SANYO

MODEL
8S-P22

All-transistor Radio

Service Manual

SPECIFICATIONS

FREQUENCY RANGE

BC	535 Kc/s–1605 Kc/s
SW	3.8 Mc/s–12.0 Mc/s

INTERMEDIATE FREQUENCY 455 Kc/s

TRANSISTOR COMPLEMENT

(1)	2SA218	Mixer
(2)	2SA221	Local oscillator
(3)	2SA202	1st IF amplifier
(4)	2SA203	2nd IF amplifier
(5)	2SB185	AF amplifier
(6)	2SB187	Driver
(7)	2SB22 × 2	Power amplifier (Output transformerless system)

DIODE 1N-60 Detector & AVC

OUTPUT POWER

Undistorted	250 mW
Maximum	430 mW

SENSITIVITY

Lower limit for 10 mW output

BC	320 μV/m
SW	180 μV/m

BATTERY

6 V (4 size C standard flashlight batteries)

Current drain	No signal	11 mA
	Maximum	110 mA

LOUDSPEAKERS

Two 90 mm (3½″) permanent dynamic speakers
Voice coil impedance 20 ohms

CABINET DIMENSIONS

Width	250 mm (10″)
Height	130 mm (5″)
Depth	52 mm (2″)

WEIGHT

Approximately 1060 grams (2¼ lbs)

SANYO ELECTRIC CO., LTD.

PART NO.	STOCK NO.	DESCRIPTION

CABINET

	R -31449	Cabinet
	R -32262	Dial window cover-plastic
	R -26549	Metal panel-upper
	R -26550	Metal panel-lower
	R -26551	Specification metal sheet
	R -26552	Emblem "DUAL SPEAKER SANYO"
	R -31450	Back cover
	R -23589a	Strap retaining metal
	R -26529	Dial plate
	R -S8425	Pointer needle
	R -36100	BC-SW sheet
	R -33321	Tuning control knob
	R -39035	Volume control knob
	R -33322	Micro tuning control knob

