ALIGNMENT PROCEDURES

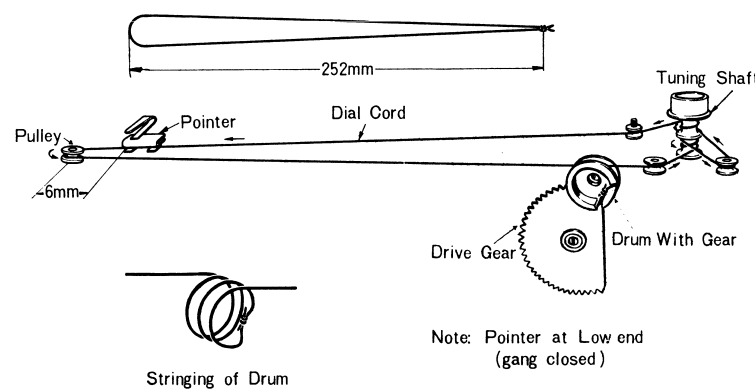
Procedures	Circuits to be adjusted	Band selector switch	Connecting points of the test oscillator	Frequency of the test oscillator	Indication of dial	Parts to be adjusted	Remarks
1	IF	BC	A capacitor 5 PF is series connected to the top of rod antenna	455 kc	At a position in the vicinity of the lowest freq.	IFT T_7 T_8 T_9	These parts are adjusted so that the output voltage may become maximum.
2	BC Oscillator Tuning	BC	ditto	525 kc	At the lowest freq. (VC capacity, Max.)	T_4 (BC Oscillator coil)	ditto
3				1650 kc	At the highest freq. (VC capacity, Min)	Tr_4 (BC Oscillator coil)	
4				Repeat Procedure 2 and 3			
5				600 kc	600 kc	T_1 (BC Antenna coil)	
6				1400 kc	1400 kc	Tr_1 (BC Antenna trimmer)	
7				Repeat Procedure 5 and 6			
8	SW_1 Oscillator Tuning	SW_1	ditto	3.4 Mc	At the lowest freq.	T_5 (SW_1 Oscillator coil)	ditto
9				7 Mc	At the highest freq.	Tr_5 (SW_1 Oscillator trimmer)	
10				Repeat Procedure 8 and 9			
11				4 Mc	4 Mc	T_2 (SW_1 Antenna coil)	
12				6.5 Mc	6.5 Mc	Tr_2 (SW_1 Antenna trimmer)	
13				Repeat Procedure 11 and 12			
14	SW_2 Oscillator Tuning	SW_2	ditto	6.4 Mc	At the highest freq.	T_6 (SW_2 Oscillator coil)	Upon completion of adjustment, respective adjusted parts are fixed with wax or enamel.
15				12.8 Mc	At the lowest freq.	Tr_6 (SW_2 Oscillator trimmer)	
16				Repeat Procedure 14 and 15			
17				7 Mc	7 Mc	T_3 (SW_2 Antenna coil)	
18				12 Mc	12 Mc	Tr_3 (SW_2 Antenna trimmer)	
19				Repeat Procedure 17 and 18			

CAUTIONS IN ALIGNMENT PROCEDURES

1) In case the position of the pointer is shifted, the pointer should be fixed in such a way that "Dial Stringing Procedure" indicates.
2) In case conditions are unsatisfactory for adjustment because of presence of a broadcasting in the proximity of the adjusted frequency, adjustment should be carried out by slightly slipping the frequency.
3) It should be noted that the frequency is frequently tuned with an image signal at the time of adjustment of high frequency especially in case of SW. As the local oscillation of this receiver is designed in the upper side oscillation, the signal coming in on the side where the oscillator trimmer slips out, is real one.

When the adjustment of the trimmer on the oscillator side is completed, it should be ascertained by turning the test oscillator that the signal is not an image signal. If another signal sound becomes audible at the frequency higher by 910 kc (= intermediate frequency × 2) than the original frequency, the adjustment is correct. Accordingly, the operation may be shifted to a next procedure.

