SANYO

MODEL
8S-P2N

All-transistor Radio

Service Manual

SPECIFICATIONS

TUNING RANGE

Standard Broadcast Band	530kc/s – 1605kc/s
Shortwave Band	3.9mc/s – 12.0mc/s

INTERMEDIATE FREQUENCY 455kc/s

TRANSISTORS

(1)	2SA60	Oscillator & Frequency Converter
(2)	2SA49 or 2SA180	Ist IF Amplifier
(3)	2SA53 or 2SA181	2nd IF Amplifier
(4)	2SB54	AGC Amplifier
(5)	2SB54	Ist AF Amplifier
(6)	2SB54	2nd AF Amplifier
(7)	2SB56×2	Power Amplifier (B class pushpull)

GERMANIUM DIODES & THERMISTOR

(1)	IN-60	Diode: Osc. Voltage Limiter
(2)	IN-60	Diode: Detector
(3)	D22A	Thermistor: Temperature Compensator

OUTPUT POWER

Undistorted	150 mW
Maximum	220 mW

RADIATION SENSITIVITY

BC	140μV/m for 10mW output
SW	60μV/m for 10mW output

BATTERY

Four 1½-volt Penlight Batteries (6-volt)

Current Drain	No Signal	9mA
	Maximum	70mA

LOUDSPEAKER

2½-inch Permanent Dynamic Type

Voice Coil Impedance 7 ohms, 0.4 watts

WEIGHT

1¼ lbs approx. (excl. battery)

DIMENSIONS

Width	6¼″
Height	3½″
Depth	1¾″

SANYO ELECTRIC CO., LTD.

PART NO.	STOCK NO.	DESCRIPTION

CABINET

	R-31395	Cabinet ; front case
	R-421518	Spacer; black paper
	R-39015a	Speaker grill net
	R-26342	Decoration panel
	R-26597	Metal panel ; dial section
	R-32300	Dial window cover
	R-23600	Emblem "SANYO"
	R-31396	Back cover; rear case
	R-41027	Battery cushion attached to back cover
	R-24031b	SCREW to fix back cover to cabinet
	R-13004La	Lock washer for above screw
	R-24107	Stud nut ; rod antenna mtg.
	R-24109	Hex nut ; rod antenna mtg.
	R-11383a	Washer ; rod antenna mtg.
	R-23198	Antenna terminal lug
	R-S2025La	Antenna jack

