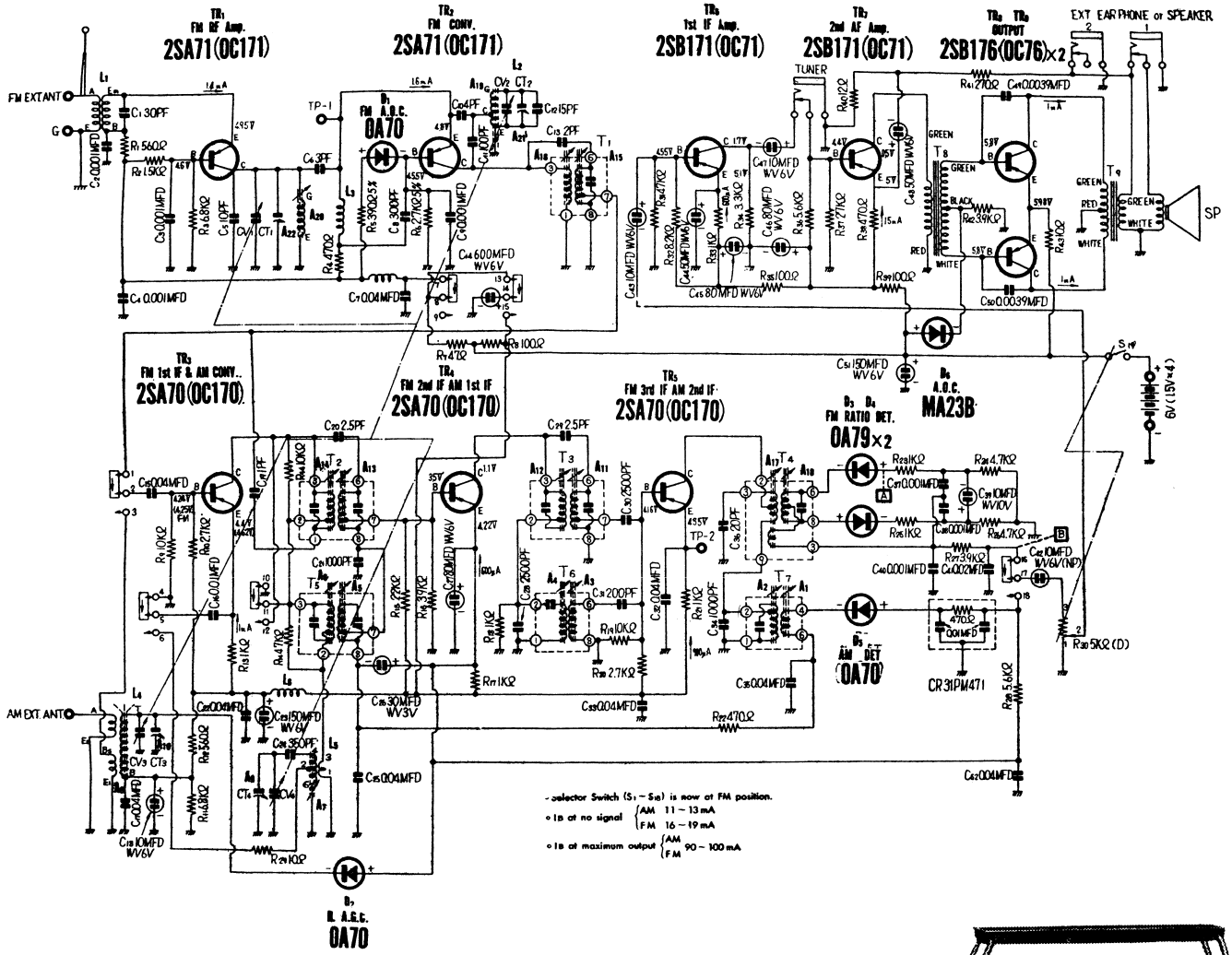
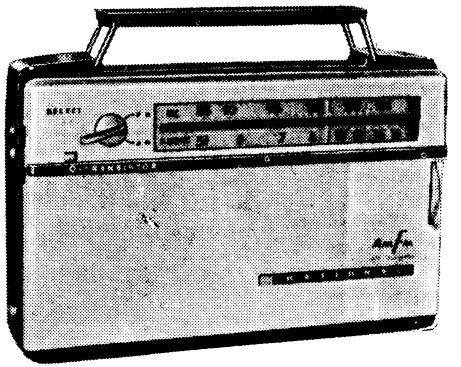


