S1555
D202		diode, 1S1555
D203		diode, 1S1555
D204		diode, 1S1555
D205		diode, 1S1555
D206		diode, 1S1555
D207		diode, 1T22A
D208		diode, 1T22A
D209		diode, 1S1555
D210		diode, 1S1555
D211		diode, 1T22A
D212		diode, 1T22A
D213		diode, 1S1555
D301		diode, 1T22A
D302		diode, 1T22A
D303		diode, 1T22A
D304		diode, 1S1555
D401		diode, 1S1555
D402		diode, 1S1555
D403		diode, 1S1555
D404		diode, 1S1555
D405		diode, 1T22A
D406		diode, 1T22A
D407		diode, 1T22A
D408		diode, 1T22A
D409		diode, 1S1555
D701 (D751)		diode, SH1S
D702 (D752)		diode, SH1S
D703 (D753)		diode, SH1S
D704 (D754)		diode, SH1S
D705 (D755)		diode, SH1S
D706 (D756)		diode, SH1S
D707 (D757)		diode, SH1S
D708 (D758)		diode, SH1S
D709 (D759)		diode, SH1S
D710 (D760)		diode, SH1S
D801		diode, 5B4
D802		diode, 10D2
D803		diode, 10D2
D804		diode, CD2
D805		diode, 1T243M
D806		diode, 1T243M
D807		diode, SH1S
D808		diode, SH1S
D809		diode, SH1S
D810		diode, SH1S
D811		diode, 1T22A
D812		diode, CDR2
D813		SCR, 1RC20
D814		diode, CD2
D815		diode, 10D2
D816		diode, 10D2
D817		diode, SH1S
D901 (D951)		diode, SV-31
Q101		FET, 2SK23
Q102		transistor, 2SC710
Q103		transistor, 2SC629
Q201		transistor, 2SC403A
Q202		transistor, 2SC710
Q203		transistor, 2SC403A
Q204		transistor, 2SC403A
Q205		transistor, 2SC403A
Q206		transistor, 2SC403A
Q207		FET, 2SK23
Q208		FET, 2SK23
Q209		transistor, 2SC633A
Q210		transistor, 2SC633A
Q301		transistor, 2SC403A
Q302		FET, 2SK23
Q303		transistor, 2SC403A
Q304		transistor, 2SC403A
Q305		transistor, 2SC403A
Q401		FET, 2SK23
Q402		transistor, 2SC633A
Q403		transistor, 2SC633A
Q404		transistor, 2SC631A
Q405		transistor, 2SC631A
Q406		transistor, 2SC633A
Q407		transistor, 2SC633A
Q501 (Q551)		transistor, 2SC631A
Q502 (Q552)		transistor, 2SC632A
Q503 (Q553)		transistor, 2SC632A
Q601 (Q651)		transistor, 2SC631A
Q602 (Q652)		transistor, 2SC632A
Q701 (Q751)		transistor, 2SA621
Q702 (Q752)		transistor, 2SA621
Q703 (Q753)		transistor, 2SC1124A
Q704 (Q754)		transistor, 2SC633A
Q705 (Q755)		transistor, 2SC633A

Ref. No.	Part No.	Description
Q706 (Q756)		transistor, 2SC633A
Q707 (Q757)		transistor, 2SA610
Q708 (Q758)		transistor, 2SC895
Q709 (Q759)		transistor, 2SA527
Q801		transistor, 2SC1124A
Q802		transistor, 2SA621
Q803		transistor, 2SC633A
Q804		transistor, 2SC634A
Q805		transistor, 2SC634A
Q806		transistor, 2SD28
Q807		transistor, 2SC633A
Q901 (Q951)		transistor, 2SD88A
Q902 (Q952)		transistor, 2SD88A

TRANSFORMERS, COILS AND INDUCTORS

Ref. No.	Part No.	Description
B101	1-417-014	balun
IFT101	1-403-295	IFT, fm 10.7 MHz
IFT301	1-403-152	IFT, a-m 455 kHz
IFT302	1-403-128	IFT, a-m 455 kHz
L101	1-401-351	coil, fm antenna
L102	1-425-446	coil, fm rf
L103	1-425-446	coil, fm rf
L104	1-405-377	coil, fm osc
L201	1-407-163	inductor, micro 33μH
L202	1-407-184	inductor, micro 3.3μH
L203	1-407-408	inductor, micro 22 mH
L204	1-407-184	inductor, micro 3.3μH
L301	1-407-169	inductor, micro 100μH
L304	1-405-359	coil, a-m osc
L306	1-407-177	inductor, micro 470μH
L901	1-407-161	inductor, micro 22μH
L902	1-407-178	inductor, micro 1.0μH
L903	1-407-182	inductor, micro 2.2μH
L904	1-401-370	bar antenna, a-m
MU401	1-425-548	MPX unit
T201	1-403-291	transformer, discriminator 10.7 MHz
T202	1-403-299	IFT, fm 10.7 MHz
T401	1-425-260	transformer, switching 38 kHz
T801	1-433-132	transformer, osc.
T901	1-441-669	transformer, power

CAPACITORS

All capacitance values are in μF except as indicated with p, which means μμF.

