

STR-7065

145

CLP-

USA Model
(Serial No. 807,001 and later)

Canada Model

GEP Model



FM STEREO/FM-AM RECEIVER

SPECIFICATIONS

Fm Tuner Section

- Frequency range: 87.5 MHz to 108 MHz
- Usable sensitivity: 1.6 μ V
- Signal-to-noise ratio: 70 dB
- Capture ratio: 1.0 dB
- Frequency response: 20 Hz to 15,000 Hz \pm 1 dB
- Stereo separation: Better than 38 dB at 400 Hz
- Harmonic distortion: Mono 0.2 % at 400 Hz 100 % modulation
Stereo 0.5 % at 400 Hz 100 % modulation

A-m Tuner Section:

- Frequency range: 530 kHz to 1,605 kHz
- Sensitivity: 53 dB/m, built-in antenna at 1,000 kHz
30 μ V, external antenna
- Signal-to-noise ratio: 50 dB at 50 mV/m

Audio Amplifier Section:

- Continuous RMS power output: (Less than 0.2 % THD) Both channels driven simultaneously
60 + 60 watts (8 ohms) at 20 Hz to 20,000 Hz
70 + 70 watts (8 ohms),
85 + 85 watts (4 ohms) at 1 kHz
One channel driven separately
85/85 watts (8 ohms),
110/110 watts (4 ohms)

- Dynamic power output: (IHF constant power supply method) 240 watts (8 ohms)
380 watts (4 ohms)

- Harmonic distortion: Less than 0.2 % at continuous RMS power output
Less than 0.1 % at 1 watt output

General

- Power requirements: 120 volts, 60 Hz ac (USA and Canada Model)
100, 120, 220, 240 volts, 50/60 Hz ac (GEP Model)
- Power consumption: 180 watts (USA Model)
360 VA (Canada Model)
300 watts (GEP Model)

- Dimensions: 471 (w) x 157 (h) x 375 (d) mm
18⁹/₁₆ x 6³/₁₆ x 14³/₄ inches

- Net weight: 15.2 kg (33 lb 8 oz)

SONY[®]

SERVICE MANUAL

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SERVICING NOTES

1. CAUTIONS ON HANDLING ICs

- a. Excessive heat may destroy an IC. Never reinstall a used IC.
- b. Check the related components for defects before replacing the IC.
- c. When installing new ICs, do not apply excessive heat. Solder quickly while holding a wet rag on the heat-sink tab as shown in Fig. A.
- d. Do not short adjacent IC leads when performing electrical checks as this might damage the IC.
- e. Always solder the IC heat sink to the printed circuit board to avoid damage.

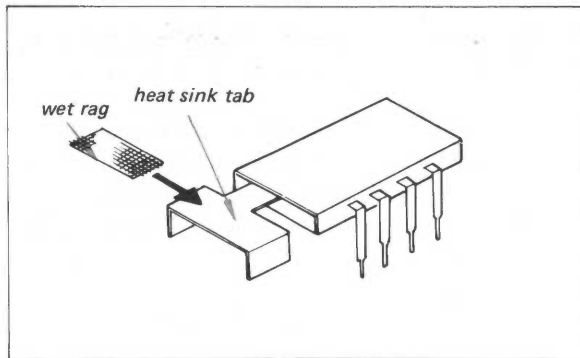


Fig. A. IC installation

2. NYLON RIVET REMOVAL

- a. To remove the nylon rivet, push its end with a tweezers as shown in Fig. B.
- b. To reinstall the rivet, insert the flared part into the opening first, then push its head as far as it will go.

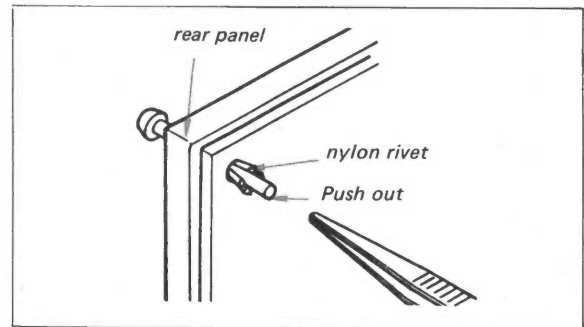


Fig. B. Nylon rivet removal

SECTION 1

TECHNICAL DESCRIPTION

1-1. SPECIFICATIONS

Fm Tuner Section

Frequency range:	87.5 MHz to 108 MHz
Antenna terminals:	300 ohms balanced 75 ohms unbalanced
Intermediate frequency:	10.7 MHz
Sensitivity:	2.0 μ V (IHF), 1.6 μ V (S/N = 30 dB)
Image rejection:	70 dB
I-f rejection:	100 dB
Spurious rejection:	90 dB
A-m suppression:	56 dB
Capture ratio:	1.0 dB
Selectivity:	70 dB, IHF
Signal-to-noise ratio:	70 dB
Frequency response:	20 Hz to 15 kHz \pm 1 dB
Harmonic distortion:	Mono 0.2 % at 400 Hz, 100 % modulation Stereo 0.5 % at 400 Hz, 100 % modulation
Stereo separation:	Better than 38 dB at 400 Hz
19 kHz, 38 kHz suppression:	40 dB
SCA suppression:	55 dB
Muting level:	Less than 5 μ V

A-m Tuner Section

Frequency range:	530 kHz to 1,605 kHz
Antenna:	Built-in bar antenna and external antenna terminal
Intermediate frequency:	455 kHz

Sensitivity:	53 dB/m, built-in bar antenna at 1,000 kHz 30 μ V, external antenna
Image rejection:	50 dB at 1,000 kHz
I-f rejection:	40 dB at 1,000 kHz
Signal-to-noise ratio:	50 dB at 50 mV/m
Harmonic distortion:	0.8 % at 50 mV/m

Amplifier Section

Continuous RMS power output: (Less than 0.2 % THD)	Both channels driven simultaneously 60 + 60 watts (8 ohms) at 20 Hz to 20 kHz 70 + 70 watts (8 ohms) at 1 kHz One channel driven separately 85/85 watts (8 ohms) 110/110 watts (4 ohms)
Dynamic power output: (IHF constant power supply method)	240 watts (8 ohms) 380 watts (4 ohms)
Power bandwidth, IHF:	15 Hz to 35 kHz
Damping factor:	50 (8 ohms)
Harmonic distortion:	Less than 0.2 % at continuous RMS power output Less than 0.1 % at 1 watt output
IM distortion: (60 Hz : 7 kHz = 4 : 1)	Less than 0.2 % at continuous RMS power output Less than 0.1 % at 1 watt output
Frequency response:	PHONO RIAA equalization curve \pm 1 dB MIC 100 Hz to 10 kHz $\begin{matrix} + \\ - \end{matrix}$ $\frac{0}{3}$ dB AUX TAPE REC/PB (input) $\left. \vphantom{\begin{matrix} + \\ - \end{matrix}} \right\}$ 10 Hz to 70 kHz $\begin{matrix} + \\ - \end{matrix}$ $\frac{0}{3}$ dB

to FM, Q806 is gradually turned on due to the time constant circuit of R819 and C809 and supplies B+ voltage to the FM tuner circuit.

However, Q206 is turned off during the time constant of R247 and C230 since Q806 is turned on, killing the detector output.

Thus, the interstation or "pop" noise is completely eliminated through these two circuits.

R820 is for discharging C809 when FM circuit is disengaged.

When S1 is changed to AM, Q807 is gradually turned on due to the time constant circuit of R818 and C823, supplying power to the a-m local oscillator at A-M mode.

2. Audio Muting Circuit

This muting circuit is used to eliminate the "pop" noise generated when the POWER switch is set to ON or OFF and operates as follows: Referring to Fig. 1-2, when the POWER switch is set to ON, B+ and B- increase quickly to its normal operating voltage. Q803 is off due to the long time constant circuit of R808 and C807. Q804 and Q603 are forced into conduction as the bleeder circuit R810, R811 and R812 are designed so that the point "C" becomes positive. Thus, noises in the pre-stage amplifiers are effectively grounded through Q603.

About 2.5 seconds later after POWER switch is set to ON, Q803 is on as C807 is fully charged. This grounds point "D", forcing point "C" negative. As a result, Q804 and Q603 are off, stopping the muting. Conversely, when the POWER switch is set to OFF, Q803 is immediately turned off as C807 is discharged by R807. C808 holds positive voltage due to the long time constant circuit of R809 and C808, and D809 (reverse resistance). As a result, Q804 and Q603 are turned on, thus PREAMP OUT is effectively grounded.

Referring to Fig. 1-3, Q805 removes the residual "pop" noises at power off caused by unbalanced discharging characteristics of B+ and B- power supply circuit. These noises cannot be removed by the muting circuit previously described.

Q805 operates as follows:

Q805 is normally off, as the base circuit is reverse biased due to the bleeder circuit.

After power is off, when the difference of absolute value of B+ and B- exceeds some extent, Q805 is forward biased and C901 is discharged quickly through Q805 and R817, maintaining equal discharging of B+ and B- power supply.

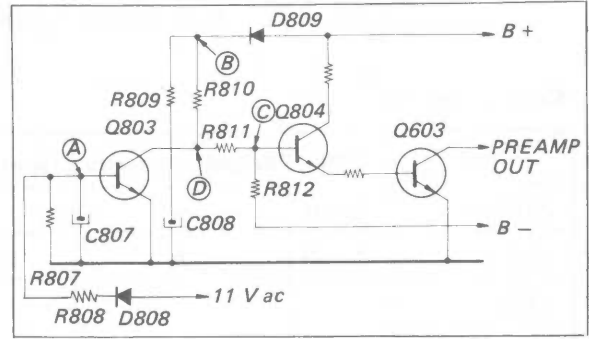


Fig. 1-2. Audio muting circuit (1)

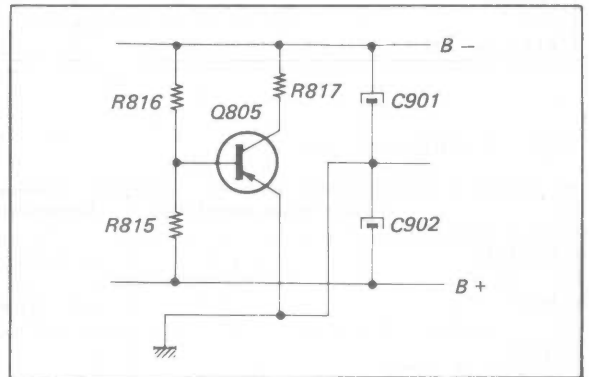


Fig. 1-3. Audio muting circuit (2)

3. Speaker Protection Circuit

In a direct-coupled power amplifier, some faults in transistors appear a large dc voltage across the speaker output terminal.

This might damage a delicate speaker system. The speaker protection circuit is used to remove the dc voltage as shown in Fig. 1-4.

The speaker protection is performed by two ways. One is the circuitry itself (self-defensible) and the other is additional protection circuit (Q709, Q710 and Q711).

They operate as follows:

- (1) In case that any of power transistors (Q706, Q707, Q901 and Q902) shorted.

If Q901 is shorted, for example, excessive current flows in this transistor and a large positive dc voltage will appear across the speaker output terminal (point "a" in Fig. 1-4).

This voltage is fed-back to the base of Q703 through R710. Q703 is turned off and Q705 is excessively forward biased. Thereby, large

bias voltage enough to short Q902 is applied to the base of Q707.

As a result, excessive current flows in Q901 and Q902, pulling voltage at point "a" back to zero, then the fuses in the power supply circuit are blown. Same is true when Q902 is shorted, except for the negative dc voltage at point "a". Then Q705 is off and Q901 is forced to short. Thus, speaker is protected even if one of the power transistor is shorted by accident, by forcing the other power transistor into secondary break-down.

- (2) In case that any of Q701, Q702, Q703 shorted Q705 is forced to either excessively forward biased or cutoff.

When Q705 is excessively forward biased

Q707 and Q902 are turned on and negative dc voltage will appear at point "a". This voltage turns Q710 and Q711 on, shorting Q707 base to ground. As a result, current flows in Q707 and Q902 decrease and the point "a" voltage becomes effectively low.

When Q705 is forced to cutoff

Q706 and Q901 are turned on and the positive dc voltage will appear at point "a". This voltage turns Q709 on, shorting Q706 base to ground and maintaining the point "a" voltage low as previously described.

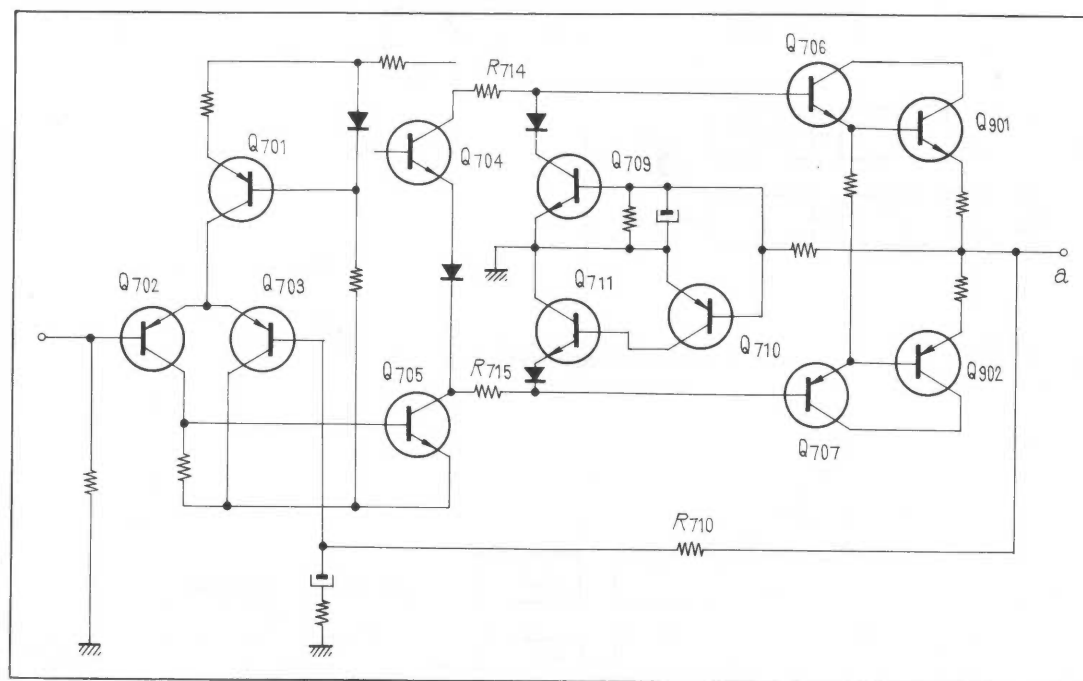
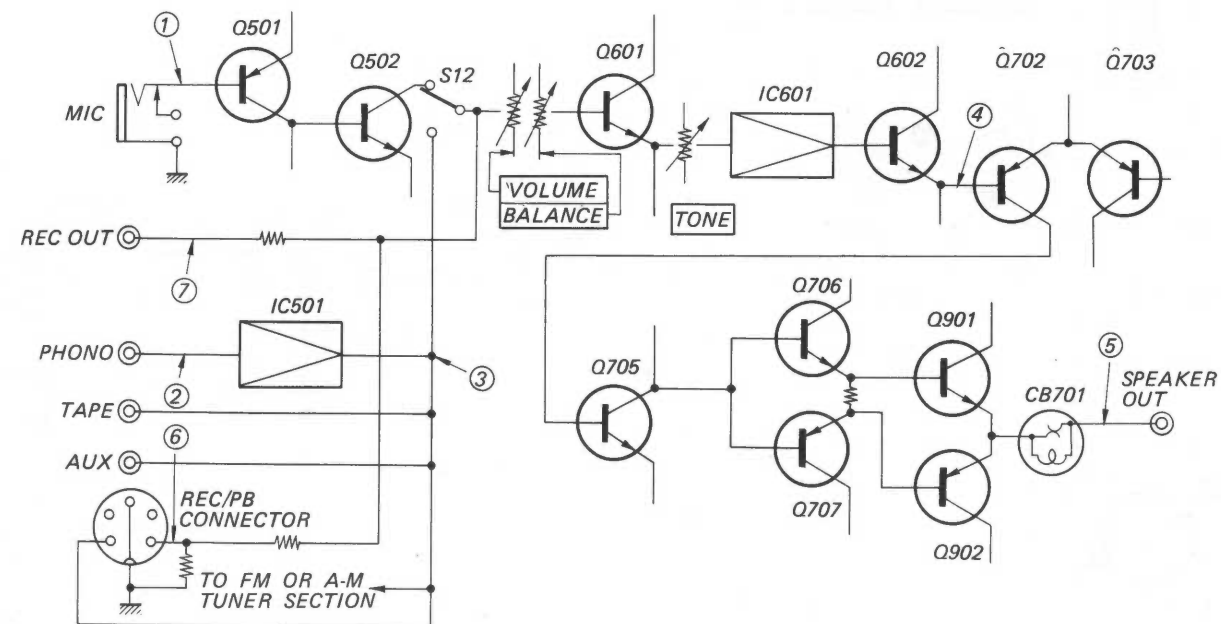
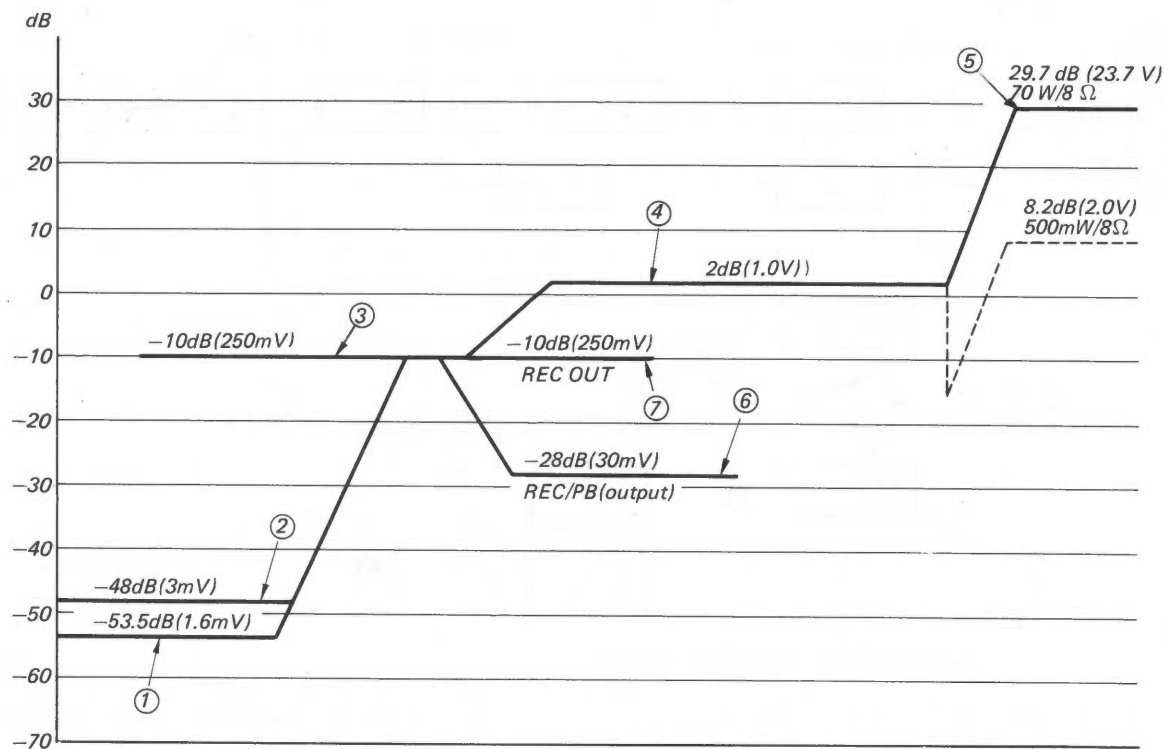


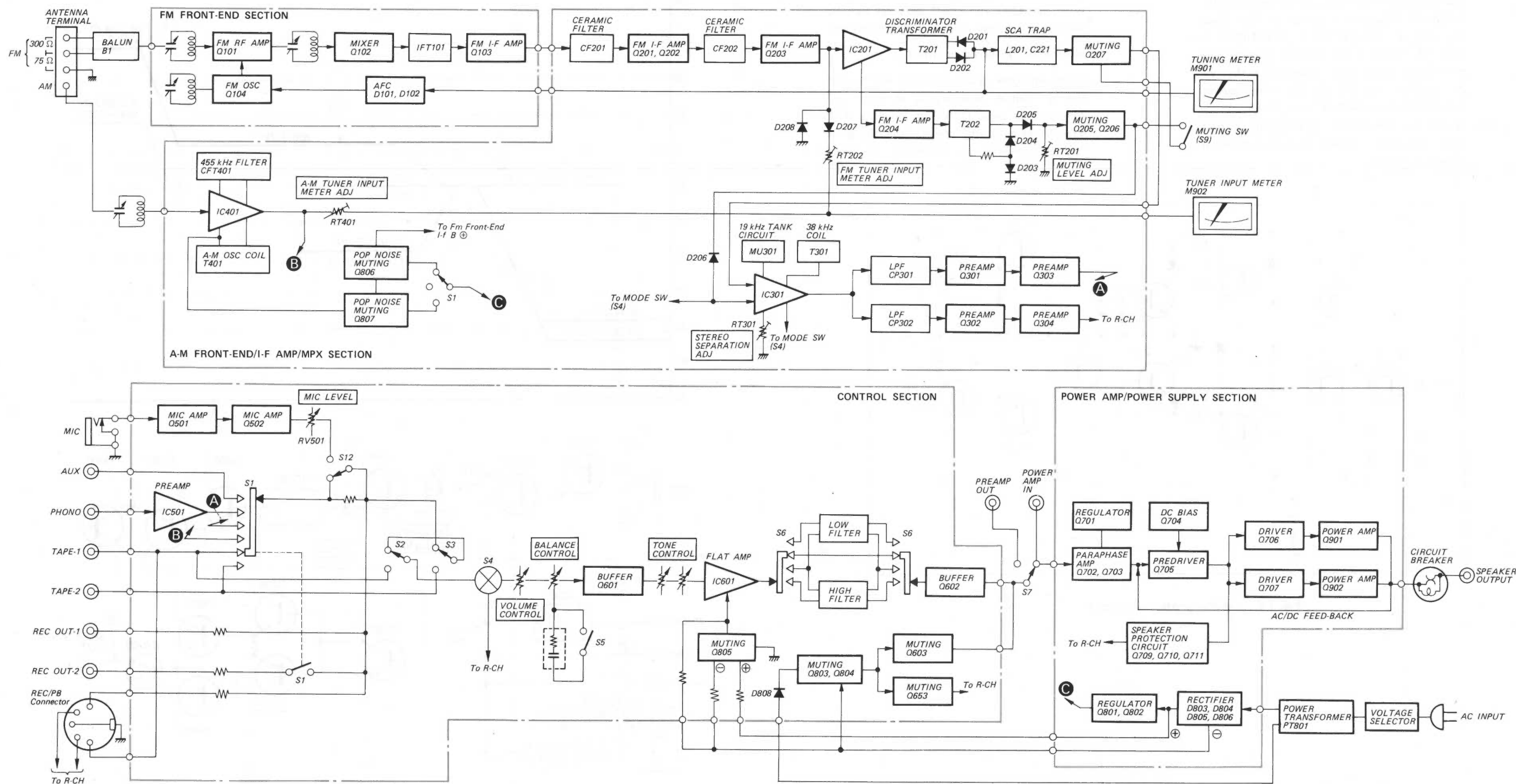
Fig. 1-4. Speaker protection circuit

1-3. LEVEL DIAGRAM



Note: Signal voltages are measured with an ac VTVM at continuous RMS power output and expressed in dB referred to 0.775 V, 1 kHz.

1-4. BLOCK DIAGRAM



SECTION 2

DISASSEMBLY AND REPLACEMENT

Note: All screws are Phillips (cross recess) type unless otherwise indicated.
(-): slotted head

2-1. BOTTOM PLATE REMOVAL

Remove the eight self-tapping screws shown in Fig. 2-1. This frees the bottom plate.

2-2. FRONT PANEL REMOVAL

1. Remove all the knobs on the front panel.
2. Remove the three self-tapping screws shown in Fig. 2-1.
3. Remove the three screws shown in Fig. 2-2. This frees the front panel.