Model 8X-808 Transistor Radio Dial Stringing



MITSUBISHI Model 8X-808

SPECIFICATIONS

Circuit system :	3–band 8–transistor super-heterodyne
Tuning range :	BC 535–1605Kc SW_1 3.5–6.8Mc
	SW_2 6.7–12Mc
Intermediate frequency :	455 Kc
Power output :	Undistorted 220mW
	Maximum 280mW
Power supply :	Penlight cell × 4
Speaker :	2¾″, Permanent dynamic speaker, (8Ω)
Antennas :	Built-in 10φ×6⅖″ ferrite-core antenna (for Bc and sw_1)
	Built-in 12-step 27½″ telescoping rod-antenna (for sw_1 and sw_2)
Earphone :	A magnetic earphone for single ear
	(Two earphones may be used at the same time)
Transistors :	2SA148 Local oscillator
	2SA147 Frequency mixer
	2SA146 IF amplifier
	2SA141 IF amplifier
	2SB135 Audio frequency amplifier
	2SB135 Audio frequency amplifier
	2SB 156, 2SB 156 Push-pull power amplifier
Diode :	MD60 Detector and A. G. C.
Varister :	HV15 Temperature compensator
Dimensions :	Width 7⅝″, Height 3⅝″, Depth 1 1/16″
Weight :	1.5 lbs (Battery assembly included)

ALIGNMENT PROCEDURES

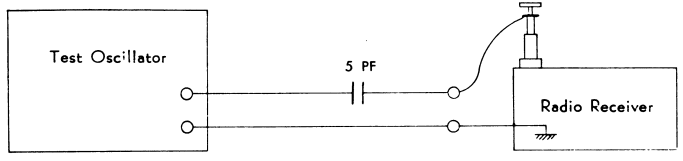
Since the "Mitsubishi" transistor radio receiver is fully adjusted before its shipment from the plant, and these adjusted points are fixed with wax and enamel so that they may not be disarranged, they should never be touched with a hand, as a rule. When readjustment is required for exchange of a faulty part with a new part, it should be carried out in accordance with the following table, after preparing a test oscillator, a vacuum-tube voltmeter or tester.

1. Measurement of the output voltage :

To measure the output voltage, the voltage between both ends of the voice coil of loudspeaker should be measured by means of a vacuum-tube voltmeter or AC-range of a tester.

2. Test oscillator and connection :

The test oscillator is used by applying modulation of 30~40% at 400~ or 1,000~. As the following picture, a capacitor of about 5 PF is arranged in series, and is connected to the rod antenna, both for BC band and SW band. To the other end of this capacitor, the test oscillator is connected. The earth side of the test oscillator is connected to the metallic chassis of the radio receiver.