Ref. No.	Part No.	Value	Tolerance	Voltage	Type
C101	1-101-862	18p	±5%	50V	ceramic
C102	1-101-938	1.5p	±10%	500V	ceramic
C103	1-101-862	18p	±5%	50V	ceramic
C104	1-101-937	1p	±10%	500V	ceramic
C105	1-101-961	12p	±5%	50V	ceramic
C106	1-102-985	180p	±5%	50V	ceramic
C107	1-101-072	0.01	$^{+80}_{-20}\%$	25V	ceramic
C108	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C109	1-101-072	0.01	$^{+80}_{-20}\%$	25V	ceramic
C110	1-101-072	0.01	$^{+80}_{-20}\%$	25V	ceramic
C111	1-101-869	27p	±5%	50V	ceramic
C112	1-102-077	0.01	±20%	50V	ceramic
C113	1-101-873	15p	±5%	50V	ceramic
C114	1-101-958	8p	±0.5p	50V	ceramic
C115	1-101-978	10p	±5%	50V	ceramic
C116	1-102-875	7p	±5%	50V	ceramic
C117	1-101-072	0.01	$^{+80}_{-20}\%$	25V	ceramic
C118	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C119	1-101-918	0.001	$^{+80}_{-20}\%$	25V	ceramic
C120	1-101-978	10p	±5%	50V	ceramic
C121	1-101-957	7p	±0.5p	50V	ceramic
C122	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C123	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C124	1-121-353	47	$^{+100}_{-10}\%$	16V	electrolytic
C125	1-105-679-12	0.033	±10%	50V	mylar
C126	1-121-391	1	$^{+150}_{-10}\%$	50V	electrolytic
C201	1-101-919	0.002	$^{+80}_{-20}\%$	25V	ceramic
C202	1-101-919	0.002	$^{+80}_{-20}\%$	25V	ceramic
C203	1-101-919	0.002	$^{+80}_{-20}\%$	25V	ceramic
C204	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C205	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C206	1-101-919	0.002	$^{+80}_{-20}\%$	25V	ceramic
C207	1-101-919	0.002	$^{+80}_{-20}\%$	25V	ceramic
C208	1-101-919	0.002	$^{+80}_{-20}\%$	25V	ceramic
C209	1-101-919	0.002	$^{+80}_{-20}\%$	25V	ceramic
C210	1-101-919	0.002	$^{+80}_{-20}\%$	25V	ceramic
C211	1-101-919	0.002	$^{+80}_{-20}\%$	25V	ceramic
C212		included in T201			
C213					
C214	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C215	1-105-689-12	0.22	±10%	50V	mylar
C216	1-101-030	200p	±5%	50V	ceramic
C217	1-101-030	200p	±5%	50V	ceramic
C218	1-101-030	200p	±5%	50V	ceramic
C219	1-121-398	10	$^{+100}_{-10}\%$	25V	electrolytic
C220	1-107-140	240p	±10%	50V	silvered mica
C221	1-101-424	500p	±20%	250V	ceramic
C222	1-127-020	0.22	±20%	10V	electrolytic (aluminum)
C223	1-127-021	0.33	±20%	10V	electrolytic (aluminum)
C224	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C225	1-121-398	10	$^{+100}_{-10}\%$	25V	electrolytic
C226	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C229	1-101-872	33p	±5%	50V	ceramic
C230	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C231	1-121-398	10	$^{+100}_{-10}\%$	25V	electrolytic
C232		included in T202			
C233	1-121-398	10	$^{+100}_{-10}\%$	25V	electrolytic
C234	1-101-904	0.005	$^{+80}_{-20}\%$	50V	ceramic
C235	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C236	1-121-396	4.7	$^{+150}_{-10}\%$	50V	electrolytic
C237	1-121-409	47	$^{+100}_{-10}\%$	16V	electrolytic
C239	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C240	1-121-398	10	$^{+100}_{-10}\%$	25V	electrolytic
C241	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C242	1-105-683-12	0.068	±10%	50V	mylar
C243	1-105-689-12	0.22	±10%	50V	mylar
C244	1-121-391	1	$^{+150}_{-10}\%$	50V	electrolytic
C301	1-101-072	0.01	$^{+80}_{-20}\%$	25V	ceramic
C302	1-105-837-12	0.022	±20%	50V	mylar
C303	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C304	1-101-072	0.01	$^{+80}_{-20}\%$	25V	ceramic
C305	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic