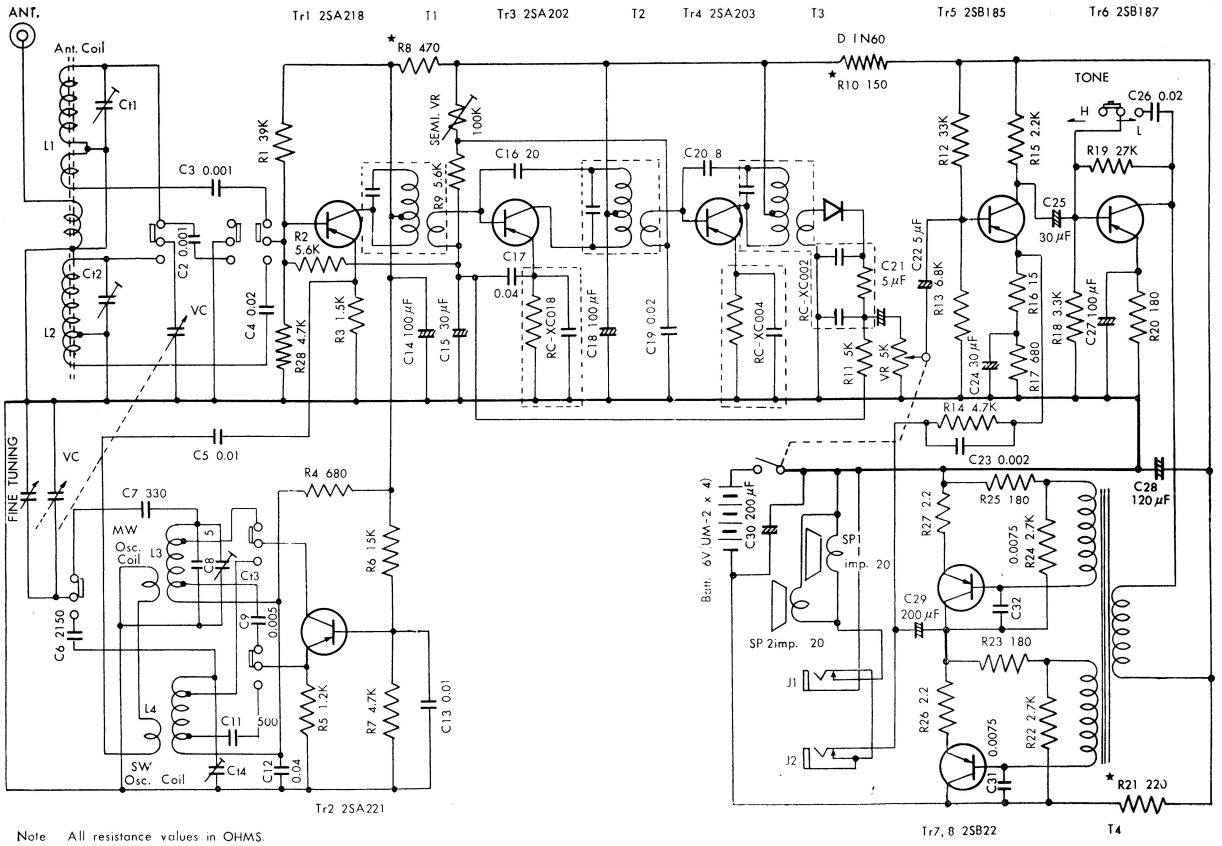
PART NO.	STOCK NO.	DESCRIPTION

MISCELLANEOUS

	R -48093	Cowhide carrying case
	R -48083	Earphone case
	R -48074	Shoulder strap
	R -48075	Ring for strap
	R -24031b	Screw to fix back cover to cabinet
	R -13004*l*a	Lock washer for above screw
	R -S2025*l*a	Antenna jack
	R -35173	Battery inserting tube
	R -24511	Stud nut-back cover mtg.
	R -S8423	Battery terminal (−)
	R -S8353	Battery terminal (+)
	R -33226	Drum
	R -15041	Tension spring
	R -S6199	Earphone
	R -S2081	Earphone jack
	R -S1142	Telescoping rod antenna
	R -S8265	Extension ant. lead with rubber cup

Printed in Japan

CIRCUIT DIAGRAM



Note All resistance values in OHMS.

K: 1,000 ★ mark ±20% allowance. no mark ±10% allowance.

All capacitance values less than 1.0 in "μF", and 1.0 and above in "μμF" except those indicated.

ALIGNMENT PROCEDURES

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

STEP	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	ADJUST FOR MAXIMUM OUTPUT
IF ALIGNMENT				
1	High side thru 0.1 μF capacitor to antenna stator lug on tuning gang. Low side to chassis.	455 Kc	lower end	IF Trans. T3 T2 T1
BROADCAST RF ALIGNMENT				
2	Fashion loop of several turns of wire and feed signal into loop antenna for radiation.	535 Kc	lower end	Osc coil L 3
3		1600 Kc	1600 Kc	Osc trimmer Ct 3
4		Repeat steps 2 and 3.		
5		600 Kc	600 Kc	Ant coil L 1
6		1400 Kc	1400 Kc	Ant trimmer Ct 1
7		Repeat steps 5 and 6.		
SHORTWAVE RF ALIGNMENT				
8	Fashion loop of several turns of wire and feed signal into loop antenna for radiation.	3.8 Mc	lower end	Osc coil L 4
9		12 Mc	12 Mc	Osc trimmer Ct 4
10		Repeat steps 8 and 9.		
11		4 Mc	4 Mc	Ant coil L 2
12		11 Mc	11 Mc	Ant trimmer C t2
13		Repeat steps 11 and 12.		

PART NO.	STOCK NO.	DESCRIPTION

TRANSISTORS

Tr 1	2SA218	Mixer
Tr 2	2SA221	Local oscillator
Tr 3	2SA202	1st IF amplifier (red or yellow)
Tr 4	2SA203	2nd IF amplifier (white or green)
Tr 5	2SB185	AF amplifier
Tr 6	2SB187	Driver (red)
Tr 7	2SB22	Power amplifier (red)
Tr 8	2SB22	Power amplifier (red)

Latest change 2SA218→2SA221

DIODE

D	1N60	Detector & AVC

COILS

L1, L2	R-W2130	Antenna coil
L1, L2	R-S 8442	Antenna coil with holders
L3	R-W8014	BC oscillator coil (red) FLO-5857FU
L4	R-W8045	SW oscillator coil (yellow) SMO-1081FU