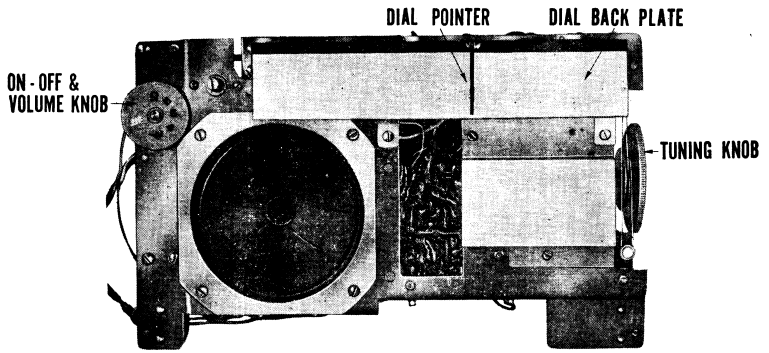


SPECIFICATIONS

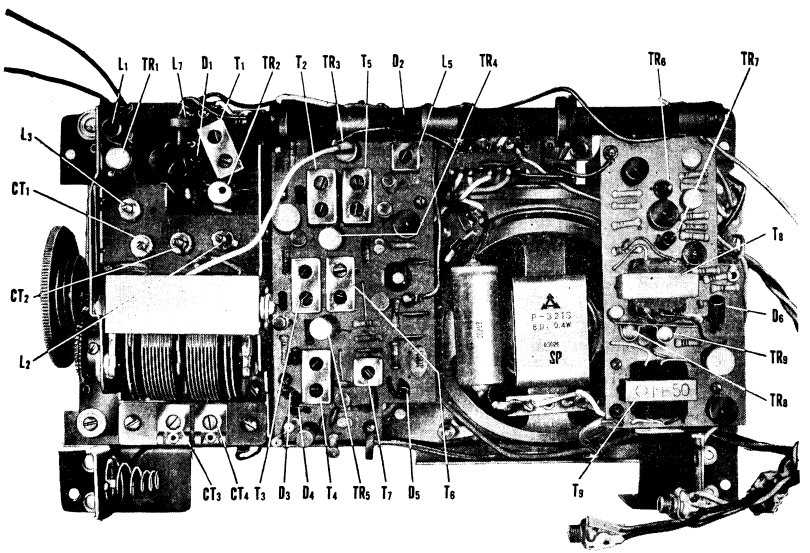
Frequency Range:	AM 535~1605KC (556~187.5m)
	FM 88 ~ 108 MC (3.4 ~ 2.8 m)
Intermediate Frequency:	AM 455 KC
	FM 10.7 MC
Sensitivity:	AM 200 μV / m / 50 mW
	FM 20 μV / m / 50 mW (30 db quieting)
Power Output:	200 m W undistorted
	350 m W maximum
Batteries:	Four 1.5V flashlight dry cells

COIL, TRIMMER & TRANSISTOR LOCATION

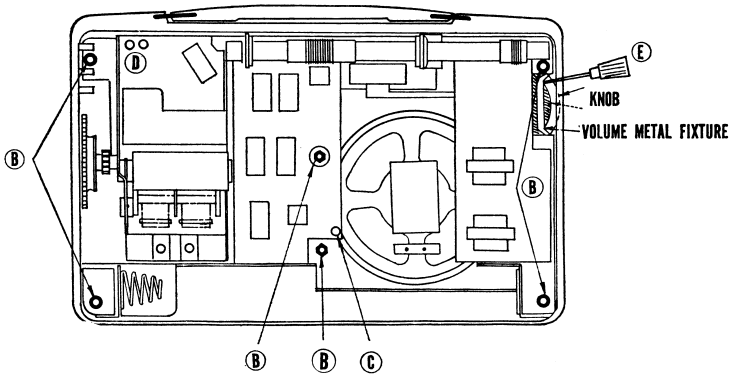
(FRONT VIEW)