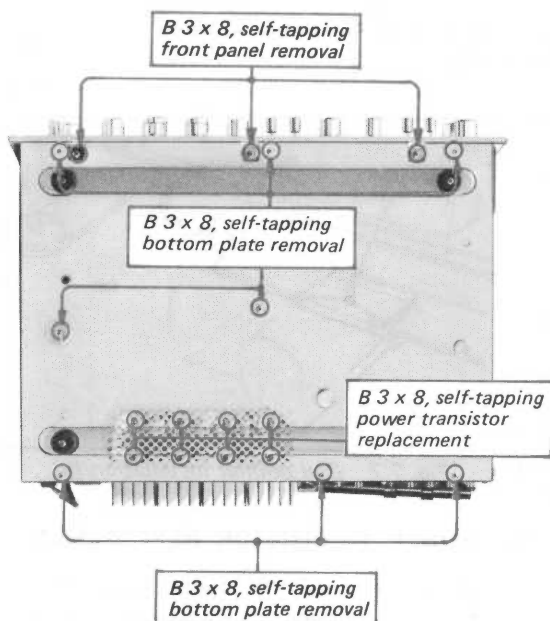


Fig. 2-1. Bottom plate and front panel removal

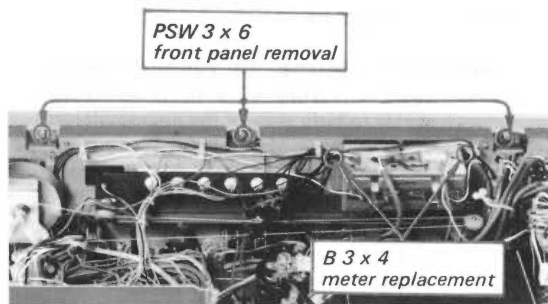


Fig. 2-2. Front panel removal and meter replacement

2-3. DIAL-CORD RESTRINGING

Preparation

1. Cut a 1,600 mm (63-inch) length of 0.3 mm ($1/64$ -inch) diameter dial cord.
2. Turn the tuning shaft fully clockwise.
3. Install the tuning drum as shown in Fig. 2-4.
4. Tie the end of the cord to a spring as shown in Fig. 2-3.
5. Hook the spring to the stud of drum as shown in Fig. 2-4.

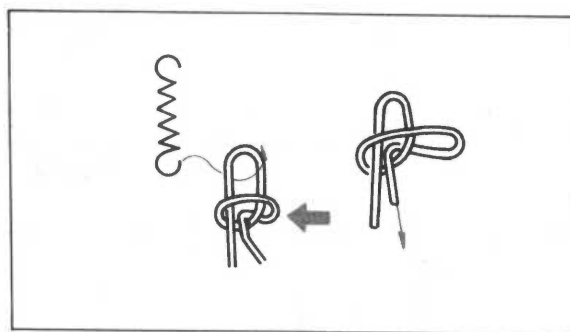


Fig. 2-3. Tying square knot in the tension spring

Procedure

1. String the dial cord in order as shown in Fig. 2-4.

Note: At the finish point, pass the doubled end of the cord through the eyelet (see Fig. 2-5) and tighten the cord and squeeze the eyelet so that the spring is under tension. Make two knots in the cord end to keep it from slipping out of the eyelet as shown in Fig. 2-5.

2. After completing the dial cord stringing, make sure that the tuning system properly works.
3. Put the pointer on the pointer guide as shown in Fig. 2-6 and bend the pointer guide tab as shown in Fig. 2-7, if necessary.
4. Tune the receiver to the local fm station. Move the pointer to the position where the dial indication coincides with the local station's carrier frequency. Apply a drop of contact cement to it.

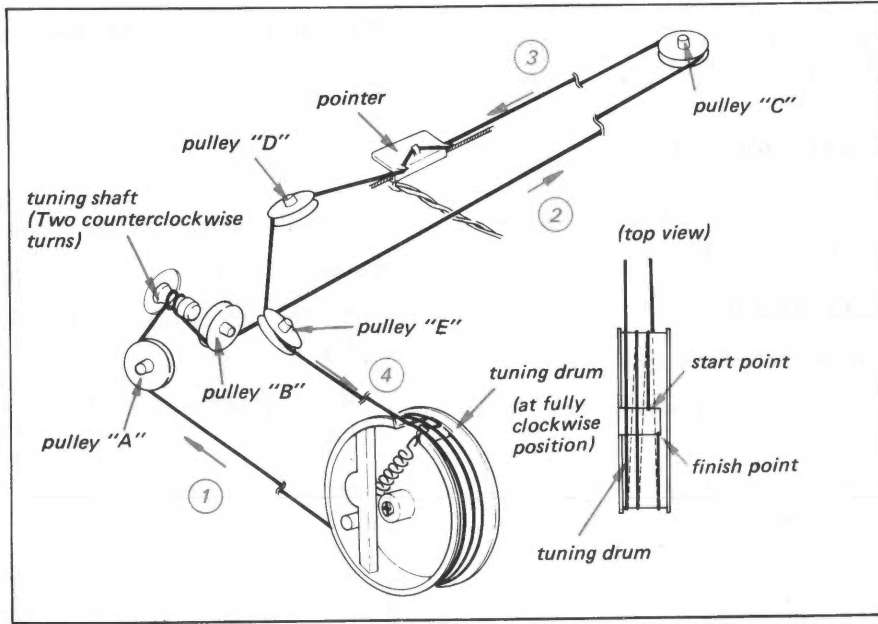


Fig. 2-4. Dial cord stringing

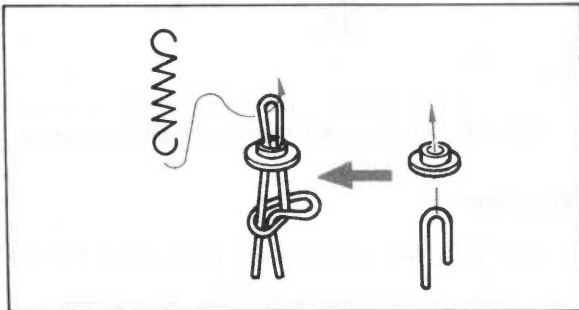


Fig. 2-5. Details of dial cord finish

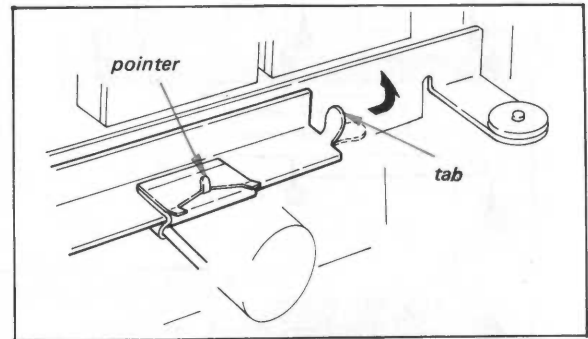


Fig. 2-7. Dial pointer installation (2)

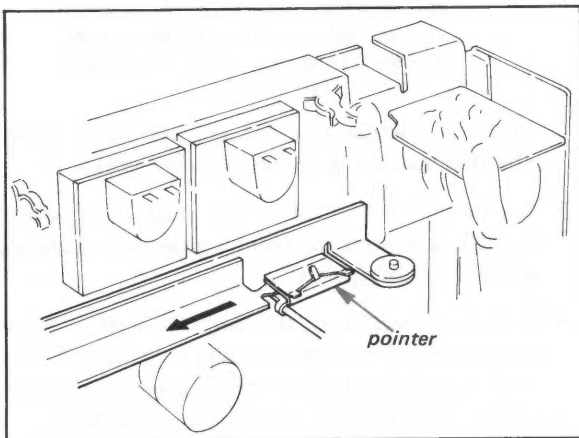


Fig. 2-6. Dial pointer installation (1)

2-4. POWER TRANSISTOR REPLACEMENT

1. Remove the twelve self-tapping screws from heat sink brackets (eight at rear bottom and four rear top) as shown in Fig. 2-1 and Fig. 2-8.
2. Remove the two screws securing the power transistor to the heat sink.

Note: When replacing the power transistor, apply a coating of a heat-transferring grease to both sides of the mica insulator. Any excess grease squeezed out when the mounting bolts are tightened should be wiped off with a clean cloth. This prevents it from accumulating conductive dust particles that might eventually cause a short.

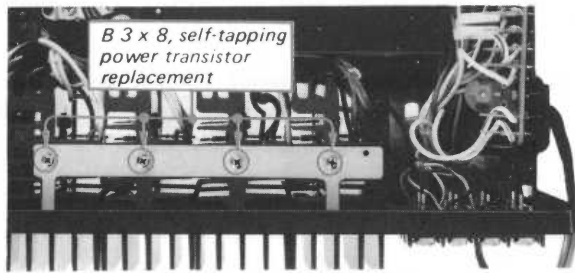


Fig. 2-8. Power transistor replacement

2-5. DIAL GLASS REMOVAL

Remove the five screws shown in Fig. 2-9. This frees the dial glass.

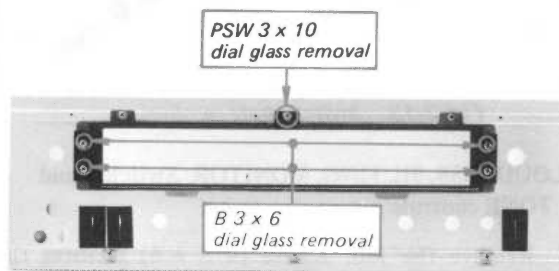


Fig. 2-9. Dial glass removal

2-6. METER REPLACEMENT

1. Remove the meter lamp shade by taking out the two screws shown in Fig. 2-2.
2. Carefully remove the defective meter from the front subchassis and install a new one.

2-7. VOLUME CONTROL REPLACEMENT

1. Remove the power amp/power supply board by taking out the two nylon rivets.
2. Remove the power amp board bracket (c) located near the front subchassis by taking out the screw as shown in Fig. 2-11.
3. Remove the front panel as described in Procedure 2-2.
4. Remove the nut securing the VOLUME control to the front subchassis shown in Fig. 2-10.

(continued to page 12.)

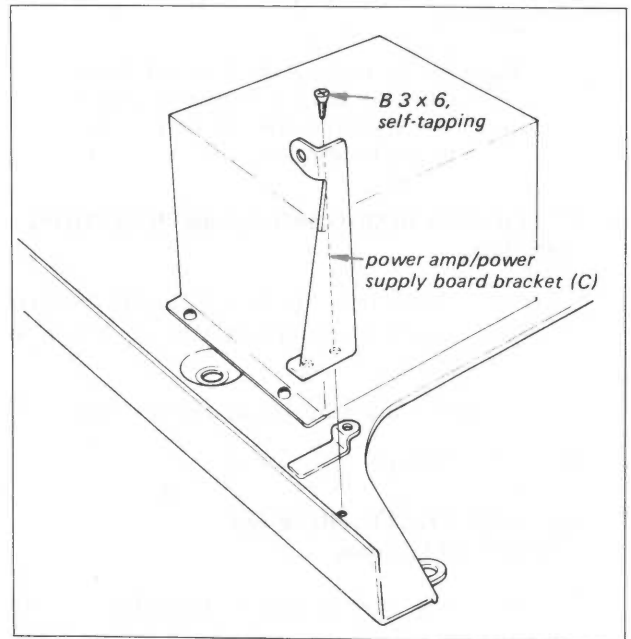


Fig. 2-11. VOLUME control replacement

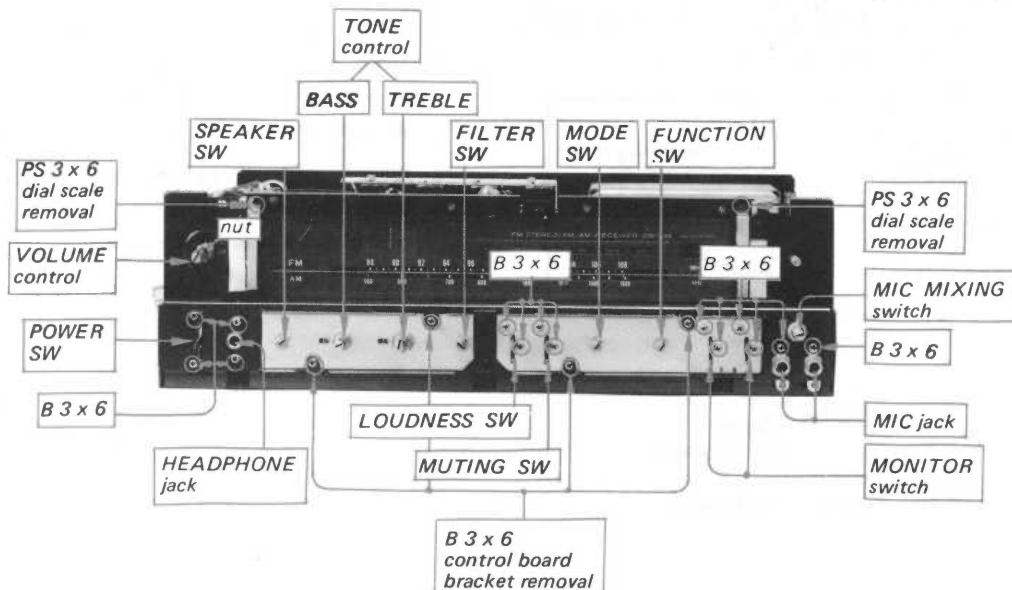


Fig. 2-10. Control, jack and switch replacement (1)

5. Remove the loudness control board along with the VOLUME control.
6. Cut each lug of the defective control on the board.
7. Unsolder and remove the clipped lugs, and clean out the holes in the printed circuit board.
8. Install a new one.

2-8. CONTROL, JACK AND SWITCH REPLACEMENT

Prepare for replacing any of the controls, jacks or switches by removing the front panel described in Procedure 2-2.

Note: Before removing the front subchassis, fasten the dial cord to the drum, pulleys with cellophane tape. This helps you to restring the dial cord.

POWER, MIC MIXING Switches and HEADPHONE, MIC Jacks

1. Remove two screws or the nut securing the defective switch or jack to front subchassis as shown in Fig. 2-10.
2. Unsolder the leads of defective switch or jack.
3. Install a new one.

SPEAKER, FILTER, MODE and FUNCTION Switches

1. Remove the retaining ring securing the defective switch, located at the back side of control board bracket, as shown in Fig. 2-12.
2. Pull out the shaft of the defective switch with a screwdriver as shown in Fig. 2-13.

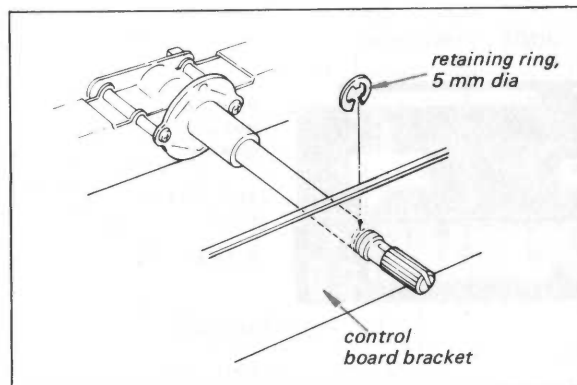


Fig. 2-12. Control board removal

3. Remove the bottom plate as described in Procedure 2-1.
4. With a soldering iron having a solder-sucking tip, clean the solder from each lug of the defective switch and the printed circuit board.
5. Remove the defective switch and install a new one.

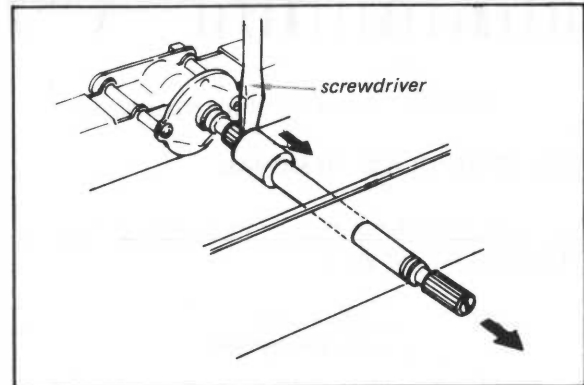


Fig. 2-13. Switch shaft removal

LOUDNESS, MUTING, MONITOR Switches and TONE controls

1. Remove the four screws (B 3 x 6) securing the control board bracket to the front subchassis as shown in Fig. 2-10.
2. Remove the three screws (PSW 3 x 6) securing the control board to the chassis as shown in Fig. 2-14.
3. Remove the nut securing the defective control or two screws (B 3 x 6) securing the defective switch to the control board bracket as shown in Fig. 2-10.
4. Remove the bottom plate as described in Procedure 2-1.
5. Move the control board toward power transformer as far as it goes. This helps in unsoldering the defective part on the board.
6. With a soldering iron having a solder-sucking tip, clean the solder from each lug of the defective part and the printed circuit board.
7. Remove the defective part and install a new one.

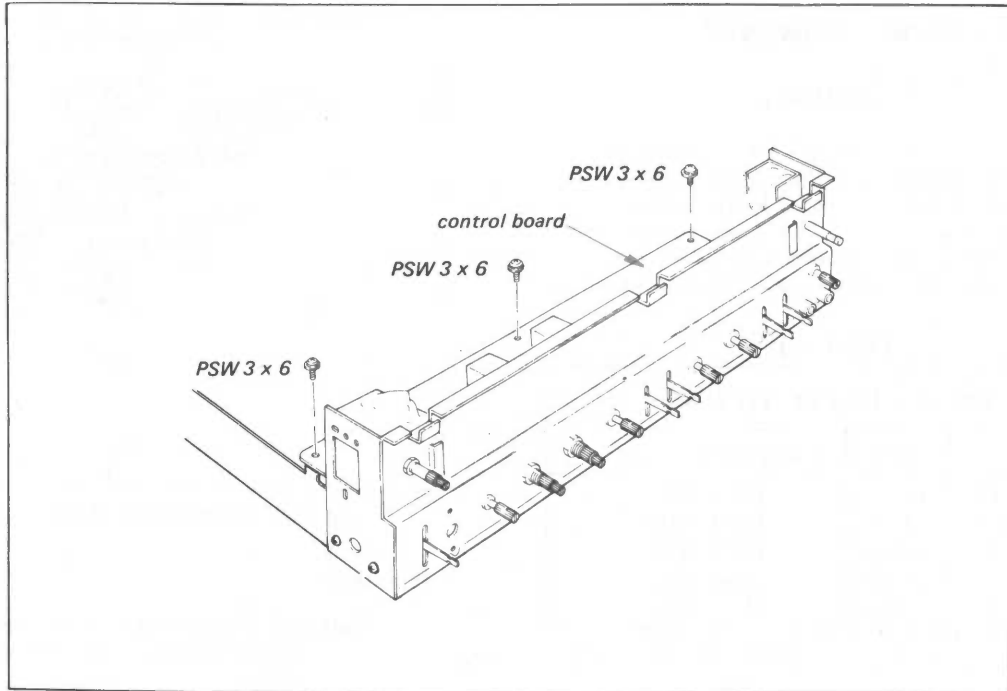


Fig. 2-14. Control, jack and switch replacement (2)

2.9. CHASSIS LAYOUT

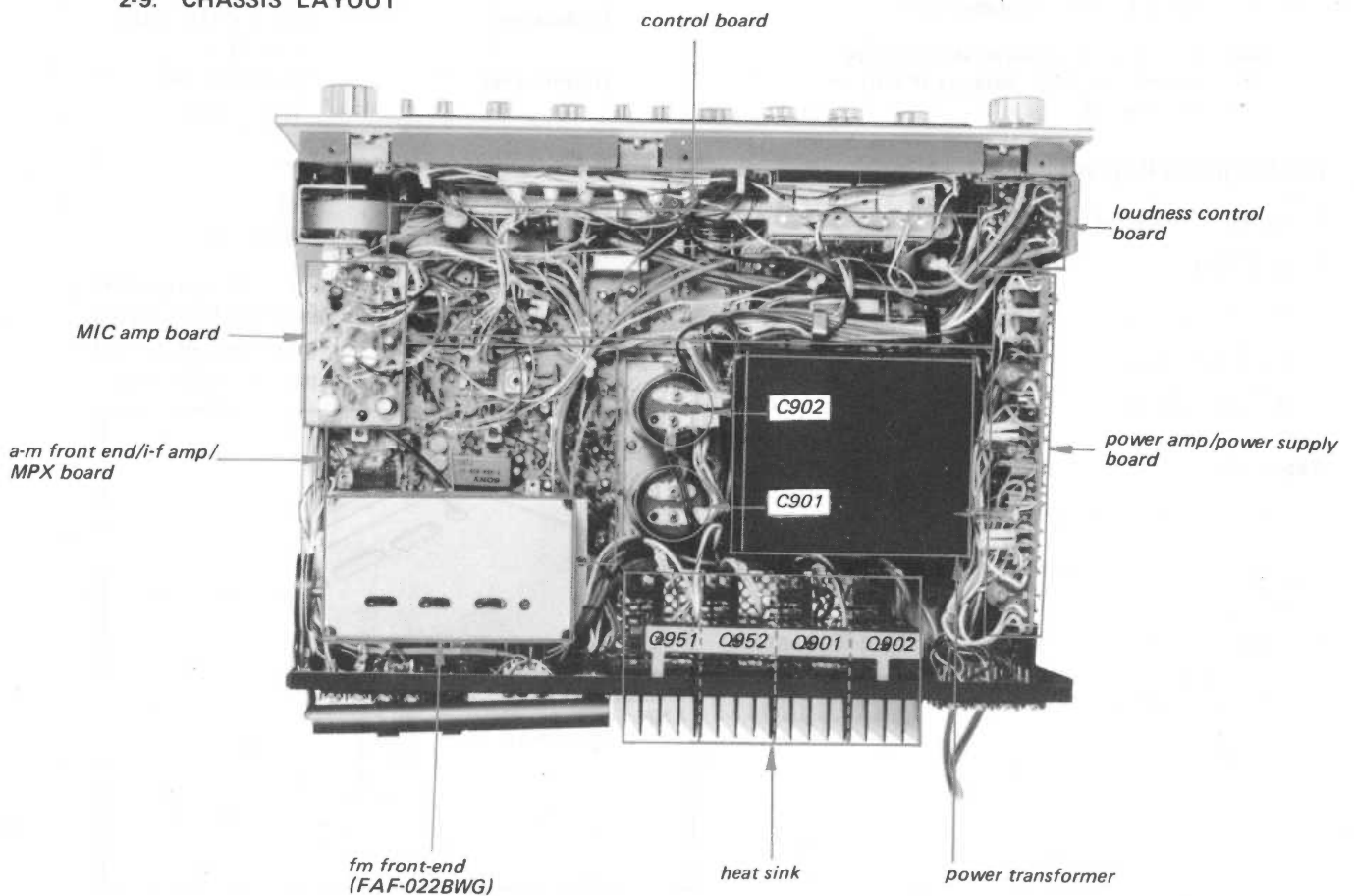


Fig. 2-15. Chassis layout

SECTION 3

ALIGNMENT AND ADJUSTMENTS

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 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.
1-527-507-12	red	10.70 MHz
1-527-507-22	black	10.66 MHz
1-527-507-32	white	10.74 MHz
1-527-507-42	green	10.62 MHz
1-527-507-52	yellow	10.78 MHz

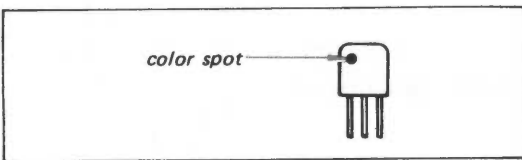


Fig. 3-1. Fm i-f ceramic filter

Note: Fm i-f strip alignment should be performed only after replacing IFT101 in the front-end.

Test Equipment Required

1. Fm signal generator
2. Ac VTVM
3. Oscilloscope
4. Alignment tools
5. Monitor speaker

Preparation

1. Remove the wooden case.
2. Connect the test equipment and a monitor speaker as shown in Fig. 3-4.
3. Short the test point of R226 on the a-m front end/i-f amp/MPX board (AFC circuit) to ground as shown in Fig. 3-2.

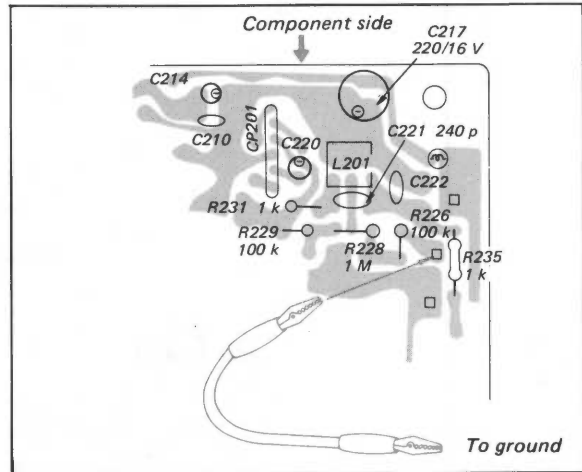


Fig. 3-2. Interruption of afc circuit

Procedure

Note: All signal generator output levels specified in this section are for terminated outputs.

