

TOSHIBA

AM/FM STEREO RECEIVER

SA-735



SPECIFICATIONS

Power Output

Continuous Power Output is 35 watts per channel, min. RMS at 8 ohms from 20 to 20,000 Hertz with no more than 0.08% total harmonic distortion.

■ AMPLIFIER SECTION

Power Output

20 Hz ~ 20 kHz Both

Channel Driven: 45W x 2 4 ohms

1 kHz Both Channel

Driven: 40W x 2 8 ohms
50W x 2 4 ohms

Total Harmonic

Distortion: at 8 ohms

Rated Power Output: 0.08%

1W: 0.05%

Intermodulation

Distortion: 0.08%

Damping Factor: 50

Input (Sensitivity/Impedance)

PHONO: 2.5 mV/47K ohms

AUX: 150 mV/47K ohms

TAPE 1, 2: 150 mV/47K ohms

PHONO Overload Level: 200 mV rms at 1 kHz

Output Level

TAPE REC 1, 2: 150 mV

DIN: 30 mV

Frequency Response

PHONO (RIAA

Equalization): 30 Hz to 15 kHz ± 0.3 dB

AUX, TAPE: 10 Hz to 40 kHz $+0.5$ dB
 -1 dB

Tone Control

BASS: ± 10 dB, (100 Hz)

TREBLE: ± 10 dB, (10 kHz)

Loudness Contour: +8 dB (100 Hz),
+4 dB (10 kHz)

Signal to Noise Ratio (IHF short-circuited A
Network, rated power)

PHONO: 72 dB

AUX, TAPE: 95 dB

Filter

HIGH: 7 kHz -6 dB/oct.

■ FM TUNER SECTION

Usable Sensitivity: Mono 10.8 dBf (1.9 μ V)

50 dB Quieting

Sensitivity: Mono 16.0 dBf (3.5 μ V)

Stereo 39.2 dBf (50 μ V)

Signal to Noise Ratio: Mono 75 dB, Stereo 68 dB

Distortion

100 Hz: Mono 0.15%, Stereo 0.2%

1 kHz: Mono 0.15%, Stereo 0.2%

6 kHz: Mono 0.2%, Stereo 0.3%

Frequency Response: 20 Hz to 15 kHz

+0.5 dB, -1.5 dB

Capture Ratio: 1.0 dB

Alternate Channel

Selectivity: 65 dB

Spurious Response Ratio: 75 dB

Image Rejection Ratio: 60 dB

IF Rejection Ratio: 90 dB

AM Suppression Ratio: 50 dB

Stereo Separation: 45 dB (1 kHz), 30 dB
(30 Hz to 15 kHz)

■ AM TUNER SECTION

Sensitivity: 300 μ V/m (IHF, ferrite
antenna)

Selectivity: 35 dB

Signal to Noise Ratio: 50 dB

Image Rejection Ratio: 45 dB

■ MISCELLANEOUS

Power Requirements: AC 120 V 60 Hz

Power Consumption: 160 watts

Dimensions (W x H x D): 480 x 145 x 400 (mm)