(BACK VIEW)



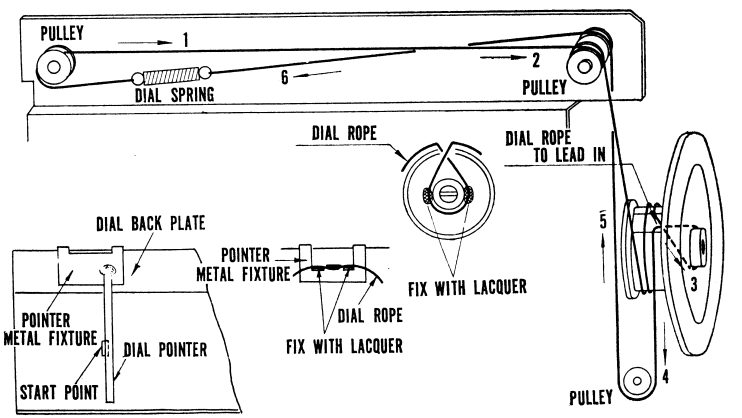
HOW TO TAKE OUT CHASSIS



A) Pull off # 160 (SELECT) knob
B) Unloosen four round-head screws on each corner and two hexangle-head screws on the center.
C) Remove the screw of EARTH LEAD.
D) Pull off two ANTENNA plugs.
E) Push in the volume metal fixture with a screw driver.
F) Slightly lift up the chassis and take it out from the right side.

To install the chassis into the cabinet again, please follow the steps in reverse order against the above.

DIAL CORD STRINGING



Note:

1. Arrow marks indicate the hanging order of the dial rope.
2. Variable capacitor is now at minimum capacity position.
3. To install the chassis into the cabinet, please place the left edge of the dial pointer in the center of the start point on the dial back plate, and fix the dial rope on the pointer metal fixture.
4. For readjustment, please follow the adjustment procedure indicated in next page after the chassis is installed into the cabinet as illustrated below.

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS

- Volume control should be at maximum position.
- Output of signal generator should be no higher than necessary to obtain an output reading.

AM ALIGNMENT

	Dummy Antenna	Signal Generator Coupling	Signal Generator Frequency	Band Switch Position	Radio Dial Setting	Output Meter Adjustment	Adjustment	Remarks
1	.01MFD	High side to Ant. stator lug of AM variable cap. Low side to chassis.	455KC (400c/s Mod.)	AM	Point of noninterference.	Across voice coil	A_1, A_2, A_3, A_4, A_5, A_6	Adjust for maximum output.
2	Fashion loop of several turns of wire and radiate signal into loop of receiver.		600KC	〃	600KC	〃	A_7, A_8	〃
3	〃		1500KC	〃	1500KC	〃	A_9, A_{10}	〃 Repeat steps 2 and 3.

INDUCTANCE ADJUSTMENT FOR A_8

Inductance increase or decrease of AM antenna coil can be made by changing the location of the coil bobbin.

Move the bobbin toward the center on the core to increase the inductance value, or toward either end to decrease.

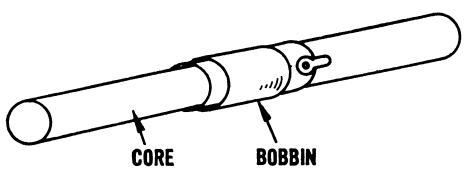


Fig. 1

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VACUUM TUBE VOLT METER

	Dummy Antenna	Signal Generator Coupling	Signal Generator Frequency	Band Switch Position	Radio Dial Setting	Connect VTVM	Adjust	Remarks
4	0.001μF	High side to point TP_1. Lowside to Frontend unit chassis.	10.7MC (Unmod.)	FM	Point of noninterference.	DC probe to point [A]. Common to chassis.	A_{11}, A_{12}, A_{13}, A_{14}, A_{15}, A_{16}	Adjust for maximum deflection.
5	〃	〃	〃	〃	〃	DC probe to point [B]. Common to chassis.	A_{17}, A_{18}	Adjust zero reading. A positive and negative will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60c/s modulation and 450KC sweep.

