SANYO

MODEL
7K-270

All-transistor Radio

Service Manual

SPECIFICATIONS

FREQUENCY RANGE
Short wave 3.2mc – 10mc
INTERMEDIATE FREQUENCY 455kc
TRANSISTORS
(1) 2SA60 ·····Frequency converter
(2) 2SA180(2SA202) ·····1st IF amplifier
(3) 2SA182(2SA203) ·····2nd IF amplifier
(4) 2SB185 ·····Pre-amplifier
(5) 2SB185 ·····Audio amplifier
(6) 2SB187 F × 2·····Power amplifier (B class push pull)
OTHER ELEMENTS
(1) 1S188 ·····Diode : Oscillation limiter
(2) 1S188 ·····Diode : Detector & AGC
(3) SDT–20 ·····Thermistor : Temperature compensator
OUTPUT POWER
Undistorted 240mW
Maximum 450mW
SENSITIVITY 50μV/m
(Average for 10 mW output)
SIGNAL TO NOISE RATIO
50 μV (At 1mV/m signal input)
Current drain No signal ····· 8 mA
Maximum ·····125 mA
BATTERY
6V 4 Flashlight batteries
LOUDSPEAKER
5" Permanent Dynamic Speaker 4ohms
DIMENSIONS
Wooden 13$\frac{1}{5}$" Wide × 7" High × 4$\frac{3}{4}$" Deep
WEIGHT
Approximately 5 lbs. 5 ozs.
Without batteries

SANYO ELECTRIC CO., LTD.

PART NO.	STOCK NO.	DESCRIPTION

CABINET AND MISCELLANEOUS

	R–S9019	Cabinet assembly
	R–31508a	Front panel -polystyrol
	R–32343	Dial panel -lucid polystyrol
	R–26726a	Panel with punched pattern
	R–26727	Metal strip with SANYO mark
	R–26728a	Concave metal strip
	R–33387	Push switch button
	R–32337	Handle ring -polystyrol
	R–12133	Tapered spring -handle mtg.
	R–35218	Antenna ring.
	R–S8645	Pointer assembly
	R–33337	Handle
	R–35171	Battery holder tube
	R–423188	Back cover -hard board
	R–24539	Pulley shaft
	R–34004	Pulley
	R–S8157a	Drum
	R–S5044	Pilot Lamp 6.3V 0.2A
	R–S2042	Pilot Lamp socket
	R–S8041	Negative battery terminal receptacle
	R–S8042	Positive battery terminal recentaclo
	R–S2040	Earphone jack
	R–S3036	Phono input terminal
	R–15051	Tension spring
	R–S8705	Fine tuning knob

COILS

L 1	R–S8703	Antenna coil assembly
L 1	R–W2177	Antenna coil only 7.7μH ferrite core
	R–35208	Ferrite core holder
L 2	R–W8110	Oscillator coil 6.8μH orange SCN 3214R5

TRANSFORMERS

T 1	R–W5T059	1st IF transformer FMC–5738LH yellow
T 2	R–W5T5009	2nd IF transformer FMC–6029A white
T 3	R–W5T062	3rd IF transformer FMC–6156 black
T 4	R–W6181	Input transformer IT–19V 3K:1K
T 5	R–W6182	Output transformer CT–26GE 150Ω : 4Ω

PART NO.	STOCK NO.	DESCRIPTION

ELECTROLYTIC CAPACITORS

C 4	R–C9023	30 μF	6wv	Vertical
C 5	R–C9079	10 μF	3wv	Vertical
C 12	R–C9075	0.1 μF	25wv	
C 13	R–C9079	10 μF	3wv	Vertical
C 14	R–C9060	10 μF	10wv	Vertical
C 15	R–C9080	30 μF	3wv	Vertical
C 16	R–C9074	200μF	10wv	Vertical
C 19	R–C9077	200μF	6wv	Vertical

FIXED CAPACITORS

C 1		5 pF	±10%	500wv Ceramic Disc
C 2		0.005μF	+30 – 20%	50wv Mylar Axial
C 3		0.005μF	+30 – 20%	50wv Mylar Square
C 6		0.05 μF	+80 - 20%	10wv Ceramic Disc
C 7		13 pF	±10%	25wv Ceramic
C 9		0.04 μF	+80 – 20%	25wv Mylar Square
C 11		12 pF	±10%	25wv Ceramic
C 17		0.005μF	+30 - 20%	50wv Mylar Square
C 18		0.005μF	+30 – 20%	50wv Mylar Square
C 21		0.004μF	+30 – 20%	50wv Mylar Axial
C 22		1800 pF	±10%	35wv Styrol Axial

