SANYO

6-transistor Portable Radio

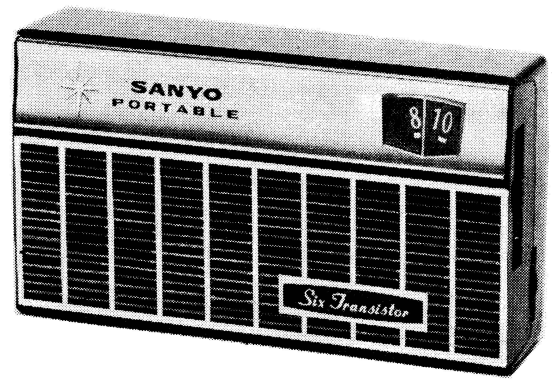
MODEL 6C-19A

SERVICE MANUAL

SANYO ELECTRIC CO., LTD.

INTERNATIONAL DIVISION: SANYO ELECTRIC TRADING CO. LTD.

OSAKA, JAPAN



SPECIFICATIONS

FREQUENCY RANGE ····· BC 540-1,600 Kc

INTERMEDIATE FREQUENCY ····· 455 Kc

TRANSISTORS ····· 2SA203 Frequency converter
2SA202 1st IF amplifier
2SA198 2nd IF amplifier
2SB185 Audio amplifier
2SB187 × 2 Power amplifier

DIODE & THERMISTOR ····· 1S188 Detector & AGC
SDT-20 Temperature compensator

OUTPUT POWER ····· Undistorted 130mW
Maximum 200 mW

SENSITIVITY ····· 1,000 μV/m (for 10 mW output)

CURRENT DRAIN ····· No signal 12 mA
Maximum 85 mA

POWER SOURCE ····· 3 × Penlight baterry (1.5V × 3)

LOUDSPEAKER ····· 2-1/2" permanent dynamic speaker.
Voice coil impedance 7 ohms

DIMENSIONS ····· 5-1/2" width × 3" height × 1-1/2" depth
(139 × 76 × 38 mm)

WEIGHT ····· 10 ozs. approx. (exclude baterries)

ALIGNMENT PROCEDURES

Apply volt-meter across the voice coil. Volume control should be at maximum position. Output of signal generator should be no highter than necessary to obtain output reading in order to avoid AGC function.

STEP	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	ADJUST FOR MAXIMUM OUTPUT

IF ALIGNMENT

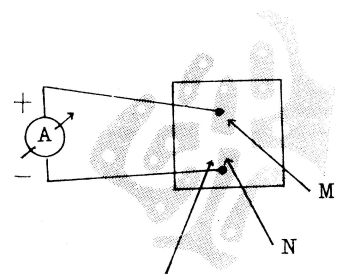
1	Radiate signal through the loop antenna, which connected with signal generator output cable.	455Kc	lower end	IF transformer T3, T2, T1

BROADCAST RF ALIGNMENT

2	Radiate signal through the loop antenna, which connected with signal generator output cable.	520Kc	lower end	L2
3		1,650Kc	upper end	Ct-2 Trimmer
4		Repeat step 2 and 3.		
5		600Kc	600Kc	L1
6		1,400Kc	1,400Kc	Ct-1 Trimmer
7		Repeat step 5 and 6.		

Alignment of Semi-fixed Resistor

Apply 4.5 volt to the receiver as power source and make a receiver tune in no signal. Connect an ammeter (range 1 mA) between two points M and N as figure. Ajust the volume of Semi-fixed Volume in order to obtain as 480~510 μA. Short circuit two points by soldering after adjustment.



PARTS LIST

SYMBOL NO.	STOCK NO.	DESCRIPTION
CABINET		
	R-483045	Leather case
	R-31433b	Cabinet — front enclosure
	R-26485	Metal panel
	R-32243	Dial window cover
	R-26591	Badge "SIX TRANSISTOR"
	R-	Speaker grille net 2-1/8" × 1-3/8"
	R-315138	Back cover — back enclosure
	R-24142a	Screw to fix back cover
	R-13061	Lock washer for above screw
	R-	Moult plane for baterry cushion
	R-35179	Ferrite core holder
	R-32244	Tuning control kmob
	R-32245	Volume control knob
	R-25097	Speaker mtg. metal
MISCELLANEOUS		
J1	R-S2107	Earphone jack
	R-25137aL	Baterry terminal—conic. spring(−)
	R-23550b	Baterry terminal (+)
	R-23551b	Baterry terminal (+) & (−)
	R-S6536	Earphone
LOUDSPEAKER		
SP	R-S6169	Speaker
TRANSISTORS		
Tr 1	2SA203	Frequency converter
Tr 2	2SA202	1st IF amplifier
Tr 3	2SA198	2nd IF amplifier
Tr 4	2SB185	Audio amplifier
Tr5&Tr6	2SB187	Power amplifier
DIODE & THERMISTOR		
D 1	1S188	Detector
Th	SDT 20	Temperature compensator
TRANSFORMERS		
T 1	R-W5T008	1st IF transformer
T 2	R-W5T009	2nd IF transformer
T 3	R-W5T043	3rd IF transformer
T 4	R-W6152	Input transformer
T 5	R-W6163	Output transformer
CONTROLS		
	R-C1071	* Tuning variable capacitor
	R-C1066	* Tuning variable capacitor
R 17	R-R11621b	Volume control
R 15	R-R11007	Semi-fixed value resistor (100K ohms)