Ref. No.	Part No.	Description			
C306		included in IFT301			
C307	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C308	1-121-398	10	$^{+100}_{-10}\%$	25V	electrolytic
C310	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C311	1-105-837-12	0.022	±20%	50V	mylar
C312	1-103-608	200p	±5%	50V	styrol
C313	1-121-413	100	$^{+100}_{-10}\%$	6.3V	electrolytic
C314		included in IFT302			
C315	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C316	1-121-409	47	$^{+100}_{-10}\%$	16V	electrolytic
C317	1-105-843-12	0.068	±20%	50V	mylar
C318	1-105-837-12	0.022	±20%	50V	mylar
C319	1-127-021	0.33	±20%	10V	electrolytic (aluminum)
C320	1-101-072	0.01	$^{+80}_{-20}\%$	25V	ceramic
C321	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C322	1-121-391	1	$^{+150}_{-10}\%$	50V	electrolytic
C323	1-121-391	1	$^{+150}_{-10}\%$	50V	electrolytic
C324	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C325	1-105-829-12	0.0047	±20%	50V	mylar
C326	1-121-409	47	$^{+100}_{-10}\%$	16V	electrolytic
C327	1-103-617	470p	±5%	50V	styrol
C328	1-101-871	30p	±5%	50V	ceramic
C329	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C330	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C331	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C332	1-121-415	100	$^{+100}_{-10}\%$	16V	electrolytic
C335	1-121-391	1	$^{+150}_{-10}\%$	50V	electrolytic
C336	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C401	1-105-683-12	0.068	±10%	50V	mylar
C402	1-105-661-12	0.001	±10%	50V	mylar
C403	1-105-661-12	0.001	±10%	50V	mylar
C404	1-121-398	10	$^{+100}_{-10}\%$	25V	electrolytic
C405	1-105-669-12	0.0047	±10%	50V	mylar
C406	1-121-344	3.3	$^{+150}_{-10}\%$	25V	electrolytic
C407	1-121-413	100	$^{+100}_{-10}\%$	6.3V	electrolytic
C408	1-121-409	47	$^{+100}_{-10}\%$	16V	electrolytic
C409	1-103-575	4,700p	±5%	50V	styrol
C410	1-127-022	0.47	±20%	10V	electrolytic (aluminum)
C411	1-121-403	33	$^{+100}_{-10}\%$	16V	electrolytic
C412	1-121-403	33	$^{+100}_{-10}\%$	16V	electrolytic
C415	1-121-402	33	$^{+100}_{-10}\%$	6.3V	electrolytic
C416	1-101-884	56p	±5%	50V	ceramic
C417	1-101-884	56p	±5%	50V	ceramic
C418	1-121-391	1	$^{+150}_{-10}\%$	50V	electrolytic
C419	1-121-391	1	$^{+150}_{-10}\%$	50V	electrolytic
C420	1-121-419	220	$^{+100}_{-10}\%$	6.3V	electrolytic
C421	1-121-419	220	$^{+100}_{-10}\%$	6.3V	electrolytic
C422	1-105-683-12	0.068	±10%	50V	mylar
C423	1-105-683-12	0.068	±10%	50V	mylar
C424	1-127-013	2.2	±20%	6.3V	electrolytic (aluminum)
C425	1-127-013	2.2	±20%	6.3V	electrolytic (aluminum)
C426	1-105-667-12	0.0033	±10%	50V	mylar
C427	1-121-409	47	$^{+100}_{-10}\%$	16V	electrolytic
C428	1-127-021	0.33	±20%	10V	electrolytic (aluminum)
C501	1-121-405	33	$^{+100}_{-10}\%$	50V	electrolytic

Ref. No.	Part No.	Description			
C502 (C552)	1-121-391	1	$^{+150}_{-10}\%$	50V	electrolytic
C503 (C553)	1-105-661-12	0.001	±10%	50V	mylar
C504 (C554)	1-105-691-12	0.33	±10%	50V	mylar
C505 (C555)	1-121-420	220	$^{+100}_{-10}\%$	10V	electrolytic
C506 (C556)	1-106-005-12	0.0015	±5%	50V	mylar
C507 (C557)	1-106-018-12	0.0051	±5%	50V	mylar
C508	1-121-417	100	$^{+100}_{-10}\%$	50V	electrolytic
C601 (C651)	1-107-085	100p	±5%	50V	silvered mica
C602 (C652)	1-105-681-12	0.047	±10%	50V	mylar
C603 (C653)	1-105-685-12	0.1	±10%	50V	mylar
C604 (C654)	1-105-661-12	0.001	±10%	50V	mylar
C605 (C655)	1-121-420	220	$^{+100}_{-10}\%$	10V	electrolytic
C606 (C656)	1-107-131	100p	±10%	50V	silvered mica
C607 (C657)	1-121-420	220	$^{+100}_{-10}\%$	10V	electrolytic
C608 (C658)	1-121-396	4.7	$^{+150}_{-10}\%$	50V	electrolytic
C609 (C659)	1-105-671-12	0.0068	±10%	50V	mylar
C610 (C660)	1-105-681-12	0.047	±10%	50V	mylar
C611 (C661)	1-105-683-12	0.068	±10%	50V	mylar
C612 (C662)	1-105-681-12	0.047	±10%	50V	mylar
C613 (C663)	1-105-669-12	0.0047	±10%	50V	mylar
C614	1-121-405	33	$^{+100}_{-10}\%$	50V	electrolytic
C701 (C751)	1-105-689-12	0.22	±10%	50V	mylar
C702 (C752)	1-121-395	4.7	$^{+150}_{-10}\%$	25V	electrolytic
C703 (C753)	1-107-044	3.3p	±0.5p	500V	silvered mica
C704 (C754)	1-107-015	47p	±10%	500V	silvered mica
C705 (C755)	1-121-425	470	$^{+100}_{-10}\%$	10V	electrolytic
C706 (C756)	1-121-402	33	$^{+100}_{-10}\%$	10V	electrolytic
C707 (C757)	1-121-738	10	$^{+100}_{-10}\%$	50V	electrolytic
C708 (C758)	1-121-405	33	$^{+100}_{-10}\%$	50V	electrolytic
C709 (C759)	1-121-405	33	$^{+100}_{-10}$	50V	electrolytic
C710 (C760)	1-105-681-12	0.047	±10%	50V	mylar
C711 (C761)	1-105-681-12	0.047	±10%	50V	mylar
C712 (C762)	1-105-679-12	0.033	±10%	50V	mylar
C713	1-105-757-12	0.022	±10%	200V	mylar
C714	1-107-096	300p	±5%	50V	silvered mica
C801	1-105-757-12	0.022	±10%	200V	mylar
C802	1-105-757-12	0.022	±10%	200V	mylar
C803	1-105-757-12	0.022	±10%	200V	mylar
C804	1-105-757-12	0.022	±10%	200V	mylar
C805	1-105-719-12	0.033	±10%	100V	mylar
C806	1-105-719-12	0.033	±10%	100V	mylar
C807	1-121-736	1,000	$^{+100}_{-10}\%$	10V	electrolytic
C808	1-121-736	1,000	$^{+100}_{-10}\%$	10V	electrolytic
C809	1-121-559	50	$^{+100}_{-10}\%$	100V	electrolytic
C810	1-121-559	50	$^{+100}_{-10}\%$	100V	electrolytic
C811	1-121-559	50	$^{+100}_{-10}\%$	100V	electrolytic
C812	1-121-559	50	$^{+100}_{-10}\%$	100V	electrolytic
C813	1-121-423	220	$^{+100}_{-10}\%$	50V	electrolytic
C814	1-121-413	100	$^{+100}_{-10}\%$	6.3V	electrolytic
C815	1-121-417	100	$^{+100}_{-10}\%$	50V	electrolytic
C816	1-121-423	220	$^{+100}_{-10}\%$	50V	electrolytic
C817	1-105-719-12	0.033	±10%	100V	mylar
C818	1-105-719-12	0.033	±10%	100V	mylar
C819	1-121-388	1,000	$^{+100}_{-10}\%$	35V	electrolytic
C820	1-121-422	220	$^{+100}_{-10}\%$	25V	electrolytic
C821	1-121-426	470	$^{+100}_{-10}\%$	16V	electrolytic
C822	1-101-073	0.02	$^{+80}_{-20}\%$	25V	ceramic
C823	1-121-426	470	$^{+100}_{-10}\%$	16V	electrolytic
C824	1-121-426	470	$^{+100}_{-10}\%$	16V	electrolytic