Weight: 11.5 kg

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1. OPERATING CONTROLS

FRONT VIEW

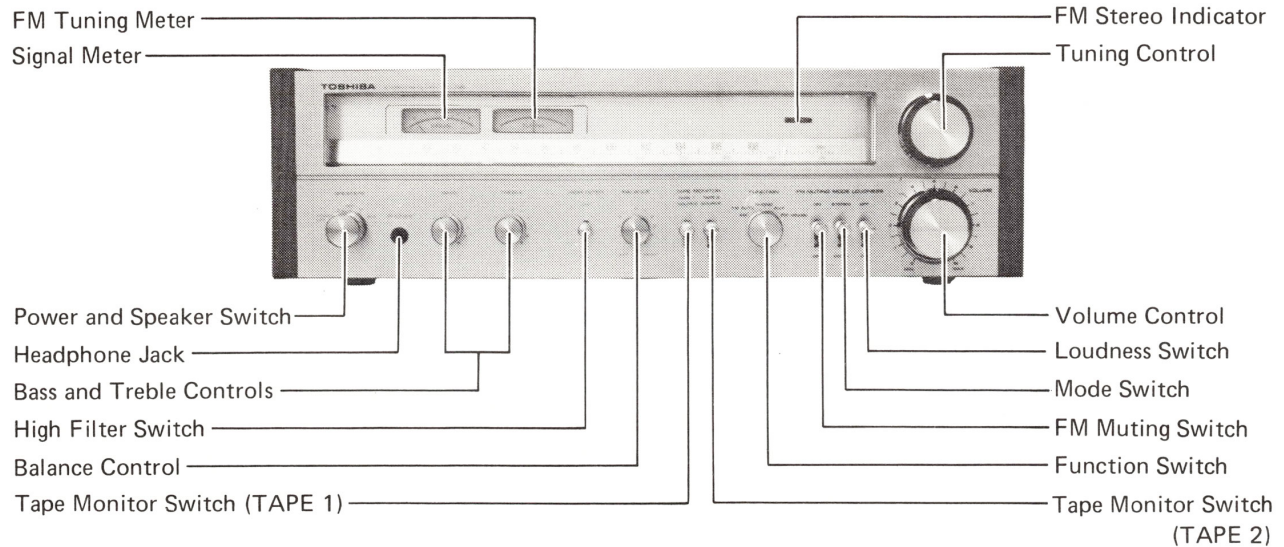


Figure 1

REAR VIEW

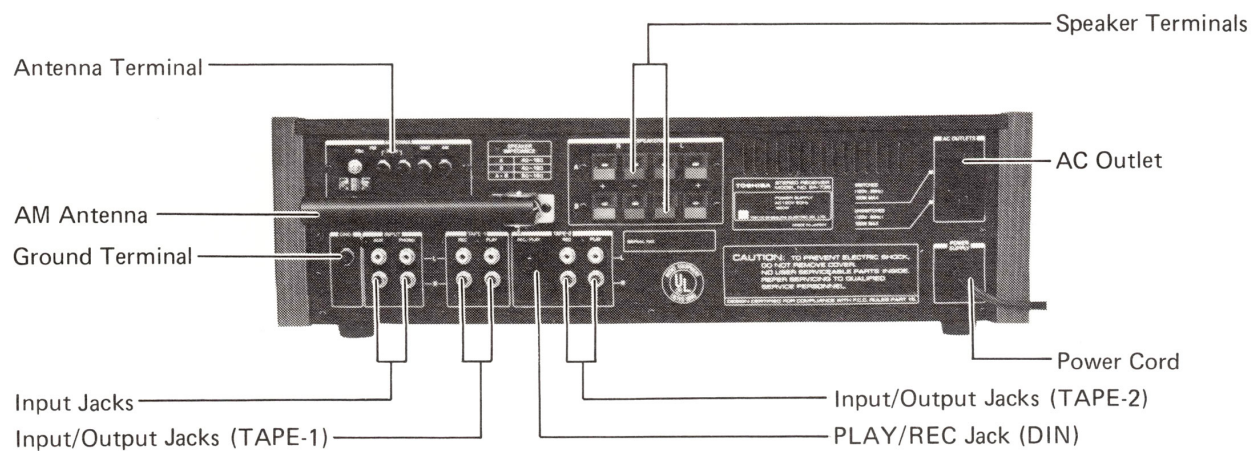


Figure 2

2. DISASSEMBLY INSTRUCTIONS

CABINET REMOVAL

1. Remove 4 screws ①. See figure 3.