* Either of the two is used. Difference between the two depends on their mounting methods.
R-C1071 mounted by screws.
R-C1066 mounted by plastic melting

Electric characteristics of them are the same.

SYMBOL NO.	STOCK NO.	DESCRIPTION
COILS		
L1	R-W2117b	Antenna coil
L2	R-W8059	Oscillator coil
FIXED CAPACITORS		
C 1		Ceramic 3pF ±0.5pF
C 2		Mylar 0.004μF +30, −20% 100WV Tubula.
C 3		Mylar 0.01μF +30, −20% 100WV Square
C 5		Electrol. 30μF 3WV V-type
C 6		Ceramic 0.04μF +80, −20% 25WV Square
C 7		Ceramic 16pF ±10%
C 8		Ceramic 0.04μF +80, −20% 25WV Square
C 9		Ceramic 0.04μF +80, −20% 25WV Square
C 10		Mylar 0.02μF +80, −20% 25WV Square
*C 11		Ceramic 13pF ±10% 25WV
*C 11		Ceramic 16pF ±10% 25WV
C 12	R-C9078	Electrol. 5μF 6WV V-type
C 13	R-C9078	Electrol. 5μF 6WV V-type.
C 14		Mylar 0.02μF +30, −20% 100WV Square
C 15	R-C9080	Electrol. 30μF 3WV V-type
C 16	R-C9086	Electrol. 120μF 6WV V-type
C 17		Ceramic 0.04μF +80, −20% 25WV Square
C 18	R-C9081b	Electrol. 50μF 9WV V-type
C 21		Mylar 0.01μF +30, −20% Tubular

* Either of the two is used depending on the transistor (Tr 2).

FIXED RESISTORS					
R 1			8.2K	±10%	1/4W
R 2			6.8K	〃 〃	〃
R 3			4.7K	〃 〃	〃
R 4		Solid	1.8K	〃 ± 5%	〃
R 5			390	〃 ±10%	〃
R 6			270	〃 〃	〃
R 7			5 K	〃 〃	〃
R 8			33 K	〃 〃	〃
R 9			6.8K	〃 〃	〃
R10			220	〃 〃	〃
R11			68	〃 〃	〃
R12			2.2K	〃 〃	〃
R13			180	〃 〃	〃
R14,19		Carbon	2.7	〃 〃	〃
R18			330K	〃 〃	〃

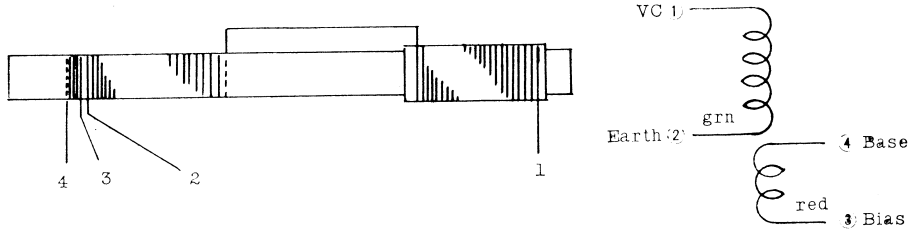
* Solid or carbon film is optionally used unless specified.