1. With the equipment connected as shown in Fig. 3-4, set the signal generator controls as follows:
 - Carrier frequency 98 MHz
 - Modulation Fm, 400 Hz, 100 % (75 kHz)
 - Output level 30 μ V (30 dB) terminated
2. Set the receiver controls as follows:
 - FUNCTION switch FM
 - VOLUME control minimum
3. Precisely tune the receiver to the SG carrier frequency by tuning for zero center or the TUNING meter. Adjust IFT101 for maximum deflection on the TUNER INPUT meter. Carefully adjust

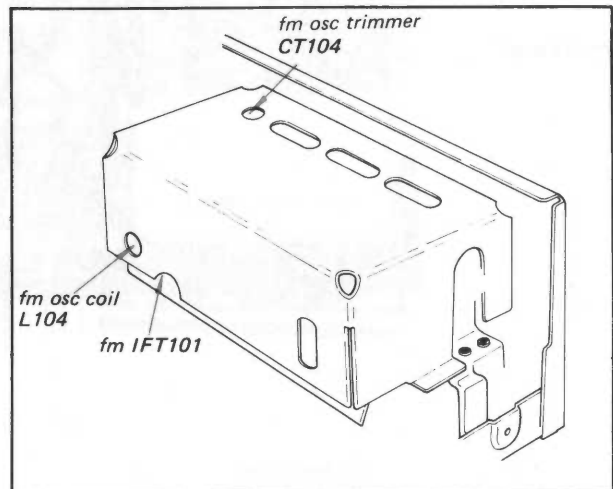


Fig. 3-3. Adjustment parts location

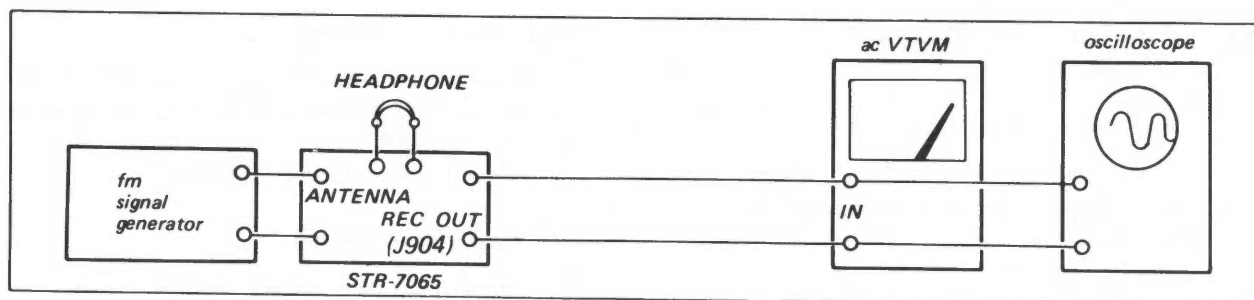


Fig. 3-4. Fm i-f, discriminator, muting and front-end alignment test setup

this slug so that maximum reading on the TUNER INPUT meter always coincides with zero center on the TUNING meter (Rock the TUNING control while observing the two meters and make the adjustment).

Adjust the bottom core (primary side) of T201 (see Fig. 3-11) for maximum output on the Ac VTVM. Then precisely adjust it so that the Ac VTVM indication falls as the set is detuned in either direction (max output corresponds to zero center on the TUNING meter).

3-2. FM DISCRIMINATOR ALIGNMENT

Note: There are two or three methods of discriminator alignment, but only the simplified method using the tuner TUNING meter is described here.

Test Equipment Required

1. Oscilloscope
2. Alignment tools
3. Monitor speaker

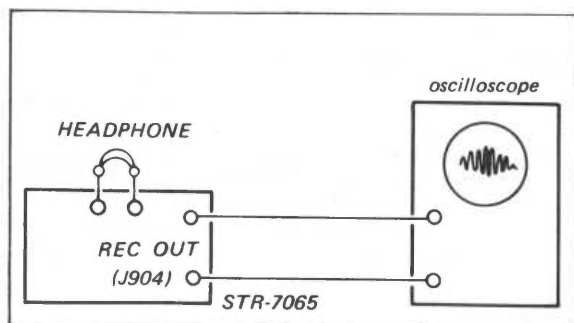


Fig. 3-5. Discriminator alignment test setup

Preparation

1. Remove the wooden case.
2. Connect the input cable of the oscilloscope to REC OUT jack (J904) as shown in Fig. 3-5.
3. Short the test point of R226 on the a-m front end/i-f amp/MPX board (AFC circuit) to ground as shown in Fig. 3-2.

Procedure

1. With the equipment connected as shown in Fig. 3-4, set the receiver controls as follows:

FUNCTION switch FM
 VOLUME control minimum
 MUTING OFF

2. Tune the receiver to a vacant spot in the band (no signal input). Listen to the monitor speaker and watch the oscilloscope to confirm that the tuner is not receiving any off-the-air signal.
3. Turn the top core (secondary side) of T201 discriminator transformer (see Fig. 3-11) 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 thread length.

4. Repeat the above mentioned steps and fm i-f strip alignment (procedure 3-1) alternately two or three times.

3-3. FM FREQUENCY COVERAGE ALIGNMENT

CAUTION

Never attempt alignment of the front-end section except for the frequency-coverage and dial-calibration adjustments. The front-end section of the receiver 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 incurred in transit to the Factory Service Center.

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

Test Equipment Required

1. Fm signal generator
2. Ac VTVM
3. Alignment tools

Preparation

1. Short the test point of R226 (AFC circuit) to ground as shown in Fig. 3-2.
2. Connect the test equipment as shown in Fig. 3-4.
3. Set the receiver controls as follows:

FUNCTION switch FM
 VOLUME control minimum

Signal Generator Method

Follow the procedures given in Table 3-2 when performing this alignment with an fm signal generator. Be sure that the dial is mechanically calibrated as described in Procedure 2-3 on page 9.

Off-the-Air Signal Method

Frequency coverage alignment 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 2-3 on page 9.

Procedure

1. Tune the receiver to the lowest-frequency station.
2. Check the dial scale for a calibration accuracy of $\pm 100\text{kHz}$ from the carrier frequency of the station. If the dial-accuracy deviation exceeds this limit, turn the local-oscillator coil L104 (see Fig. 3-3) slightly until optimum dial calibration is obtained.
3. 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. 3-3) to obtain maximum calibration accuracy.

3-4. FM STEREO SEPARATION ADJUSTMENT

Test Equipment Required

1. Fm stereo signal generator
2. Ac VTVM
3. Oscilloscope

TABLE 3-2 FM FREQUENCY COVERAGE ALIGNMENT

Step	Coupling Between Tuner and SG	SG Frequency and Output Level (terminated)	Receiver Dial Setting	AC VTVM Connection	Adjust	Indication
1.	Direct	87.5 MHz 400 Hz 100 % Mod. Output level as low as possible	87.5 MHz	REC OUT Jack (J904)	OSC coil L104 See Fig. 3-3	Maximum VTVM reading
2.		108 MHz 400 Hz 100 % Mod. Output level as low as possible	108 MHz		OSC trimmer CT104 See Fig. 3-3	

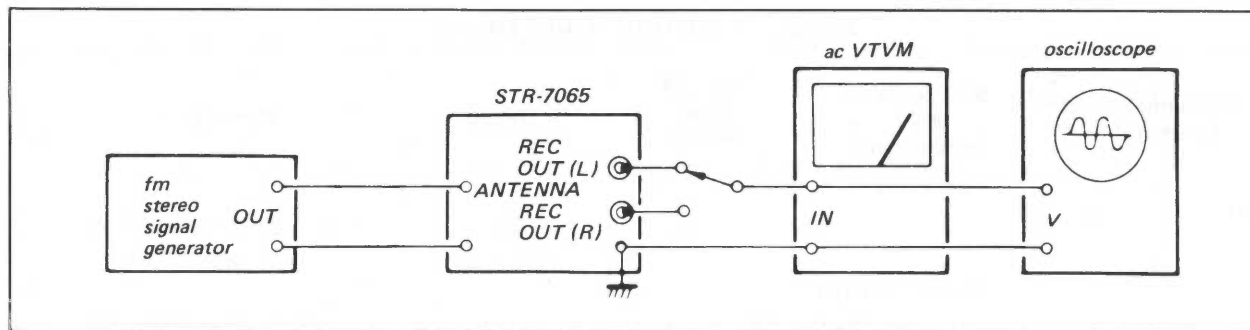


Fig. 3-6. Fm stereo separation adjustment test setup

Preparation

1. Remove the wooden case.
2. Connect the test equipment as shown in Fig. 3-6, then set the fm stereo signal generator controls as follows:
 - Carrier frequency 98 MHz
 - Output level 1,000 μ V (60 dB)
 - Mode Stereo
 - Audio (400 Hz) Mod 67.5 kHz (90 %) *
 - Pilot (19 kHz) Mod 7.5 kHz (10 %)

* **Note:** 75 kHz (100 %) if the metering indicates total modulation (audio-pilot).

Procedure

1. Precisely tune the receiver to the carrier frequency of stereo signal generator, then turn the top core of switching transformer T301 (see Fig. 3-11) to obtain maximum output at the left channel. Note that this adjustment has a close relationship with stereo distortion.
2. Record the output level of the left channel when the stereo signal generator input selector is set to the left channel.
3. Switch the stereo signal generator input selector to the right channel and read the residual signal level in the left channel.
4. The output-level to residual-level ratio represents the separation. Adjust separation adj. control RT301 (see Fig. 3-11) for minimum residual level. Check the right channel for separation. Usually, about an 8 to 9 dB difference in channel separation exists. Readjust RT301 for minimum difference between left- and right-channel separation. While doing this, remember that the output level also changes according to the setting of RT301.

3-5. MUTING ADJUSTMENT

Note: Readjustment is necessary after replacing Q204 (FET) or if the muting point upon TUNING meter deflection is not symmetrical when detuning higher or lower than the reference carrier frequency. Two methods of muting adjustment are available, signal generator adjustment and adjustment by using an off-the-air signal. You can use either of them.

Signal Generator Method

Test Equipment Required

1. Fm signal generator
2. Ac VTVM or oscilloscope
3. Screwdriver with 3 mm ($1/8$ ") blade

Preparation

1. Remove the wooden case.
2. Short the test point of R226 on the a-m front end/i-f amp/MPX board (AFC circuit) to ground as shown in Fig. 3-2.

Procedure

1. With the equipment connected as shown in Fig. 3-4, set the signal generator and receiver controls as follows:

Carrier frequency 98 MHz
 Modulation Fm, 400 Hz, 100 %
 Output level 1,000 μ V (60 dB)
 FUNCTION switch FM
 VOLUME CONTROL minimum

2. Turn RT201 (see Fig. 3-11) fully clockwise.

TABLE 3-3 MUTING ADJUSTMENT

Coupling Between Tuner and SG	SG Frequency and Output Level	Receiver Dial Setting	Adjust	Remarks
Direct	98 MHz 400 Hz 30 % Mod. 1,000 μ V (60 dB)	98 MHz	T202 See Fig. 3-11.	Turn T202 to obtain proper muting operation.

3. Follow the procedure given in Table 3-3. Tune the receiver to the SG frequency, then adjust RT201 (See Fig. 3-11) for proper muting operation. Muting should begin at point equidistant from zero center.

Off-the-Air Signal Method

Accurate muting adjustment can also be performed by utilizing an off-the-air local fm signal instead of the fm SG.

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

Note: The i-f transformers (CFT401 and T402) in the a-m i-f amplifier circuit are adjusted at the factory, so very little adjustment is necessary in the field even if replacing any of these i-f transformers.

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

Note: Before performing the following procedure, make sure that the dial pointer is correctly positioned as described in Procedure 2-3 on page 9.

Preparation

Connect the input cable of ac VTVM or oscilloscope to REC OUT jack as shown in Fig. 3-7.

Signal Generator Method

Test Equipment Required

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

Procedure

With the equipment connected as shown in Fig. 3-7, follow the procedures given in Table 3-4 when performing this alignment with an a-m signal generator.

Off-the-Air Signal Method

Accurate frequency-coverage and tracking alignment can also be performed by utilizing off-the-air local a-m signals.

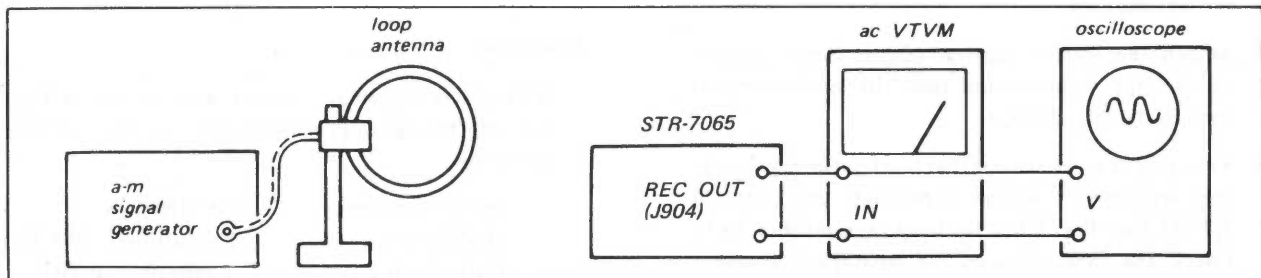


Fig. 3-7. A-m frequency coverage and tracking alignment test setup

TABLE 3-4. A-M FREQUENCY COVERAGE AND TRACKING ALIGNMENT

A-M FREQUENCY COVERAGE ALIGNMENT		SG Coupling Loop Antenna SG Output Level . . 400 Hz, 30 % (as low as possible)			
Step	SG Frequency	Receiver Dial Setting	Ac VTVM Connection	Adjust	Indication
1.	550 kHz	550 kHz	REC OUT	OSC coil T401 See Fig. 3-11.	Maximum VTVM reading
2.	1,600 kHz	1,600 kHz		OSC trimmer CT402 See Fig. 3-11.	
A-M TRACKING ALIGNMENT		SG Coupling Loop Antenna SG Output Level . . 400 Hz, 30 % (as low as possible)			
1.	600 kHz	Tune to the SG signal.	REC OUT	Bar antenna coil L901	Maximum VTVM reading
2.	1,400 kHz			Antenna trimmer CT401 See Fig. 3-11.	

3-8. TUNER INPUT METER CALIBRATION

Test Equipment Required

1. Signal generator (SG)
2. Ac VTVM
3. Loop antenna
4. Alignment tools

Preparation

1. Remove the wooden case.

Procedure

a. FM

1. Connect the test equipment as shown in Fig. 3-8.
2. Set the fm signal generator and receiver controls as follows:

Carrier frequency 98 MHz
 Output level 60 dB
 Modulation (400 Hz) 100 % (75 kHz)
 VOLUME control Minimum
 FUNCTION switch FM
 MODE switch MONO
 MONITOR switch SOURCE

3. Precisely tune the receiver to the signal and adjust RT202 (see Fig. 3-11.) to obtain the meter pointer within 1 mm (³/₆₄"') left of its maximum indication as shown in Fig. 3-9.

b. A-M

1. Connect the test equipment as shown in Fig. 3-10.
2. Set the a-m signal generator and receiver controls as follows:

Carrier frequency 1,000 kHz
 Output level 104 dB/m at AM antenna terminal
 Modulation (400 Hz) 30 %
 VOLUME control Minimum
 FUNCTION switch AM
 MODE switch MONO
 MONITOR switch SOURCE

3. Precisely tune the receiver to the signal and adjust RT401 (see Fig. 3-11.) to obtain the meter pointer within 1 mm (³/₆₄"') left of its maximum indication as shown in Fig. 3-9.

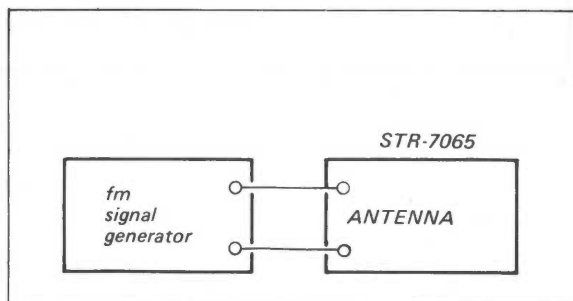


Fig. 3-8. Tuner input meter calibration test setup (Fm)

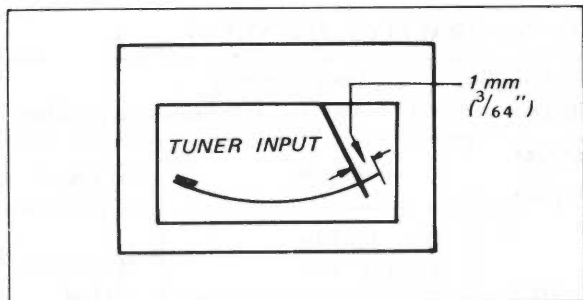


Fig. 3-9. TUNER INPUT meter calibration

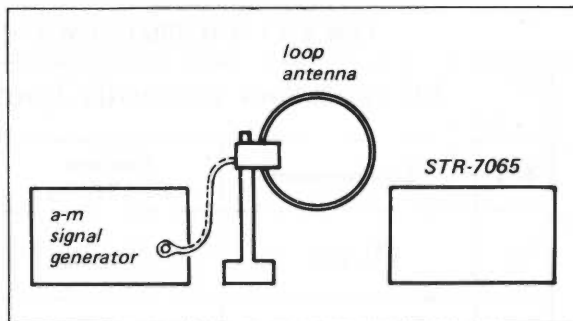
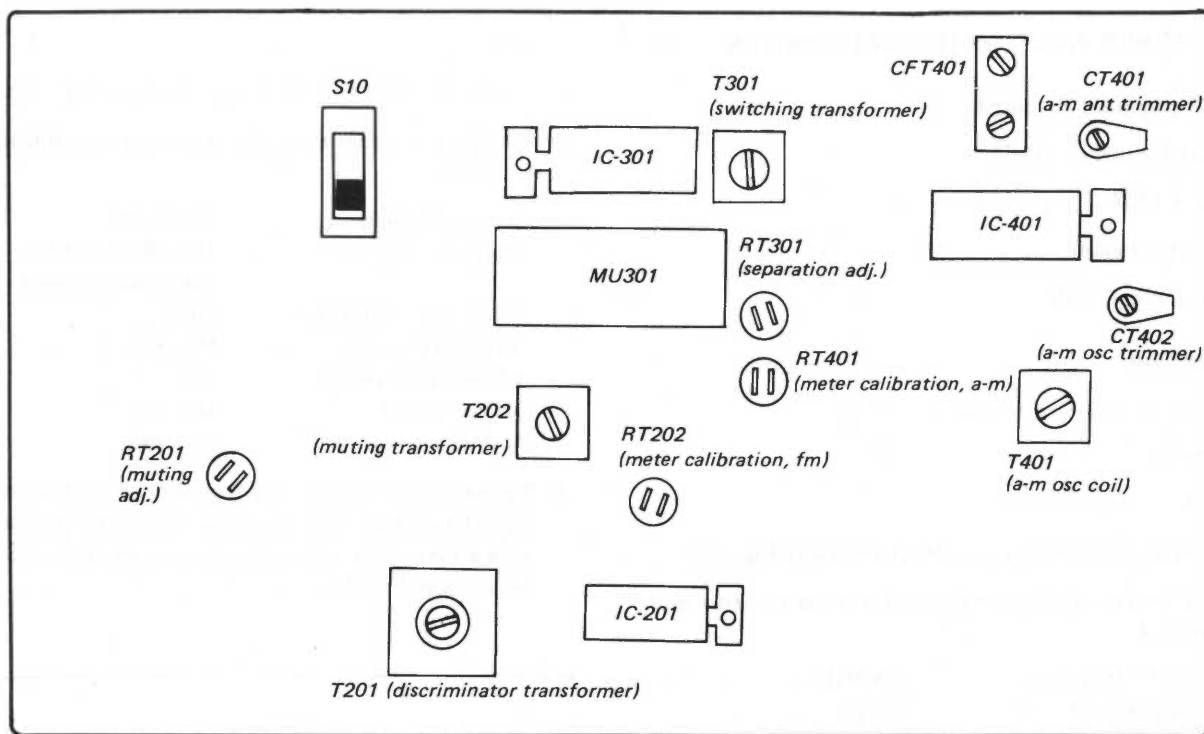


Fig. 3-10. Tuner input meter calibration test setup (A-m)

Adjustment Parts Location

A-m Front-End/I-f Amplifier/MPX Board
 - Component Side -

rear panel side



front panel side

Fig. 3-11. Adjustment parts location

3-9. POWER-AMPLIFIER ADJUSTMENT

Dc-Bias Adjustment

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

CAUTION

To avoid accidental power transistor damage, increase the ac line voltage gradually, using a variable transformer.

Test Equipment Required

1. Dc millivoltmeter
2. Variable transformer
3. Screwdriver, 3 mm ($\frac{1}{8}$ ") blade

Preparation

1. Remove the wooden case.
2. Connect the dc millivoltmeter across the test points as shown in Fig. 3-12.
3. Turn the adjustable resistors RT701 and RT751 (see Fig. 3-12) on the power amp/power supply board fully counterclockwise.
4. Set the variable transformer for minimum output.

Procedure

1. Turn on POWER switch, and increase the line voltage up to the rated value (120 V).
2. Allow about five minutes for warm-up.
3. Adjust RT701 (RT751) for 50 mV reading on the meter.

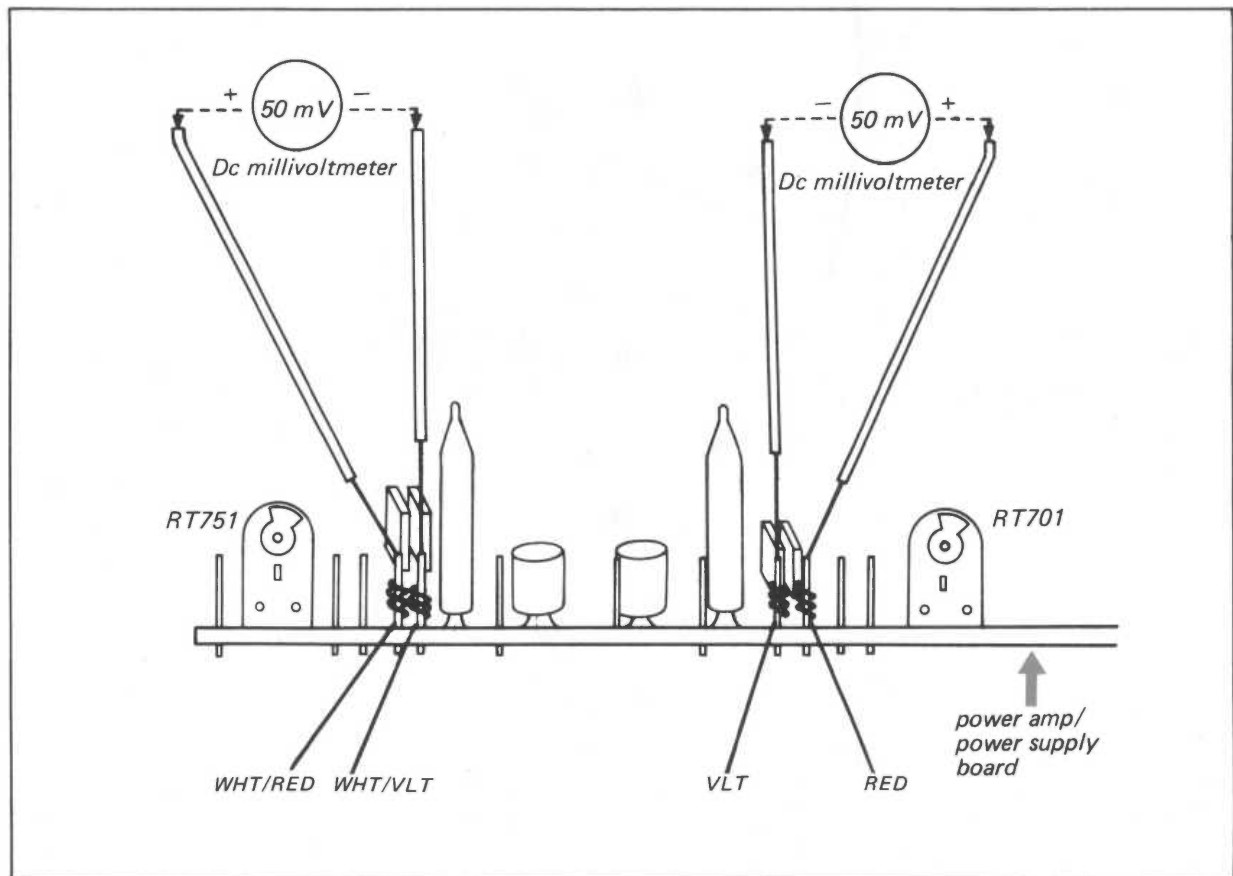
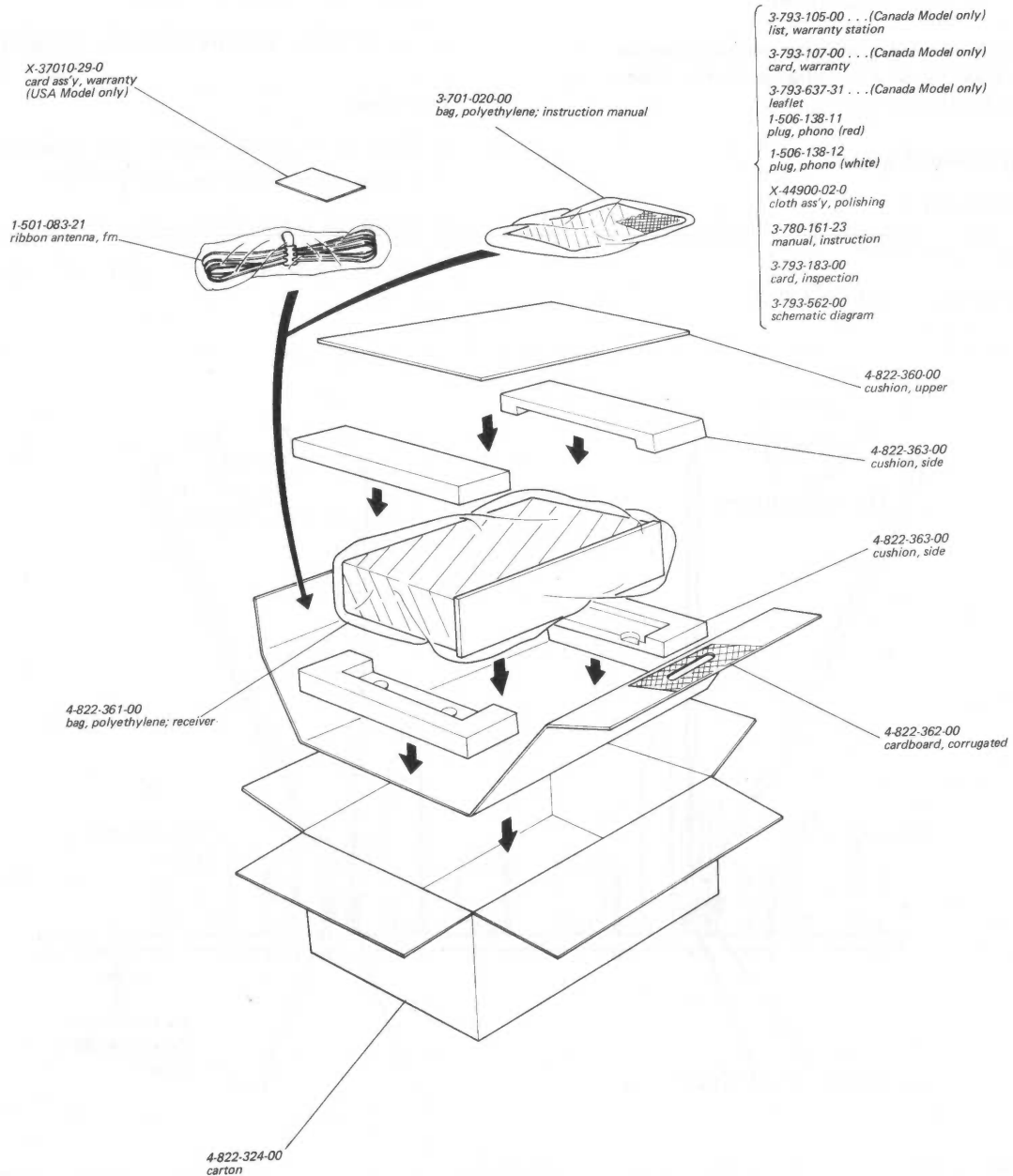


