

SERVICE MANUAL



PORTABLE RADIO

53



SPECIFICATIONS

Frequency ranges:	MW 525 – 1605 kHz	Output power:	Maximam 1500 mW
	SW1 2.3 – 7.0 MHz	Transistor:	11
	SW2 7.0 – 21.0 MHz	Diode:	16
	FM 62 – 74 MHz	Power source:	DC 4.5 for 1.5V "UM-1" Size x 3
Intermediate:	MW/SW 460 kHz		AC 220V, 50Hz
	FM 10.7 MHz	Current consumption:	No signal 30 mA
Sensitivity:	MW 100 μ V/m	Speaker:	92 mm, 8 ohm
(for 50mW output)	SW1 100 μ V/m	Dimensions:	257mm(W) x 162mm(H) x 75mm(D)
	SW2 10 μ V		Approx.
	FM 3 μ V	Weight:	Approx. 1.5 kg

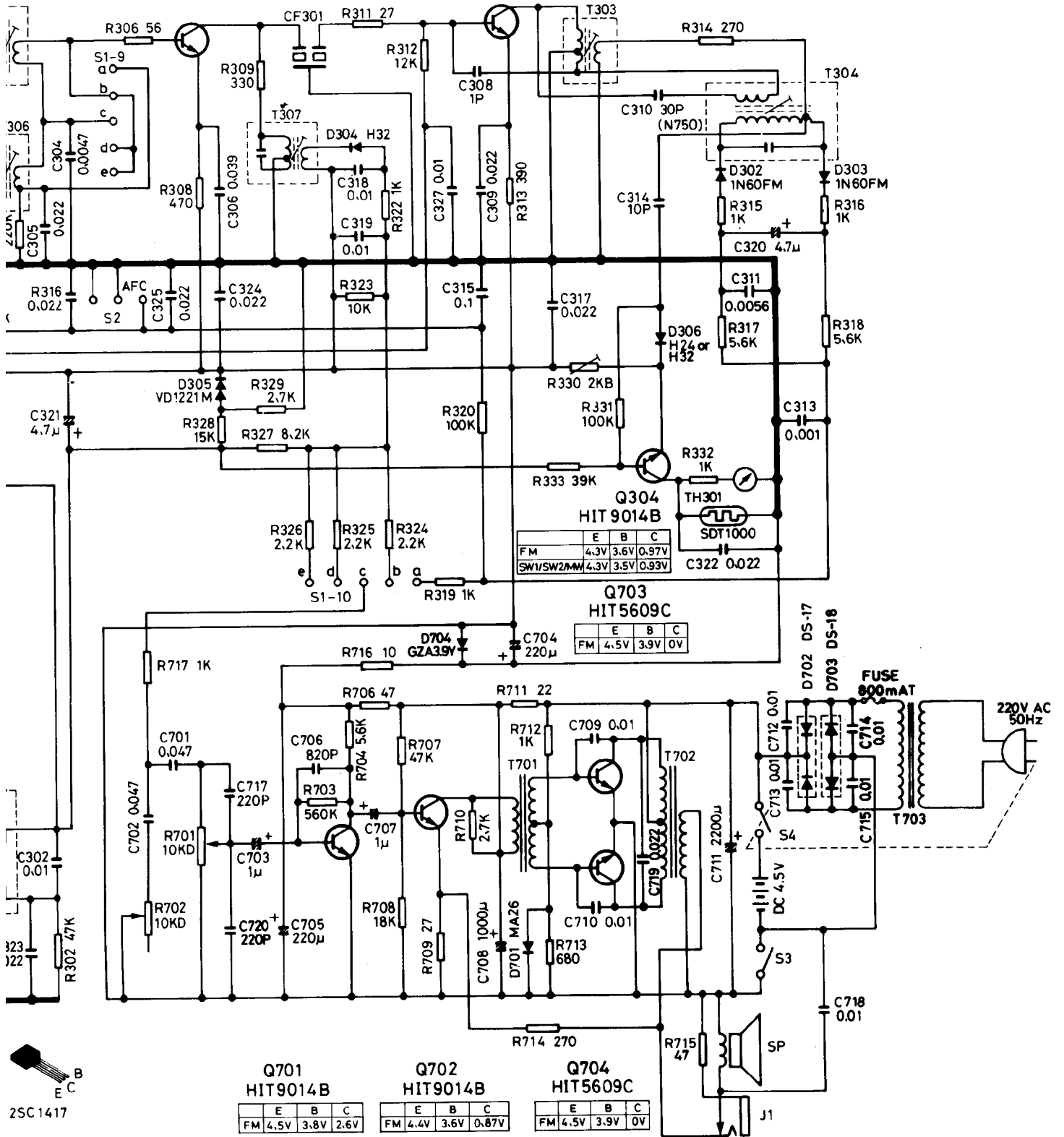
NOTE: Specifications are subject to change without notice.