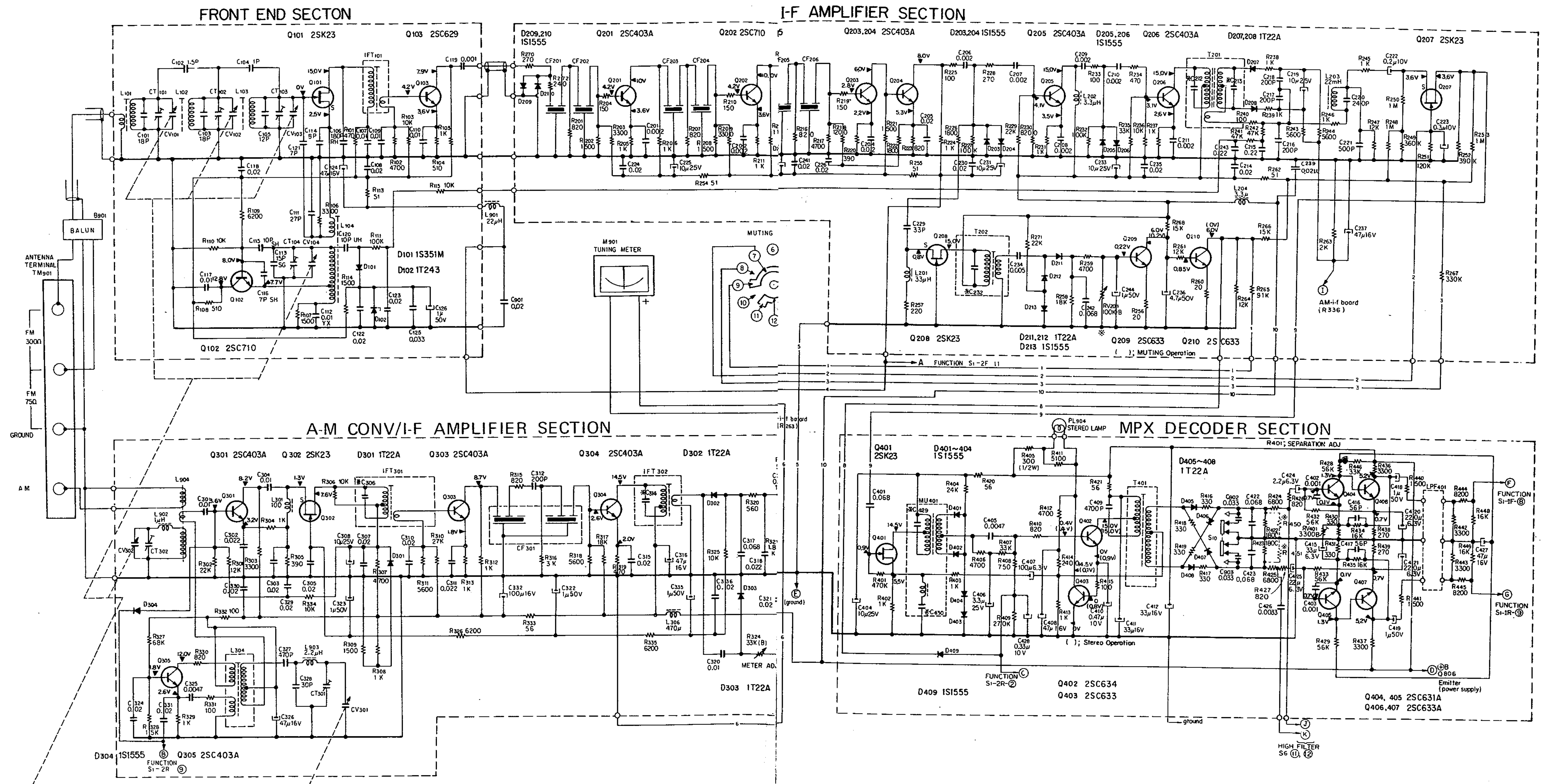
Ref. No.	Part No.	Description			
C825	1-121-425	470	$\pm^{100}_{10}$%	10V	electrolytic
C826	1-105-675-12	0.015	±10%	50V	mylar
C827	1-105-679-12	0.033	±10%	50V	mylar
C828	1-105-681-12	0.047	±10%	50V	mylar
C901	1-101-073	0.02	$\pm^{80}_{20}$%	25V	ceramic
C902	1-105-679-12	0.033	±10%	50V	mylar
C903	1-105-679-12	0.033	±10%	50V	mylar
C904	1-121-330	1,000	$\pm^{100}_{10}$%	63V	electrolytic
C905	1-121-817	6,000	$\pm^{100}_{10}$%	63V	electrolytic
C906	1-121-817	6,000	$\pm^{100}_{10}$%	63V	electrolytic
CV101, CV102, CV103, CV104, CV301, CV302	1-151-191-13S	capacitor, tuning			
CT104	1-141-094	ceramic trimmer			