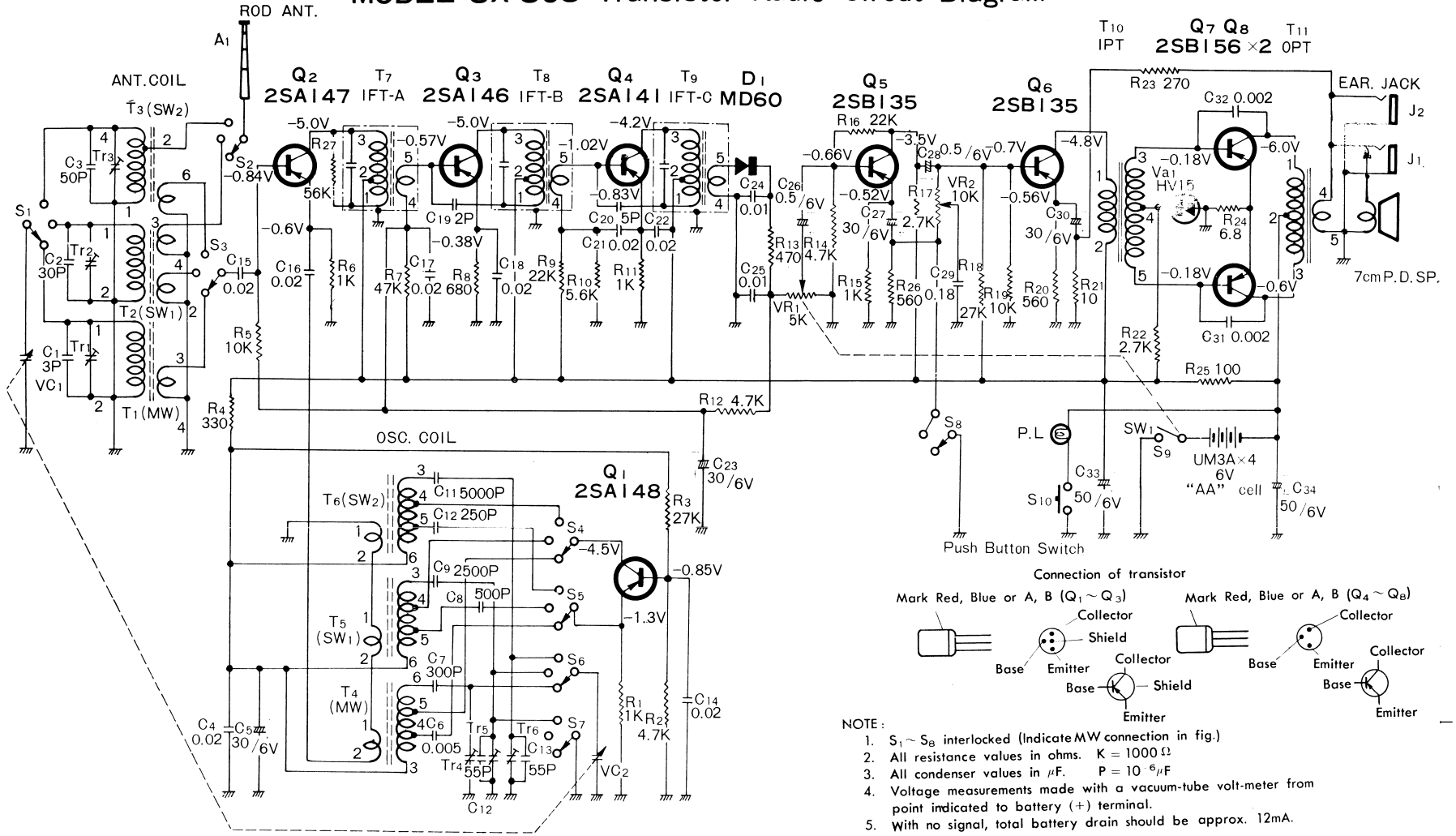


Connection of Test Oscillator

3. Aligning tool :

To turn cores of the oscillator coil and so on, it is advised to use a screw driver made of a bakelite stick in order to avoid body-effect. After adjustment, the cores should be fixed with enamel and wax, so that they may not move.

MODEL 8X-808 Transistor Radio Circut Diagram

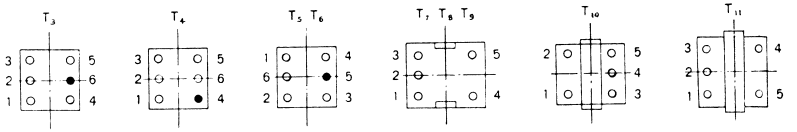


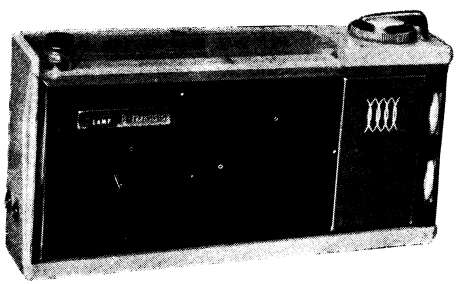
Connection of transistor

NOTE:

1. $S_1 \sim S_8$ interlocked (Indicate MW connection in fig.)
2. All resistance values in ohms. K = 1000 Ω
3. All condenser values in μF. P = 10^{-6} μF
4. Voltage measurements made with a vacuum-tube volt-meter from point indicated to battery (+) terminal.
5. With no signal, total battery drain should be approx. 12mA.