2. Open the Cabinet in the direction ②.

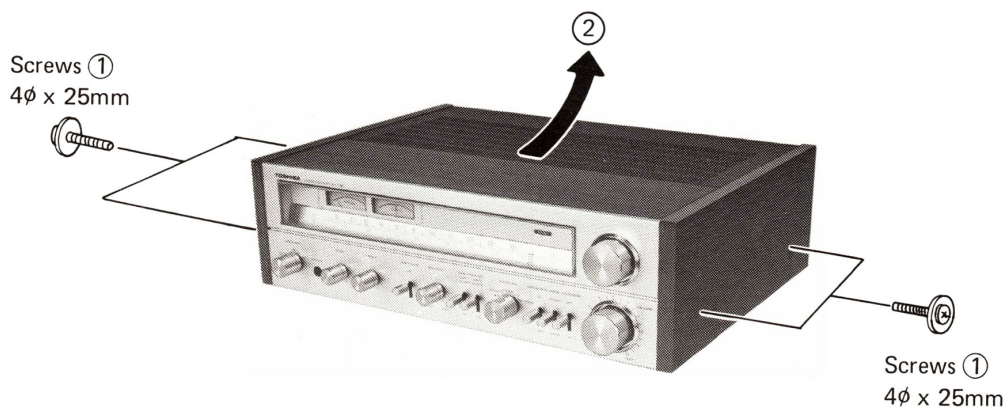


Figure 3

FRONT PANEL REMOVAL

1. Remove the Cabinet. See figure 3.
2. Remove three screws ③. See figure 4.
3. Remove the thirteen knobs ④. See figure 5.
4. Remove two nuts ⑤. See figure 6.
5. Remove the Front Panel.