Fig. 3-12. Power-amplifier adjustment test setup

**SECTION 4
REPACKING**

The STR-7065 original shipping carton and packing materials are the ideal containers for shipping the unit. However to secure the maximum protection,

the STR-7065 must be repacked in these materials precisely as before. The proper repacking procedures are shown in Fig. 4-1.



Note:

USA Model Serial No. 807,001 and later
 Canada Model Serial No. 700,001 and later

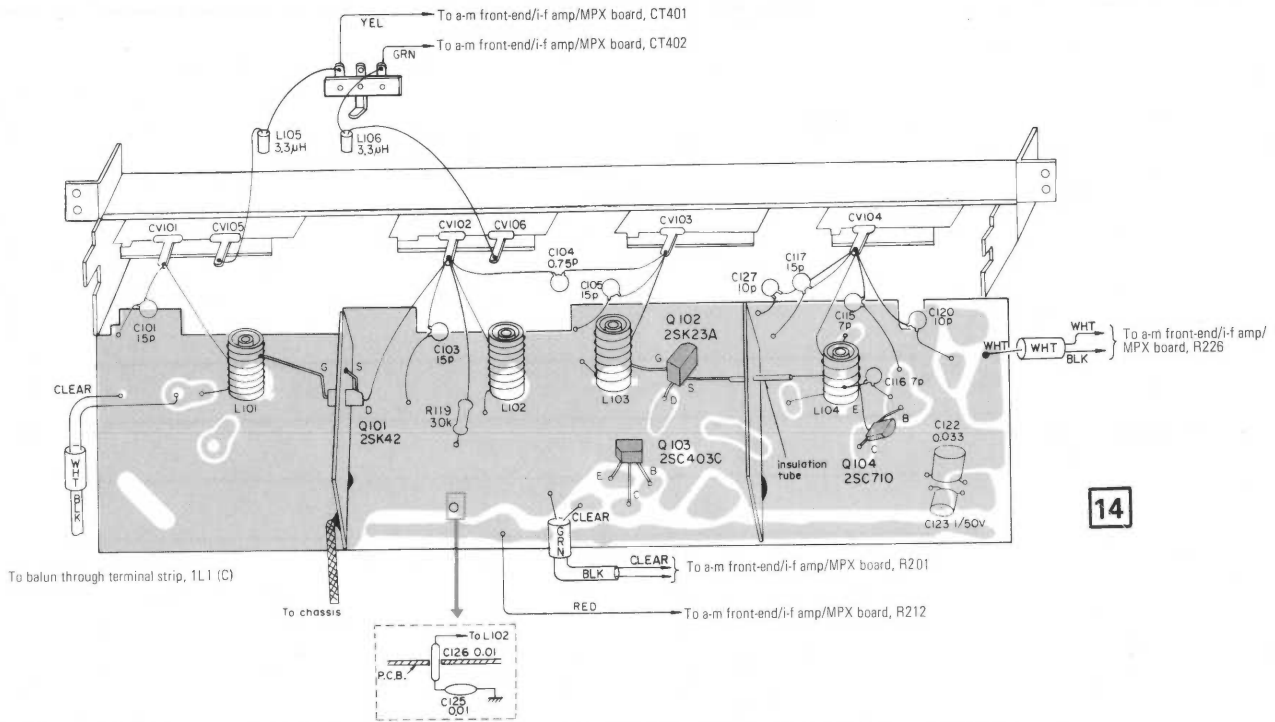
Fig. 4-1. Repacking

MEMO

A series of horizontal dotted lines for writing.

SECTION 5
DIAGRAMS

5-1. MOUNTING DIAGRAM – Fm Front-End –
– Conductor Side – (FAF-022BWG)

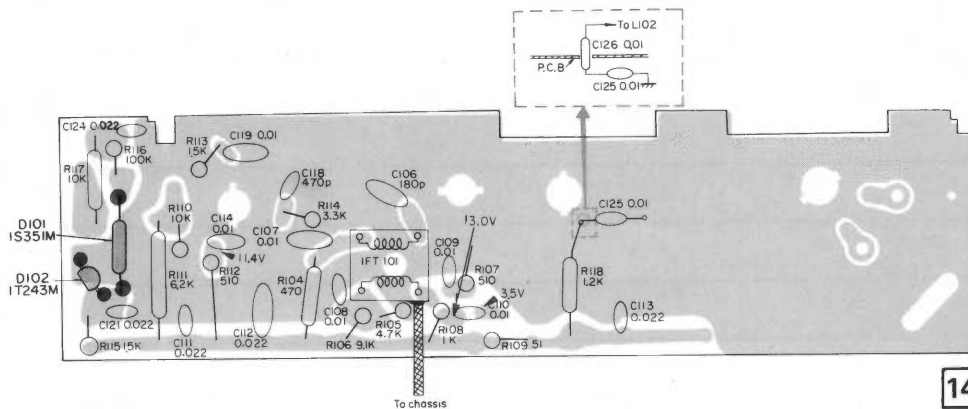


14

Transistor and Adjustment Parts Location



– Component Side –



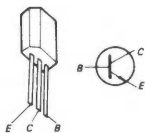
14



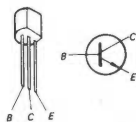
2SK23A



2SK42



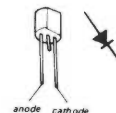
2SC403C



2SC710

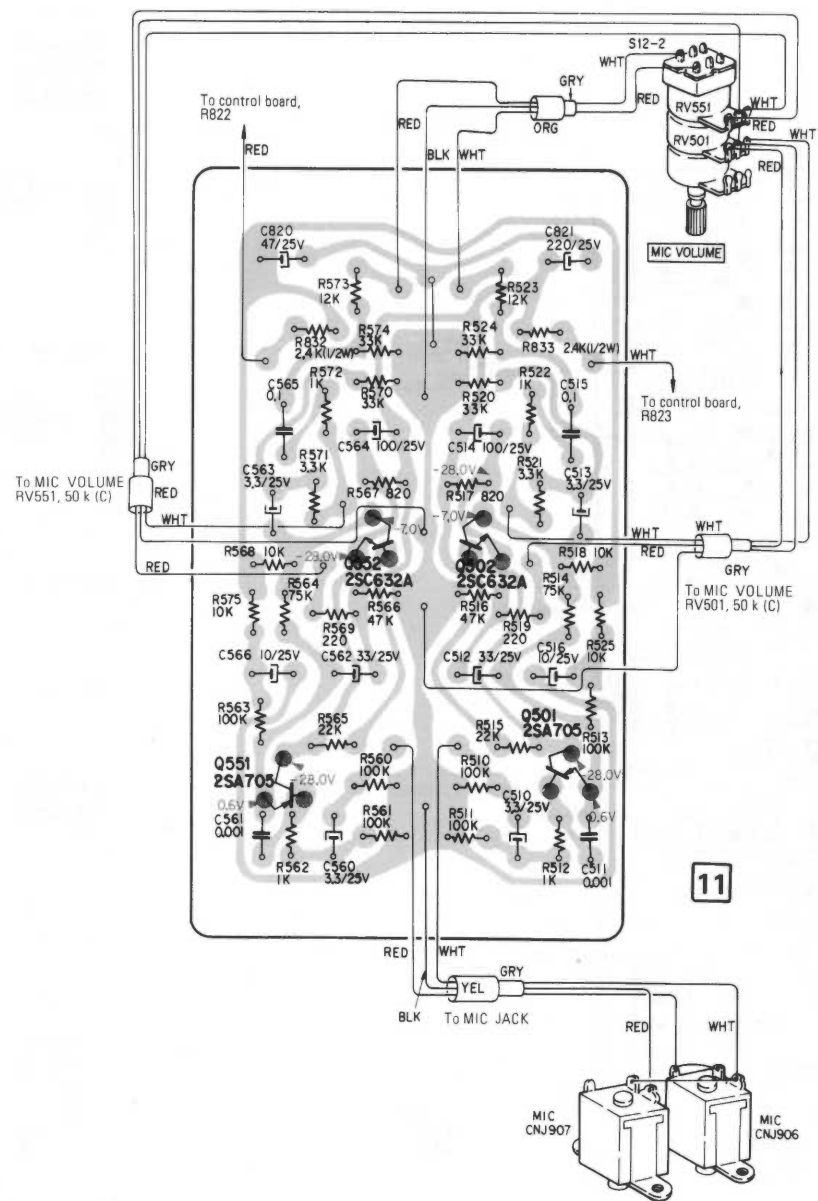


1S351M

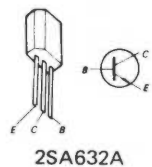
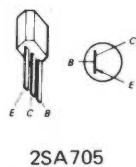


1T243M

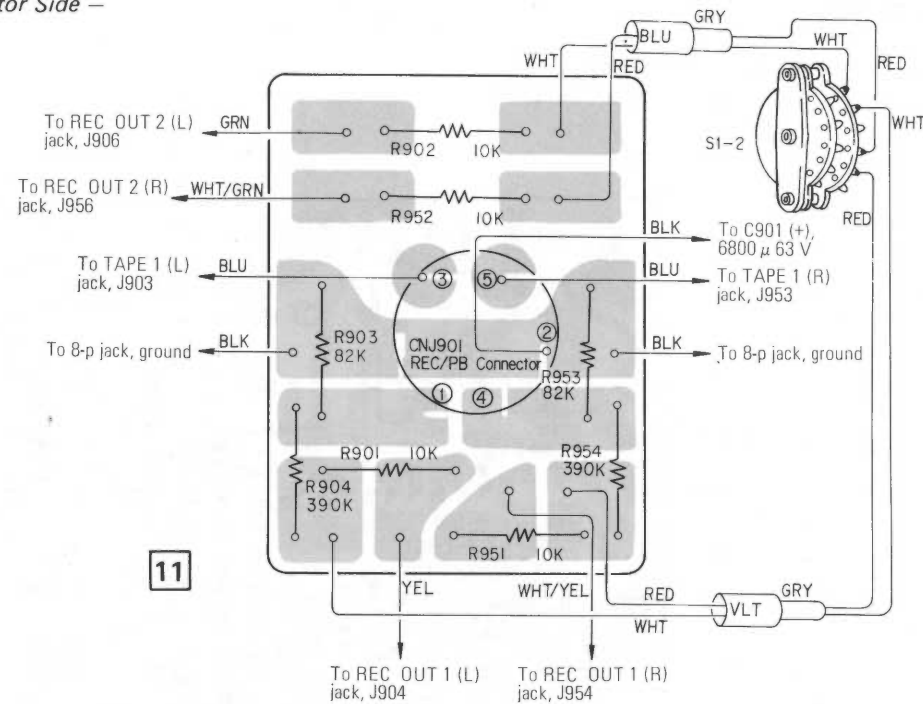
5-2. MOUNTING DIAGRAM – MIC Amp Board –
– Conductor Side –



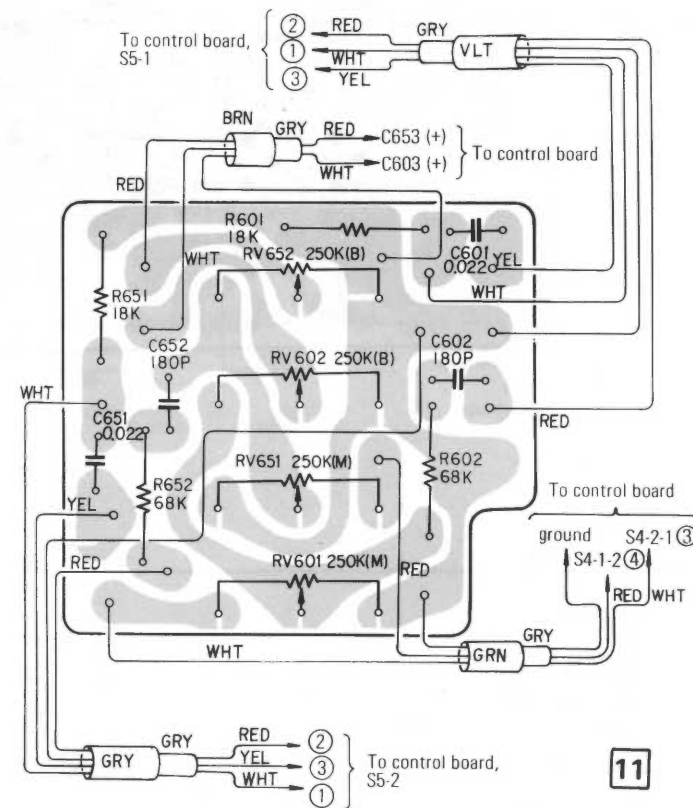
Transistor Location	Q51	Q52	Q502	Q501



5-3. MOUNTING DIAGRAM – REC/PB Connector Board –
– Conductor Side –

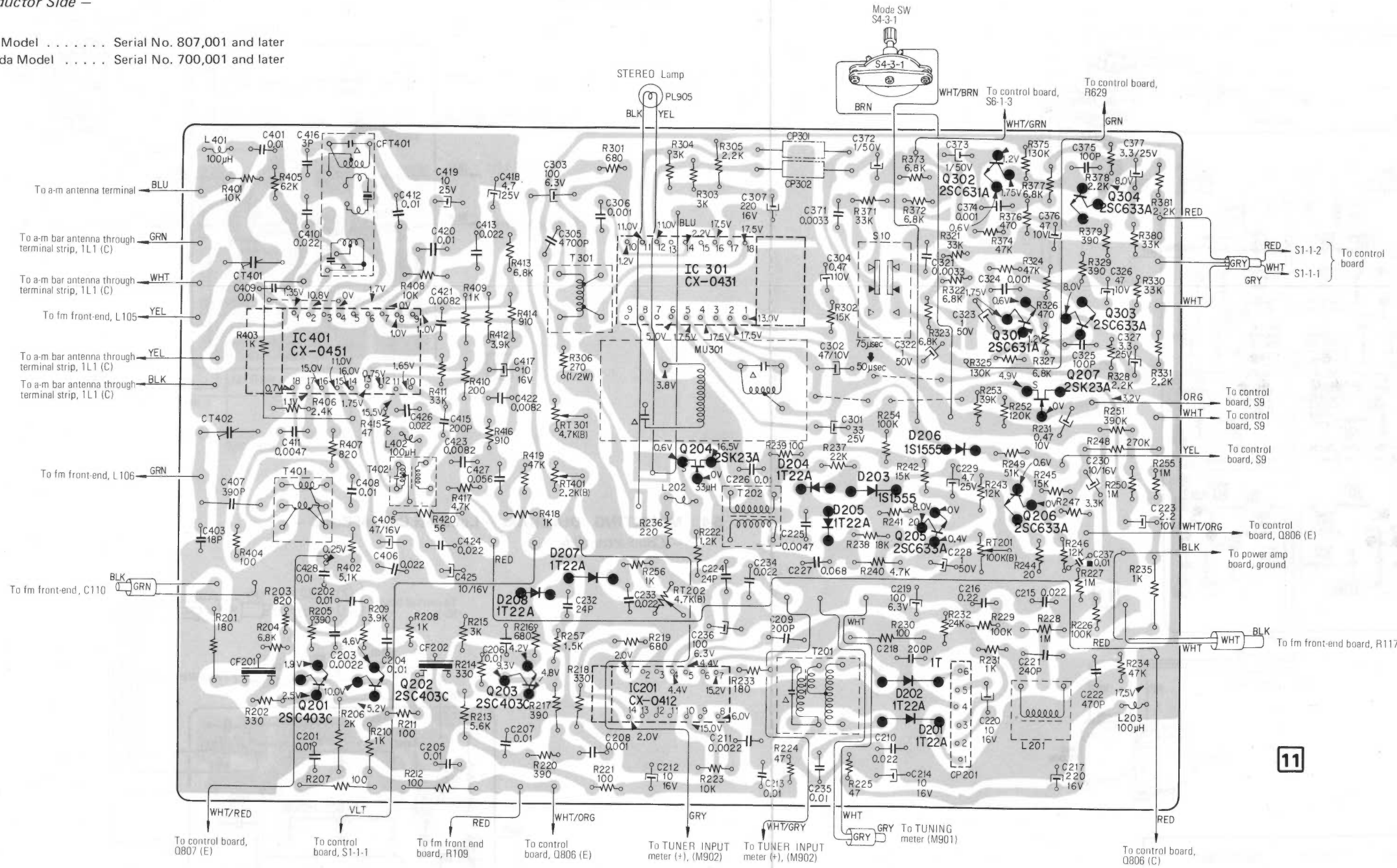


5-4. MOUNTING DIAGRAM – Loudness Control Board –
– Conductor Side –



5-5. MOUNTING DIAGRAM – A-m Front-End/I-f Amplifier/MPX Board –
– Conductor Side –

USA Model Serial No. 807,001 and later
Canada Model Serial No. 700,001 and later



- 2SC403C
- 2SC631A
- 2SC633A
- 2SK23A
- CX-0412
- CX-0431
- CX-0451
- 1T22A
- 1S1555

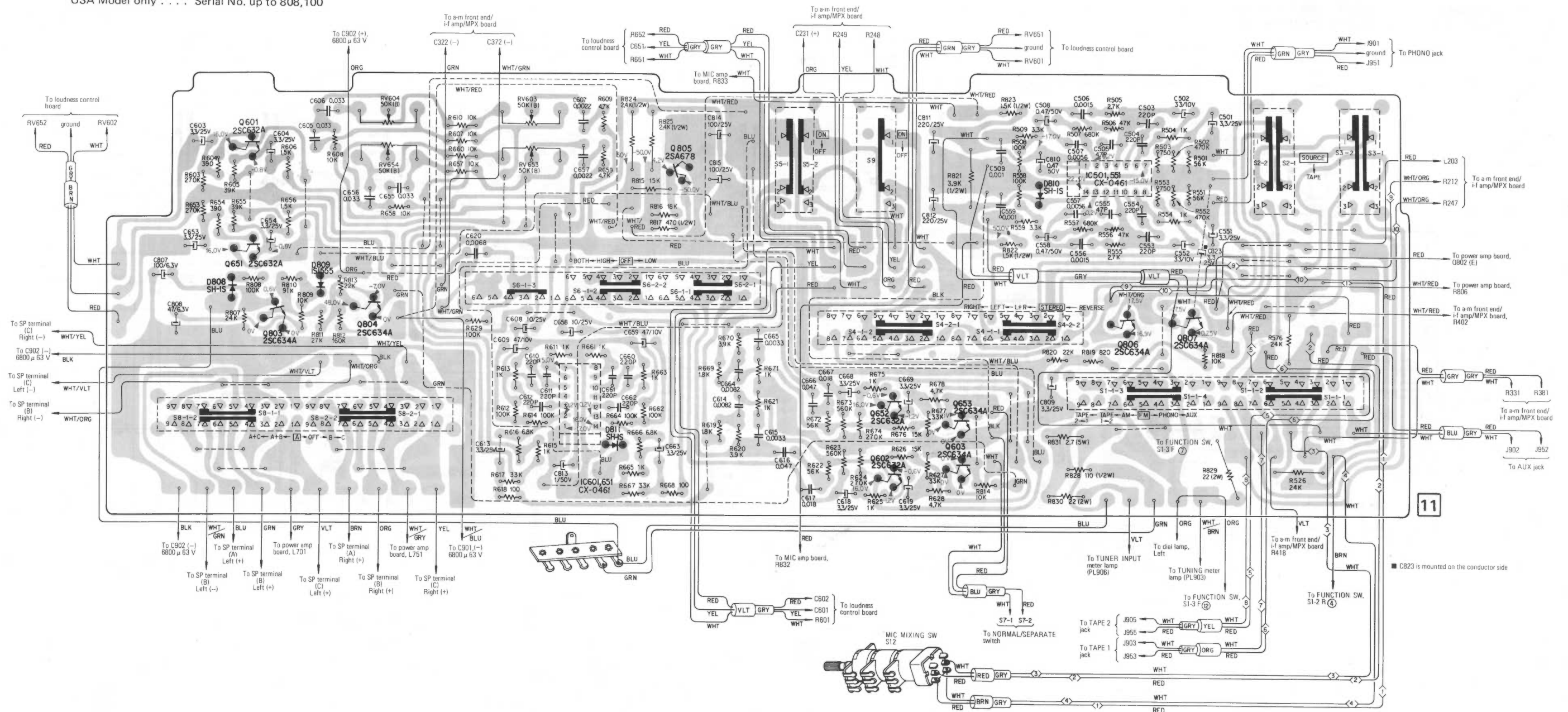
■ C237 is mounted on the conductor side

Parts Location

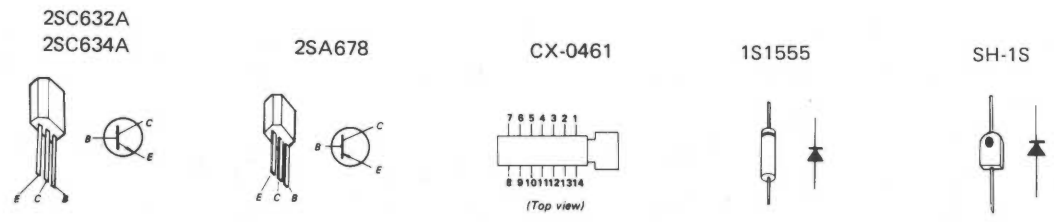
Q	Q201	Q202	Q203	Q204	Q205	Q302	Q301 Q207	Q304	Q303
ADJ	CT401	T401	T301	RT301	T202	T201	RT201		
	CT402		RT401	RT202					

