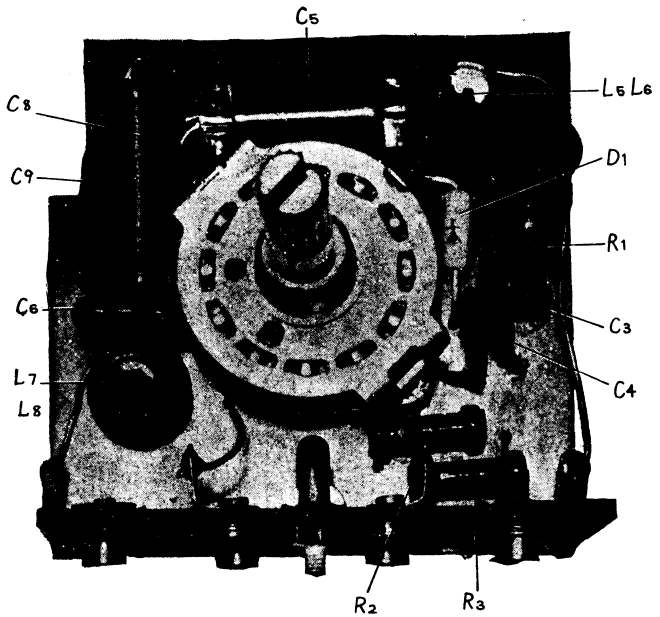
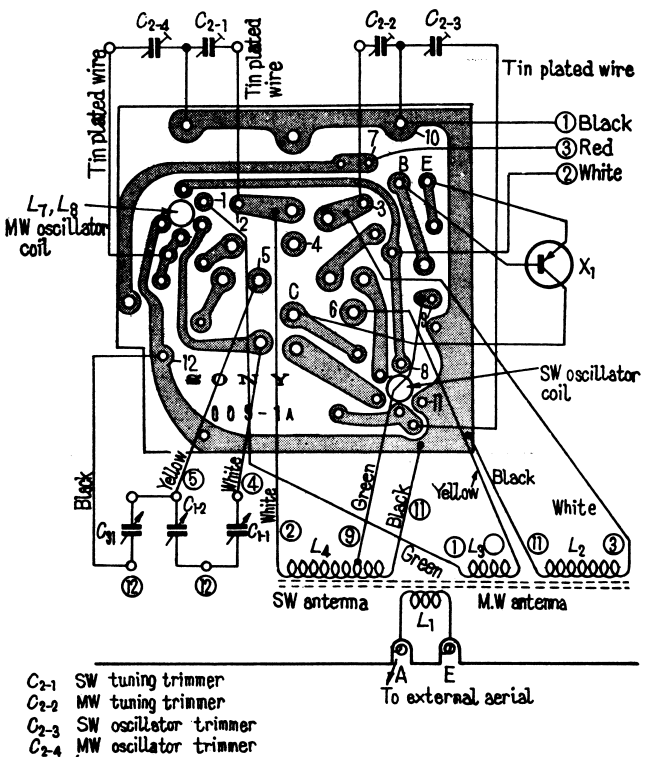
Coil pack of TR-711



Circuit board of TR-711 (coil pack printed side)



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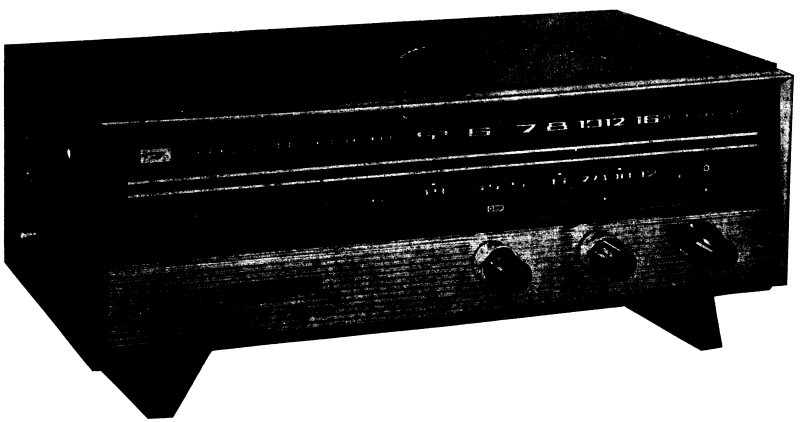