TRANSFORMERS

T 1	R-W5T008	1st IF transformer (yellow) FMC-6038A
T 2	R-W5T009	2nd IF transformer (white) FMC-6029A
T 3	R-W5T097	3rd IF transformer (black) JFMC-6022F
T 4	R-W6154	Input transformer

CONTROLS

VC	R-C1058	Tuning variable with trimmers
	R-C1070	Fine tuning variable
VR	R-R 11620	Volume control 5K ohms
	R-R 11007	Semi-fixed resistor 100K ohms
TONE	R-S 4200	Tone selector switch
	R-S 4201	Band selector switch

LOUDSPEAKERS

	R-S6127	Permanent dynamic 3½", 20 ohms

ELECTROLYTIC CAPACITORS

C 14		100 μF	+250—10%	6 V
C 15		30 〃	〃	〃
C 18		100 〃	〃	〃
C 21		5 〃	〃	〃
C 22		5 〃	〃	〃
C 24		30 〃	〃	〃
C 25		30 〃	〃	〃
C 27		100 〃	〃	〃
C 28		120 〃	〃	〃
C 29		200 〃	〃	〃
C 30		200 〃	〃	〃

PART NO.	STOCK NO.	DESCRIPTION

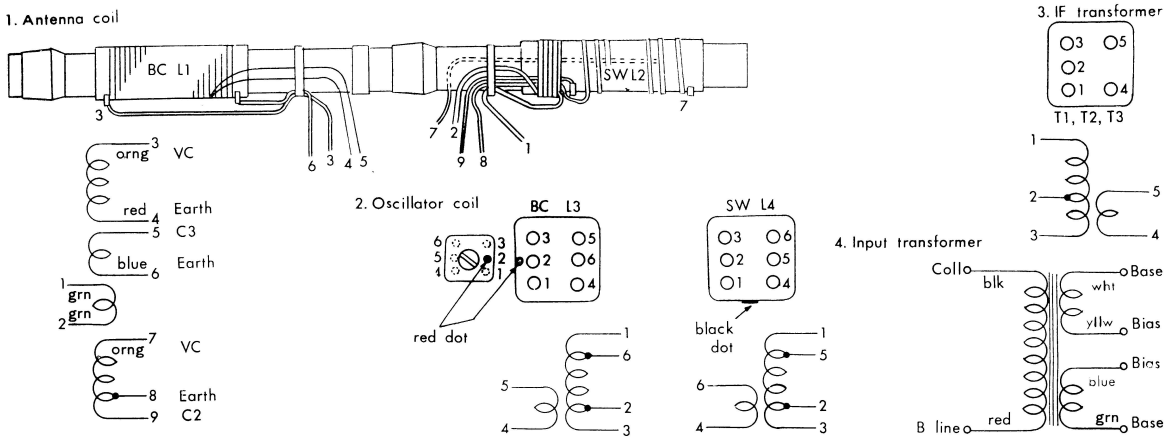
FIXED CAPACITORS

C 2		0.001 μF	+30-20%	100V	Mylar
C 3		0.001 μF	〃	〃	〃
C 4		0.02 μF	〃	〃	〃
C 5		0.01 μF	〃	〃	〃
C 6		2150 pF	±10%	125V	Styrol
C 7		330 pF	〃	〃	〃
C 8		5 pF	〃	25V	Ceramic
C 9		0.005 μF	+30-20%	100V	Mylar
C 11		500 pF	〃	〃	〃
C 12		0.04 μF	〃	〃	〃
C 13		0.01 μF	〃	〃	〃
C 16		15 pF	±10%	25V	Ceramic
		or 20 pF	〃	〃	〃
C 17		0.04 μF	+30-20%	100V	Mylar
C 19		0.04 μF	〃	〃	〃
C 20		8 pF	±10%	25V	Ceramic
C 23		0.002 μF	+30-20%	100V	Mylar
C 26		0.02 μF	〃	〃	〃
C 31		0.0075 μF	〃	〃	〃
C 32		0.0075 μF	〃	〃	〃