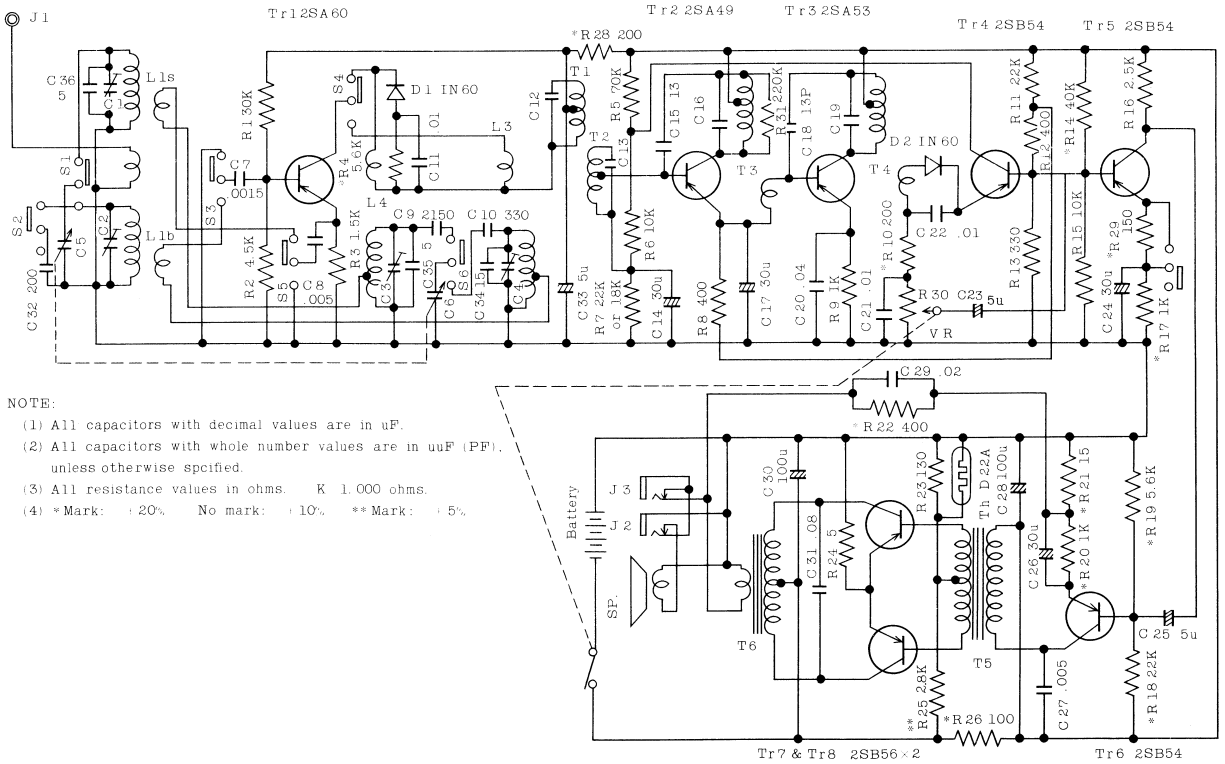
MISCELLANEOUS

	R-26051b	Dial disc
	R-28006bL	Band select knob
	R-24120aL	Screw; band select knob mtg.
	R-24099	Stud nut; which mates with SCREW
	R-47110a	Battery instruction sheet
	R-12011	Lead clamper
	R-25057b	Speaker fixing metal
	R-12088	Speaker fixing metal
	R-24098	Stud nut; speaker mtg.
		Soldering lug
	R-11389a	Shielding plate on tuning gang
	R-31185	Tuning control knob
	R-31186	Volume control knob
	R-33124b	Drum
	R-35050	Ferrite core holder
	R-15116	Tension spring
	R-44046	Cushion seat for tuning gang
	R-S8013	Tuning shaft
	R-24068a	Stud nut; dial disc mtg.
		Dial cord 24"
		Adhesive tape attached to tuning gang

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Printed in Japan

Model 8S-P2N Circuit Diagram



NOTE:

(1) All capacitors with decimal values are in uF.
(2) All capacitors with whole number values are in uuF (PF), unless otherwise spcified.
(3) All resistance values in ohms. K 1,000 ohms.
(4) *Mark: ±20%. No mark: ±10%. **Mark: ±5%.

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 AGC function.

STEP	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	ADJUST FOR MAXIMUM OUTPUT
IF ALIGNMENT				
1	High side through 0.1 mf capacitor to antenna stator lug on tuning gang. Low side to chassis.	455 Kc	upper end	T 4 T 3 T 2 T 1
BROADCAST RF ALIGNMENT				
2	Fashion loop of several turns of wire and radiate signal into loop antenna.	530 Kc	lower end	L 3
3		1650 Kc	upper end	C 4
4		Repeat steps 2 and 3.		
5		600 Kc	600 Kc	L1b
6		1400 Kc	1400 Kc	C 2
7		Repeat steps 5 and 6.		
SHORTWAVE RF ALIGNMENT				
8	Fashion loop of several turns of wire and radiate signal into loop antenna.	3.8 mc	lower end	L 4
9		12.5 mc	upper end	C 3
10		Repeat steps 8 and 9.		
11		4.2 mc	4.2 mc	L1s
12		11.0 mc	11.0 mc	C1
13		Repeat steps 11 and 12.		

PART NO.	STOCK NO.	DESCRIPTION

TRANSISTORS

Tr 1	2SA60	Mixer
Tr 2	2SA49	1st IF amplifier
Tr 3	2SA53	2nd IF amplifier
Tr 4	2SB54	AGC amplifier
Tr 5	2SB54	1st AF amplifier
Tr 6	2SB54	2nd AF amplifier
Tr 7	2SB56	Power amplifier
Tr 8	2SB56	Power amplifier

DIODES AND THERMISTOR

D 1	IN-60	Oscillation voltage limiter
D 2	IN-60	Detector
Th	D22A	Temperature compensator

COILS

L 1	R-W2030a	Antenna coil
L 2	R-W3021	Oscillator coil SW
L 3	R-W8011	Oscillator coil BC 5221R red

TRANSFORMERS

T 1	R-W5T045	1st IF transformer FMC-5388PR pink
T 2	R-W5T046	1st IF transformer FMC-5294S blue
T 3	R-W5T047	2nd IF transformer FLC-5327A white
T 4	R-W5T048	3rd IF transformer FMC-6153A black
T 5	R-W6021	Input transformer 3K : 2K ohms
T 6	R-W6022	Output transformer 300 : 7 ohms