RESISTOR/CAPACITOR PACKED		
R 16	R-CXC 002	(200 ohms ±20%)
+C19		+(0.01 μF +80−20%)
+C20		+(0.01 μF +80−20%)

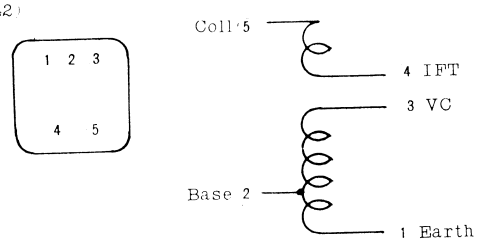
5-20012 Printed in Japan

MAIN PARTS CONNECTION

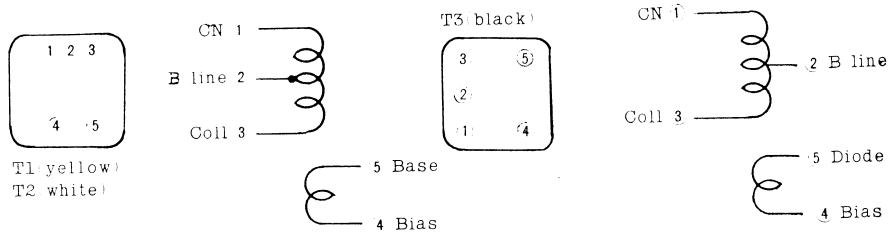
1. Antenna coil (L1)



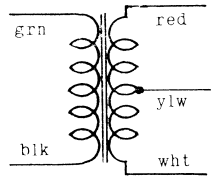
2. Oscillator coil (L2)