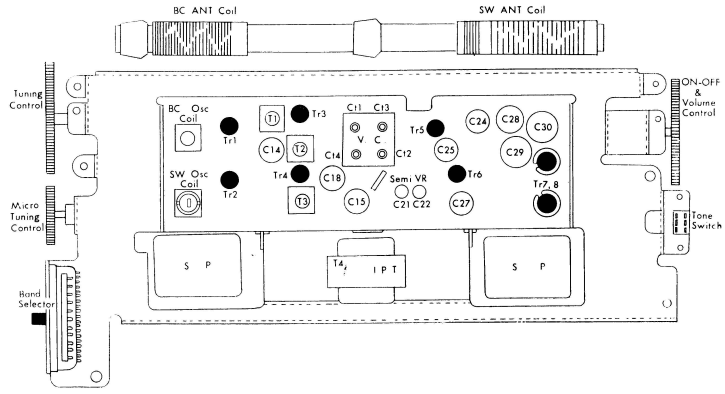
FIXED RESISTORS

R 1		39K ohms	±10%	½W	Mold
R 2		5.6K 〃	〃	〃	〃
R 3		1.5K 〃	〃	〃	〃
R 4		680 〃	〃	〃	〃
R 5		1.2K 〃	〃	〃	〃
R 6		15K 〃	〃	〃	〃
R 7		4.7K 〃	〃	〃	〃
R 8		470 〃	±20%	〃	〃
R 9		5.6K 〃	±10%	〃	〃
R 10		150 〃	±20%	¼W	〃
R 11		5K 〃	±10%	½W	〃
R 12		33K 〃	〃	〃	〃
R 13		6.8K 〃	〃	〃	〃
R 14		4.7K 〃	〃	〃	〃
R 15		2.2K 〃	〃	〃	〃
R 16		15 〃	〃	〃	〃
R 17		680 〃	〃	〃	〃
R 18		3.3K 〃	〃	〃	〃
R 19		27K 〃	〃	〃	〃
R 20		180 〃	〃	〃	〃
R 21		220 〃	±20%	〃	〃
R 22		2.7K 〃	±10%	〃	〃
R 23		180 〃	〃	〃	〃
R 24		2.7K 〃	〃	〃	〃
R 25		180 〃	〃	〃	〃
R 26		2.2 〃	〃	〃	〃
R 27		2.2 〃	〃	〃	〃
R 28		4.7K 〃	〃	〃	〃