5-6. MOUNTING DIAGRAM - Control Board -
- Conductor Side - (CCB-115)

USA Model only . . . Serial No. up to 808,100

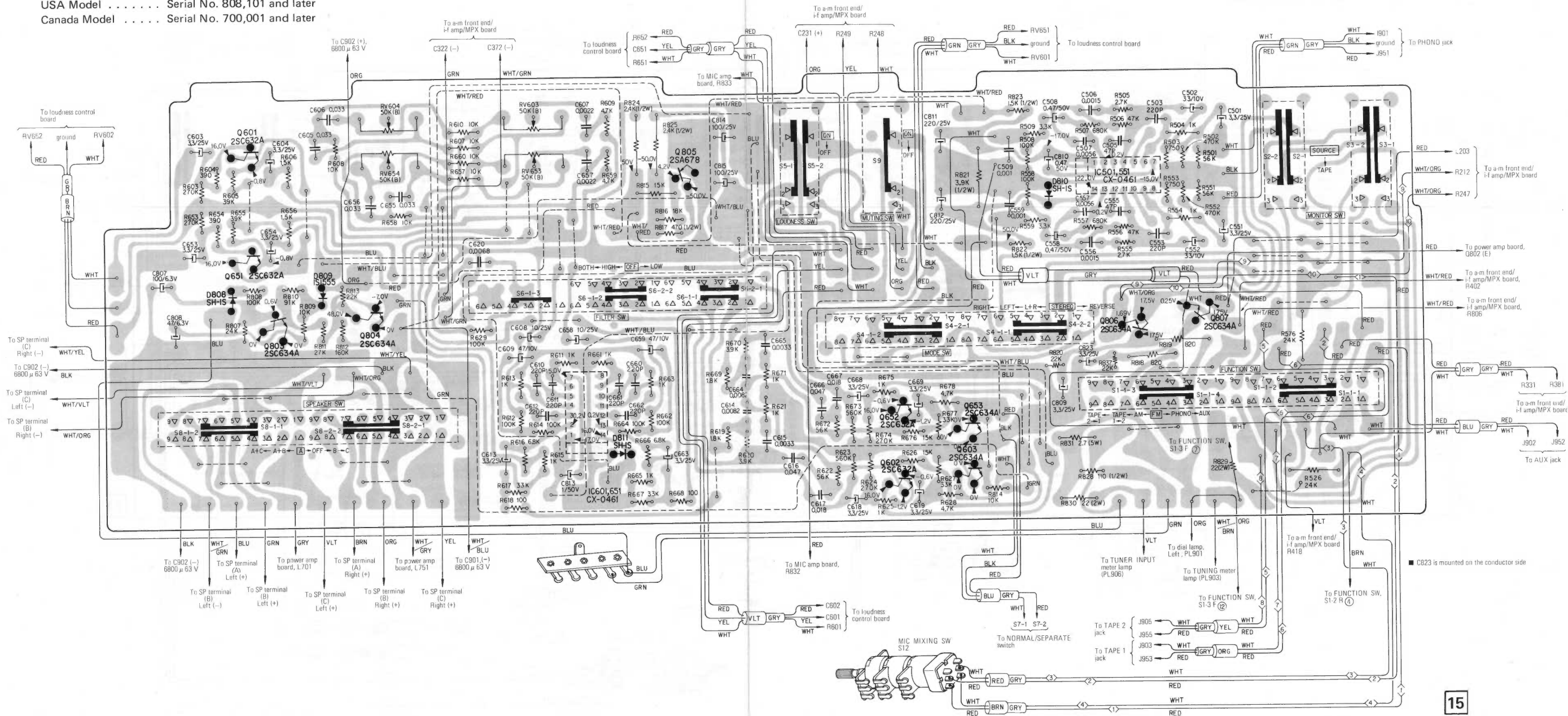


Transistor Location	Q601	Q651	Q803	Q804	Q805	Q652	Q653	Q602	Q603	Q806	Q807
---------------------	------	------	------	------	------	------	------	------	------	------	------



5-6. MOUNTING DIAGRAM — Control Board —
— Conductor Side — (CCB-115)

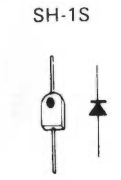
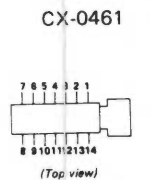
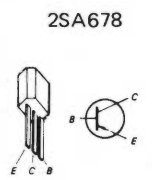
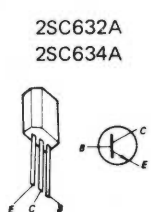
USA Model Serial No. 808,101 and later
Canada Model Serial No. 700,001 and later



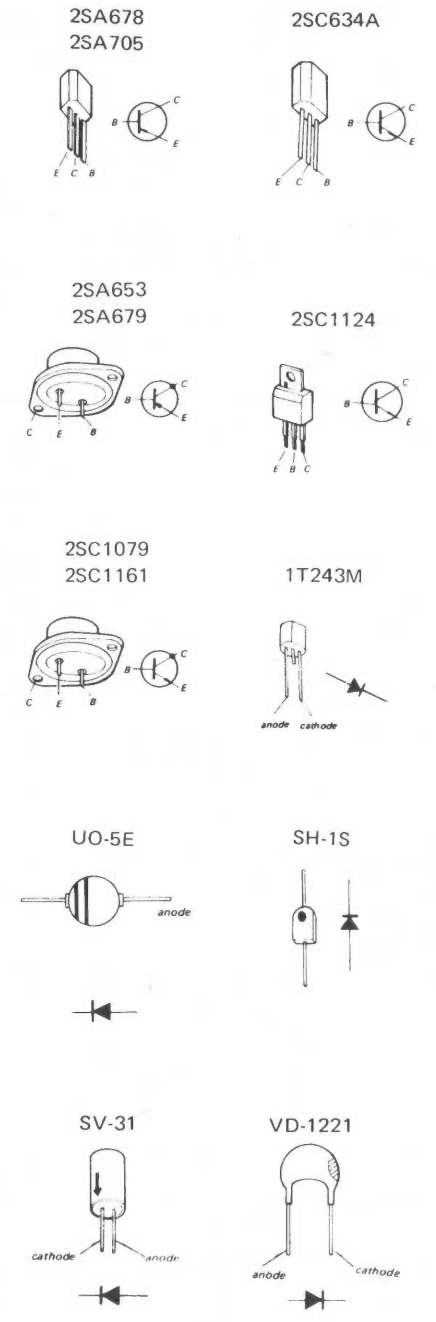
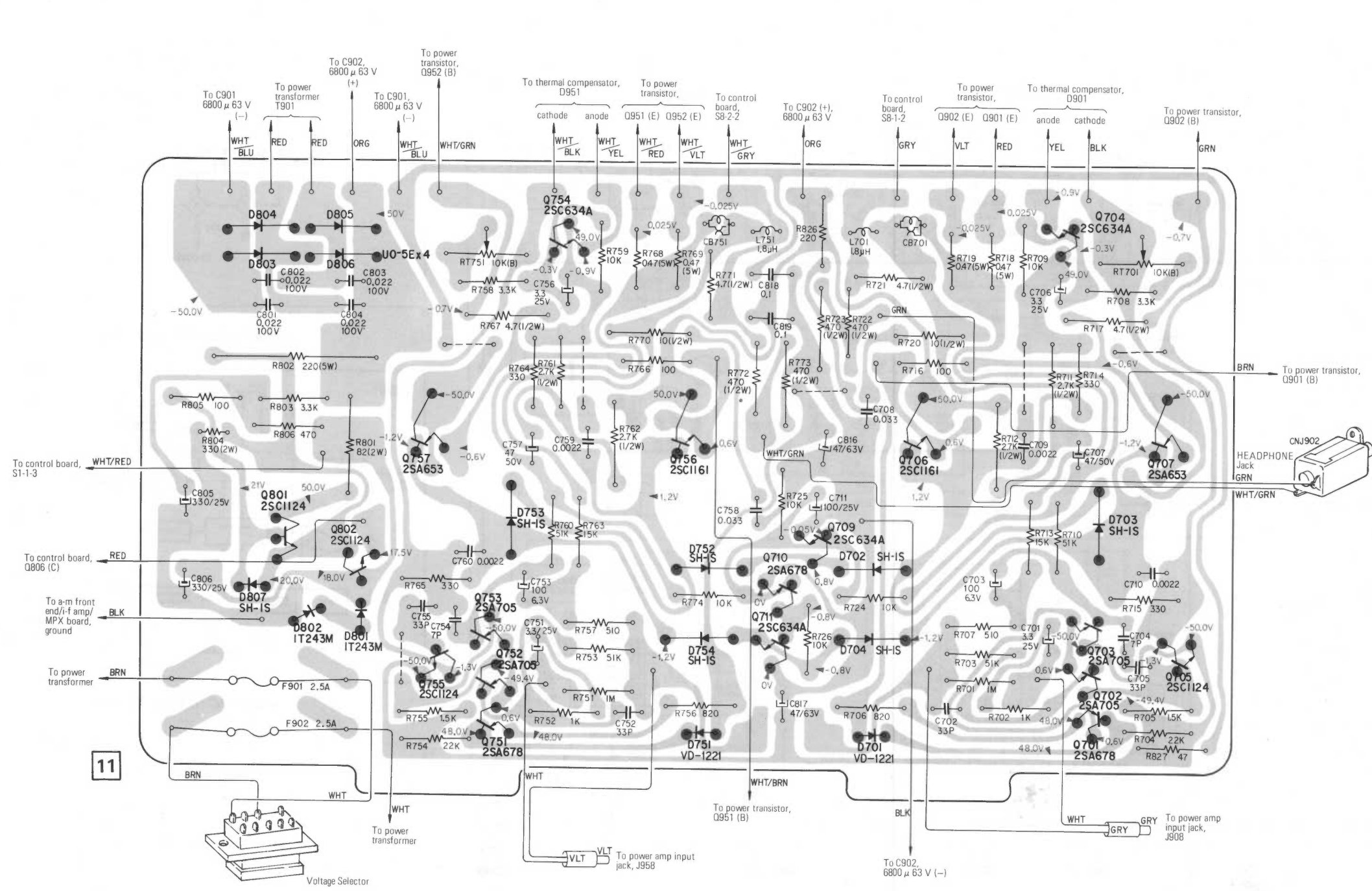
■ C823 is mounted on the conductor side

Transistor
Location

Q601	Q805	Q806	Q807
Q651	Q804	Q652	Q653
Q803		Q602	Q603



5-7. MOUNTING DIAGRAM – Power Amplifier/Power Supply Board –
– Conductor Side –

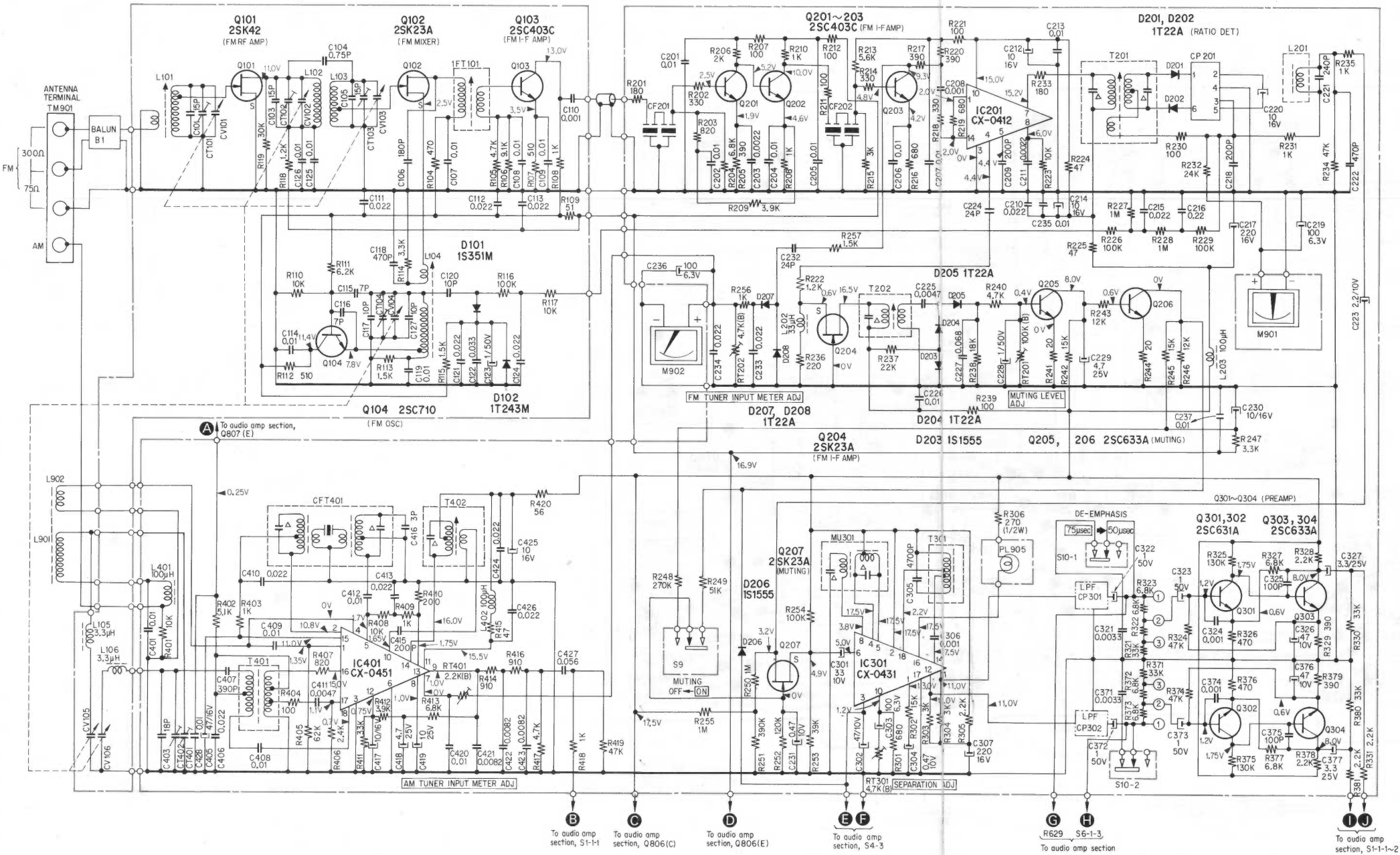


Parts Location

Q	Q801	Q802	Q757	Q753	Q754	Q756	Q710	Q709	Q706	Q704	Q707
			Q755	Q752	Q751		Q711			Q703	Q705
D	D804	D805		D753		D752		D702		D703	
	D803	D806				D754		D704			
	D807	D802	D801			D751		D701			
ADJ				RT751						RT701	

5-8. SCHEMATIC DIAGRAM – Tuner Section –

USA Model Serial No. 807,001 and later
 Canada Model Serial No. 700,001 and later

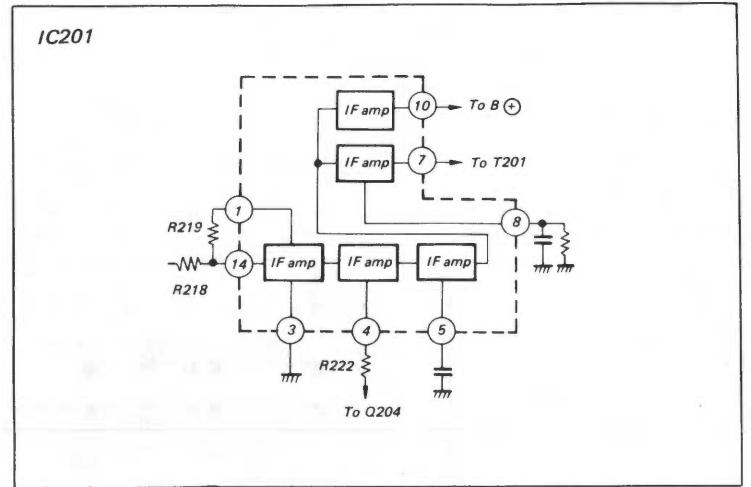


Ref. No.	Description	Position
S9	MUTING switch	ON
S10	DE-EMPHASIS switch	75 μ sec (50 μ sec – 75 μ sec)

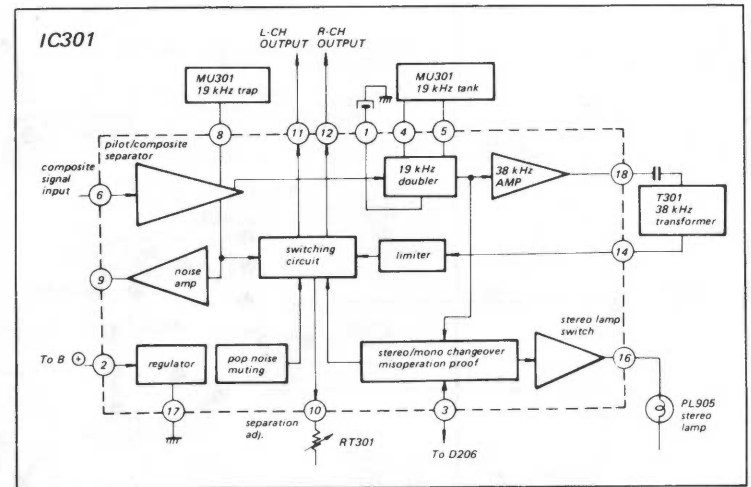
Note:

All resistance values are in ohms. k = 1000, M = 1000 k
 All capacitance values are in μ F except as indicated with p, which means μ F.
 Voltage variations may be noted because of normal production tolerances.
 All voltages are dc measured with a VOM which has an input impedance of 20 k ohms/volt. No signal in.

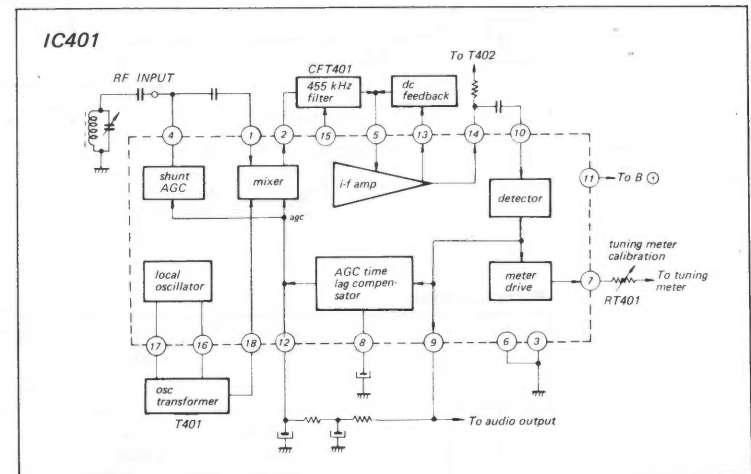
IC BLOCK DIAGRAMS



Detailed IC (CX-0412) diagram



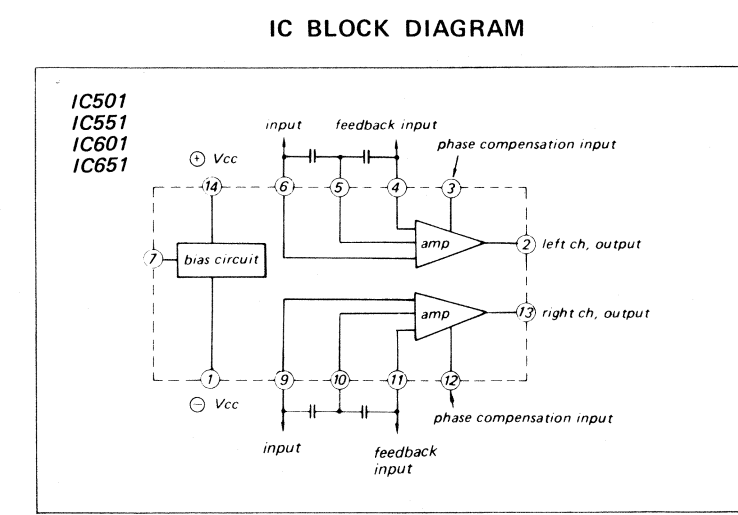
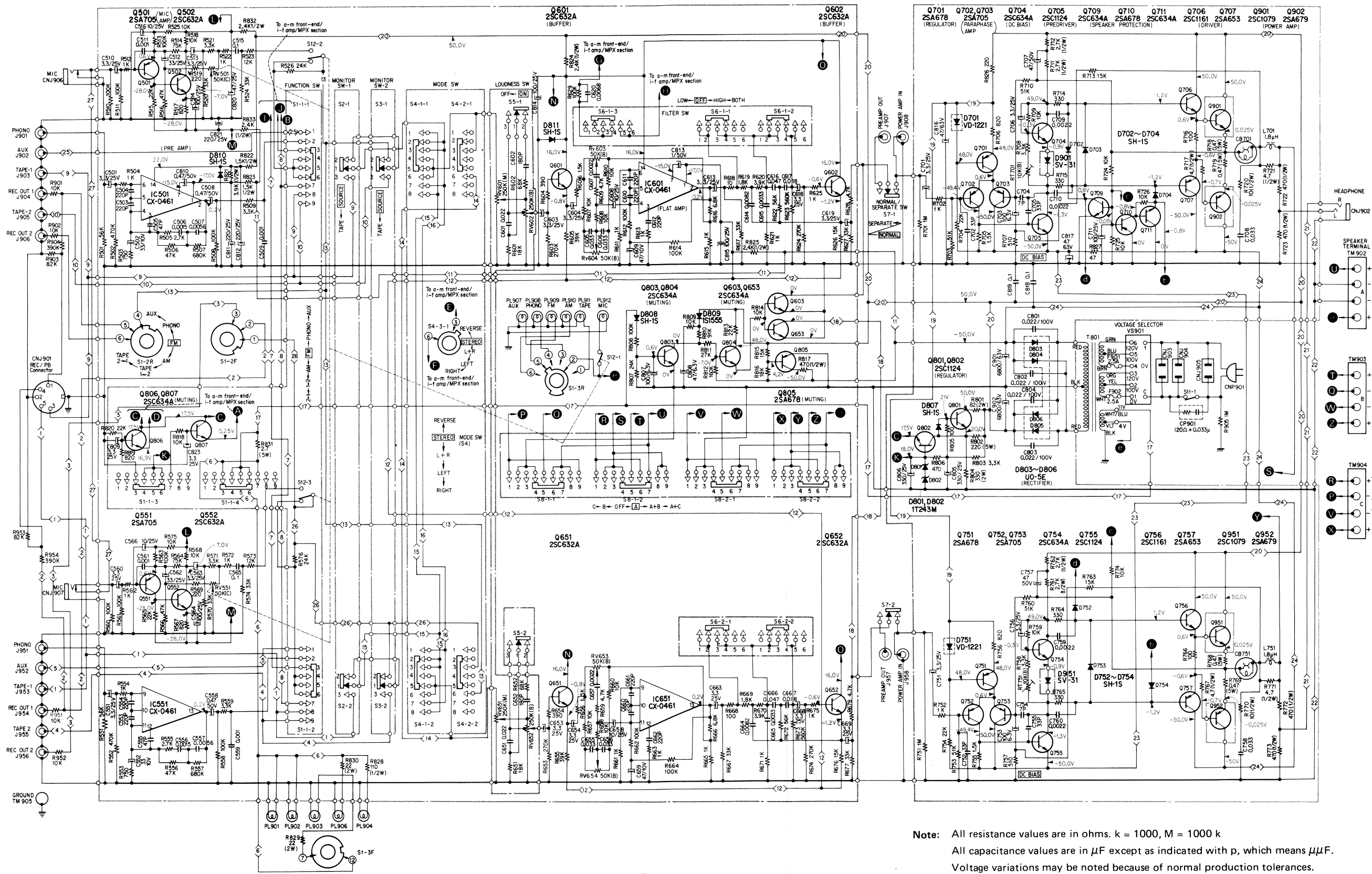
Detailed IC (CX-0431) diagram