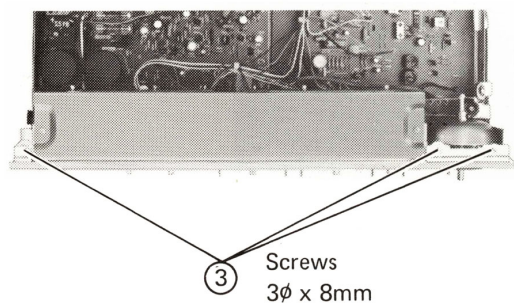


Figure 4

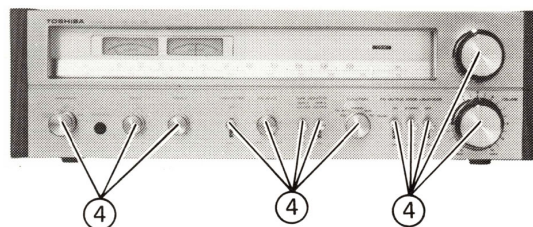


Figure 5

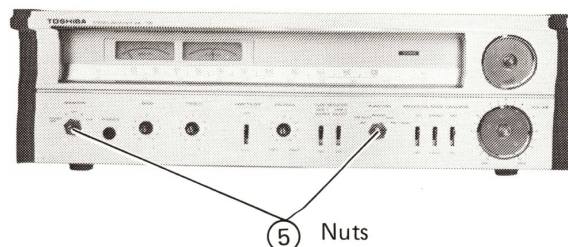