Use 120c/s sawtooth voltage in scope for horizontal deflection.

	Dummy Antenna	Signal Generator Coupling	Signal Generator Frequency	Band Switch Position	Radio Dial Setting	Connect Scope	Adjust	Remarks
4	0.001μF	High side to point TP_1. Low side to Frantend unit chassis.	10.7MC (450KC Sweep)	FM	Point of noninterference.	Vert. Amp. to point TP_2. Low side to chassis.	A_{11}, A_{12}, A_{13}, A_{14}, A_{15}, A_{16}	Adjust for curve of maximum amplitude and symmetry similar to Fig. 3.
5	〃	High side to TP_1. Low side to chassis.	〃	〃	〃	Vert. Amp. to point [B]. Low side to chassis.	A_{17}, A_{18}	Adjust A_{17} for maximum amplitude straightness of crossover lines and A_{18} so that 10.7MC occurs at center of crossover lines similar to Fig. 4.

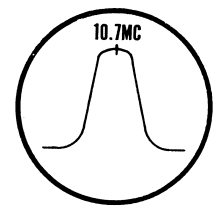


Fig. - 3

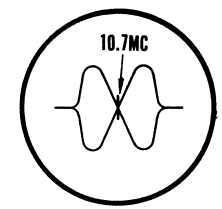
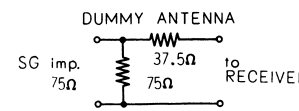


Fig. - 4

FM RF ALIGNMENT

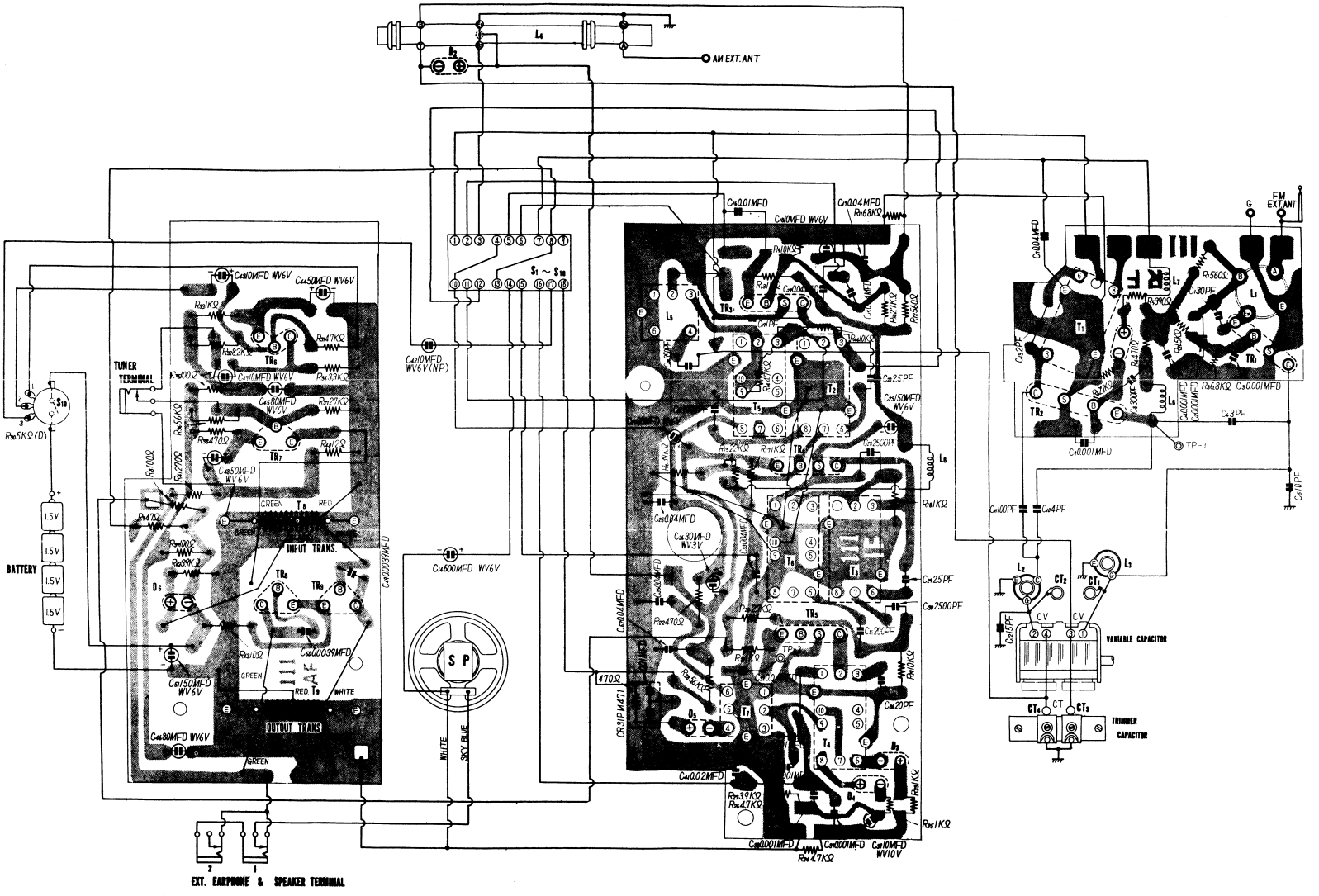
	Dummy Antenna	Signal Generator Coupling	Signal Generator Frequency	Band Switch Position	Radio Dial Setting	Connect RF Type VTVM & Output Meter	Adjust	Remarks
6	See Fig. 5	Across FM Antenna terminals.	90MC (400c/s Mod.)	FM	90MC	Output Meter to across voice coil.	A_{19}, A_{20}	Adjust for maximum output.
7	〃	〃	106MC (〃)	〃	106MC	〃	A_{21}, A_{22}	〃