CONTROLS

S1-6	R-S4048a	Rotary switch
C5,C6	R-C1025	Variable Capacitor
VR	R-R11606a	Volume control 5K ohms with switch
C1-4	R-S8412	4-block trimmer

ELECTROLYTIC CAPACITORS

C14	R-C9023	30	μF	+200-10%	6WV	Vertical	type
C17	R-C9023	30	μF	〃	〃	〃	〃
C23	R-C9084	5	μF	〃	〃	Tubular	type
C24	R-C9023	30	μF	〃	〃	Vertical	type
C25	R-C9078	5	μF	〃	〃	〃	〃
C26	R-C9023	30	μF	〃	〃	〃	〃
C28	R-C9082	100	μF	〃	〃	〃	〃
C30	R-C9082	100	μF	〃	〃	〃	〃
C33	R-C9078	5	μF	〃	〃	〃	〃

PART NO.	STOCK NO.	DESCRIPTION

FIXED CAPACITORS

C 7		0.0015	μF	+30-20%	100WV	Mylar	Tubular
C 8		0.005	〃	〃	〃	〃	〃
C 9		2150	pF	±10%	1000WV	Styrol	〃
C10		330	〃	〃	125WV	〃	〃
C11		0.01	μF	+80-20%	25WV	Ceramic	Disc
C15		13	pF	±10%	〃	〃	Square
C18		13	〃	〃	〃	〃	〃
C20		0.04	μF	+80-20%	〃	〃	Disc
C21		0.01	〃	〃	〃	〃	〃
C22		0.01	〃	〃	〃	〃	〃
C27		0.005	〃	+30-20%	100WV	Mylar	Tubular
C29		0.02	〃	+80-20%	25WV	Ceramic	Disc
C31		0.08	〃	〃	〃	〃	〃
C32		200	pF	±10%	〃	〃	〃
C34		15	〃	〃	〃	〃	Square
C35		5	〃	〃	〃	〃	Disc
C36		5	〃	〃	〃	〃	〃
C37		5	〃	〃	〃	〃	
		added in parallel with C2					

FIXED RESISTORS

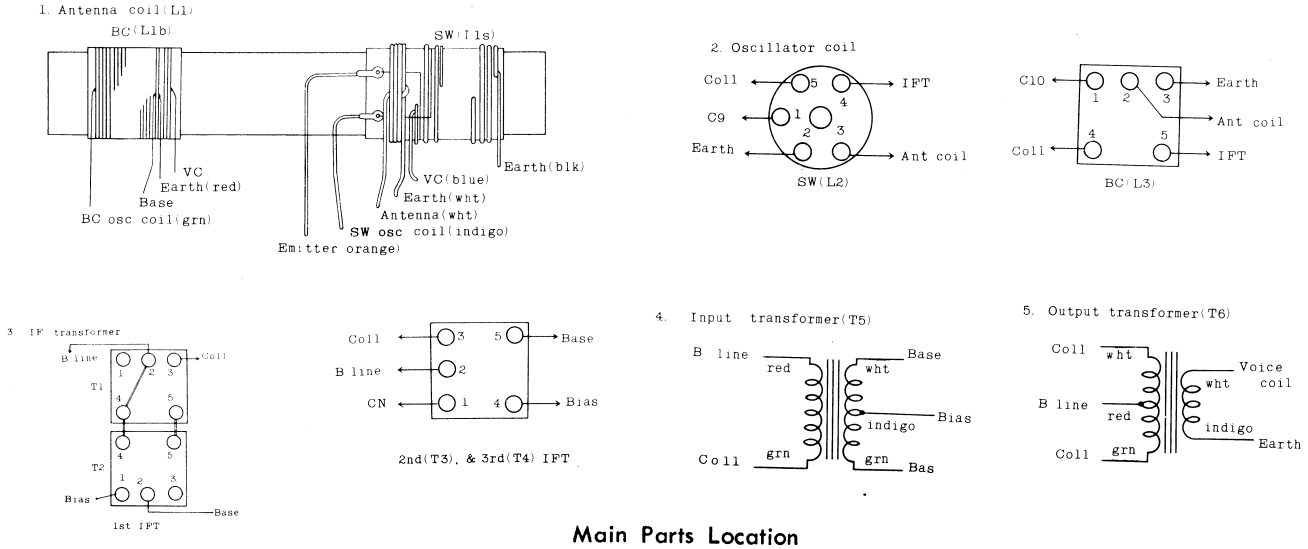
R 1		30	K	ohms	±10%	
R 2		4.5	K	〃	〃	
R 3		1.5	K	〃	〃	
R 4		5.6	K	〃	±20%	
R 5		70	K	〃	±10%	
R 6		10	K	〃	〃	
R 7		18	K	〃	〃	Cap of Tr2: green, black
		22	K	〃	〃	Cap of Tr2: yellow, red
R 8		400		〃	〃	
R 9		1	K	〃	〃	
R10		200		〃	±20%	
R11		22	K	〃	±10%	
R12		400		〃	〃	¼W Solid
R13		330		〃	〃	
R14		40	K	〃	±20%	
R15		10	K	〃	±10%	
R16		2.5	K	〃	〃	
R17		1	K	〃	±20%	
R18		22	K	〃	〃	
R19		5.6	K	〃	〃	
R20		1	K	〃	〃	
R21		15		〃	〃	
R22		400		〃	〃	
R23		130		〃	±10%	
R24		5		〃	〃	
R25		2.8	K	〃	±5%	¼W Carbon
R26		100		〃	±20%	
R27		60		〃	〃	¼W Solid
R28		200		〃	〃	
R29		150		〃	〃	¼W Solid
R31		220	K	〃	±10%	¼W 〃