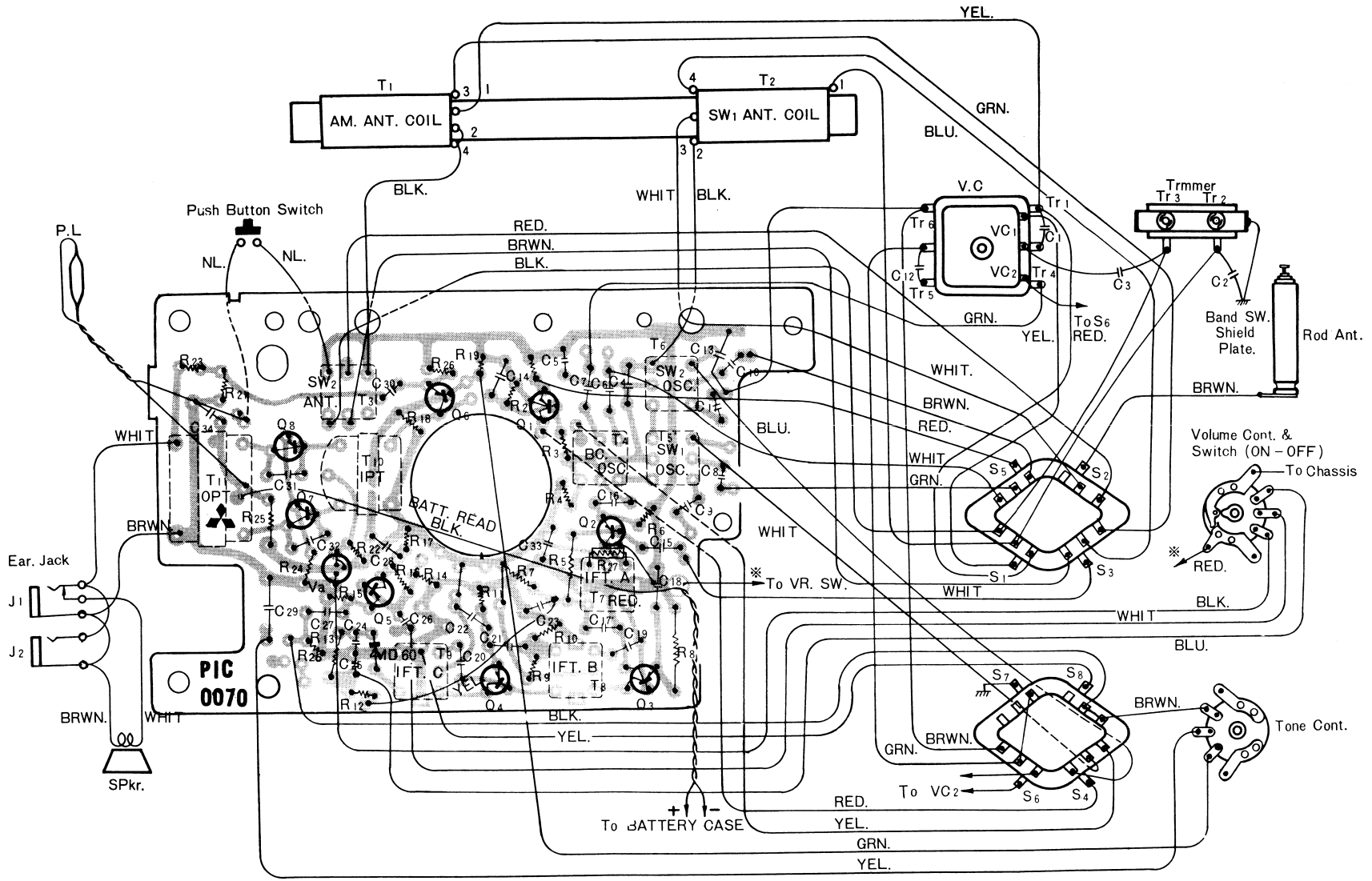
Bottom View of Transformer





MODEL 8X-808 Transistor Radio Printed Circuit

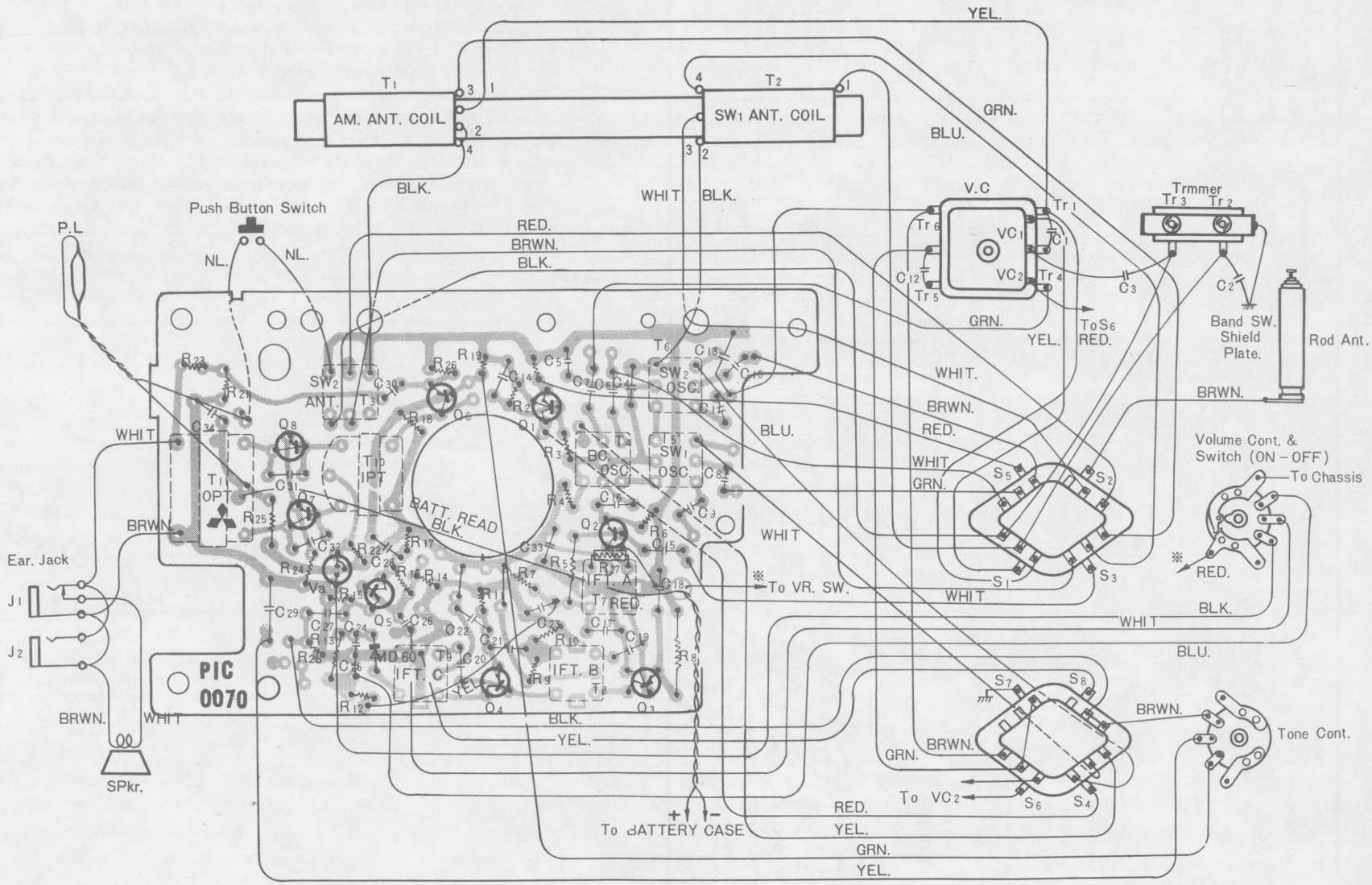
Mitsubishi 8X808 M25



NOTE: ⊟ indicate parts which are fixed on copper foil side of printed Board

MODEL 8X-808 Transistor Radio Printed Circuit

Mitsubishi 8X808 M25



NOTE: ⊣⊢ indicate parts which are fixed on copper foil side of printed Board