RESISTORS

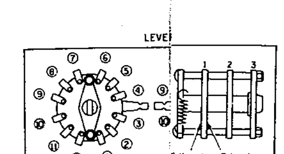
All resistance values are in ohms, ±5%, ¼W and carbon type unless otherwise indicated.

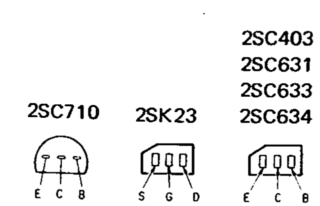
Ref. No.	Part No.	Description
R101	1-244-665	470
R102	1-244-689	4.7k
R103	1-244-697	10k
R104	1-244-666	510
R105	1-244-673	1k
R106	1-244-685	3.3k
R107	1-244-677	1.5k
R108	1-244-666	510
R109	1-244-692	6.2k
R110	1-244-697	10k
R111	1-244-721	100k
R113	1-244-642	51
R114	1-244-677	1.5k
R115	1-244-697	10k
R201	1-244-671	820
R202	1-244-677	1.5k
R203	1-244-685	3.3k
R204	1-244-653	150
R205	1-244-673	1k
R206	1-244-673	1k
R207	1-244-671	820
R208	1-244-677	1.5k
R209	1-244-685	3.3k
R210	1-244-653	150
R211	1-244-673	1k
R212	1-244-673	1k
R213	1-244-649	100
R214	1-244-657	220
R215	1-244-721	100k
R216	1-244-671	820
R217	1-244-689	4.7k
R218	1-244-675	1.2k
R219	1-244-653	150
R220	1-244-663	390
R221	1-244-677	1.5k
R222	1-244-679	1.8k
R223	1-244-671	820
R224	1-244-673	1k
R225	1-244-649	100
R226	1-244-679	1.8k
R227	1-244-721	100k
R228	1-244-659	270
R229	1-244-705	22k
R230	1-244-695	8.2k
R231	1-244-673	1k
R232	1-244-721	100k
R233	1-244-649	100
R234	1-244-665	470
R235	1-244-709	33k
R236	1-244-697	10k
R237	1-244-673	1k
R238	1-244-673	1k
R239	1-244-673	1k
R240	1-244-649	100
R241	1-244-713	47k
R242	1-244-713	47k
R243	1-244-691	5.6k
R244	1-244-691	5.6k
R245	1-244-673	1k
R246	1-244-673	1k
R247	1-244-699	12k
R248	1-244-745	1M
R249	1-244-734	360k
R250	1-244-745	1M
R251	1-244-723	120k
R252	1-244-735	390k
R253	1-244-745	1M
R254	1-244-642	51
R255	1-244-642	51
R256	1-244-632	20
R257	1-244-657	220
R258	1-244-703	18k
R259	1-244-689	4.7k
R260	1-244-632	20
R261	1-244-699	12k
R262	1-244-642	51
R263	1-244-680	2k
R264	1-244-699	12k
R265	1-244-720	91k
R266	1-244-701	15k
R267	1-244-733	330k
R268	1-244-701	15k
R270	1-244-659	270
R271	1-244-705	22k
R272	1-244-658	240
R301	1-244-699	12k
R302	1-244-705	22k
R303	1-244-685	3.3k
R304	1-244-673	1k
R305	1-244-663	390
R306	1-244-697	10k
R307	1-244-689	4.7k
R308	1-244-673	1k
R309	1-244-677	1.5k
R310	1-244-707	27k
R311	1-244-691	5.6k
R312	1-244-673	1k