Specifications for TR-711

Circuit	:	7 transistor superheterodyne
Covering range	:	MW 535~1,605 Kc SW 3.9~12 Mc
IF frequency	:	455 Kc
Sensitivity	:	100 μV/m with built-in ferrite bar antenna (50 mw output) 10 μV/m with exteral aerial of 5 m. effective height
Antenna system	:	Built-in turret ferrite bar antenna
Output power	:	210 mw (undistorted)
Curreut drain	:	14 mA $\pm$ 20 %
Speaker	:	Two 4″ × 6″ PM dynamic speakers
Battery	:	4 standard size flash light batteries (6 Volts)
Dimensions	:	396 × 225 × 166 mm (15 1/2″ × 8 3/4″ × 6 5/16″)
Weight	:	4.3 Kg (9.5 lbs.)
Cabinet	:	wood

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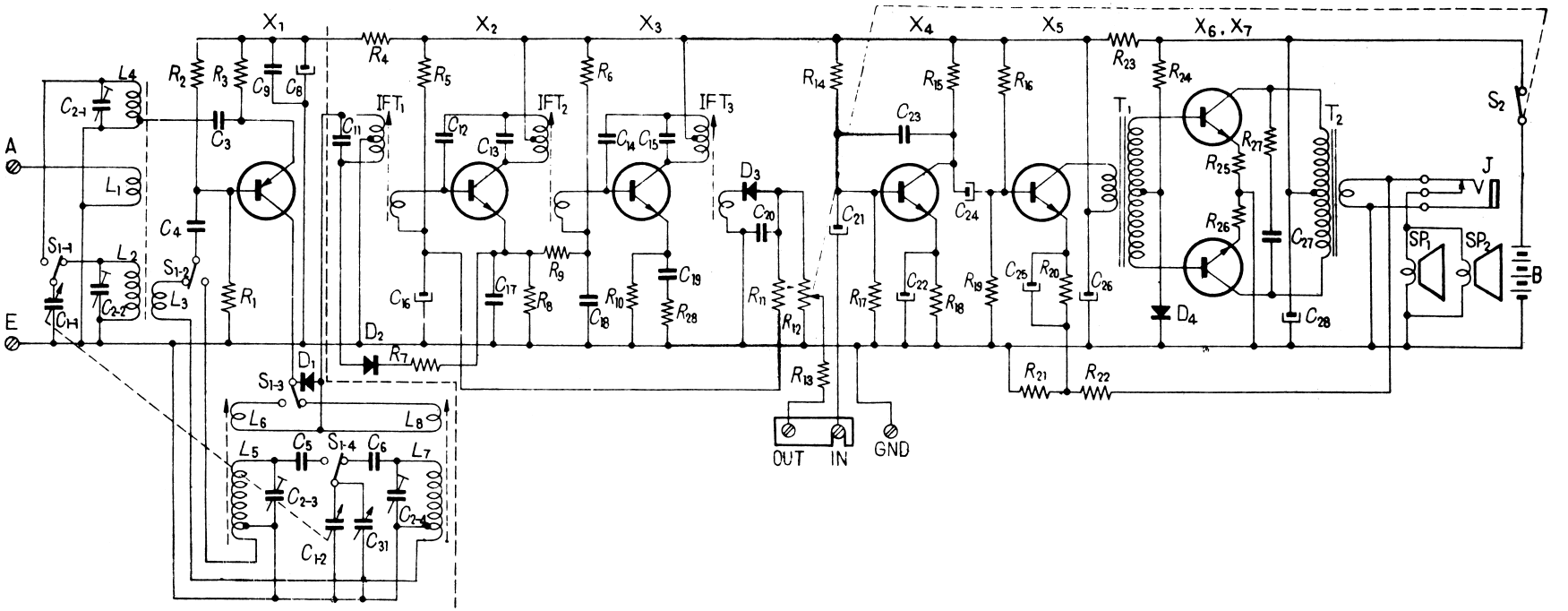
CIRCUIT DIAGRAM FOR TR—711