Resistors of either carbon film ¼W or solid ½W work well if type of resistor and wattage not specified.

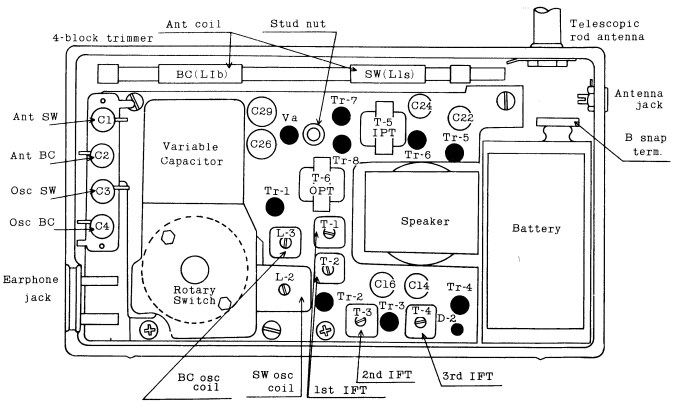
LOUDSPEAKER

	R-S6027a	2½〃 Permanent dynamic 7 ohms 0.4 watts

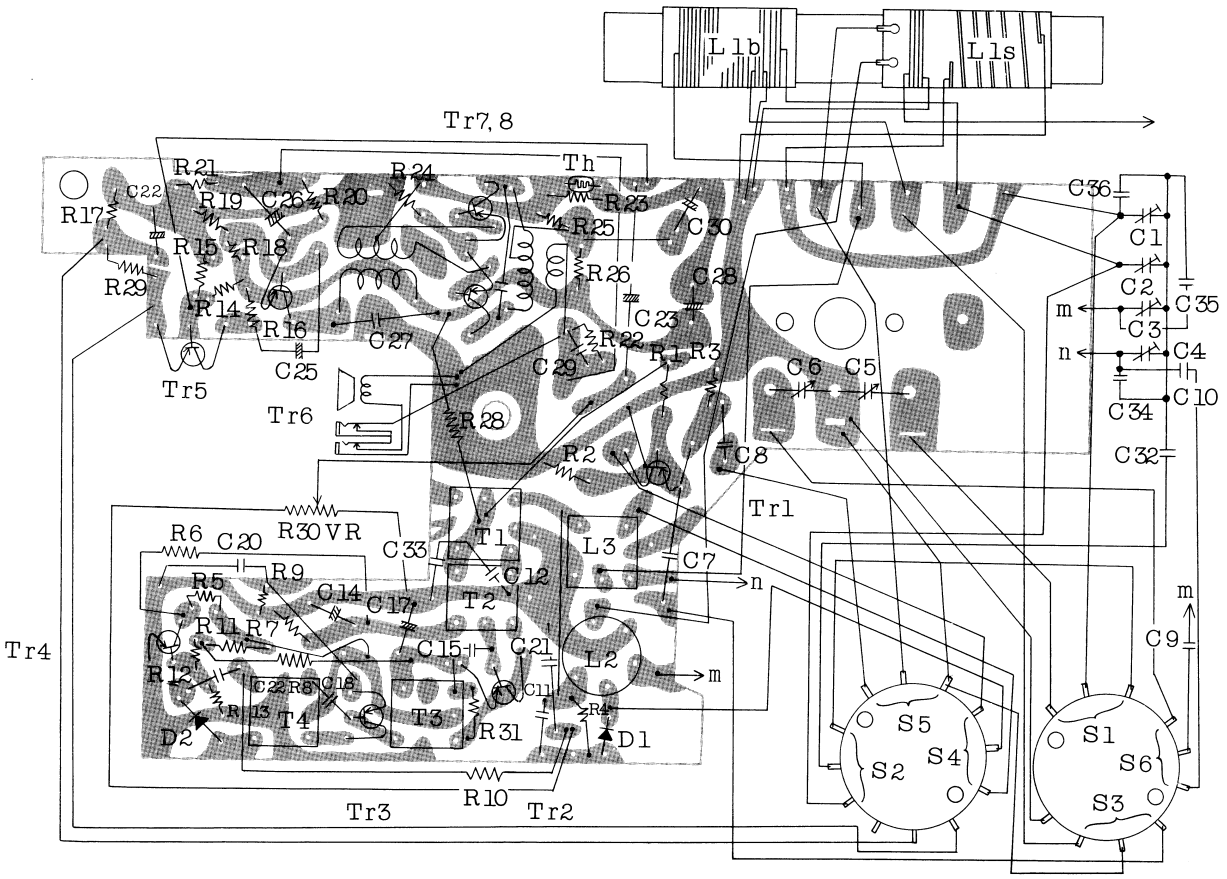
Main Parts Connection



Main Parts Location



Inter-Parts Connection



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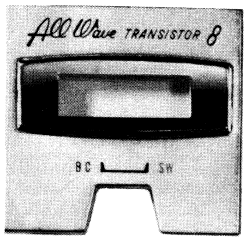

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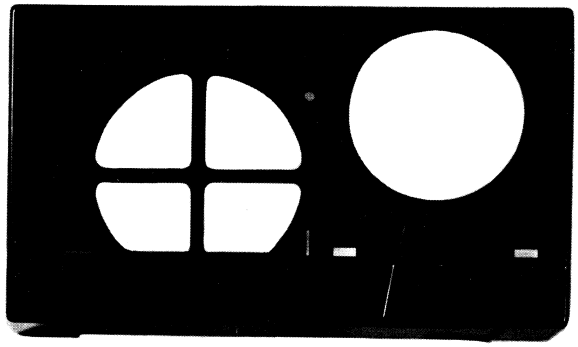

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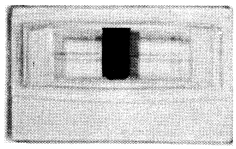

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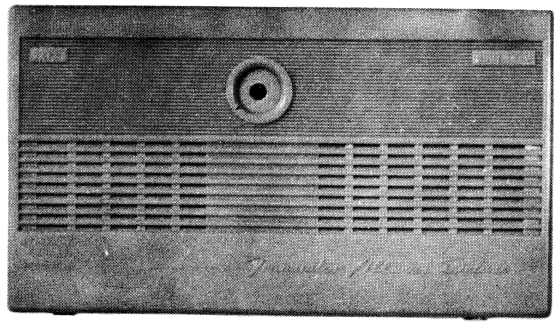