3. IF transformer

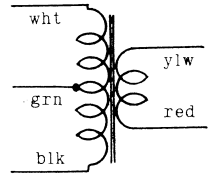


4. Input transformer



3K : 2K ohms

5. Output transformer

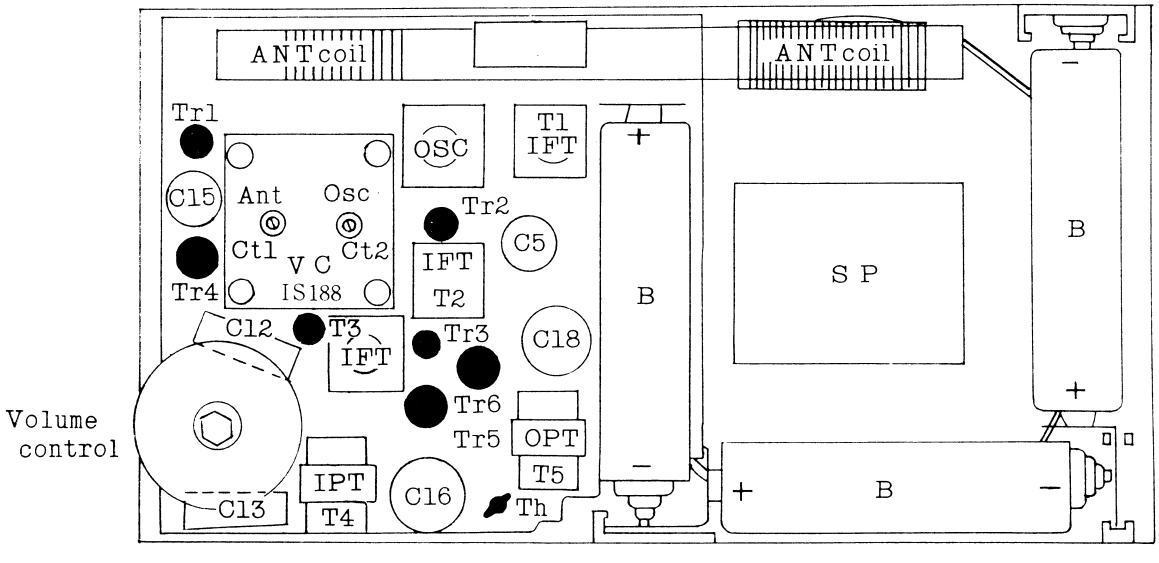


150 : 7 ohms

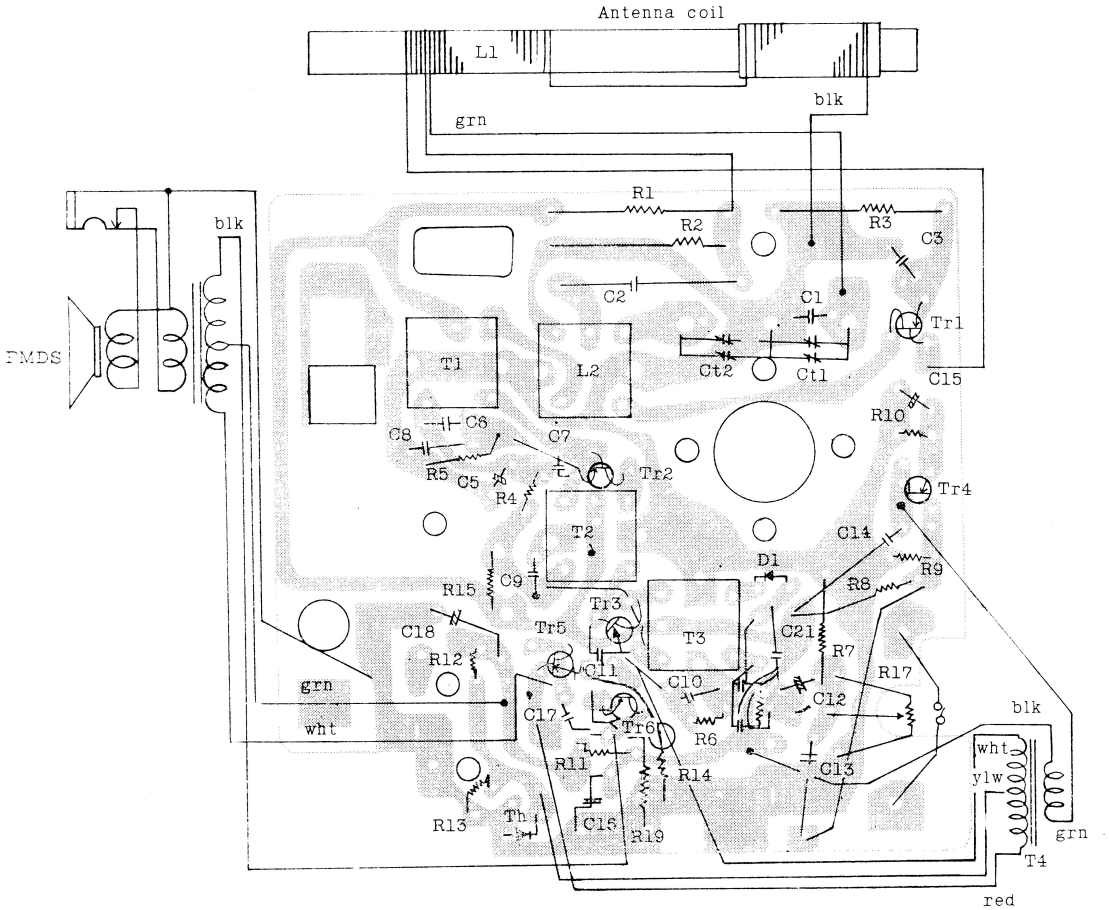
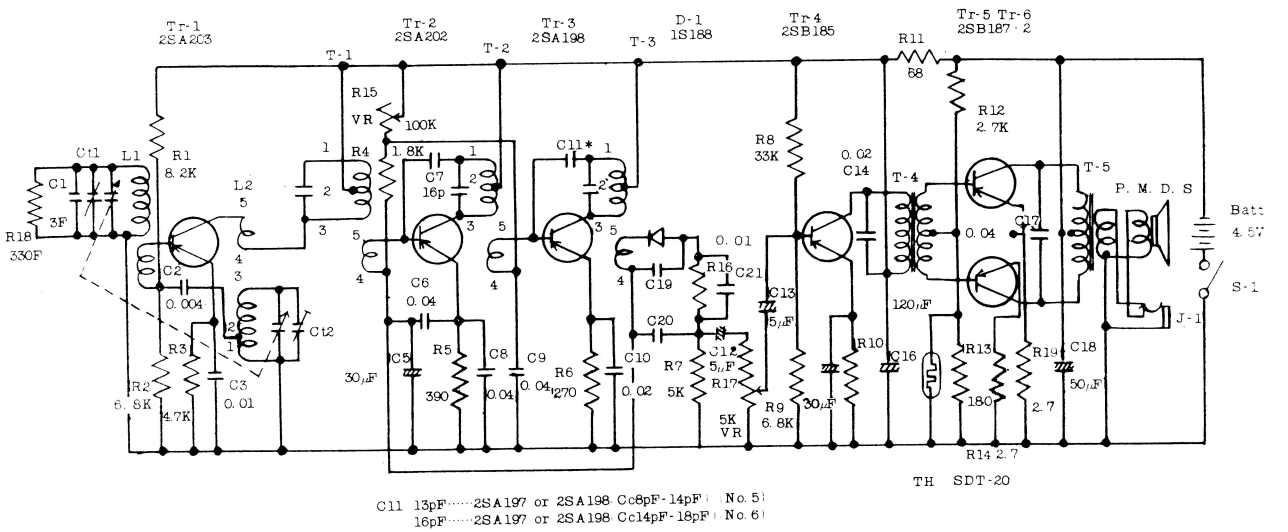
CN: neutralizing capacitor

VC: (Tuning) variable capacitor

MAIN PARTS LOCATION



INTER PARTS CONNECTION



CIRCUIT DIAGRAM