Detailed IC (CX-0451) diagram

5-9. SCHEMATIC DIAGRAM – Audio Amplifier Section –

USA Model only . . . Serial No. up to 808,100

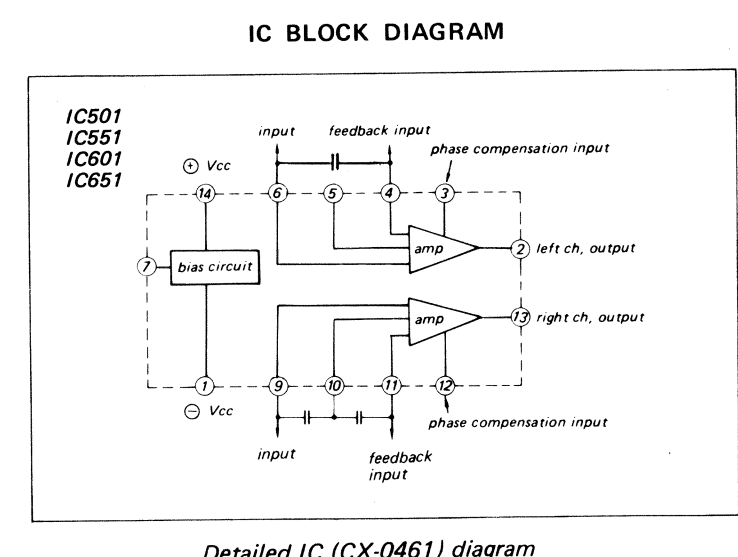


Detailed IC (CX-0461) diagram

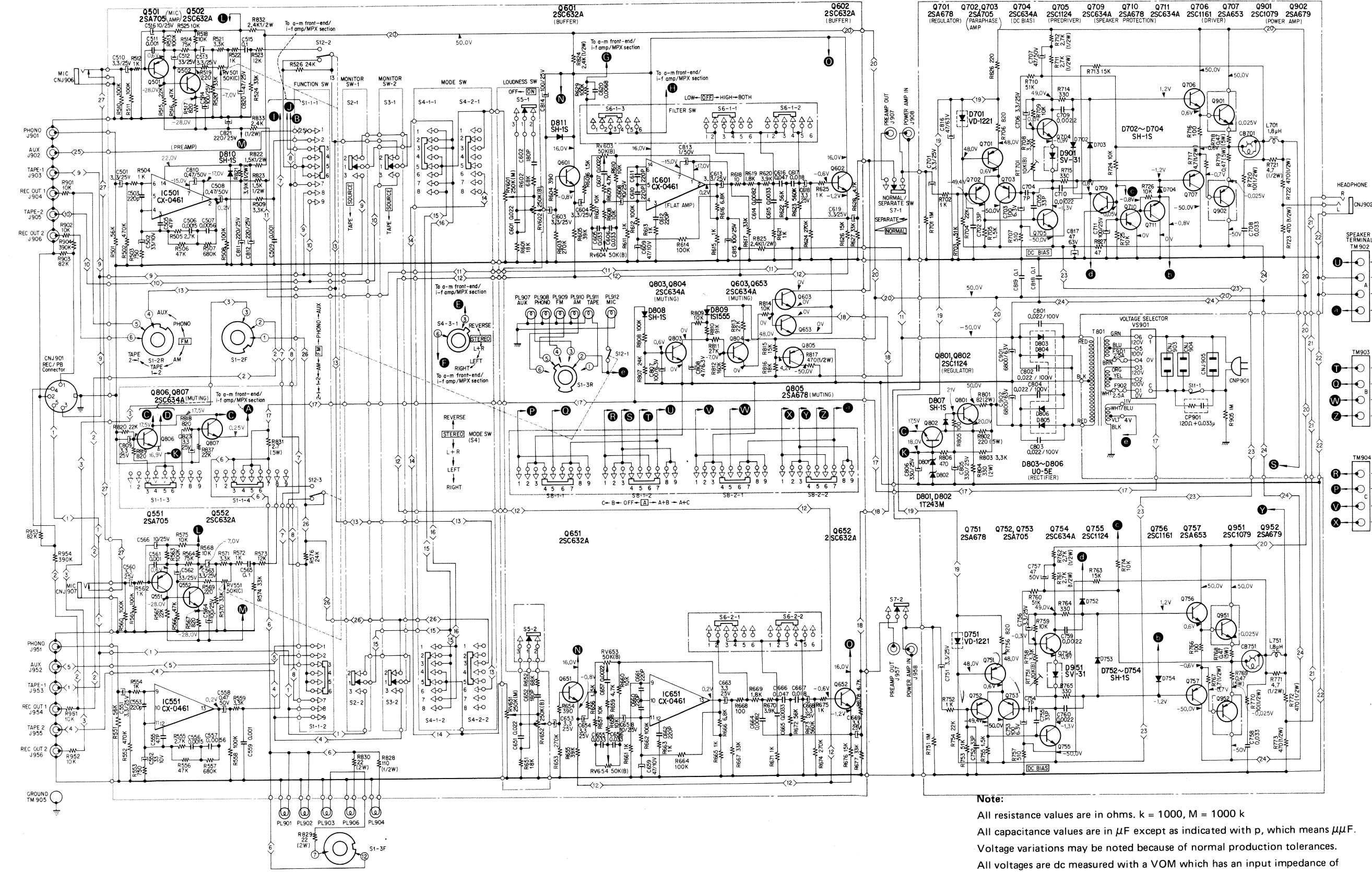
Ref. No.	Description	Position
S1-1 ~ 4	FUNCTION switch [AUX - PHONO - FM - AM - (TAPE PRINT 1-2) - (TAPE PRINT 2-1)]	FM
S2-1 ~ 2	MONITOR-1 switch (SOURCE - TAPE)	SOURCE
S3-1 ~ 2	MONITOR-2 switch (SOURCE - TAPE)	SOURCE
S4	MODE switch [REVERSE - STEREO - (L + R) - LEFT - RIGHT]	STEREO
S5	LOUDNESS switch	ON
S6	FILTER switch (LOW - OFF - HIGH - BOTH)	OFF
S7	NORMAL/SEPARATE switch	NORMAL
S8	SPEAKER switch [C - B - OFF - A - (A + B) - (A + C)]	A
S11	POWER switch	OFF
S12	MIC MIXING switch	OFF

Note: All resistance values are in ohms. k = 1000, M = 1000 k
 All capacitance values are in μF except as indicated with p, which means μF .
 Voltage variations may be noted because of normal production tolerances.
 All voltages are dc measured with a VOM which has an input impedance of
 20 k ohms/volt. No signal in.

5-9. SCHEMATIC DIAGRAM – Audio Amplifier Section –



USA Model Serial No. 808,101 and later
 Canada Model . . . Serial No. 700,001 and later



Ref. No.	Description	Position
S1-1 - 4	FUNCTION switch [AUX - PHONO - FM - AM - TAPE PRINT 1 - 2] - (TAPE PRINT 2 - 1)	FM
S2-1 - 2	MONITOR-1 switch (SOURCE - TAPE)	SOURCE
S3-1 - 2	MONITOR-2 switch (SOURCE - TAPE)	SOURCE
S4	MODE switch [REVERSE - STEREO - (L + R) - LEFT - RIGHT]	STEREO
S5	LOUDNESS switch	ON
S6	FILTER switch (LOW - OFF - HIGH - BOTH)	OFF
S7	NORMAL/SEPARATE switch	NORMAL
S8	SPEAKER switch [C - B - OFF - A - (A + B) - (A + C)]	A
S11	POWER switch	OFF
S12	MIC MIXING switch	OFF

Note:
 All resistance values are in ohms, k = 1000, M = 1000 k
 All capacitance values are in μF except as indicated with p, which means μF .
 Voltage variations may be noted because of normal production tolerances.
 All voltages are dc measured with a VOM which has an input impedance of
 20 k ohms/volt. No signal in.

SECTION 6
EXPLODED VIEWS

(1)

Hardware Nomenclature

P - Pan Head Screw	W - Washer
PS - Pan Head Screw with Spring Washer	SW - Spring Washer
K - Flat Countersunk Head Screw	LW - Lock Washer
B - Binding Head Screw	N - Nut
SC - Set Screw	
E - Retaining Ring (E Washer)	

Example

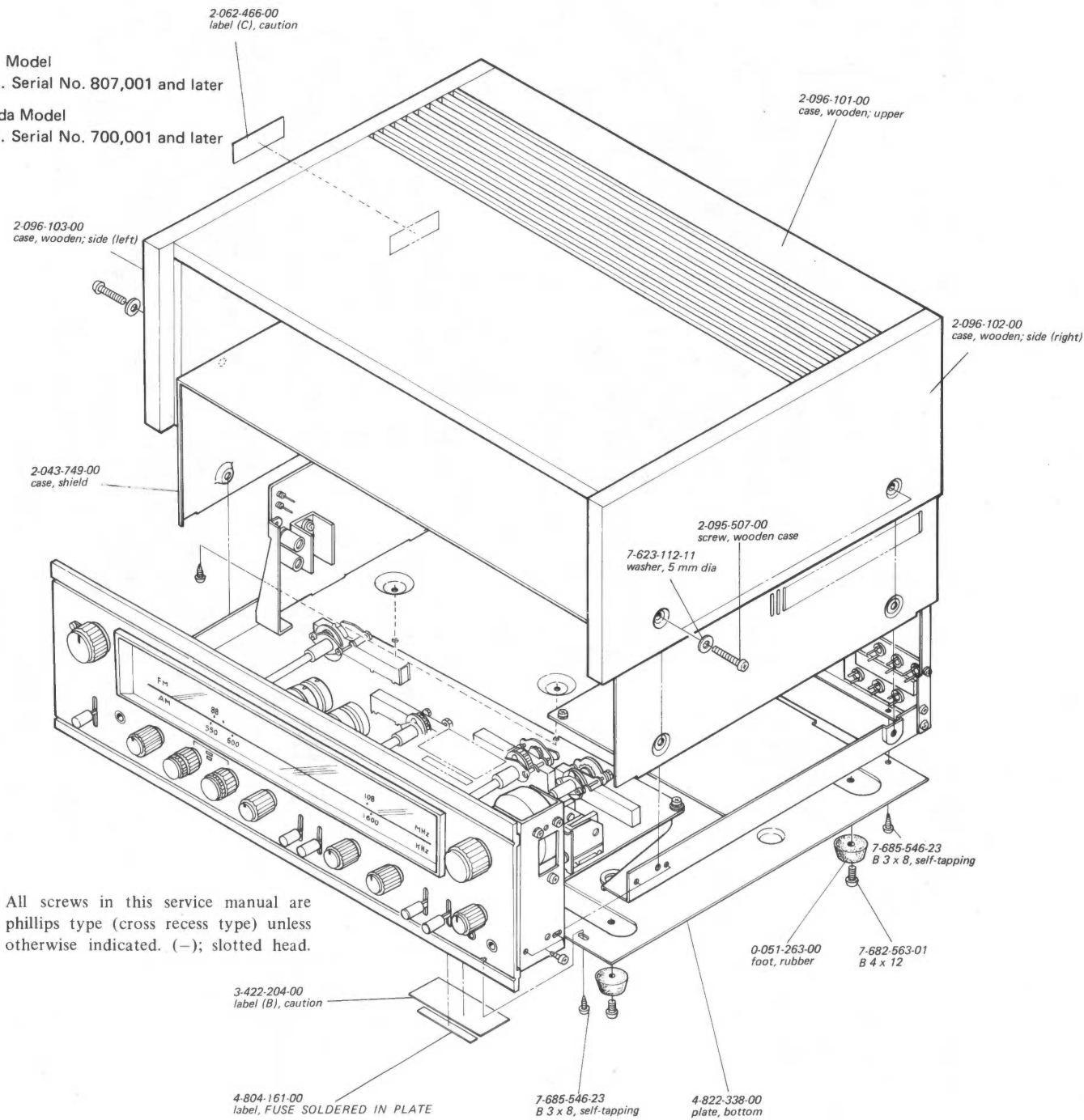
Type of Slot: P 3x10

Length in mm (L)

Diameter in mm (D)

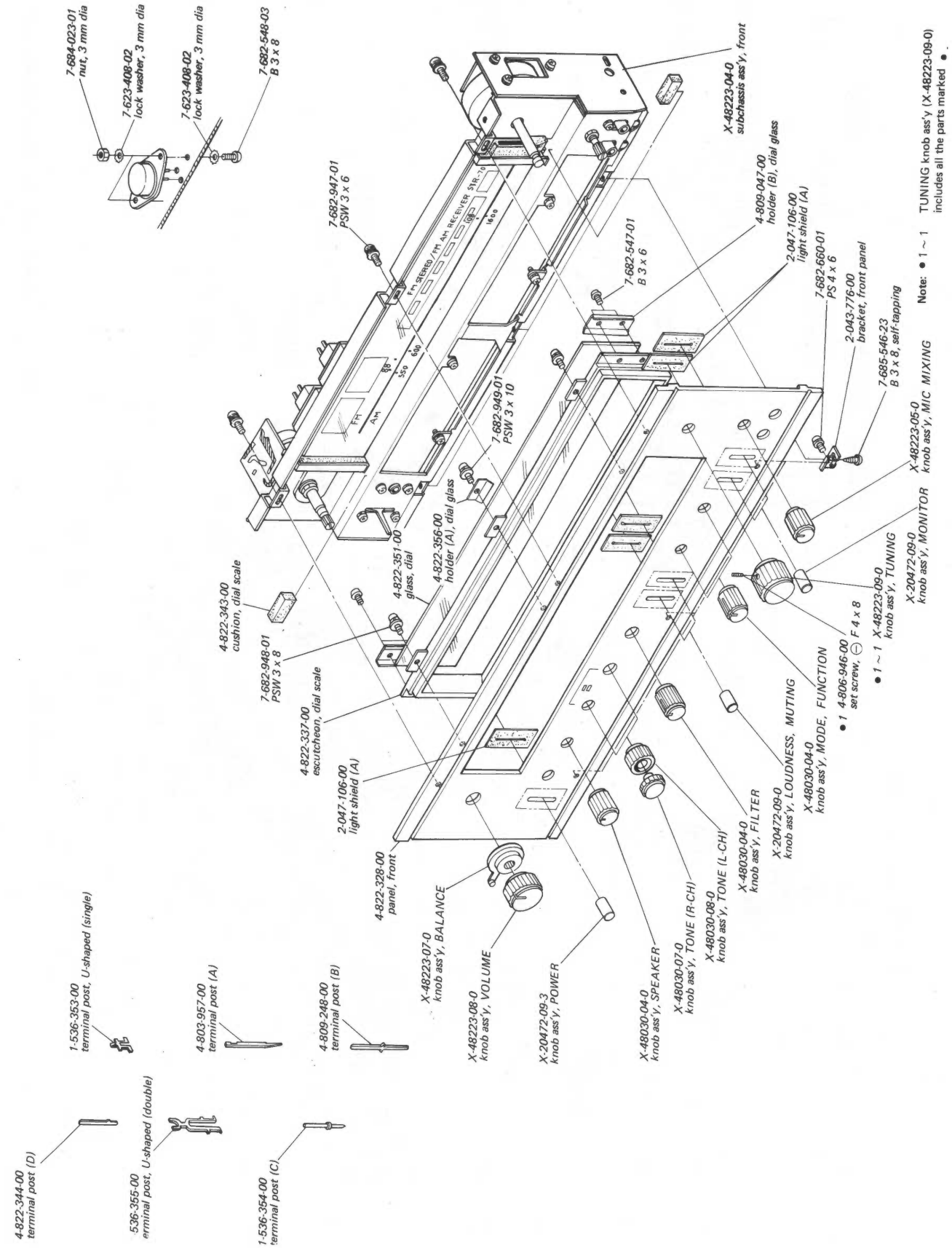
Type of Head

Note: USA Model
Serial No. 807,001 and later
Canada Model
Serial No. 700,001 and later



Note: All screws in this service manual are phillips type (cross recess type) unless otherwise indicated. (-); slotted head.

(2)



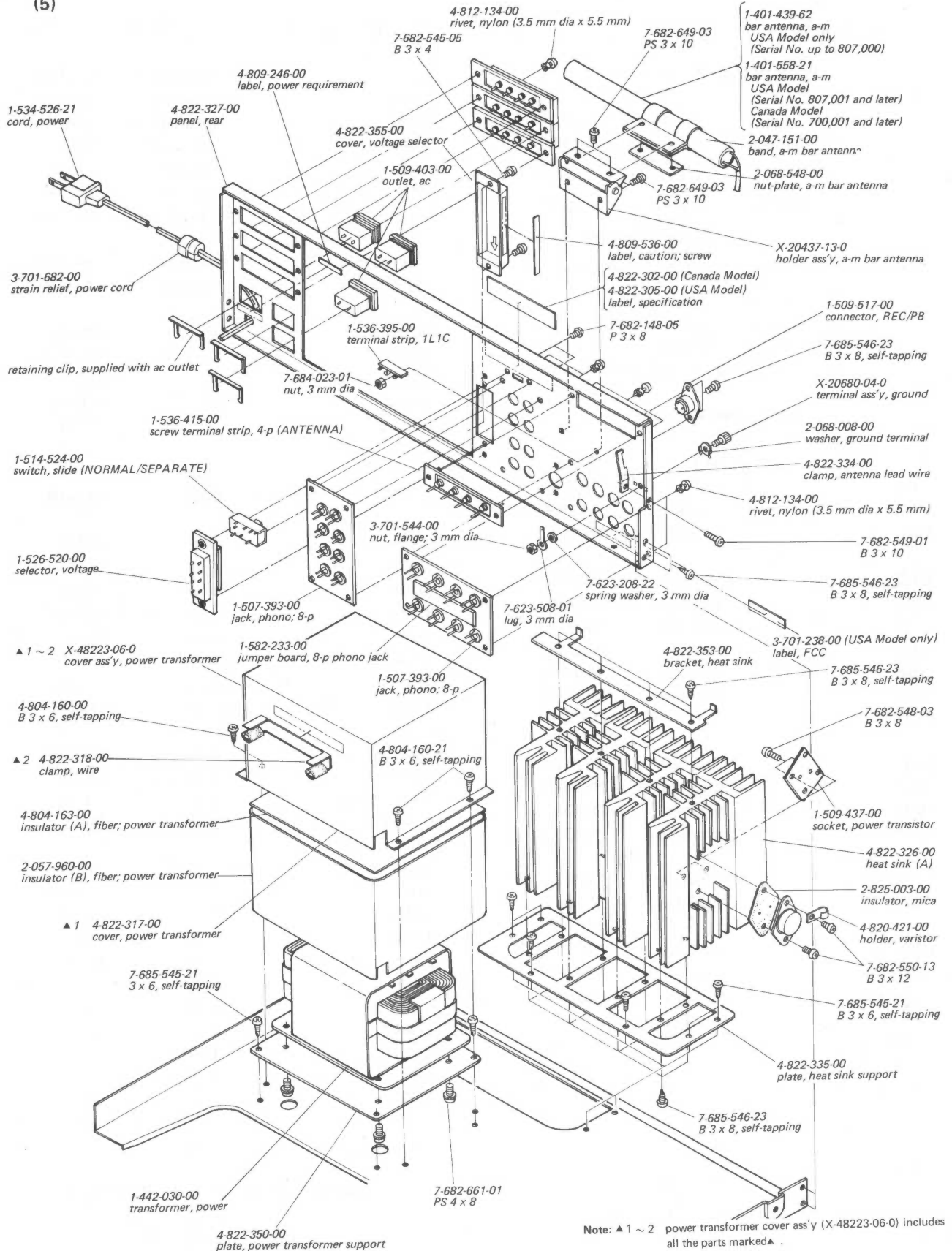
TUNING knob ass'y (X-48223-09-0) includes all the parts marked

Note: 1 ~ 1 X-48223-09-0 knob ass'y, MONITOR

Note: 1 ~ 1 X-48223-09-0 knob ass'y, TUNING

Note: 1 ~ 1 X-48223-09-0 knob ass'y, MONITOR

(5)



SECTION 7

ELECTRICAL PARTS LIST

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
COMPLETE CIRCUIT BOARDS					
	8-982-709-11	fm front-end (FAT-022BWG)	Q801		transistor 2SC1124
	8-982-709-27	a-m front-end/i-f amp/MPX USA Model only (Serial No. up to 807,000)	Q802		transistor 2SC1124
	X-48223-24	a-m front-end/i-f amp/MPX USA Model (Serial No. 807,001 and later) Canada Model (Serial No. 700,001 and later)	Q803		transistor 2SC634A
	8-982-709-12	control (CCB-115)	Q804		transistor 2SC634A
	8-982-709-25	loudness control	Q805		transistor 2SA678
	8-982-709-26	MIC amp	Q806		transistor 2SC634A
	8-982-709-22	power amp/power supply	Q807		transistor 2SC634A
			Q901(Q951)		transistor 2SC1079
			Q902(Q952)		transistor 2SA679
			IC201		IC CX-0412
			IC301		IC CX-0431
			IC401		IC CX-0451
			IC501		IC CX-0461
			IC601		IC CX-0461
			D101		diode 1S351M
			D102		diode 1T243M
			D201		diode 1T22A
			D202		diode 1T22A
			D203		diode 1S1555
			D204		diode 1T22A
			D205		diode 1T22A
			D206		diode 1S1555
			D207		diode 1T22A
			D208		diode 1T22A
			D701(D751)		diode VD-1221
			D702(D752)		diode SH-1S
			D703(D753)		diode SH-1S
			D704(D754)		diode SH-1S
			D801		diode 1T243M
			D802		diode 1T243M
			D803		diode UO-5E
			D804		diode UO-5E
			D805		diode UO-5E
			D806		diode UO-5E
			D807		diode SH-1S
			D808		diode SH-1S
			D809		diode 1S1555
			D810		diode SH-1S
			D811		diode SH-1S
			D901(D951)		diode SV-31
			TRANSFORMERS, COILS & INDUCTORS		
			B1	1-417-014-21	balun
			CFT401	1-403-150-00	CFT
			IFT101	1-403-295-12	IFT, fm 10.7 MHz
Q101		FET 2SK42			
Q102		FET 2SK23A			
Q103		transistor 2SC403C			
Q104		transistor 2SC710			
Q201		transistor 2SC403C			
Q202		transistor 2SC403C			
Q203		transistor 2SC403C			
Q204		FET 2SK23A			
Q205		transistor 2SC633A			
Q206		transistor 2SC633A			
Q207		FET 2SK23A			
Q301		transistor 2SC631A			
Q302		transistor 2SC631A			
Q303		transistor 2SC633A			
Q304		transistor 2SC633A			
Q501(Q551)		transistor 2SA705			
Q502(Q552)		transistor 2SC632A			
Q601(Q651)		transistor 2SC632A			
Q602(Q652)		transistor 2SC632A			
Q603(Q653)		transistor 2SC634A			
Q701(Q751)		transistor 2SA678			
Q702(Q752)		transistor 2SA705			
Q703(Q753)		transistor 2SA705			
Q704(Q754)		transistor 2SC634A			
Q705(Q755)		transistor 2SC1124			
Q706(Q756)		transistor 2SC1161			
Q707(Q757)		transistor 2SA653			
Q708		-----			
Q709		transistor 2SC634A			
Q710		transistor 2SA678			
Q711		transistor 2SC634A			

Note: USA Model Serial No. 807,001 and later
Canada Model Serial No. 700,001 and later