SCHEMATIC DIAGRAM
TUNER SECTION



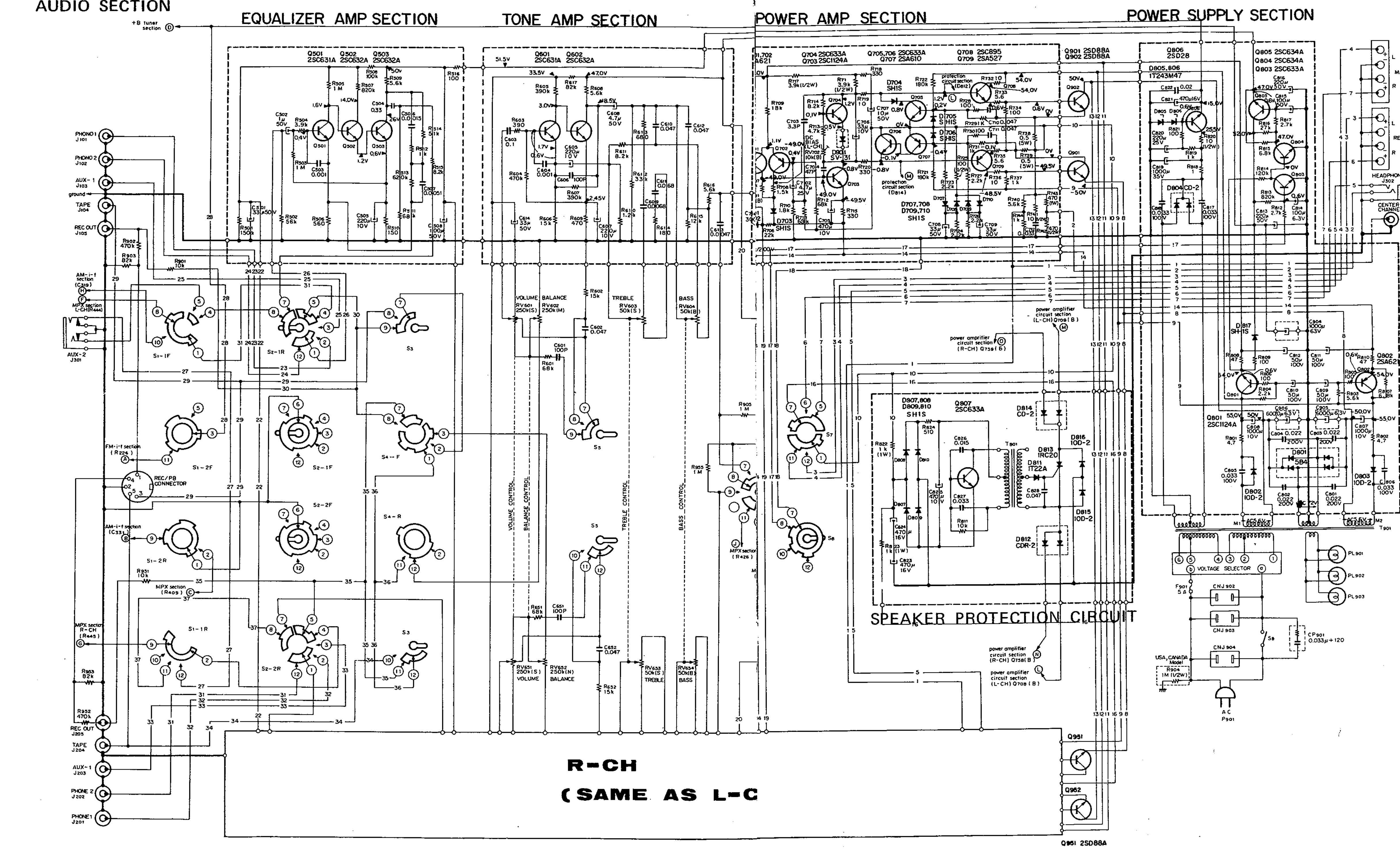
Ref. No.	Description	Position
S9	MUTING SW	ON
S10	DE-EMPHASIS SW	75μsec





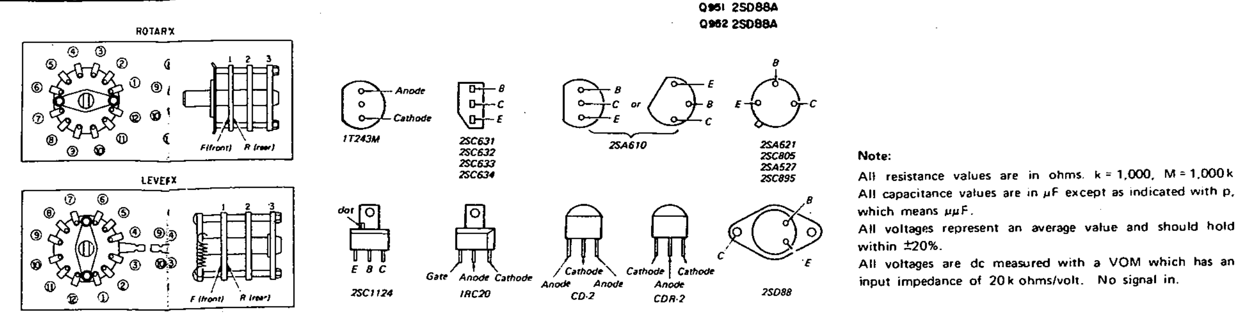
Note:
All resistance values are in ohms. k = 1,000, M = 1,000k
All capacitance values are in μF except as indicated with p, which means μμF.
All voltages represent an average value and should hold within ±20%.
All voltages are dc measured with a VOM which has an input impedance of 20k ohms/volt. No signal in.