Q302 2SC1417H

	E	B	C
FM	3.9V	3.0V	1.15V
SW1/SW2/MW	3.9V	3.0V	1.15V

Q303 2SC1417H

	E	B	C
FM	4.1V	3.3V	0.76V
SW1/SW2/MW	4.5V	3.8V	0.63V



Q701
HIT9014B

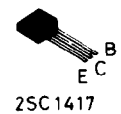
	E	B	C
FM	4.5V	3.8V	2.6V

Q702
HIT9014B

	E	B	C
FM	4.4V	3.6V	0.87V

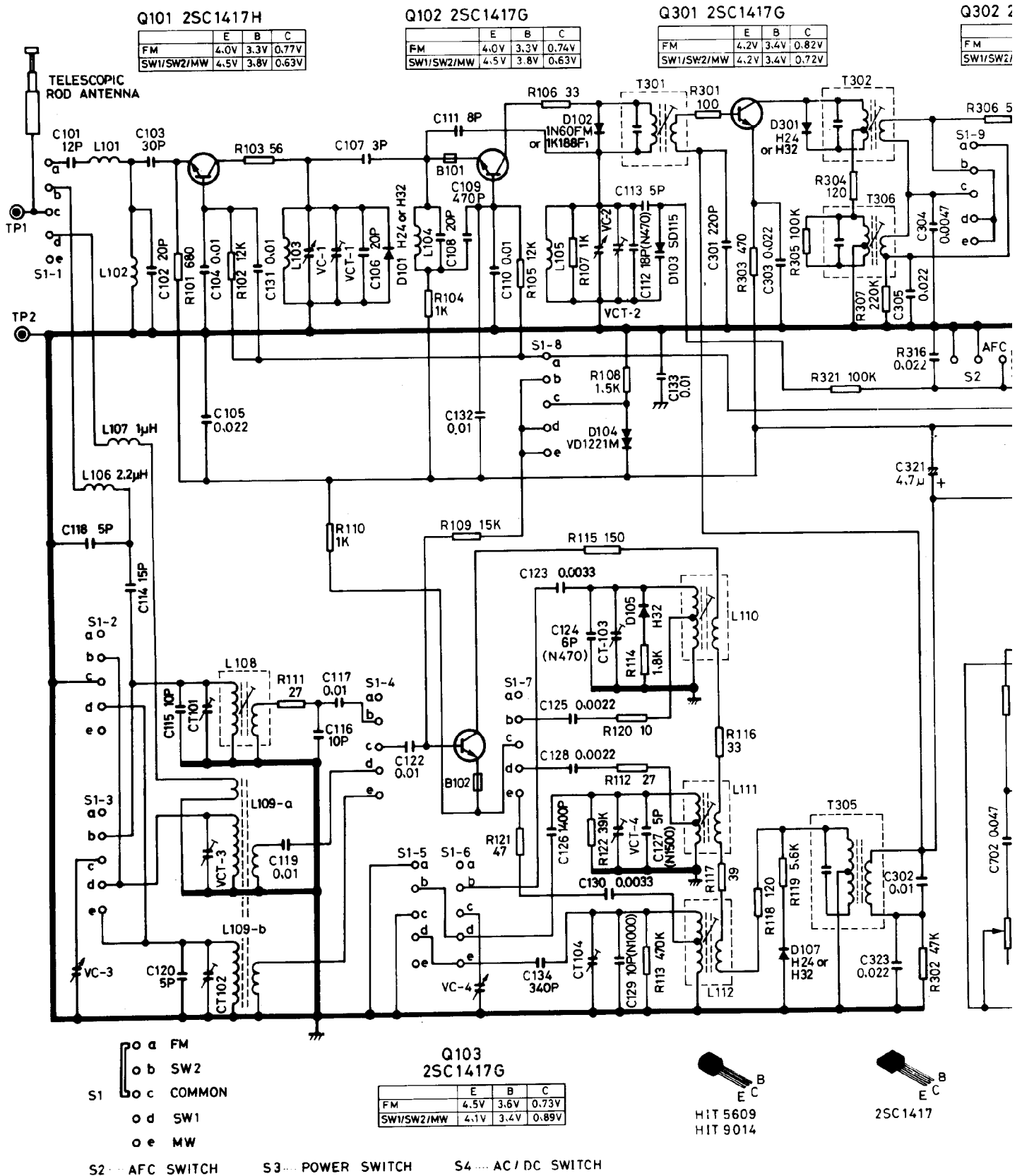
Q704
HIT5609C

	E	B	C
FM	4.5V	3.9V	0V

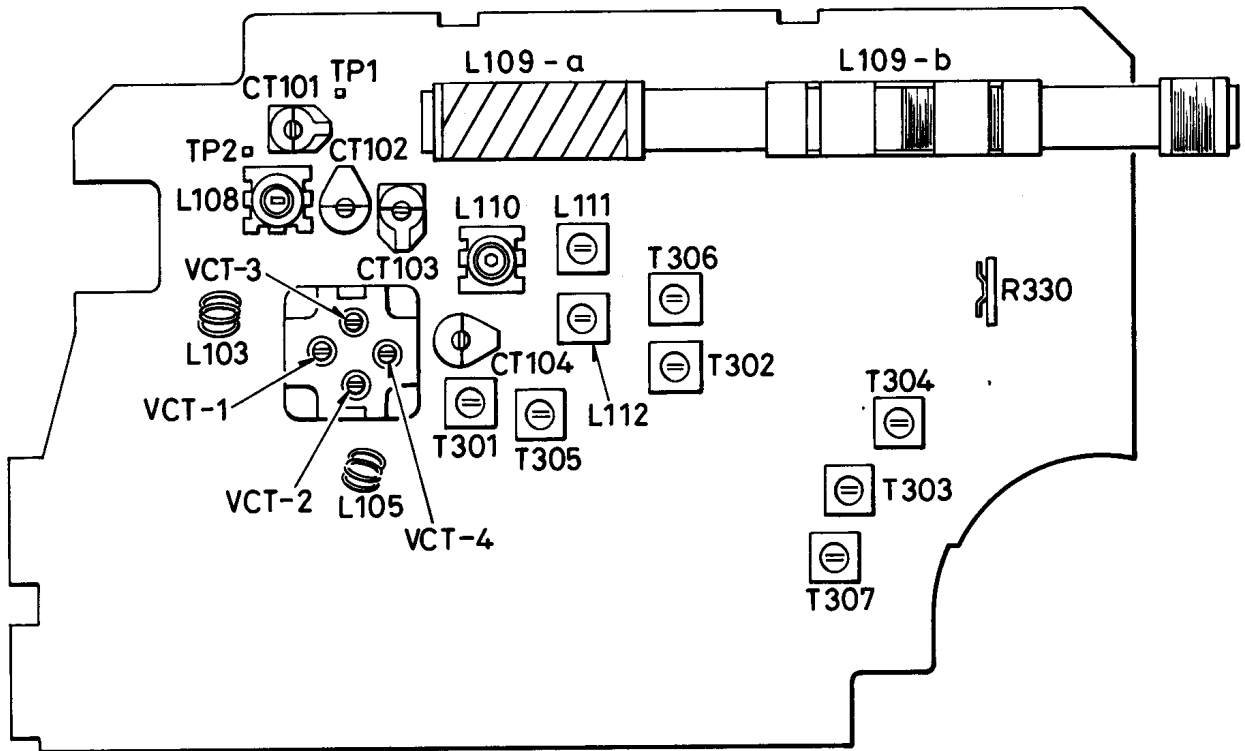


2SC1417

SCHEMATIC DIAGRAM



PARTS LOCATION



ALIGNMENT PROCEDURES**GENERAL ALIGNMENT CONDITIONS**

1. The position of volume control is at maximum position.
2. Signal input must be kept as low as possible to avoid overload.
3. Use an output meter of the highest possible sensitivity.
4. Standard modulation is 400Hz at 30% amplitude (for AM) and 22.5 kHz deviation (for FM).

MW BAND – Band selector switch in MW position

Step	Connection of Signal Generator	Input Signal Frequency	Dial Setting of Radio	Connection of Output Meter	Adjust	Remarks
1	Loop Antenna	460 kHz	Lowest End	Across Speaker	IFT T305, 306, 307	Adjust for Maximum