Figure 6

3. DIAL CORD RESTRINGING

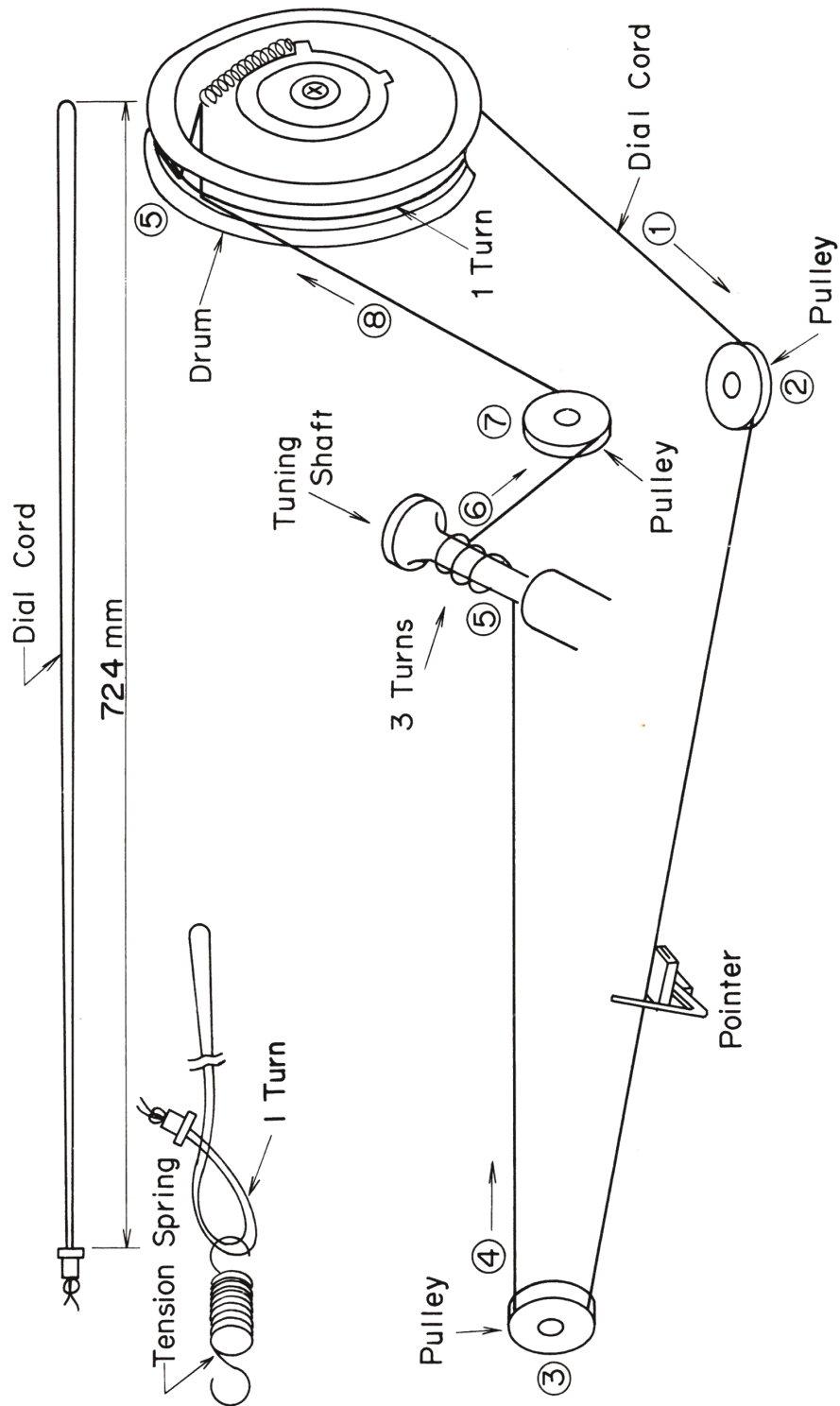
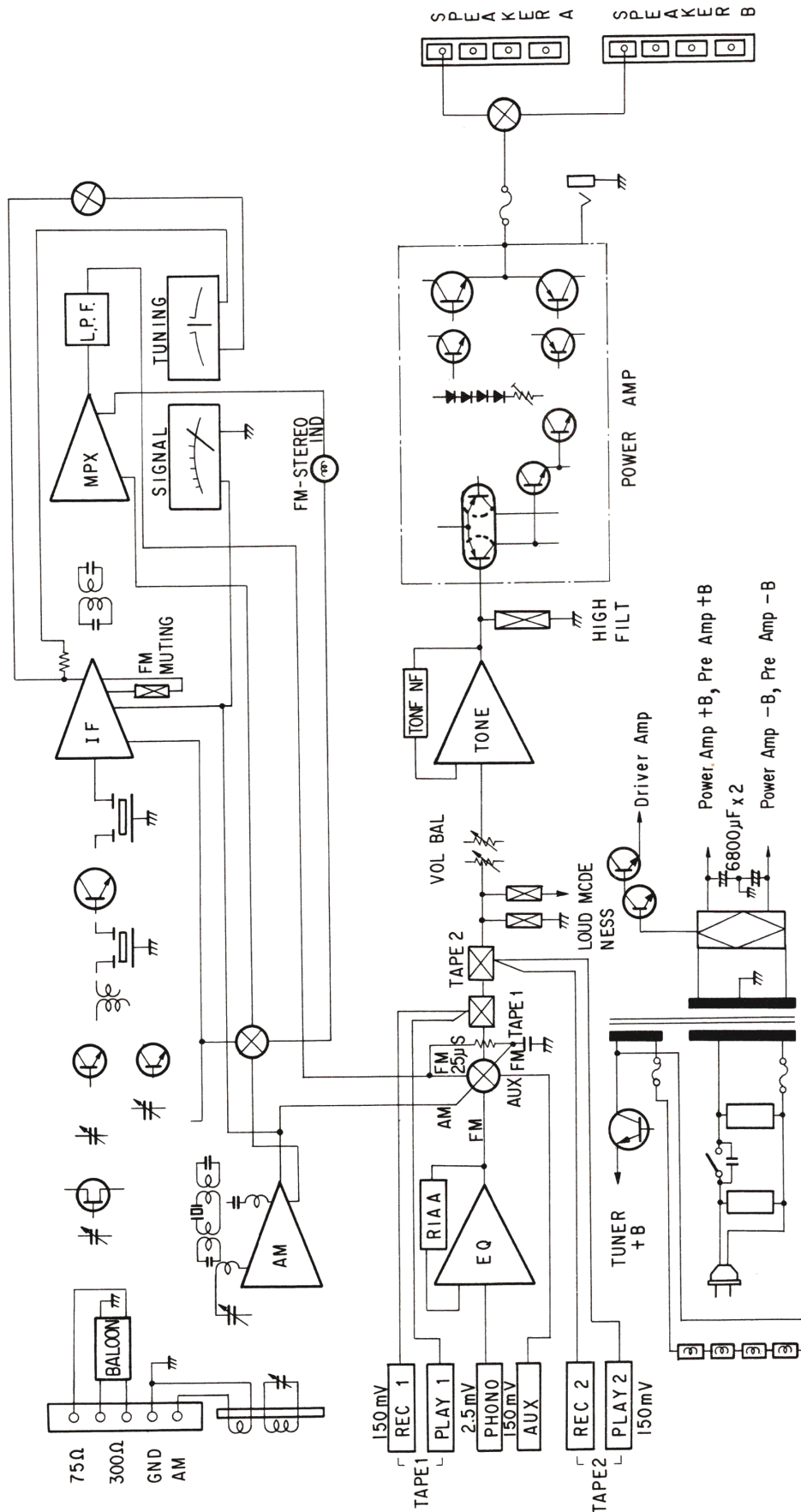