SCHEMATIC DIAGRAM
AUDIO SECTION



Ref. No.	Description	Position
S1	FUNCTION (1) (FM AUTO STEREO - FM MONO - AM - PHONO-2 - AUX-2)	AUTO STEREO
S2	FUNCTION (2) SW (AUX-1 - FUNCTION (1) - PHONO-1)	FUNCTION (1)
S3	MONITOR SW (SOURCE - TAPE)	SOURCE
S4	MODE SW (REVERSE - STEREO - L+R - LEFT - RIGHT)	STEREO

Ref. No.	Description	Position
S5	LOUDNESS SW	ON
S6	HIGH FILTER	OFF
S7	SPEAKER SW (REMOTE - OFF - MAIN - BOTH)	BOTH
S8	POWER SW	OFF



Note:
All resistance values are in ohms. k = 1,000, M = 1,000k
All capacitance values are in μF except as indicated with p, which means μμF.
All voltages represent an average value and should hold within ±20%.
All voltages are dc measured with a VOM which has an input impedance of 20k ohms/volt. No signal in.

SONY
STR-6065

Ref. No.	Part No.	Description	
R313	1-244-673	1k	
R315	1-244-671	820	
R316	1-244-684	3k	
R317	1-244-703	18k	
R318	1-244-691	5.6k	
R319	1-244-665	470	
R320	1-244-667	560	
R321	1-244-679	1.8k	
R322	1-244-694	7.5k	
R323	1-244-673	1k	
R324	1-222-984	33k (B), semi-fixed	
R325	1-244-697	10k	
R326	1-244-692	6.2k	
R327	1-244-717	68k	
R328	1-244-701	15k	
R329	1-244-673	1k	
R330	1-244-671	820	
R331	1-244-649	100	
R332	1-244-649	100	
R333	1-244-643	56	
R334	1-244-697	10k	
R335	1-244-692	6.2k	
R336	1-244-673	1k	
R401	1-244-737	470k	
R402	1-244-673	1k	
R403	1-244-673	1k	
R404	1-244-706	24k	
R405	1-202-560	300	±10% ½W composition
R406	1-244-689	4.7k	
R407	1-244-709	33k	
R408	1-244-670	750	
R409	1-244-731	270k	
R410	1-244-671	820	
R411	1-244-690	5.1k	
R412	1-244-689	4.7k	
R413	1-244-673	1k	
R414	1-244-682	2.4k	
R415	1-244-649	100	
R416	1-244-661	330	
R417	1-244-661	330	
R418	1-244-661	330	
R419	1-244-661	330	
R420	1-244-643	56	
R421	1-244-643	56	
R422	1-244-679	1.8k	
R423	1-244-679	1.8k	
R424	1-244-693	6.8k	
R425	1-244-693	6.8k	
R426	1-244-671	820	
R427	1-244-671	820	
R428	1-244-715	56k	
R429	1-244-715	56k	
R430	1-244-661	330	
R431	1-244-661	330	
R432	1-244-715	56k	
R433	1-244-715	56k	
R434	1-244-702	16k	
R435	1-244-702	16k	
R436	1-244-685	3.3k	
R437	1-244-685	3.3k	
R438	1-244-659	270	
R439	1-244-659	270	
R440	1-244-677	1.5k	
R441	1-244-677	1.5k	
R442	1-244-685	3.3k	
R443	1-244-685	3.3k	
R444	1-244-695	8.2k	
R445	1-244-695	8.2k	
R446	1-244-709	33k	
R448	1-244-702	16k	
R449	1-244-702	16k	
R501	1-242-725	150k	
R502 (R552)	1-242-715	56k	
R503 (R553)	1-242-745	1M	
R504 (R554)	1-242-687	3.9k	
R505 (R555)	1-242-745	1M	
R506 (R556)	1-242-667	560	
R507 (R557)	1-242-743	820k	
R508	1-242-721	100k	
R509 (R559)	1-242-691	5.6k	
R510 (R560)	1-242-653	150	
R511 (R561)	1-242-717	68k	
R512 (R562)	1-242-673	1k	
R513 (R563)	1-242-740	620k	
R514 (R564)	1-242-714	51k	
R515 (R565)	1-242-695	8.2k	
R516	1-242-649	100	
R601 (R651)	1-242-717	68k	
R602 (R652)	1-242-701	15k	
R603 (R653)	1-242-663	390	
R604 (R654)	1-242-737	470k	
R605 (R655)	1-242-735	390k	
R606 (R656)	1-242-701	15k	
R607 (R657)	1-242-735	390k	
R608 (R658)	1-242-691	5.6k	
R609 (R659)	1-242-665	470	
R610 (R660)	1-242-675	1.2k	
R611 (R661)	1-242-695	8.2k	
R612 (R662)	1-242-709	33k	
R613 (R663)	1-242-669	680	
R614 (R664)	1-242-655	180	
R615 (R665)	1-242-699	12k	
R616 (R666)	1-242-691	5.6k	
R617	1-242-719	82k	
R702 (R752)	1-242-705	22k	
R703 (R753)	1-242-717	68k	
R704	1-242-705	22k	
R705 (R755)	1-242-677	1.5k	
R706	1-242-705	22k	
R707 (R757)	1-242-677	1.5k	
R708 (R758)	1-242-677	1.5k	
R709 (R759)	1-242-703	18k	
R710 (R760)	1-242-679	1.8k	
R711 (R761)	1-242-717	68k	
R712 (R762)	1-242-717	68k	
R713 (R763)	1-242-689	4.7k	
R714 (R764)	1-242-695	8.2k	
R715 (R765)	1-242-661	330	
R716 (R766)	1-202-587	3.9k	±5% ½W composition
R717 (R767)	1-202-587	3.9k	±5% ½W composition