SPEAKERS

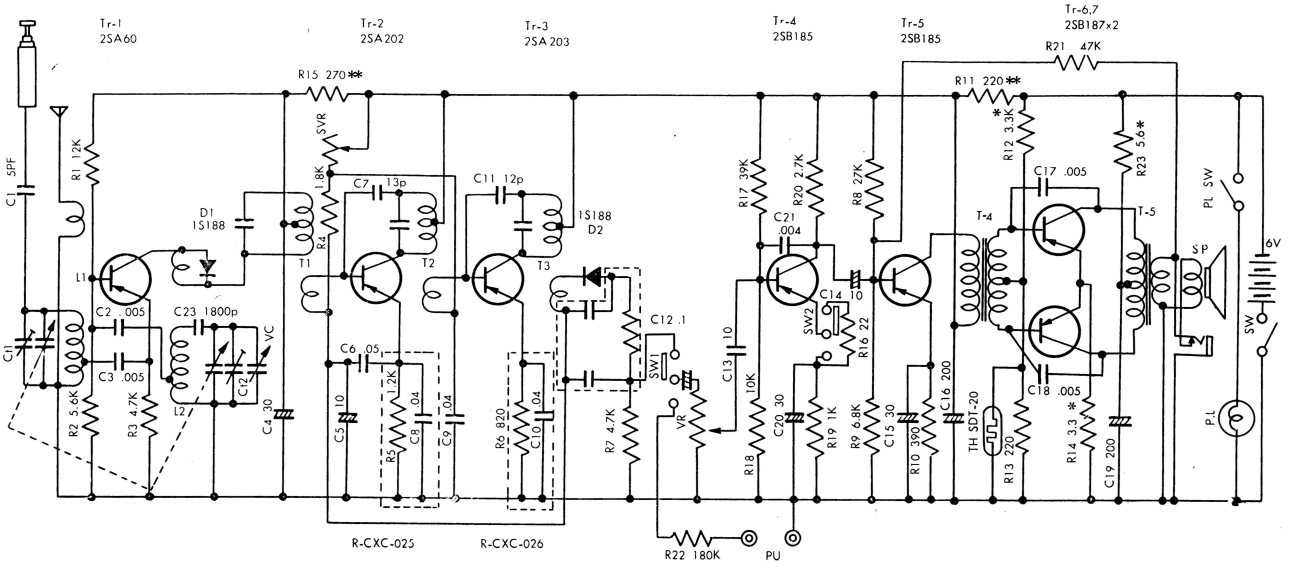
PMDS	R–S6158	4″ permanent dynamic speaker 4Ω 2W

Future change R–S4084 R–S4106

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

Printed in Japan

CIRCUIT DIAGRAM



ALIGNMENT PROCEDURES

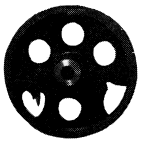
Apply volt-meter across the the voice colil. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain output reading in order to avoid AGC function.

STEP	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DAIAL SETTING	ADJUST FOR MAX. OUTPUT
IF ALIGNMENT				
1	Radiate signal through the loop antenna, which connected with signal generator output cable.	455 kc	lower end	IF transformer T 3 T 2 T 1
SHORT-WAVE RF ALIGNMENT				
2	Radiate signal through the loop antenna, which connected with signal generator output cable.	3.6 mc	lower end	Osc coil L 2
3		10.5 mc	upper eud	Osc trimmer Ct2
4		Repeat steps 2 and 3.		
5		3.5 mc	3.5 mc	Ant coil L 1
6		10.0 mc	10.0 mc	Ant trimmer Ct1
7		Repeat steps 5 and 6.		