Fig. - 5



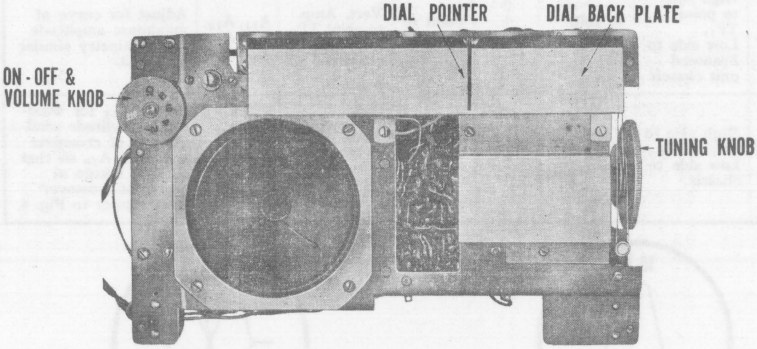
PRINTED CIRCUIT BOARD

NATIONAL MODEL T-30

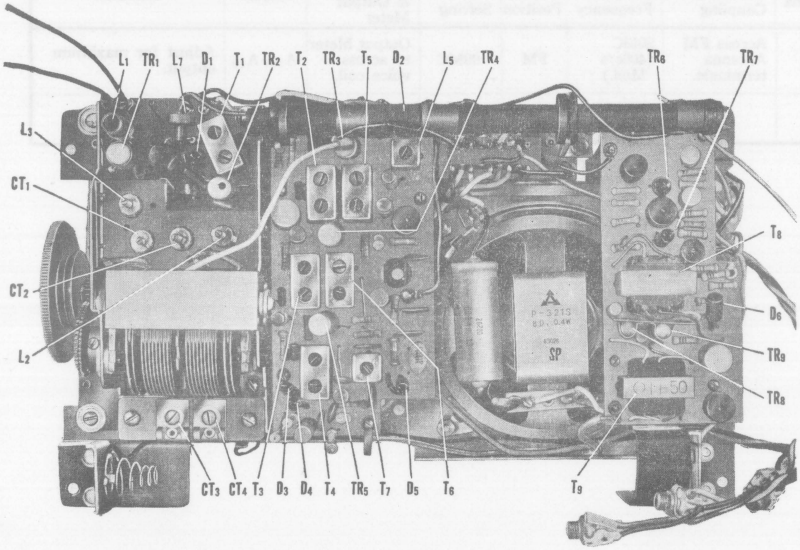