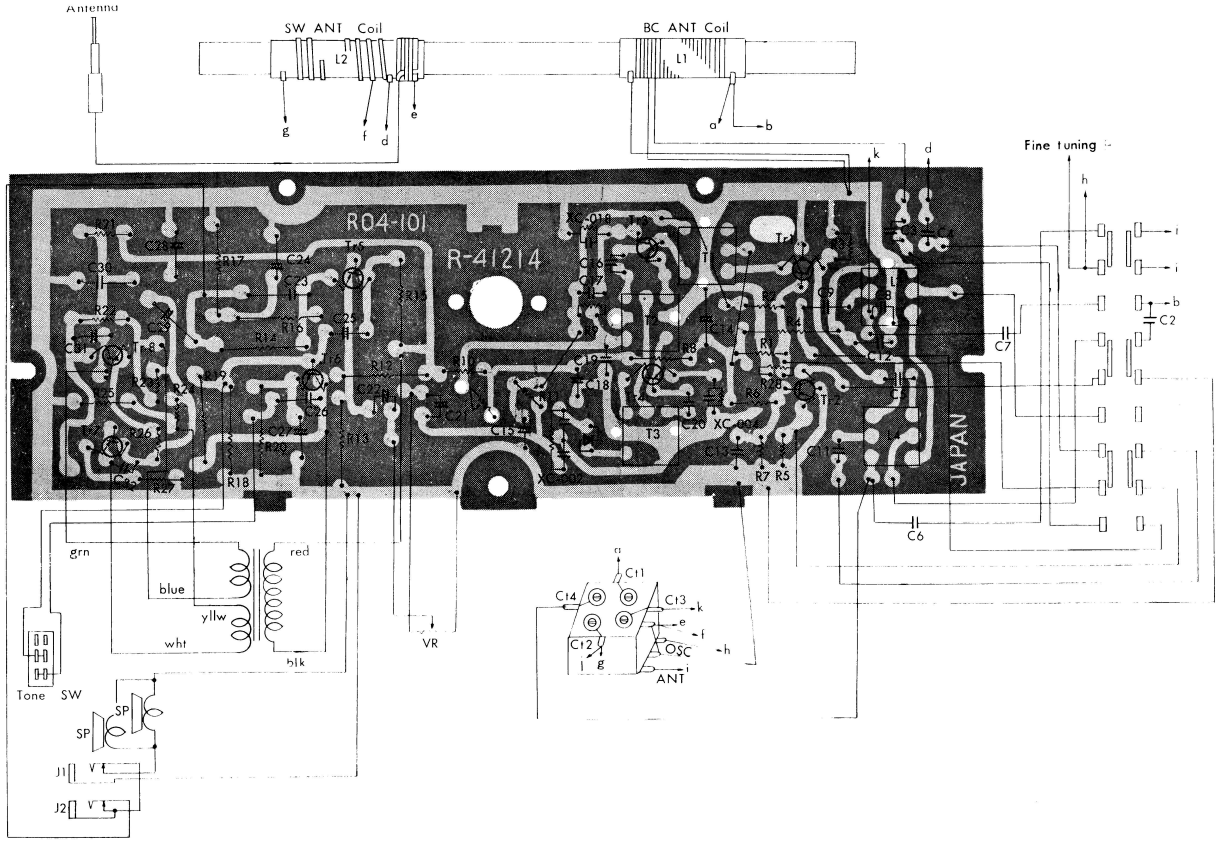
MAIN PARTS TERMINAL IDENTIFICATION



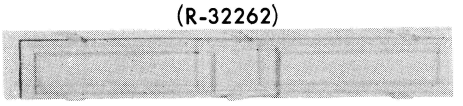
MAIN PARTS LOCATION



INTER PARTS CONNECTION

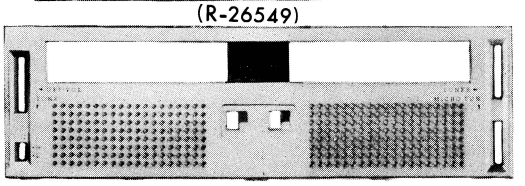


(R-32262)



(R-26529)

(R-26549)

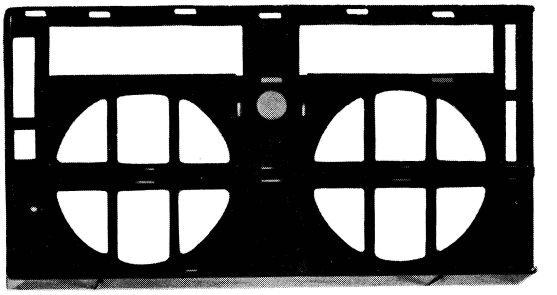


(R-26550)

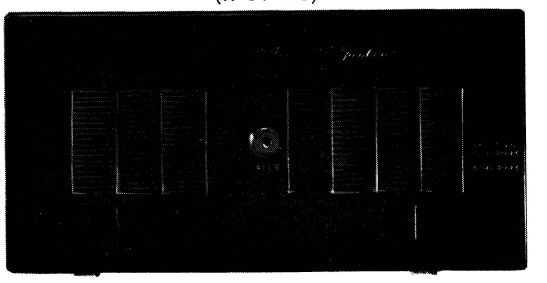
(R-26551)

(R-35173)

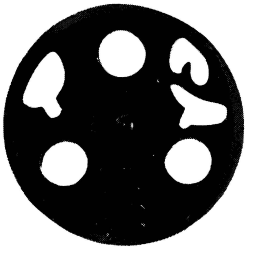
(R-31449)



(R-31450)

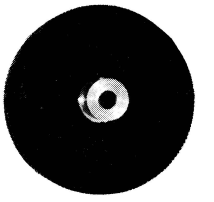


(R-33226)



(R-39035)

(R-33321)



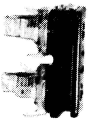
(R-S8423)

(R-S8353)

(R-S8425)

(R-33322)

(R-S2081)



(R-S20251a)

(R-23589a)

(R-23589a)