R-33337

R-35218 R-32337 R-33387

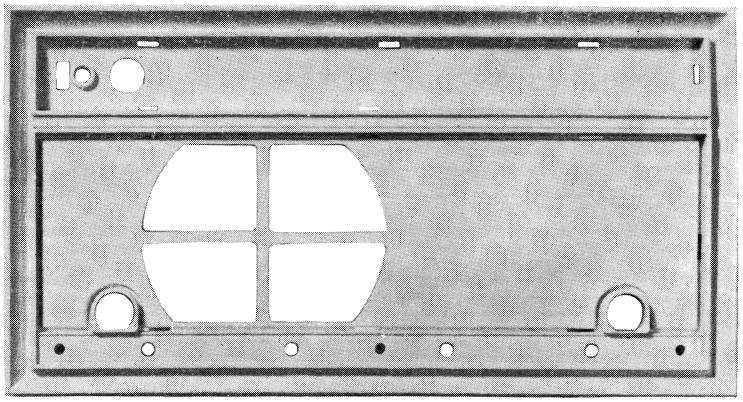
R-12133



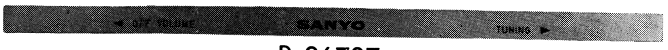
R-S8157a

R-15041
R-25178

R-23594
R-34055



R-31508a



R-26727

R-26728a

PART NO.	STOCK NO.	DESCRIPTION

TRANSISTORS

Tr 1	2SA60	Frequency converter
Tr 2	2SA202	1st IF Amplifier
	2SA180	
Tr 3	2SA182	2nd IF Amplifier
	2SA203	
Tr 4	2SB185	Audio amplifier
Tr 5	2SB187F	Power amplifier
Tr 6	2SB187F	Power amplifier
Tr 7	2SB185	Driver

DIODES AND THERMISTOR

D 1	1S188	Oscillation limiter
D 2	1S188	Detector & AGC
T H	SDT-20	Temperature compensator

CONTROLS

	R-C1040d	Tuning gang SY-230 air
R 17	R-R12445a	Volume control with switch 5K T curve
	R-S4084	Slide switch
Ct1,Ct2	R-C0030	Dual trimmer
SVR	R-R11011	Semi-fixed variable resistor
VC	R-C1095a	Fine tuning capacitor (1pF + Variable cap. 1.8pF)

PART NO.	STOCK NO.	DESCRIPTION

FIXED RESISTORS

R 1		12 Kohm	±10%	½W or ¼W
R 2		5.6 Kohm	〃	〃
R 3		4.7 Kohm	〃	〃
R 4		1.8 Kohm	〃	〃
R 7		4.7 Kohm	〃	〃
R 8		27 Kohm	〃	〃
R 9		6.8 Kohm	〃	〃
R 10		390 ohm	〃	〃
R 11		220 ohm	±20%	〃
R 12		3.3 Kohm	± 5%	〃
R 13		220 ohm	±10%	〃
R 14		3.3 ohm	± 5%	〃
R 15		270 ohm	±20%	〃
R 18		10 Kohm	±10%	〃
R 19		1 Kohm	〃	〃
R 20		2.5 Kohm	〃	〃
R 21		47 Kohm	〃	〃
R 22		180Kohm	〃	〃
R 16		22 ohm	〃	〃
R 17		39 Kohm	〃	〃
R 23		5.6 ohm	± 5%	〃

RC Pack R-CXC002 (200 ohm ± 20%) + (0.01 μF + 80 -- 20%)
+ (0.01 μF + 80 20%)
R-CXC025 (1.2Kohm ± 10%) + (0.04 μF + 80 – 20%)
R5 + C8
R-CXC026 (820 ohm ± 10%) + (0.04 μF + 80 – 20%)
R6 + C10

ADJUSTMENT OF SEMI-FIXED RESISTOR

(SVR 100Kohm)

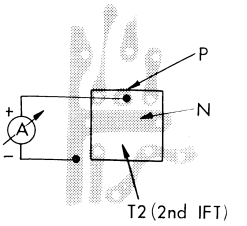
Set the value of SVR at maximum and make a receiver tune in no signal (station).

Apply 6 volts to the receiver as power source.