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
L101	1-401-489-00	coil, fm antenna	C123	1-121-391-11	1 50 V electrolytic
L102	1-425-446-12	coil, fm rf 1	C124	1-101-924-11	0.022 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic
L103	1-425-668-00	coil, fm rf 2	C125	1-101-118-11	0.01 ± 20 % 50 V ceramic
L104	1-405-377-00	coil, fm osc	C126	1-101-118-11	0.01 ± 20 % 50 V ceramic
L105	1-407-184-00	inductor, micro 3.3 μ H	C127	1-102-986-11	10 p ± 0.5 pF 50 V ceramic
L106	1-407-184-00	inductor, micro 3.3 μ H	C128	1-101-924-11	0.022 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic
L201	1-407-418-00	coil, trap; SCA	C201	1-101-118-11	0.01 ± 20 % 50 V ceramic
L202	1-407-163-00	inductor, micro 33 μ H	C202	1-101-923-11	0.01 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic
L203	1-407-169-00	inductor, micro 100 μ H	C203	1-102-100-11	0.0022 ± 5 % 50 V ceramic
L401	1-407-169-00	inductor, micro 100 μ H	C204	1-101-923-11	0.01 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic
L402	1-407-592-00	inductor, micro 100 μ H	C205	1-101-118-11	0.01 ± 20 % 50 V ceramic
L701(L751)	1-401-439-62	inductor, micro 1.8 μ H	C206	1-101-923-11	0.01 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic
L901	1-401-439-62	bar antenna, a-m USA Model only (Serial No. up to 807,000)	C207	1-101-923-11	0.01 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic
L901(L902)	1-401-558-21	bar antenna, a-m USA Model (Serial No. 807,001 and later) Canada Model (Serial No. 700,001 and later)	C208	1-101-918-11	0.001 ± 5 % 50 V ceramic
MU301	1-464-009-00	MPX unit	C209	1-102-977-11	200 p ± 5 % 50 V ceramic
T201	1-403-291-00	transformer, discriminator 10.7 MHz	C210	1-101-924-11	0.022 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic
T202	1-403-299-00	transformer, muting	C211	1-102-100-11	0.0022 ± 5 % 50 V ceramic
T301	1-425-729-00	transformer, switching 38 kHz	C212	1-121-651-11	10 16 V electrolytic
T401	1-405-459-00	coil, a-m osc	C213	1-101-118-11	0.01 ± 20 % 50 V ceramic
T402	1-403-128-00	IFT, a-m	C214	1-121-651-11	10 16 V electrolytic
T801	1-442-030-00	transformer, power	C215	1-105-677-12	0.022 ± 10 % 50 V mylar
CAPACITORS			C216	1-105-689-12	0.22 ± 10 % 50 V mylar
All capacitance values are in μ F except as indicated with p, which means μ F.			C217	1-123-068-11	220 16 V electrolytic
C101	1-102-880-11	15 p ± 0.5 pF 50 V ceramic	C218	1-102-977-11	200 p ± 5 % 50 V ceramic
C102	-----	-----	C219	1-121-413-11	100 6.3 V electrolytic
C103	1-102-880-11	15 p ± 0.5 pF 50 V ceramic	C220	1-121-651-11	10 16 V electrolytic
C104	1-102-064-11	0.75 p ± 10 % 50 V ceramic	C221	1-107-140-11	240 p ± 10 % 50 V silvered mica
C105	1-102-880-11	15 p ± 0.5 pF 50 V ceramic	C222	1-102-824-11	470 p ± 5 % 50 V ceramic
C106	1-102-848-11	180 p ± 0.5 pF 50 V ceramic	C223	1-131-196-11	2.2 16 V tantalum
C107	1-101-923-11	0.01 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic	C224	1-102-960-11	24 p ± 5 % 50 V ceramic
C108	1-101-923-11	0.01 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic	C225	1-101-922-11	0.0047 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic
C109	1-101-923-11	0.01 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic	C226	1-101-923-11	0.01 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic
C110	1-101-918-11	0.001 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic	C227	1-105-683-12	0.068 ± 10 % 50 V mylar
C111	1-101-924-11	0.022 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic	C228	1-121-391-11	1 50 V electrolytic
C112	1-101-924-11	0.022 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic	C229	1-121-395-11	4.7 25 V electrolytic
C113	1-101-924-11	0.022 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic	C230	1-121-651-11	10 16 V electrolytic
C114	1-101-923-11	0.01 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic	C231	1-127-022-11	0.47 ± 10 % 10 V solid aluminum
C115	1-102-875-11	7 p ± 5 % 50 V ceramic	C232	1-102-960-11	24 p ± 5 % 50 V ceramic
C116	1-102-875-11	7 p ± 5 % 50 V ceramic	C233	1-101-924-11	0.022 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic
C117	1-102-986-11	10 p ± 0.5 pF 50 V ceramic	C234	1-101-924-11	0.022 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic
C118	1-102-114-11	470 p ± 10 % 50 V ceramic	C235	1-101-118-11	0.01 ± 20 % 50 V ceramic
C119	1-101-118-11	0.01 ± 20 % 50 V ceramic	C236	1-121-413-11	100 6.3 V electrolytic
C120	1-102-986-11	10 p ± 0.5 pF 50 V ceramic	C237	1-101-923-11	0.01 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic
C121	1-101-924-11	0.022 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic	C301	1-121-402-11	33 10 V electrolytic
C122	1-105-679-12	0.033 ± 10 % 50 V mylar	C302	1-121-352-11	47 10 V electrolytic
			C303	1-121-413-11	100 6.3 V electrolytic
			C304	1-127-022-11	0.47 10 V solid aluminum
			C305	1-103-575-11	4.700 p ± 5 % 50 V styrol
			C306	1-105-661-12	0.001 ± 10 % 50 V mylar
			C307	1-123-068-11	220 16 V electrolytic
			C321(C371)	1-106-013-12	0.0033 ± 5 % 50 V mylar

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
C322(C372)	1-121-912-11	1 50 V electrolytic	C602(C652)	1-102-982-11	180 p ± 10 % 50 V ceramic
C323(C373)	1-121-912-11	1 50 V electrolytic	C603(C653)	1-131-206-11	3.3 25 V tantalum
C324(C374)	1-105-661-12	0.001 ± 10 % 50 V mylar	C604(C654)	1-121-392-11	3.3 25 V electrolytic
C325(C375)	1-102-973-11	100 p ± 5 % 50 V ceramic	C605(C655)	1-105-679-12	0.033 ± 10 % 50 V mylar
C326(C376)	1-121-352-11	47 10 V electrolytic	C606(C656)	1-105-679-12	0.033 ± 10 % 50 V mylar
C327(C377)	1-121-392-11	3.3 25 V electrolytic	C607(C657)	1-105-665-12	0.0022 ± 10 % 50 V mylar
C401	1-105-673-12	0.01 ± 10 % 50 V mylar	C608(C658)	1-121-398-11	10 25 V electrolytic
C402		-----	C609(C659)	1-121-352-11	47 10 V electrolytic
C403	1-102-953-11	18 p ± 25 % 25 V ceramic	C610(C660)	1-102-978-11	220 p ± 5 % 50 V ceramic
C404	1-102-976-11	180 p ± 5 % 25 V ceramic	C611(C661)	1-102-978-11	220 p ± 5 % 50 V ceramic
C405	1-121-409-11	47 16 V electrolytic	C612(C662)	1-102-978-11	220 p ± 5 % 50 V ceramic
C406	1-105-677-12	0.022 ± 10 % 50 V mylar	C613(C663)	1-121-392-11	3.3 25 V electrolytic
C407	1-103-815-11	390 p ± 5 % 25 V styrol	C614(C664)	1-106-023-12	0.0082 ± 5 % 50 V mylar
C408	1-101-923-11	0.01 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic	C615(C665)	1-106-013-12	0.0033 ± 5 % 50 V mylar
C409	1-101-923-11	0.01 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic	C616(C666)	1-106-041-12	0.047 ± 5 % 50 V mylar
C410	1-105-677-12	0.022 ± 10 % 50 V mylar	C617(C667)	1-106-031-12	0.018 ± 5 % 50 V mylar
C411	1-105-669-12	0.0047 ± 10 % 50 V mylar	C618(C668)	1-121-392-11	3.3 25 V electrolytic
C412	1-101-923-11	0.01 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic	C619(C669)	1-121-392-11	3.3 25 V electrolytic
C413	1-105-677-12	0.022 ± 10 % 50 V mylar	C620	1-105-671-12	0.0068 ± 10 % 50 V mylar
C414		-----	C701(C751)	1-121-392-11	3.3 25 V electrolytic
C415	1-102-977-11	200 p ± 5 % 25 V ceramic	C702(C752)	1-102-963-11	33 p ± 5 % 50 V ceramic
C416	1-102-936-11	3 p ± 0.25 pF 25 V ceramic	C703(C753)	1-121-413-11	100 6.3 V electrolytic
C417	1-121-651-11	10 16 V electrolytic	C704(C754)	1-102-944-11	7 p ± 5 % 50 V ceramic
C418	1-121-395-11	4.7 25 V electrolytic	C705(C755)	1-102-963-11	33 p ± 5 % 50 V ceramic
C419	1-121-398-11	10 25 V electrolytic	C706(C756)	1-121-392-11	3.3 25 V electrolytic
C420	1-101-923-11	0.01 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic	C707(C757)	1-123-058-11	47 50 V electrolytic
C421	1-105-672-12	0.0082 ± 10 % 50 V mylar	C708(C758)	1-105-679-12	0.033 ± 10 % 50 V mylar
C422	1-105-672-12	0.0082 ± 10 % 50 V mylar	C709(C759)	1-105-665-12	0.0022 ± 10 % 50 V mylar
C423	1-105-672-12	0.0082 ± 10 % 50 V mylar	C710(C760)	1-105-665-12	0.0022 ± 10 % 50 V mylar
C424	1-101-924-11	0.022 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic	C711	1-121-935-11	100 25 V electrolytic
C425	1-121-651-11	10 16 V electrolytic	C801	1-105-917-12	0.022 ± 10 % 200 V mylar
C426	1-101-924-11	0.022 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic	C802	1-105-917-12	0.022 ± 10 % 200 V mylar
C427	1-105-682-12	0.056 ± 10 % 50 V mylar	C803	1-105-917-12	0.022 ± 10 % 200 V mylar
C428	1-101-923-11	0.01 $\begin{matrix} +80 \\ -20 \end{matrix}$ % 25 V ceramic	C804	1-105-917-12	0.022 ± 10 % 200 V mylar
C501(C551)	1-131-206-11	3.3 25 V tantalum	C805	1-123-065-11	330 25 V electrolytic
C502(C552)	1-121-926-11	33 10 V electrolytic	C806	1-123-065-11	330 25 V electrolytic
C503(C553)	1-102-978-11	220 p ± 5 % 50 V ceramic	C807	1-121-413-11	100 6.3 V electrolytic
C504(C554)		-----	C808	1-123-090-11	47 63 V electrolytic
C505(C555)	1-101-880-11	47 p ± 5 % 50 V ceramic	C809	1-121-392-11	3.3 25 V electrolytic
C506(C556)	1-106-005-12	0.0015 ± 5 % 50 V mylar	C810	1-121-726-11	0.47 50 V electrolytic
C507(C557)	1-106-019-12	0.0056 ± 5 % 50 V mylar	C811	1-121-936-11	220 25 V electrolytic
C508(C558)	1-121-911-11	0.47 50 V electrolytic	C812	1-121-936-11	220 25 V electrolytic
C509(C559)	1-105-661-12	0.001 ± 10 % 50 V mylar	C813	1-121-391-11	1 50 V electrolytic
C510(C560)	1-131-206-11	3.3 25 V tantalum	C814	1-121-935-11	100 25 V electrolytic
C511(C561)	1-105-661-12	0.001 ± 10 % 50 V mylar	C815	1-121-935-11	100 25 V electrolytic
C512(C562)	1-123-044-11	33 25 V electrolytic	C816	1-123-090-11	47 63 V electrolytic
C513(C563)	1-121-913-11	3.3 25 V electrolytic	C817	1-123-090-11	47 63 V electrolytic
C514(C564)	1-121-416-11	100 25 V electrolytic	C818	1-105-725-12	0.1 ± 10 % 100 V mylar
C515(C565)	1-105-685-12	0.1 ± 10 % 50 V mylar	C819	1-105-725-12	0.1 ± 10 % 100 V mylar
C516(C566)	1-121-398-11	10 25 V electrolytic	C820	1-121-410-11	47 25 V electrolytic
C601(C651)	1-105-677-12	0.022 ± 10 % 50 V mylar	C821	1-121-936-11	220 25 V electrolytic

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
C822	1-105-677-12	0.022 $\pm 10\%$ 50 V mylar
C823	1-121-392-11	3.3 25 V electrolytic
C901	1-123-089-11	6800 63 V electrolytic
C902	1-123-089-11	6800 63 V electrolytic
CT401,402	1-141-095-11	capacitor, trimmer
CV101,102	1-151-232-12	capacitor, tuning
CV103,104		
CV105, 106		

RESISTORS

All resistance values are in Ω , $\pm 5\%$, $\frac{1}{4}$ W and carbon type unless otherwise indicated.

R104	1-244-665-11	470
R105	1-242-689-11	4.7 k
R106	1-242-696-11	9.1 k
R107	1-242-666-11	510
R108	1-242-673-11	1 k
R109	1-242-642-11	51
R110	1-242-697-11	10 k
R111	1-244-692-11	6.2 k
R112	1-242-666-11	510
R113	1-242-677-11	1.5 k
R114	1-242-685-11	3.3 k
R115	1-242-677-11	1.5 k
R116	1-242-721-11	100 k
R117	1-244-697-11	10 k
R118	1-244-675-11	1.2 k
R119	1-244-708-11	30 k
R201	1-244-655-11	180
R202	1-242-661-11	330
R203	1-242-671-11	820
R204	1-242-693-11	6.8 k
R205	1-242-663-11	390
R206	1-242-680-11	2 k
R207	1-244-649-11	100
R208	1-242-673-11	1 k
R209	1-242-687-11	3.9 k
R210	1-242-673-11	1 k
R211	1-242-649-11	100
R212	1-244-649-11	100
R213	1-242-691-11	5.6 k
R214	1-242-661-11	330
R215	1-242-684-11	3 k
R216	1-242-669-11	680
R217	1-242-663-11	390
R218	1-242-661-11	330
R219	1-242-669-11	680
R220	1-242-663-11	390
R221	1-244-649-11	100
R222	1-242-675-11	1.2 k

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
R223	1-242-697-11	10 k
R224	1-242-641-11	47
R225	1-242-641-11	47
R226	1-242-721-11	100 k
R227	1-242-745-11	1 M
R228	1-242-745-11	1 M
R229	1-242-721-11	100 k
R230	1-244-649-11	100
R231	1-242-673-11	1 k
R232	1-242-706-11	24 k
R233	1-242-655-11	180
R234	1-242-713-11	47 k
R235	1-244-673-11	1 k
R236	1-242-657-11	220
R237	1-242-705-11	22 k
R238	1-242-703-11	18 k
R239	1-242-649-11	100
R240	1-242-689-11	4.7 k
R241	1-242-632-11	20
R242	1-242-701-11	15 k
R243	1-242-699-11	12 k
R244	1-242-632-11	20
R245	1-242-701-11	15 k
R246	1-242-699-11	12 k
R247	1-242-685-11	3.3 k
R248	1-244-731-11	270 k
R249	1-242-714-11	51 k
R250	1-242-745-11	1 M
R251	1-242-735-11	390 k
R252	1-242-723-11	120 k
R253	1-242-711-11	39 k
R254	1-242-721-11	100 k
R255	1-242-745-11	1 M
R256	1-242-673-11	1 k
R257	1-242-677-11	1.5 k
R301	1-242-669-11	680
R302	1-242-701-11	15 k
R303	1-242-684-11	3 k
R304	1-242-684-11	3 k
R305	1-242-681-11	2.2 k
R306	1-202-559-11	270 $\frac{1}{2}$ W composition
R321(R371)	1-242-709-11	33 k
R322(R372)	1-242-693-11	6.8 k
R323(R373)	1-242-693-11	6.8 k
R324(R374)	1-242-713-11	47 k
R325(R375)	1-242-724-11	130 k
R326(R376)	1-242-665-11	470
R327(R377)	1-242-693-11	6.8 k
R328(R378)	1-242-681-11	2.2 k
R329(R379)	1-242-663-11	390
R330(R380)	1-242-709-11	33 k

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
R331(R381)	1-242-681-11	2.2 k
R401	1-242-697-11	10 k
R402	1-242-690-11	5.1 k
R403	1-244-673-11	1 k
R404	1-242-649-11	100
R405	1-242-716-11	62 k
R406	1-242-682-11	2.4 k
R407	1-242-671-11	820
R408	1-242-697-11	10 k
R409	1-242-673-11	1 k
R410	1-242-656-11	200
R411	1-242-709-11	33 k
R412	1-242-687-11	3.9 k
R413	1-242-693-11	6.8 k
R414	1-242-672-11	910
R415	1-242-641-11	47
R416	1-242-672-11	910
R417	1-242-689-11	4.7 k
R418	1-242-673-11	1 k
R419	1-242-713-11	47 k
R420	1-244-643-11	56
R501(R551)	1-242-715-11	56 k
R502(R552)	1-242-737-11	470 k
R503(R553)	1-242-670-11	750
R504(R554)	1-242-673-11	1 k
R505(R555)	1-242-683-11	2.7 k
R506(R556)	1-242-713-11	47 k
R507(R557)	1-242-741-11	680 k
R508(R558)	1-242-721-11	100 k
R509(R559)	1-242-685-11	3.3 k
R510(R560)	1-242-721-11	100 k
R511(R561)	1-242-721-11	100 k
R512(R562)	1-242-673-11	1 k
R513(R563)	1-242-721-11	100 k
R514(R564)	1-242-718-11	75 k
R515(R565)	1-242-705-11	22 k
R516(R566)	1-242-713-11	47 k
R517(R567)	1-242-671-11	820
R518(R568)	1-242-697-11	10 k
R519(R569)	1-242-657-11	220
R520(R570)	1-242-709-11	33 k
R521(R571)	1-242-685-11	3.3 k
R522(R572)	1-242-673-11	1 k
R523(R573)	1-242-698-11	12 k
R524(R574)	1-242-709-11	33 k
R525(R575)	1-242-697-11	10 k
R526(R576)	1-244-699-11	24 k
R601(R651)	1-244-703-11	18 k
R602(R652)	1-244-717-11	68 k
R603(R653)	1-242-731-11	270 k

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
R604(R654)	1-242-663-11	390
R605(R655)	1-242-711-11	39 k
R606(R656)	1-242-677-11	1.5 k
R607(R657)	1-242-697-11	10 k
R608(R658)	1-242-697-11	10 k
R609(R659)	1-242-689-11	4.7 k
R610(R660)	1-242-697-11	10 k
R611(R661)	1-242-673-11	1 k
R612(R662)	1-242-721-11	100 k
R613(R663)	1-242-673-11	1 k
R614(R664)	1-242-721-11	100 k
R615(R665)	1-242-673-11	1 k
R616(R666)	1-242-693-11	6.8 k
R617(R667)	1-242-709-11	33 k
R618(R668)	1-242-649-11	100
R619(R669)	1-242-679-11	1.8 k
R620(R670)	1-242-687-11	3.9 k
R621(R671)	1-242-673-11	1 k
R622(R672)	1-242-715-11	56 k
R623(R673)	1-242-739-11	560 k
R624(R674)	1-242-731-11	270 k
R625(R675)	1-242-673-11	1 k
R626(R676)	1-242-701-11	15 k
R627(R677)	1-242-709-11	33 k
R628(R678)	1-242-689-11	4.7 k
R629	1-242-721-11	100 k
R701(R751)	1-244-745-11	1 M
R702(R752)	1-244-673-11	1 k
R703(R753)	1-244-714-11	51 k
√R704(R754)	1-244-705-11	22 k
R705(R755)	1-244-677-11	1.5 k
R706(R756)	1-244-671-11	820
R707(R757)	1-244-666-11	510
R708(R758)	1-244-685-11	3.3 k
R709(R759)	1-244-697-11	10 k
R710(R760)	1-244-714-11	51 k
R711(R761)	1-202-583-11	2.7 k ½ W composition
R712(R762)	1-202-583-11	2.7 k ½ W composition
R713(R763)	1-244-701-11	15 k
R714(R764)	1-244-661-11	330
R715(R765)	1-244-661-11	330
R716(R766)	1-244-649-11	100
R717(R767)	1-202-517-11	4.7 ½ W composition
R718(R768)	1-217-158-11	0.47 5 W metal
R719(R769)	1-217-158-11	0.47 5 W metal
R720(R770)	1-202-525-11	10 ½ W composition
R721(R771)	1-202-517-11	4.7 ½ W composition
R722(R772)	1-202-565-11	470 ½ W composition
R723(R773)	1-202-565-11	470 ½ W composition
R724(R774)	1-244-697-11	10 k
R725	1-244-697-11	10 k
R726	1-244-697-11	10 k

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	
R801	1-207-635-11	82	2 W wirewound
R802	1-207-688-11	220	5 W wirewound
R803	1-244-685-11	3.3 k	
R804	1-207-639-11	330	2 W wirewound
R805	1-244-649-11	100	
R806	1-244-665-11	470	
R807	1-242-706-11	24 k	
R808	1-242-721-11	100 k	
R809	1-242-697-11	10 k	
R810	1-242-720-11	91 k	
R811	1-242-707-11	27 k	
R812	1-242-726-11	160 k	
R813	1-242-705-11	22 k	
R814	1-242-697-11	10 k	
R815	1-242-701-11	15 k	
R816	1-242-703-11	18 k	
R817	1-202-565-11	470	$\pm 10\%$ $\frac{1}{2}$ W composition
R818	1-242-697-11	10 k	
		USA Model only (Serial No. up to 808,100)	
R818	1-242-671-11	820	
		USA Model (Serial No. 808,101 and later) Canada Model (Serial No. 700,001 and later)	
R819	1-242-671-11	820	
R820	1-242-705-11	22 k	
R821	1-202-587-11	3.9 k	$\frac{1}{2}$ W composition
R822	1-202-577-11	1.5 k	$\frac{1}{2}$ W composition
R823	1-202-577-11	1.5 k	$\frac{1}{2}$ W composition
R824	1-202-582-11	2.4 k	$\frac{1}{2}$ W composition
R825	1-202-582-11	2.4 k	$\frac{1}{2}$ W composition
R826	1-244-657-11	220	
R827	1-244-641-11	47	
R828	1-202-550-11	110	$\frac{1}{2}$ W composition
R829	1-207-630-11	22	2 W wirewound
R830	1-207-630-11	22	2 W wirewound
R831	1-207-929-11	2.7	5 W wirewound
R832	1-202-510-11	2.4 k	$\frac{1}{2}$ W composition
R833	1-202-510-11	2.4 k	$\frac{1}{2}$ W composition
R837	1-242-705-11	22 k	
		USA Model (Serial No. 808,101 and later) Canada Model (Serial No. 700,001 and later)	
R901(R951)	1-244-697-11	10 k	
R902(R952)	1-244-697-11	10 k	
R903(R953)	1-244-719-11	82 k	
R904(R954)	1-244-735-11	390 k	
R905	1-202-645-11	1 M	$\pm 10\%$ $\frac{1}{2}$ W composition
RT201	1-222-845-11	100 k (B)	adjustable
RT202	1-221-978-11	4.7 k (B)	adjustable
RT301	1-221-978-11	4.7 k (B)	adjustable

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	
RT401	1-221-997-11	2.2 k (B)	adjustable
RT701 (RT751)	1-221-967-11	10 k (B)	adjustable
RV501 (RV551)	1-224-103-11	50 k (C)	variable (MIC MIXING)
RV601 (RV651)	1-224-102-11	250 k (B)/250 k (M)	variable (VOLUME)
RV602 (RV652)	1-224-102-11	250 k (B)/250 k (M)	variable (BALANCE)
RV603 (RV653)	1-224-101-11	50 k (B)	variable (TREBLE)
RV604 (RV654)	1-224-101-11	50 k (B)	variable (BASS)

SWITCHES

S1	1-516-199-00	rotary/slide	(FUNCTION)
S2	1-516-036-00	lever	(MONITOR 1)
S3	1-516-036-00	lever	(MONITOR 2)
S4	1-516-196-00	rotary/slide	(MODE)
S5	1-516-036-00	lever	(LOUDNESS)
S6	1-516-197-00	rotary/slide	(FILTER)
S7	1-514-524-00	slide	(NORMAL/SEPARATE)
S8	1-514-198-00	rotary/slide	(SPEAKER)
S9	1-516-036-00	lever	(MUTING)
S10	1-514-448-00	slide	(DE-EMPHASIS)
S11	1-516-007-00	seesaw	(POWER)
S12-1 ~ 3		MIC MIXING (built in RV501, 551)	