Figure 7.

4. BLOCK DIAGRAM



CIRCUIT ADJUSTMENTS

Figure 8.

5. CIRCUIT ADJUSTMENTS

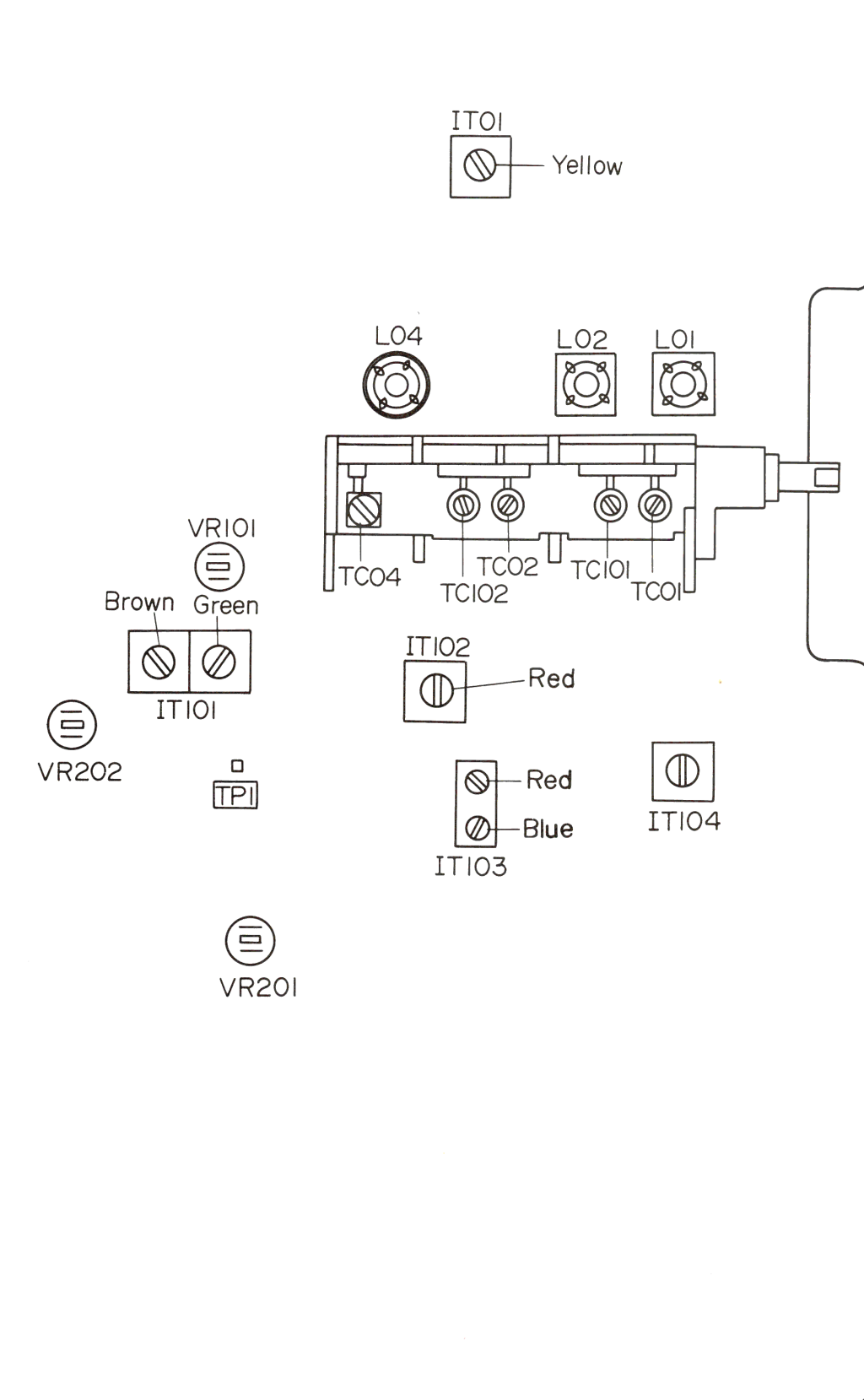


Figure 9. Top View of Tuner Unit

AM ADJUSTMENT

Test equipments/Tools required

1. Signal generator
2. Sweep generator
3. Test loop antenna
4. VTVM
5. Adjusting screwdriver
6. Adjusting screwdriver (Use to antenna core)
7. Oscilloscope

IF ADJUSTMENT

Step	Adjustment	Remarks
IF Response	IT103	Adjust for scope pattern with specified marker (455 kHz) as illustrated in Fig. 10.

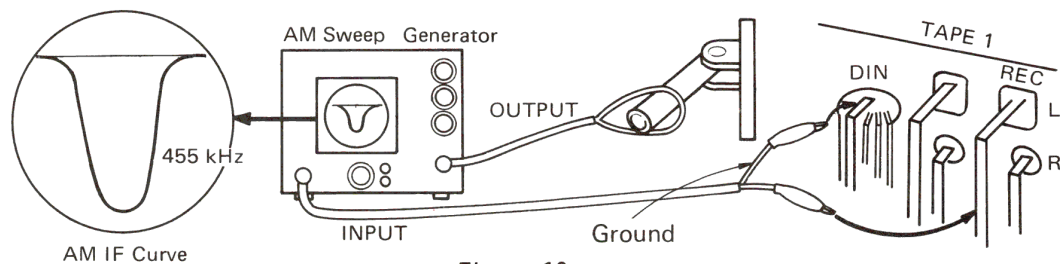


Figure 10.