L_1	Ext.Ant.	J	Earphone Jack	D_4	AF Comp. 1T51	C_{13}	200 PF	C_{26}	100 μF 6 V	R_9	3.3 KΩ	± 5 %	R_{22}	82 Ω	± 5 %
L_2, L_3	BC Band Bar Antenna	SP_1, SP_2	10×15cm. Speaker	B	UM-1×4 6 V	C_{14}	2 PF	C_{27}	0.1 μF	R_{10}	470 Ω	"	R_{23}	82 Ω	"
L_4	SW "					C_{15}	200 PF	C_{28}	100 μF 6 V	R_{11}	5.6 KΩ	"	R_{24}	2.7 KΩ	"
L_4, L_5	SW Band Oscillator Coil	X_1	Mix. 2T20	C_1	Tuning Capacitor	C_{16}	10 μF 3 V	C_{31}	Midget Tunning Capacitor	R_{12}	5 KΩ VR with Switch		R_{25}	5 Ω	"
L_7, L_8	BC " " "	X_2	IF_1 2T76	C_2	2~15PF Gang Trimmer	C_{17}	0.05 μF			R_{13}	470 Ω	± 5 %	R_{26}	5 Ω	"
		X_3	IF_2 2T76	C_3	0.005 μF	C_{18}	0.05 μF	R_1	15 KΩ ± 5 %	R_{14}	33 KΩ	"	R_{27}	60 Ω	"
I F T_1	I.F. Trans.	X_4	AF1 2T65	C_4	0.01 μF	C_{19}	0.05 μF	R_2	2.2 KΩ "	R_{15}	1 KΩ	"	R_{28}	82 Ω	"
I F T_2	"	X_5	AF_2 2T66	C_5	3000 PF	C_{20}	0.02 μF	R_3	1.5 KΩ "	R_{16}	5.6 KΩ	"			
I F T_3	"	X_6	AF out 2T85	C_6	370 PF	C_{21}	10 μF 3 V	R_4	82 Ω "	R_{17}	5.6 KΩ	"			
S_1	BC, SW Switch	X_7	AF out 2T85	C_7	30 μF 6 V	C_{22}	100 μF 3 V	R_5	68 KΩ "	R_{18}	470 Ω	"			
S_2	Power Switch	D_1	Osc. Comp. 1T23	C_8	0.01 μF	C_{23}	0.01 μF	R_6	33 KΩ "	R_{19}	3.3 KΩ	"			
T_1	Input Trans. 1.1K : 3K	D_2	AGC 1T23	C_{11}	170 PF	C_{24}	10 μF 3 V	R_7	470 Ω "	R_{20}	330 Ω	"			
T_2	Output Trans. 160K : 4Ω	D_3	Det. 1T23	C_{12}	2 PF	C_{25}	100 μF 3 V	R_8	470 Ω "	R_{21}	5 Ω	"			