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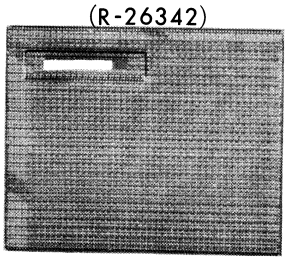

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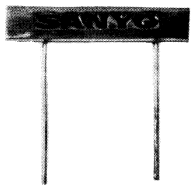

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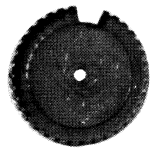

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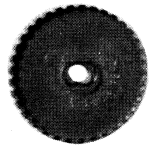

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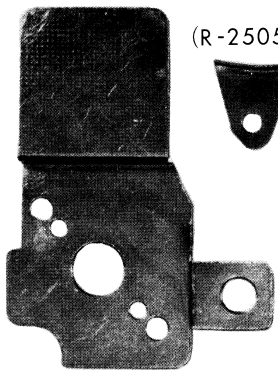

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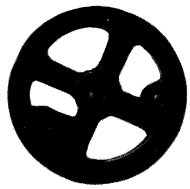
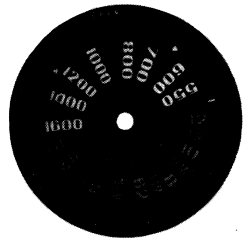
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