Ref. No.	Part No.	Description			
R718 (R768)	1-242-661	330			
R719 (R769)	1-242-625	10			
R720 (R770)	1-242-661	330			
R721 (R771)	1-242-727	180k			
R722 (R772)	1-242-727	180k			
R723 (R773)	1-242-681	2.2k			
R724 (R774)	1-242-681	2.2k			
R725 (R775)	1-202-549	100	±5%	½W	composition
R726 (R776)	1-242-681	2.2k			
R727 (R777)	1-242-681	2.2k			
R728 (R778)	1-242-649	100			
R729 (R779)	1-242-673	1k			
R730 (R780)	1-242-649	100			
R731 (R781)	1-242-673	1k			
R732 (R782)	1-242-625	10			
R733 (R783)	1-242-619	5.6			
R734 (R784)	1-242-649	100			
R735 (R785)	1-242-619	5.6			
R736 (R786)	1-242-625	10			
R737 (R787)	1-242-673	1k			
R738 (R788)	1-205-803	0.5	±10%	5W	wire wound
R739 (R789)	1-205-803	0.5	±10%	5W	wire wound
R740 (R790)	1-242-691	5.6k			
R741 (R791)	1-202-525	10	±5%	½W	composition
R742 (R792)	1-202-565	470	±5%	½W	composition
R743 (R793)	1-206-089	470	±10%	1W	metal-oxide
R744	1-242-673	1k			
R801	1-244-617	4.7			
R802	1-244-617	4.7			
R803	1-244-691	5.6k			
R804	1-244-681	2.2k			
R805	1-244-649	100			
R806	1-244-649	100			
R807	1-244-693	6.8k			
R808	1-244-641	47			
R809	1-244-649	100			
R810	1-244-641	47			
R811	1-244-697	10k			
R812	1-244-683	2.7k			
R813	1-244-743	820k			
R814	1-244-723	120k			
R815	1-244-693	6.8k			
R816	1-244-707	27k			
R817	1-244-683	2.7k			
[illegible]	1-244-601	1			
R818	1-244-673	1k			
R819	[illegible]202-525	10	±10%	½W	composition
R820	1-2[illegible]4-649	100			
R821	1-24[illegible]093	1k	±10%	1W	metal-oxide
R822	1-206[illegible]	[illegible]	[illegible]	1W	metal-oxide
R823	1-206-093	1k	±10%		
R824	1-244-666	510			
R901 (R951)	1-244-697	10k			
R902 (R952)	1-244-737	470k			
R903 (R953)	1-244-719	82k			
R904	1-202-645	1M	±10%	½W	composition
		(USA, CANADA Model only)			
R905 (R955)	1-242-745	1M			
RV201	1-221-966	100k (B),	semi-fixed		
RV401	1-222-948	3.3k (B),	semi-fixed		

Ref. No.	Part No.	Description		
RV601 (RV651)	1-222-392	250k	variable (volume control)	
RV602 (RV652)	1-222-392	250k	variable (balance control)	
RV603 (RV653)	1-222-373	50k	variable (tone control, treble)	
RV604 (RV654)	1-222-374	50k	variable (tone control, bass)	
RV701 (RV751)	1-221-967	10k (B),	semi-fixed	
RV702 (RV752)	1-221-967	10k (B),	semi-fixed	

SWITCHES

S1	1-514-770	switch, rotary	(FUNCTION 1)
S2	1-514-681	switch, lever	(FUNCTION 2)
S3	1-513-338	switch, lever	(MONITOR)
S4	1-514-508	switch, rotary	(MODE)
S5	1-513-338	switch, lever	(LOUDNESS)
S6	1-514-511	switch, lever	(HIGH FILTER)
S7	1-514-507	switch, rotary	(SPEAKER)
S8	1-514-369-12S	switch, lever	(POWER) (CANADA General Export Model)
S8	1-514-369-22S	switch, lever	(POWER) (USA Model)
S9	1-513-338	switch, lever	(MUTING)
S10	1-514-524	switch, slide	(DE-EMPHASIS)

FILTERS

			(Color)	(Specified Center Freq.)
CF201–CF206	1-403-562-11	fm i-f, ceramic	red	10.70 MHz
	1-403-562-21	fm i-f, ceramic	black	10.66 MHz
	1-403-562-31	fm i-f, ceramic	white	10.74 MHz
	1-403-562-41	fm i-f, ceramic	green	10.62 MHz
	1-403-562-51	fm i-f, ceramic	yellow	10.78 MHz
CF301	1-403-153	filter, ceramic	455 kHz	
LPF401	1-231-088	filter, low-pass		

MISCELLANEOUS

1-231-057	encapsulated component, 120Ω + 0.033μF
1-507-163	phono jack, 4[illegible]
1-507-176	phono jack, 1-[illegible]
1-507-185	phono jack, 6-P[illegible]
1-507-190	jack, HEADPHONE; AUX-2
1-509-029	REC/PB connector
1-509-341	AC outlet
1-517-021	socket, meter lamp
1-518-017-02	lamp, meter 8V/0.15A
1-518-051-22	lamp, stereo 4.5V/40mA
1-518-070	lamp, dial 8V/300mA
1-520-097	meter, tuning
1-526-502	socket, transistor
1-526-165	voltage changeover block
1-532-214	fuse 5A
1-533-051	socket, dial lamp
1-534-487-22	cord, power (General Export Model)
1-534-526-21	cord, power (USA, CANADA Model)
1-536-146	terminal strip, 1L1 (A)
1-536-179	terminal strip, 1L1 (C)
1-536-187	terminal strip, L1 (B)
1-536-284	terminal strip, 4-P

SONY CORPORATION

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