$C_{7, 10, 29, 30}$
Note: C7, 10, 29, 30 Not in use

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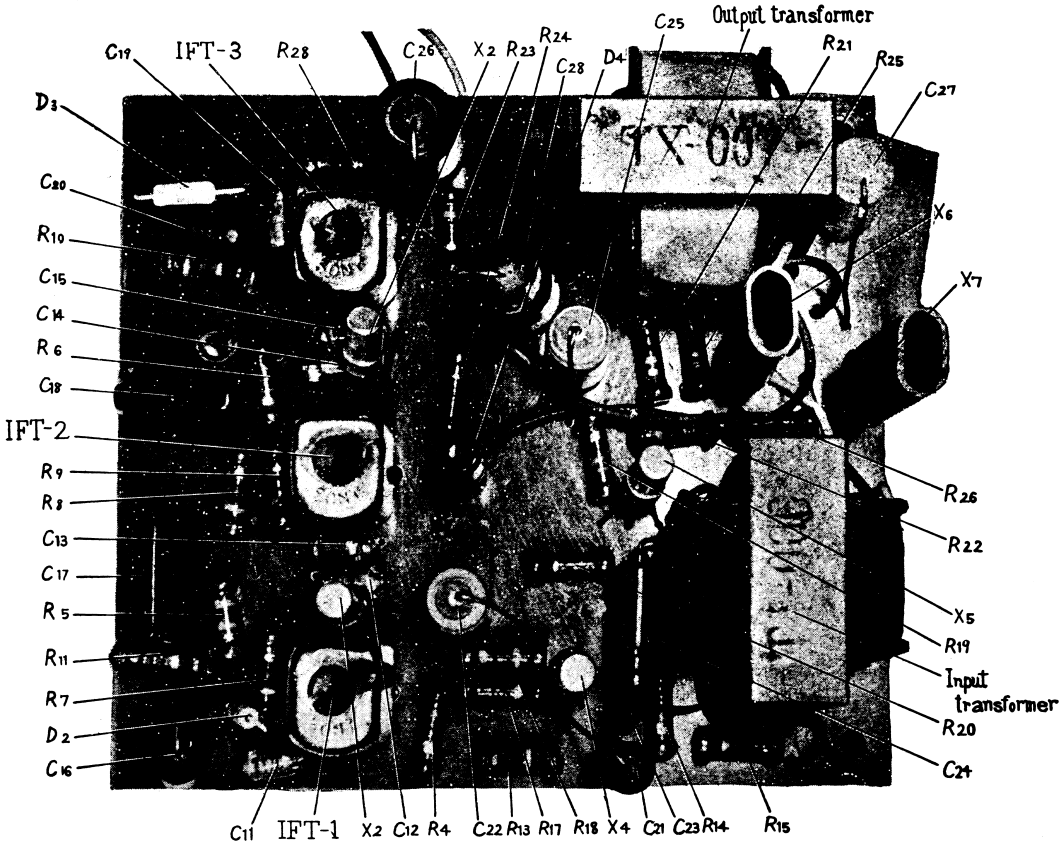
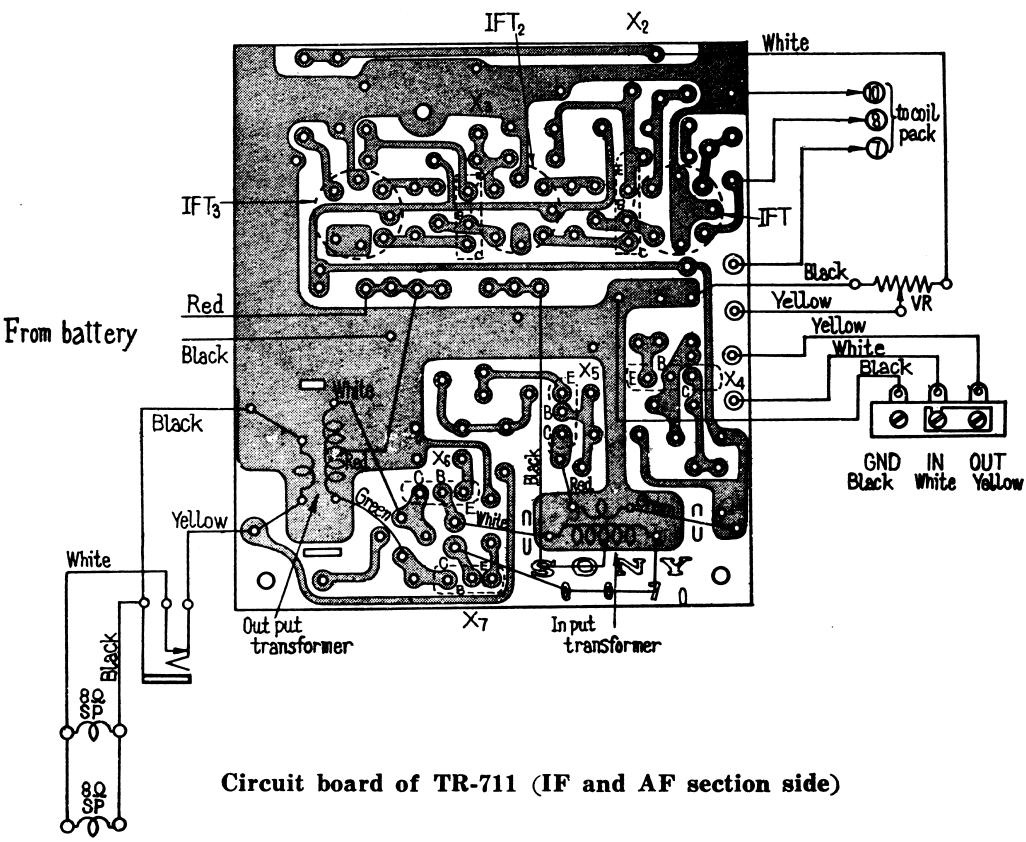
Mounting diagram of TR-711 (IF and AF section)





Circuit board of TR-711 (IF and AF section side)

To take out the set from the cabinet

a) Remove fine tuning knob which is fixed with a set screw.
b) Pull out volume control knob, band switch knob and tuning knob.
c) Remove 3 screws at the bottom of the cabinet.
d) Remove antenna lever at the bottom of the cabinet.

When the coil pack is wanted to be taken out :

a) Remove battery holder under variable condenser.
b) Remove nut for band switch.
c) Take out the coil pack holding the variable condenser upward slightly.
d) Unsolder ground wire from variable condenser if it prevents to take out the coil pack.

IF and AF section can be taken out by removing 3 fixing screws on the circuit board.