FREQUENCY COVERAGE AND TRACKING ADJUSTMENT

Step	Adjusting Circuit	Connection		SG Frequency	Position of Tuning Dial	Adjustment	VTVM
		Input	Output				
1	OSC (Frequency Coverage)	Connect signal generator to test loop.	Connect VTVM to Speaker terminal A.	515 kHz (400 Hz 30% MOD.)	Tune to 515 kHz signal	IT102	Maximum
2				1640 kHz (400 Hz 30% MOD.)	Tune to 1640 kHz signal	TC102	
Repeat steps 1 and 2.							
3	OSC (Frequency Coverage)	Connect signal generator to test loop.	Connect VTVM to Speaker terminal A.	600 kHz (400 Hz 30% MOD)	Tune to 600 kHz signal		Adjust for no scale error.
4				1400 kHz (400 Hz 30% MOD)	Tune to 1400 kHz signal		
Repeat steps 3 and 4. If any error is present, repeat steps from 1 to 4.							
5	ANT (Tracking)	Connect signal generator to test loop.	Connect VTVM to Speaker terminal A.	600 kHz (400 Hz 30% MOD.)	Tune to 600 kHz signal	Ferrite Ant. Coil L105	Maximum
6				1400 kHz (400 Hz 30% MOD.)	Tune to 1400 kHz signal	TC101	
Repeat steps 5 and 6.							

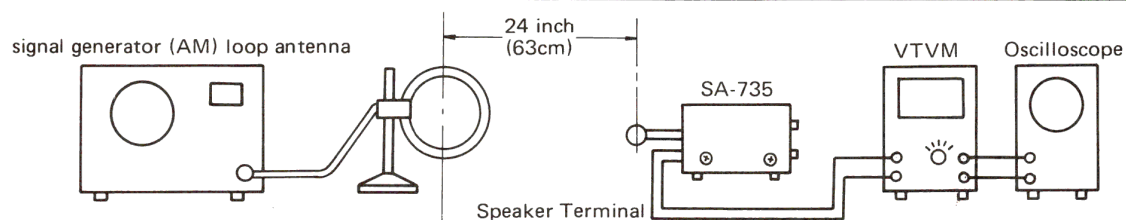


Figure 11.

FM ADJUSTMENT

Test equipments/Tools required

- | | | |
|---------------------|--------------------------------|--------------------------|
| 1. Distortion meter | 4. VTVM | 7. Network |
| 2. Signal generator | 5. FM dummy antenna (300 ohms) | 8. Adjusting screwdriver |
| 3. Oscilloscope | 6. Dummy load resistor | 9. Adjusting bar |

Step	Adjusting Circuit	Connection		SG Frequency	Position of Tuning Dial	Adjustment	
		Input	Output				
1	IF Distortion Adjustment (MONO)				No signal	IT101 (Brown Color)	Adjust tuning meter pointer so as to keep center.
2	IF Distortion Adjustment (MONO)	Connect FM signal generator to FM antenna terminal. Connect the modulator to signal generator.	Connect VTVM, oscilloscope and distortion meter to speaker terminal.	SG 98 MHz	Tune to 98 MHz signal	IT101 (Green Color)	Distortion Minimum
Repeat steps 1 and 2.							
3	Distortion Adjustment (Stereo)	Connect FM signal generator to FM antenna terminal. Connect the modulator to signal generator.	Connect VTVM, oscilloscope and distortion meter to speaker terminal.	SG 98 MHz	Tune to 98 MHz signal	IT01	Distortion Minimum
4	OSC (Frequency coverage)	Connect FM signal generator to FM antenna terminal.	Connect VTVM to speaker terminal.	88 MHz	Tune to 88 MHz signal	L01, 02	Maximum
5				108 MHz	Tune to 108 MHz signal	TC01 TC02	
Repeat steps 4 and 5.							
6	RF (Tracking)	Connect FM signal generator to FM antenna terminal.	Connect VTVM to speaker terminal.	87.6 MHz	Tune to 87.6 MHz signal	L04	Maximum
7				108.7 MHz	Tune to 108.7 MHz signal	TC04	
Repeat steps 6 and 7.							