FILTERS

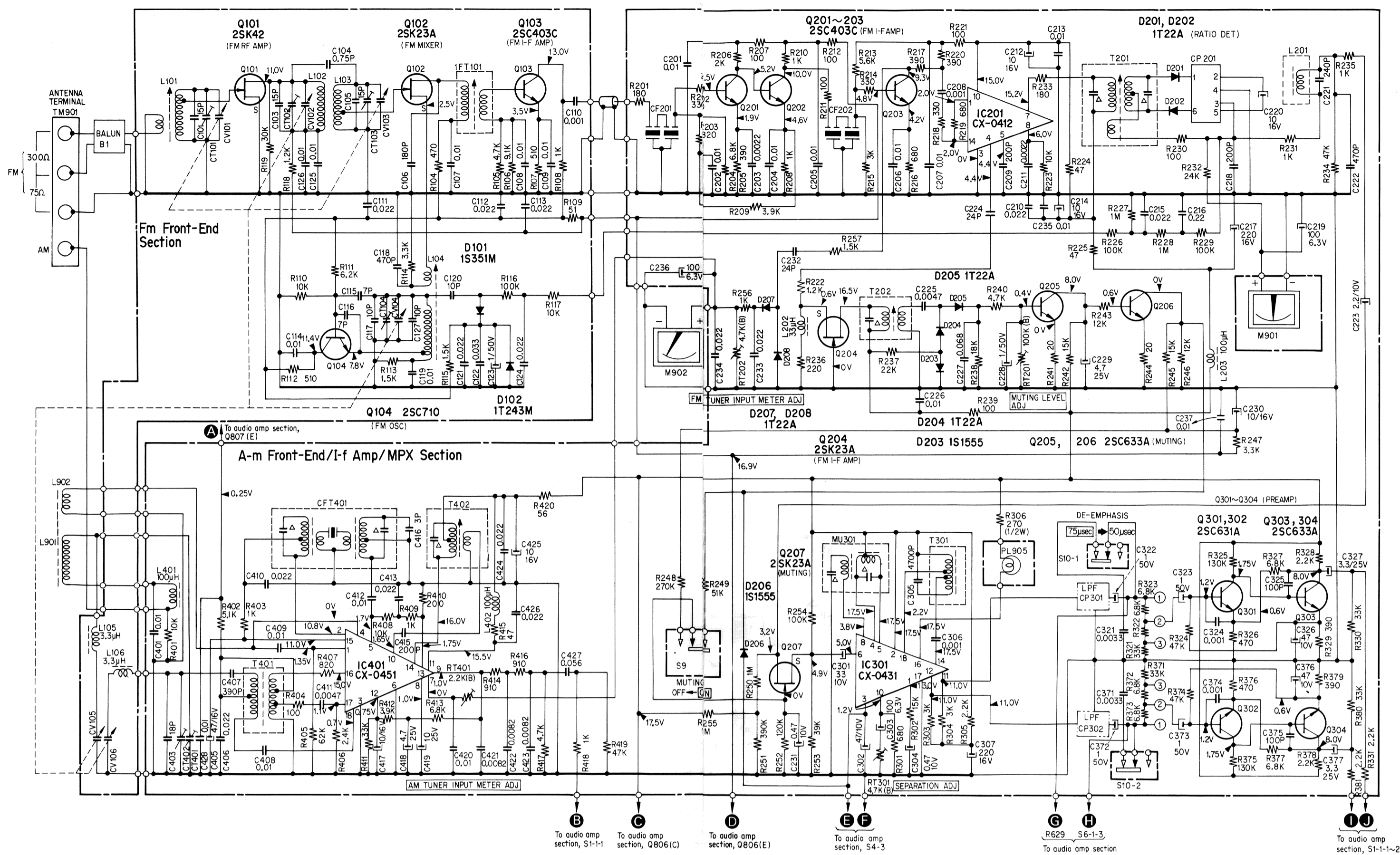
CF201,202	1-527-507-12	fm i-f, ceramic	10.70 MHz (red)
	1-527-507-22	fm i-f, ceramic	10.66 MHz (black)
	1-527-507-32	fm i-f, ceramic	10.74 MHz (white)
	1-527-507-42	fm i-f, ceramic	10.62 MHz (green)
	1-527-507-52	fm i-f, ceramic	10.78 MHz (yellow)

MISCELLANEOUS

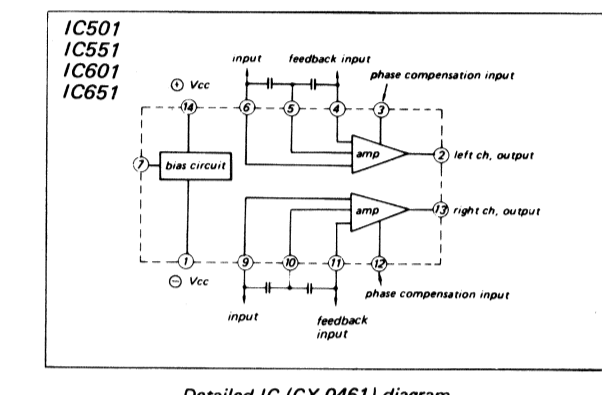
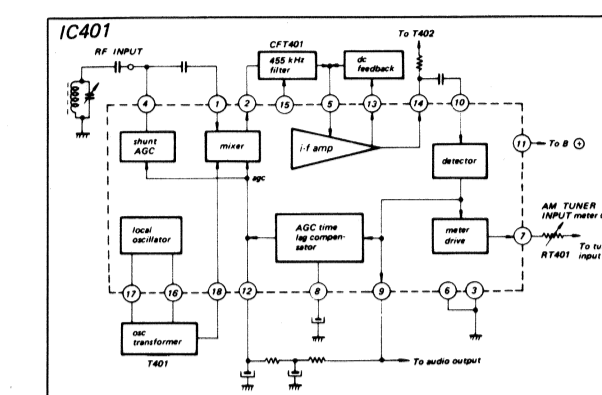
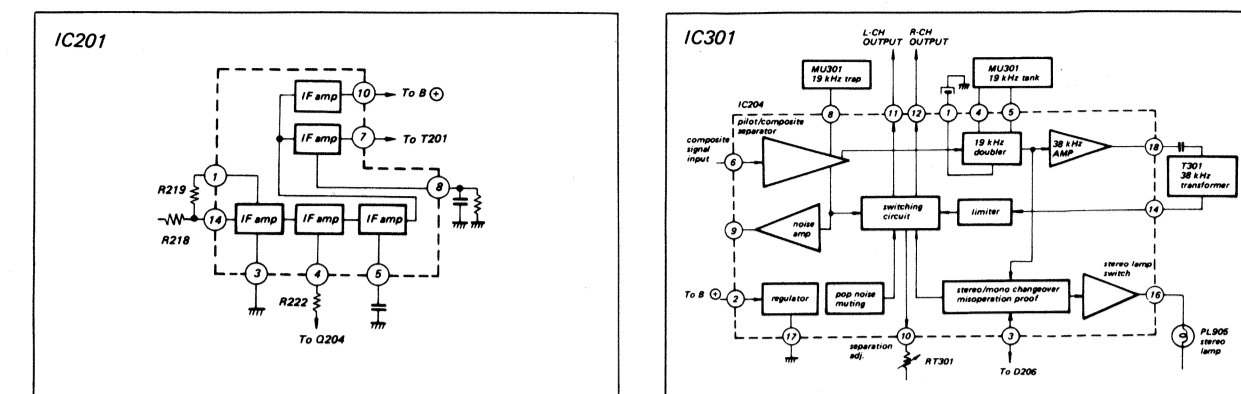
CB701 (CB751)	1-515-194-00	breaker, circuit
CP201	1-231-193-00	encapsulated component
CP301,302	1-231-224-00	encapsulated component
CP901	1-231-057-12	encapsulated component, 0.033 μ F + 120 Ω
CNJ901	1-509-517-00	connector, REC/PB
CNJ902	1-507-265-00	jack, HEADPHONE
CNJ903,904 CNJ905	1-509-403-00	outlet, ac

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
CNJ906)	1-507-394-00	jack, MIC	VS901	1-526-520-00	selector, voltage
CNJ907)			1-509-437-00	socket, power transistor	
F901,902	1-532-269-00	fuse, 2.5 A		1-517-057-00	holder, meter lamp; 2-p
J901 ~ 908	1-507-393-00	jack, phono; 8-p		1-533-090-00	holder, dial lamp
(J951 ~ 958)			1-534-526-21	cord, power	
M901	1-520-140-00	meter, TUNING		1-535-055-00	lug terminal
M902	1-520-141-00	meter, TUNER INPUT		1-536-353-00	terminal post, U-shaped (single)
PL901,902	1-518-116-00	lamp, dial 11V/0.36 A		1-536-354-00	terminal post (C)
PL903	1-518-124-00	lamp, TUNING 8 V/0.25 A		1-536-355-00	terminal post, U-shaped (double)
PL904	1-518-151-00	lamp, pointer		1-536-395-00	terminal strip, 1L1C
PL905	1-518-158-00	lamp, STEREO		1-536-398-00	terminal strip, 2L2C
PL906	1-518-124-00	lamp, TUNER INPUT meter 8 V/0.25 A	TM901 ~)	1-536-415-00	screw terminal strip, 4-p (ANTENNA)
PL907 ~)	1-518-121-00	lamp, AUX, PHONO, FM, A-M, TAPE, MIC 4.5 V/0.04 A	TM904		
PL912				1-582-233-00	jumper board, 8-p phono jack

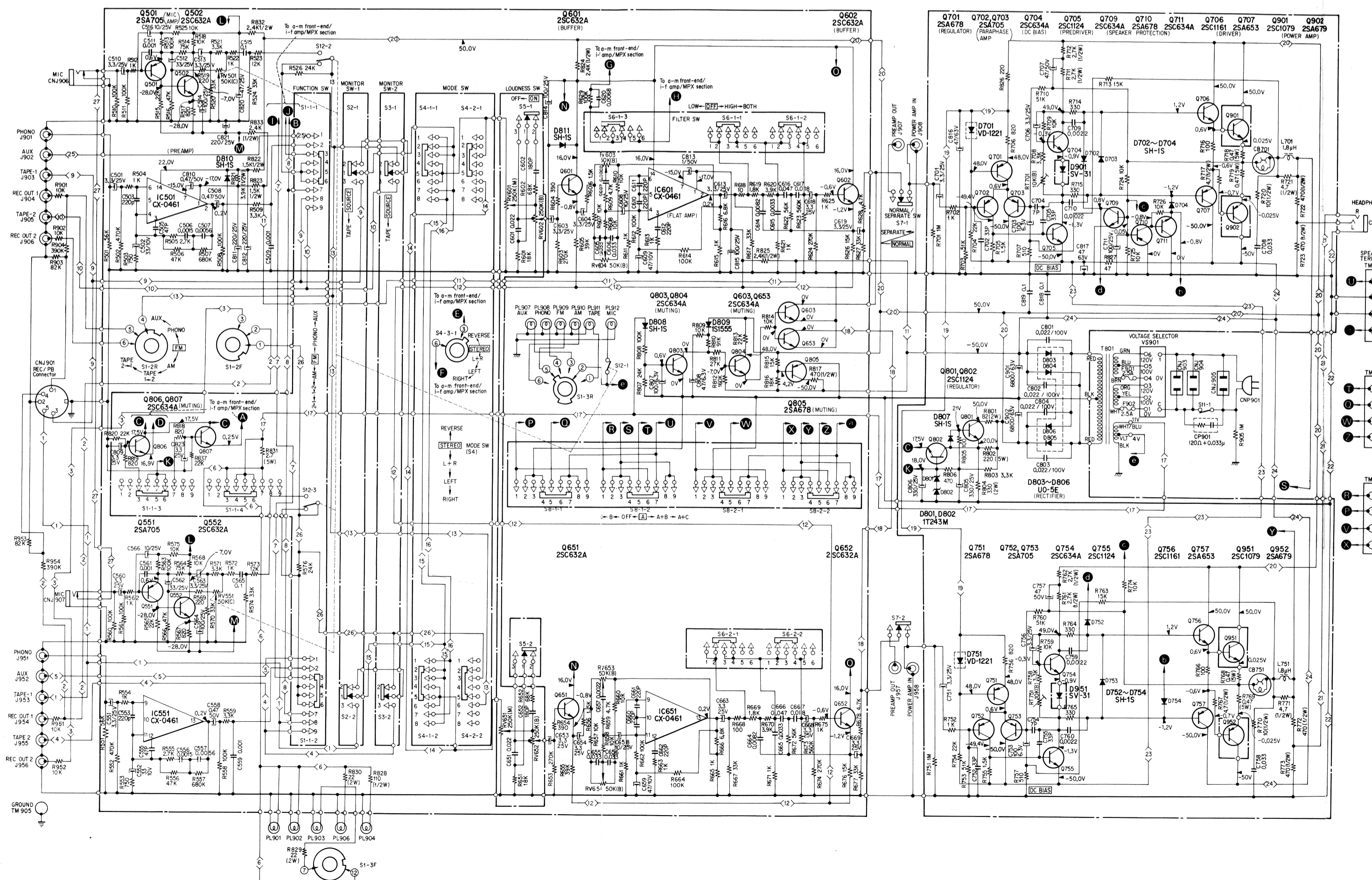
SONY CORPORATION



IC BLOCK DIAGRAM



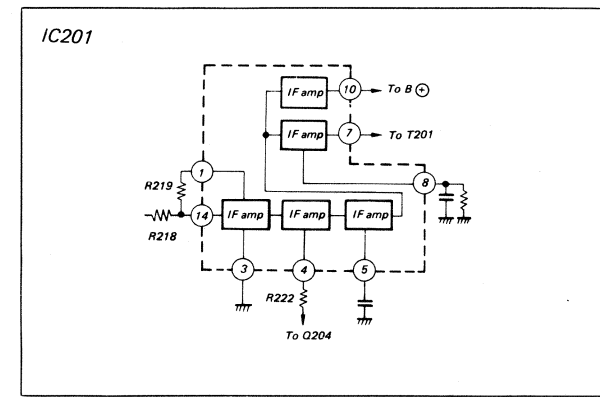
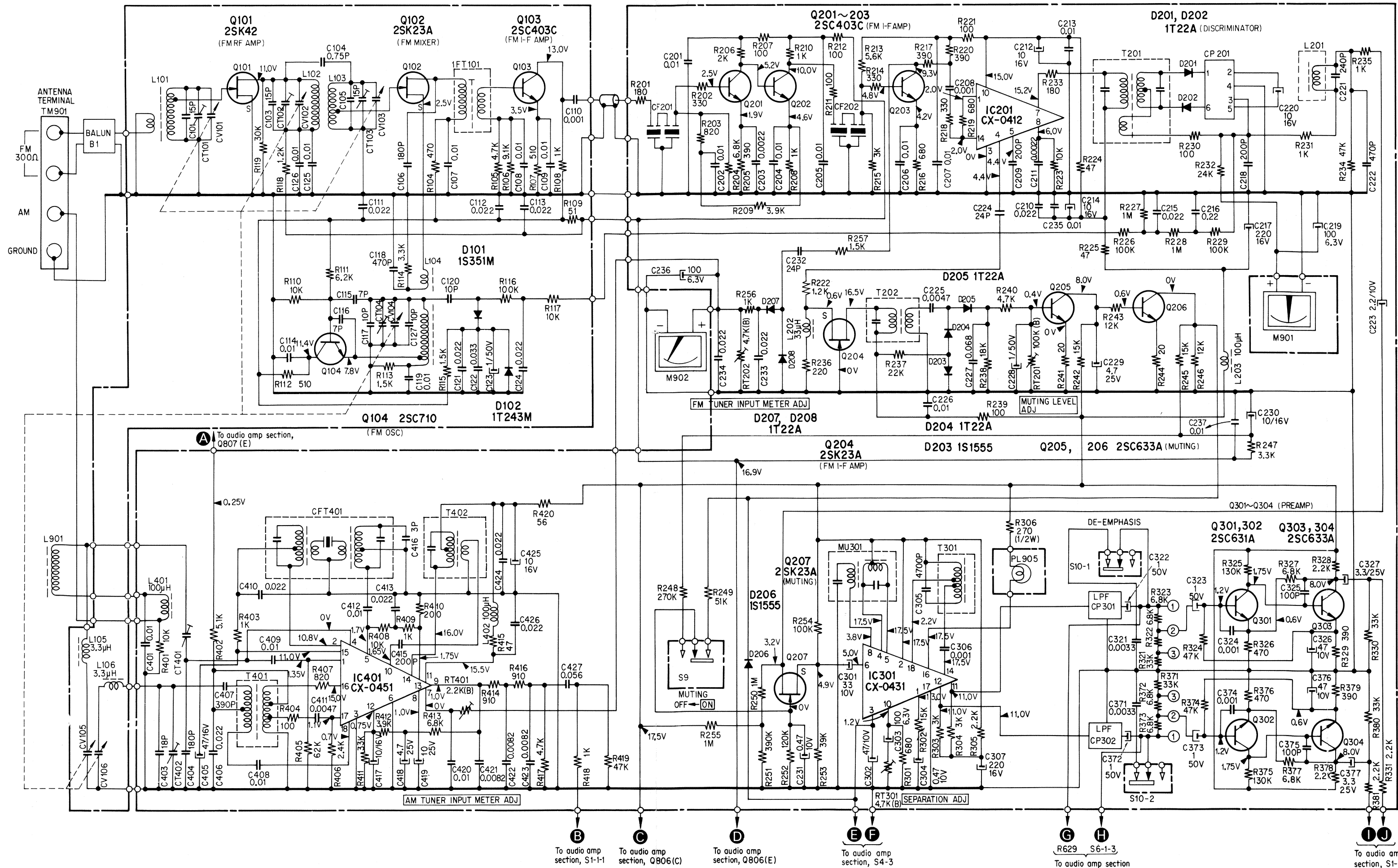
– Audio Amplifier Section –



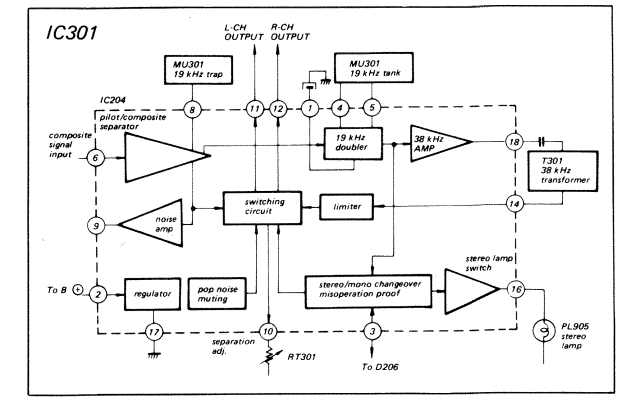
Ref. No.	Description	Position
S1-1 ~ 4	FUNCTION switch [AUX - PHONO - FM - AM - (TAPE PRINT 1 - 2) - (TAPE PRINT 2 - 1)]	FM
S2-1 ~ 2	MONITOR-1 switch (SOURCE - TAPE)	SOURCE
S3-1 ~ 2	MONITOR-2 switch (SOURCE - TAPE)	SOURCE
S4	MODE switch [REVERSE - STEREO - (L + R) - LEFT - RIGHT]	STEREO
S5	LOUDNESS switch	ON
S6	FILTER switch (LOW - OFF - HIGH - BOTH)	OFF
S7	NORMAL/SEPARATE switch	NORMAL
S8	SPEAKER switch [C - B - OFF - A - (A + B) - (A + C)]	A
S9	MUTING switch	ON
S10	DE-EMPHASIS switch (50 μsec - 75 μsec)	75 μsec
S11	POWER switch	OFF
S12	MIC MIXING switch	OFF

Note:
All resistance values are in ohms. k = 1000, M = 1000 k
All capacitance values are in μF except as indicated with p,
which means pF.
Voltage variations may be noted because of normal production
tolerances.
All voltages are dc measured with a VOM which has an input
impedance of 20 k ohms/volt. No signal in.

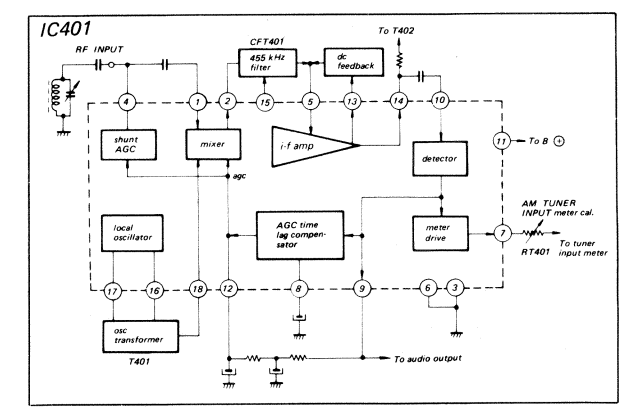
SCHEMATIC DIAGRAM



Detailed IC (CX-0412) diagram



Detailed IC (CX-0431) diagram

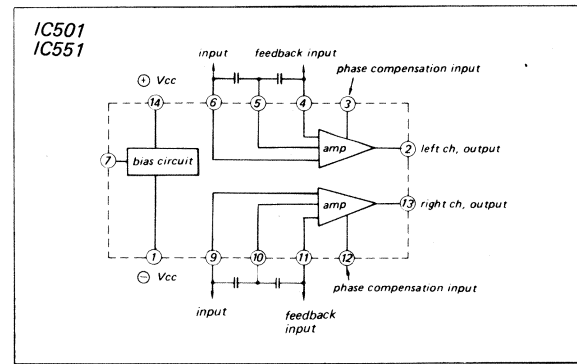
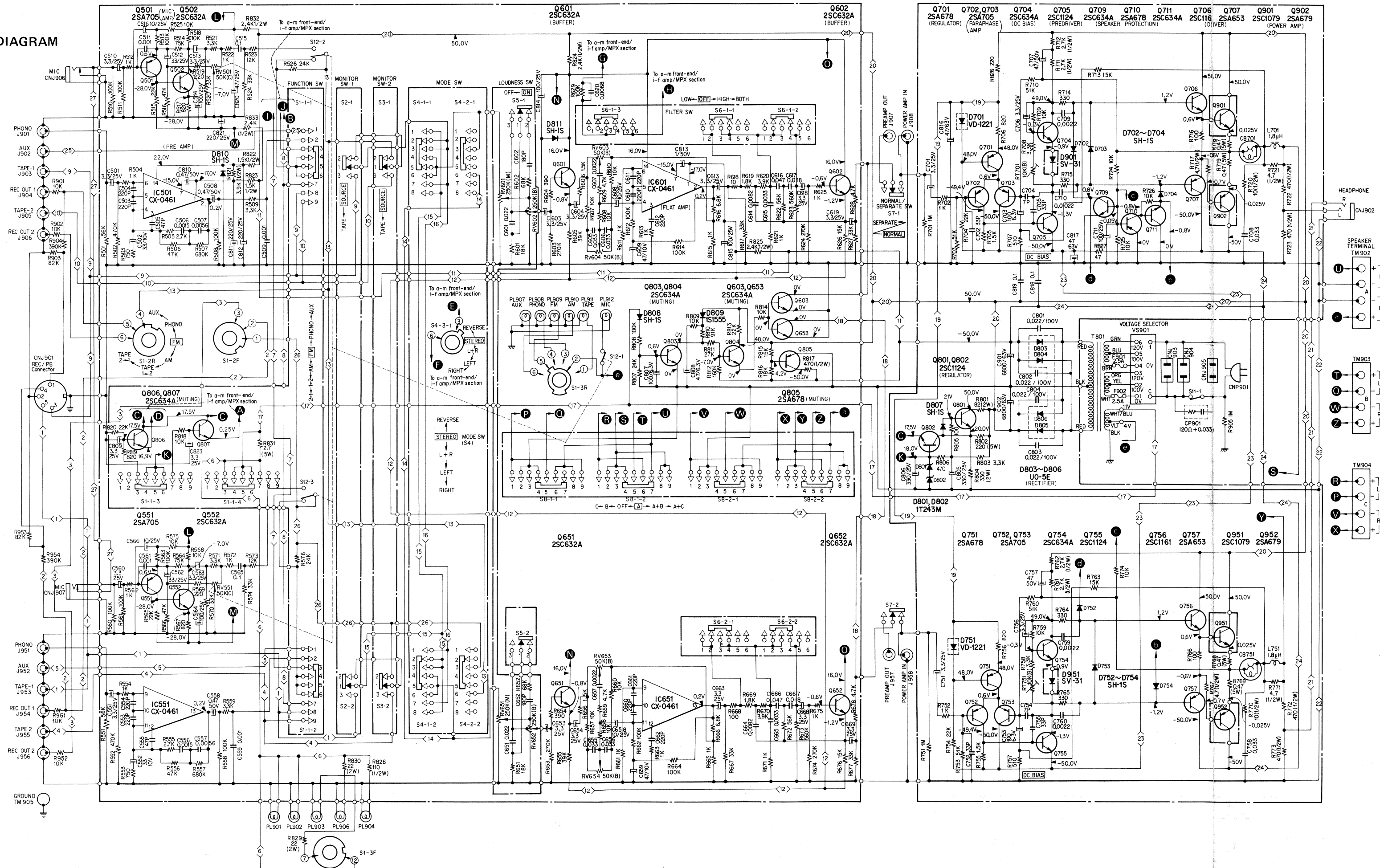


Detailed IC (CX-0451) diagram

Ref. No.	Description	Position
S9	MUTING switch	ON
S10	DE-EMPHASIS switch	75 μsec (50 μsec-75 μsec)

Note:
All resistance values are in ohms. k = 1,000, M = 1,000 k.
All capacitance values are in μF except as indicated with p, which means μF.
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.

SCHEMATIC DIAGRAM



Ref. No.	Description	Position
S1-1 ~ 4	FUNCTION switch (AUX - PHONO - FM - AM - TAPE PRINT 1 → 2 - TAPE PRINT 2 → 1)	FM
S2-1 ~ 2	MONITOR-1 switch (SOURCE - TAPE)	SOURCE
S3-1 ~ 2	MONITOR-2 switch (SOURCE - TAPE)	SOURCE
S4	MODE switch (REVERSE - STEREO - L + R - LEFT - RIGHT)	STEREO
S5	LOUDNESS switch	ON
S6	FILTER switch (LOW - OFF - HIGH - BOTH)	OFF
S7	NORMAL/SEPARATE switch	NORMAL
S8	SPEAKER switch (C - B - OFF - A - A + B - A + C)	A
S11	POWER switch	OFF
S12	MIC MIXING switch	OFF

Note:
 All resistance values are in ohms. k = 1,000. M = 1,000 k
 All capacitance values are in μF except as indicated with p,
 which means μF .
 All voltages represent an average value and should hold
 within $\pm 10\%$.
 All voltages are dc measured with a VOM which has an
 input impedance of 20 k ohms/volt. No signal in.