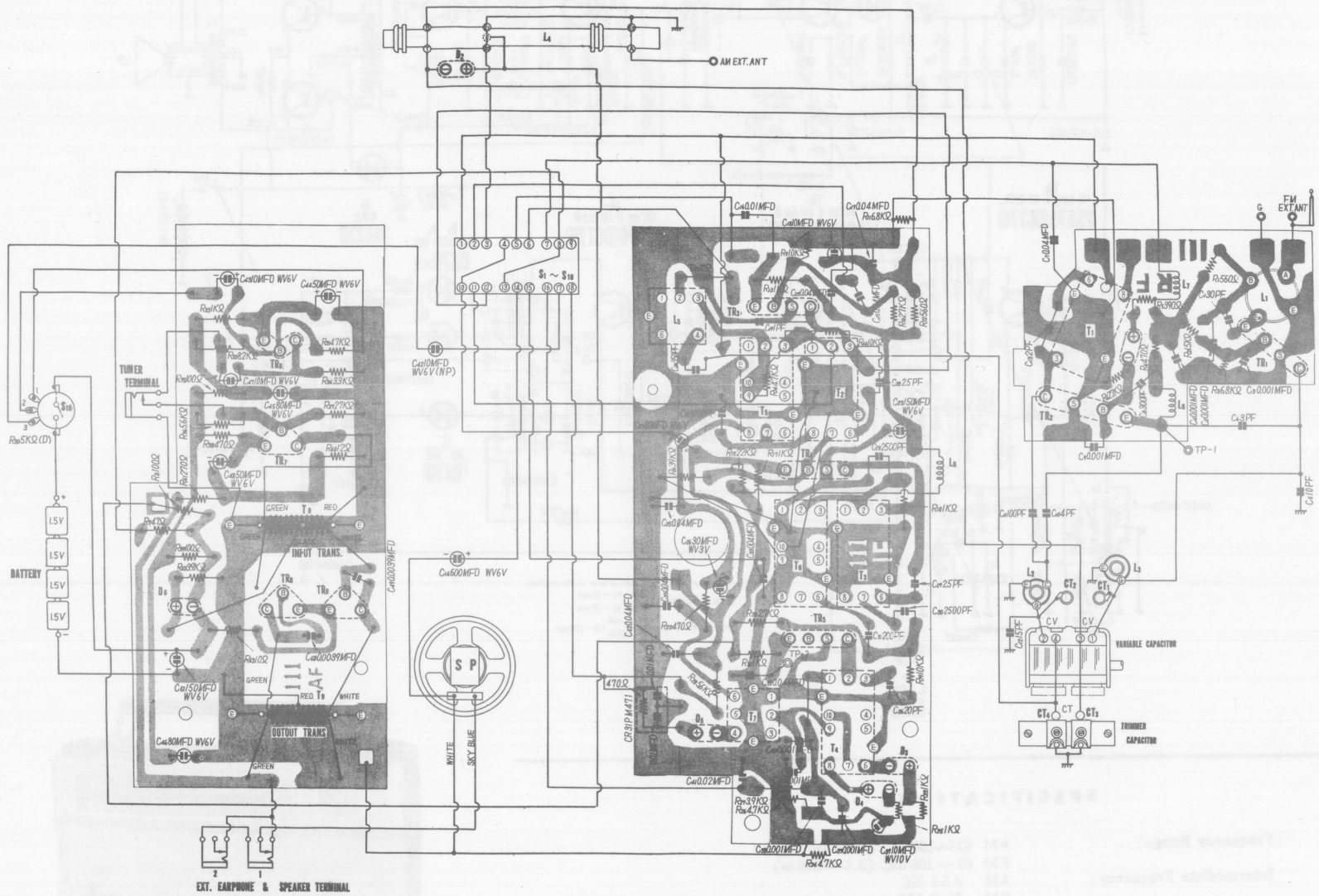
COIL, TRIMMER & TRANSISTOR LOCATION

(FRONT VIEW)



(BACK VIEW)



PRINTED CIRCUIT BOARD

NATIONAL MODEL T-30