Audio transformers

Input transformer TI-006
1.1 kΩ : 3 kΩ DC resistance 81 Ω : 217 Ω
Output transformer TX-007
160 Ω : 4 Ω DC rescstance 9.6 Ω : 0.23 Ω

MW band adjustment

a) Adjust L_7 core to receive 520 Kc (lower limit) with the variable condenser set at maximum.
b) Adjust trimmer $C_{2\text{-}4}$ to receive 1,680 Kc (upper limit) with the variable condenser set at minimum.
c) Tune the set to 1,640 Kc by turning tuning knob and adjust L_2 position to get maximum output.
d) Tune the set to 1,400 Kc in the same way as c) and adjust $C_{2\text{-}2}$ to get maximum output.

SW band adjustment

a) Adjust L_5 core to receive 3.82 Mc (lower limit) with the variable condenser set at maximum.
b) Adjust $C_{2\text{-}3}$ to receive 12.8 Mc (upper limit) with the variable condenser set at minimum.
c) Tune the set to 3.9 Mc by turning tuning knob and adjust L_4 position to get maximum output.
d) Tune the set to 12 Mc in the same way as c) and adjust $C_{2\text{-}1}$ to get maximum output.

Cautions on adjustment

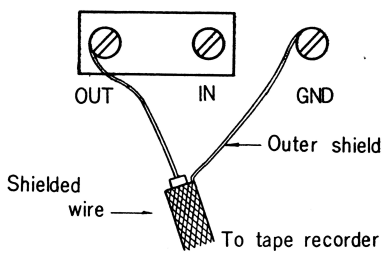
a) When IF circuit is adjusted, inject signal to antenna circuit keeping its level low enough to avoid saturaton.
b) Adjustment of RF section must be performed with fine tuning condenser set at 90° (dial indicates 0)
c) During adjustment, ferrite bar antenna must be kept parallel to the dial surface with external aerial coil (L_1) set at the center of the ferrite bar.
d) During SW adjustment load batteries in battery holder as in actual use.
If the batteries are loaded after adjustment the set may be misadjusted.
e) In higher frequency range, attention must be payed to avoid misalignment due to image.
f) Adjustment must be completed before mounting into the cabinet because it can not be done when the set is in the cabinet.

Cautions in general

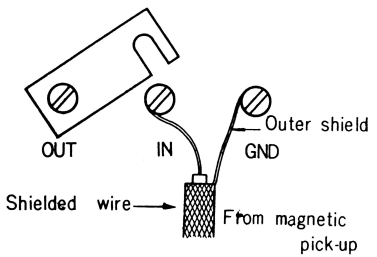
a) After the adjustment is finished, fix oscillator coil core with a drop of lacquer and other coils with sealing wax.
b) When the set is mounted into the cabinet :
i. Pointer needle must be adjusted to be vertical and perpendicular to dial back plate.
ii. Clear off the dust on the dial surface.
iii. Antenna lever must be perpendicular to ferrite bar antenna.
iv. Fix volume control knob so as that white line marking points upward at off position.
v. Fix band switch knob keeping white line marking upward.
vi. Fix fine tuning knob so as that the set screw comes to the bottom side when 0 figure or vernier dial appears at the window.

Recording of the radio program and playnig back of record

On the back side of the cabinet, 3 terminals (OUT, IN and GND) are provided.
a) Recording of the radio program
Connect OUT and GND terminals to the tape recorder with shielded cord.
b) Playing back of the record.
Disengage IN and OUT. Connect pick-up lead wire to IN and GND terminals.
(medium impedance magnetic pick-up is recommended.)



a) Recording of radio program



b) Playing back of record

Voltage and current distribution for TR-711

		Voltage Volt	Current			Voltage Volt	Current
X_1	E	$4.8\sim5.0_5$	250~350μA	X_4	E	$0.45\sim0.54_1$	
	B	$4.5\sim4.9_5$			B	$0.52\sim0.58_1$	
	C	0			C	$4.19\sim4.6_5$	0.9~1.3 mA
X_2	E	$0.18\sim0.21_1$		X_5	E	$1.4\sim1.8_5$	
	B	$0.32\sim0.36_1$			B	$1.59\sim1.8_5$	
	C	0	250~350μA		C	5.5_5	4.3~5.5 mA
X_3	E	$0.29\sim0.34_1$		X_6X_7	E	$0.005_{0.25}$	
	B	$0.49\sim0.53_1$			B	$0.15\sim0.16_{0.25}$	
	C	5.5_{25}	640~730μA		C	6.0_{25}	1.5~2.5 mA

Current drain at 0 signal : 14mA
Internal resistance of voltmeter used for measurement is 20 KΩ/V
Small figures next to data show voltmeter range.