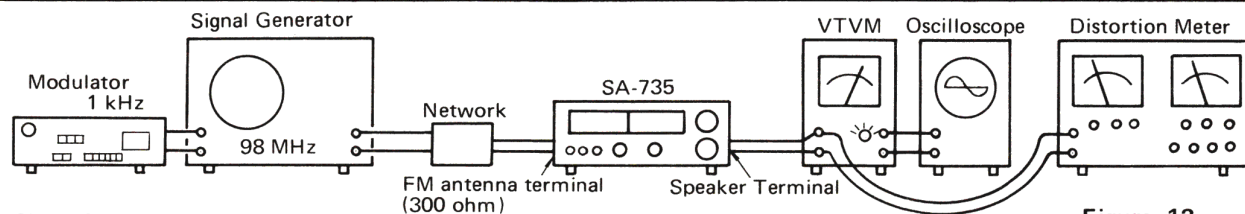


Figure 12.

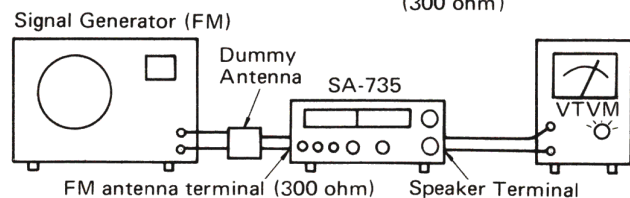


Figure 13.

FM MPX ADJUSTMENT

Test Equipments/Tools required

1. Frequency counter
2. Signal generator
3. Stereo modulator
4. VTVM
5. 300 ohm FM dummy antenna
6. Oscilloscope

Pilot signal adjustment	Connect a frequency counter to the Test Point (TP1), and adjust the VR202 for 19 kHz reading counter with no-signal input.
Separation adjustment	<p>Receive the stereo signal and adjust the VR201 for maximum channel separation.</p> <p>Note: Signal frequency: 98 MHz Frequency deviation: Pilot Signal 7.5 kHz L and R signals: 33.75 kHz</p>

SIGNAL METER ADJUSTMENT (FM)

Connection	Signal Generator	Adjustment
Connect signal generator to FM antenna terminal. See figure 13.	Frequency: 98 MHz SG output: 126 dB	Adjust the VR101 so that the signal meter indicates 4.5 ~ 5.0

IDLING ADJUSTMENT

R Channel

1. Connect a tester to test Pins A(−) and A(+).
2. Adjust the semi-fixed Resistor (VR501) so that the tester indicates $25\text{mV} \pm 5\text{mV}$.

L Channel

3. Connect a tester to test Pins B(−) and B(+).
4. Adjust the semi-fixed Resistor (VR502) so that the tester indicates $25\text{mV} \pm 5\text{mV}$.

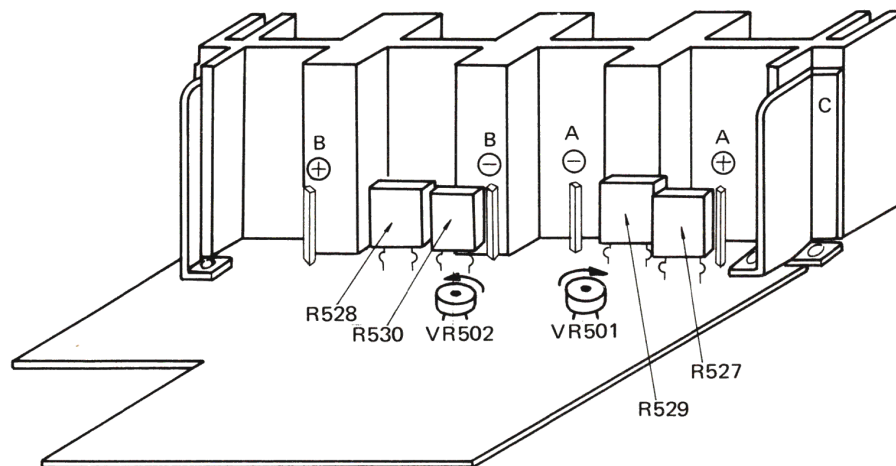


Figure 14.