2	Same	505 kHz	Lowest End	Same	Osc. Coil L112	Same
3	Same	1670 kHz	Highest End	Same	Osc. Trim CT104	Same
4	Same	600 kHz	600 kHz	Same	Ant. coil L109b	Same
5	Same	1400 kHz	1400 kHz	Same	Ant. Trim CT102	Same

Repeat steps 2 thru 5 to obtain maximum sensitivity.

SW1 – Band selector switch in SW1 position

Step	Connection of Signal Generator	Input Signal Frequency	Dial Setting of Radio	Connection of Output Meter	Adjust	Remarks
1	Same	2.15 MHz	Lowest End	Same	Osc. Coil L111	Adjust for Maximum
2	Same	7.3 MHz	Highest End	Same	Osc. Trim VCT-4	Same
3	Same	2.5 MHz	2.5 MHz	Same	Ant. Coil L109a	Same
4	Same	6.5 MHz	6.5 MHz	Same	Ant. Trim VCT-3	Same

Repeat steps 1 thru 4 to obtain maximum sensitivity.

SW2 BAND – Band selector switch in SW2 position

Step	Connection of Signal Generator	Input Signal Frequency	Dial Setting of Radio	Connection of Output Meter	Adjust	Remarks
1	Same	6.8 MHz	Lowest End	Same	Osc. Coil L110	Same
2	Same	22.7 MHz	Highest End	Same	Osc. Trim CT103	Same
3	Same	8.0 MHz	8.0 MHz	Same	Ant. coil L108	Same
4	Same	21.0 MHz	21.0 MHz	Same	Ant. Trim CT101	Same

Repeat steps 1 thru 4 to obtain maximum sensitivity.

FM BAND – Band selector switch in FM position

Step	Connection of Signal Generator	Input Signal Frequency	Dial Setting of Radio	Connection of Meter or Oscilloscope	Adjust	Remarks
1	Connect Sweep Marker Generator to VCT2, Ground TP2	10.7 MHz	Lowest End	Connect scope input cable thru network to R314, Ground	IFT T301, 302, 303	Adjust for maximum sensitivity with symmetrical curve.
2	Same	10.7 MHz	Lowest End	Connect scope input cable thru network to R319, Ground	IFT T304	Adjust for symmetrical "S" curve.
3	Connect Signal Generator to TP1, TP2	61 MHz	Lowest End	Connect V.T.V.M. across speaker	Osc. coil L105	Adjust for maximum
4	Same	75 MHz	Highest End	Same	Osc. Trimmer VCT2	Same
5	Same	64 MHz	64 MHz	Same	RF Coil L103	Same
6	Same	72 MHz	72 MHz	Same	RF Trimmer VCT1	Same

Repeat steps 3 thru 6 to obtain maximum sensitivity.