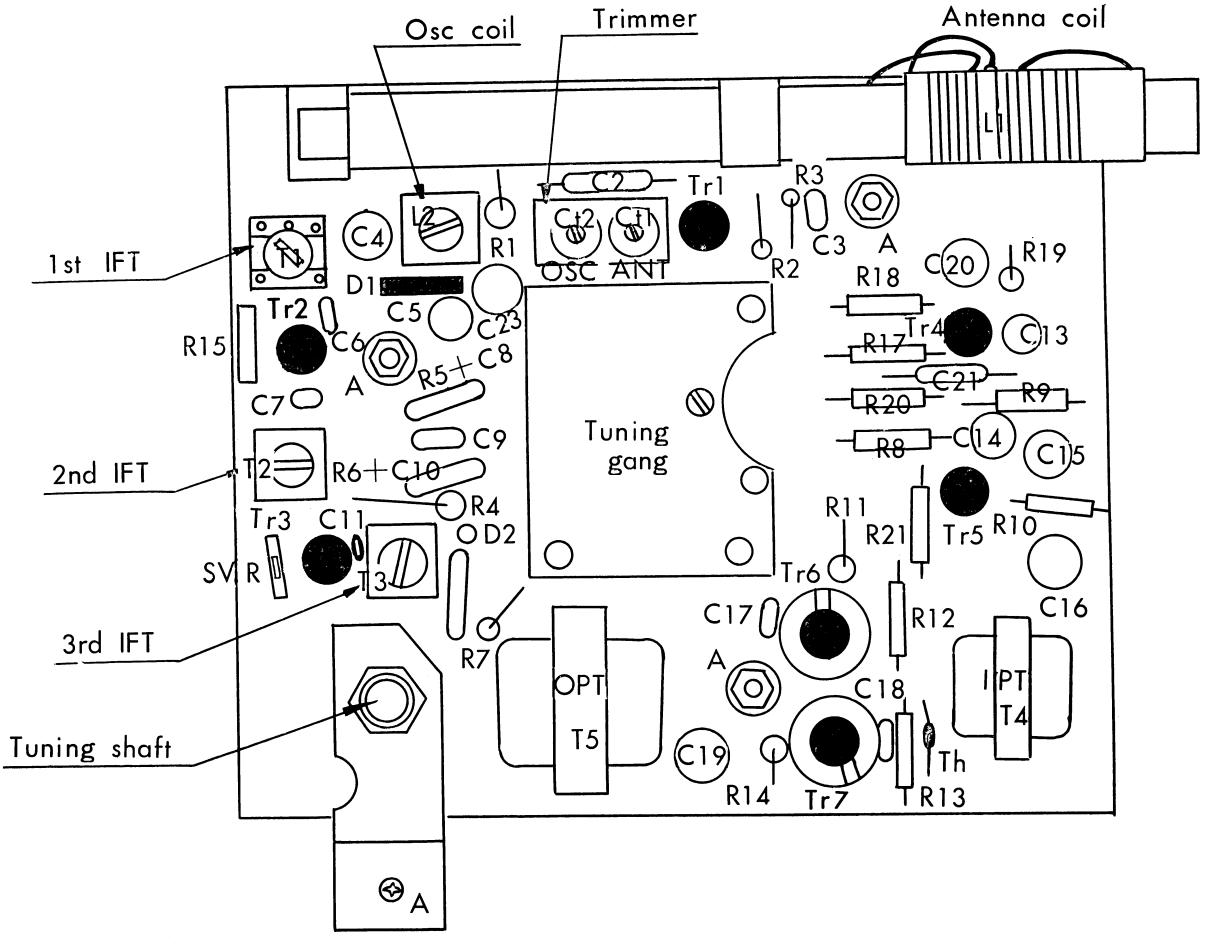
Connect an ammeter (range : 1mA) between two points P and N as illustrated.

Adjust the value of SVR in order to obtain such a meter reading as 400 μA.

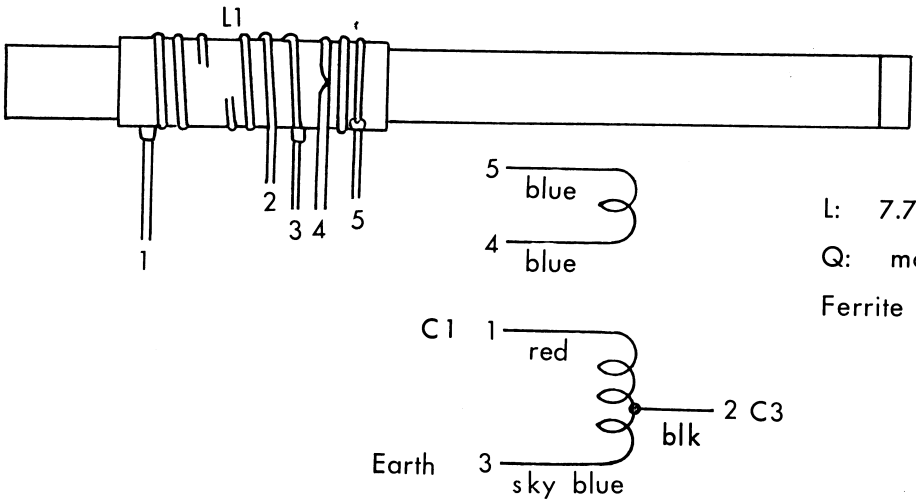
Short-circuit the two points by soldering after adjustment.



PARTS LAYOUT



PARTS CONNECTION

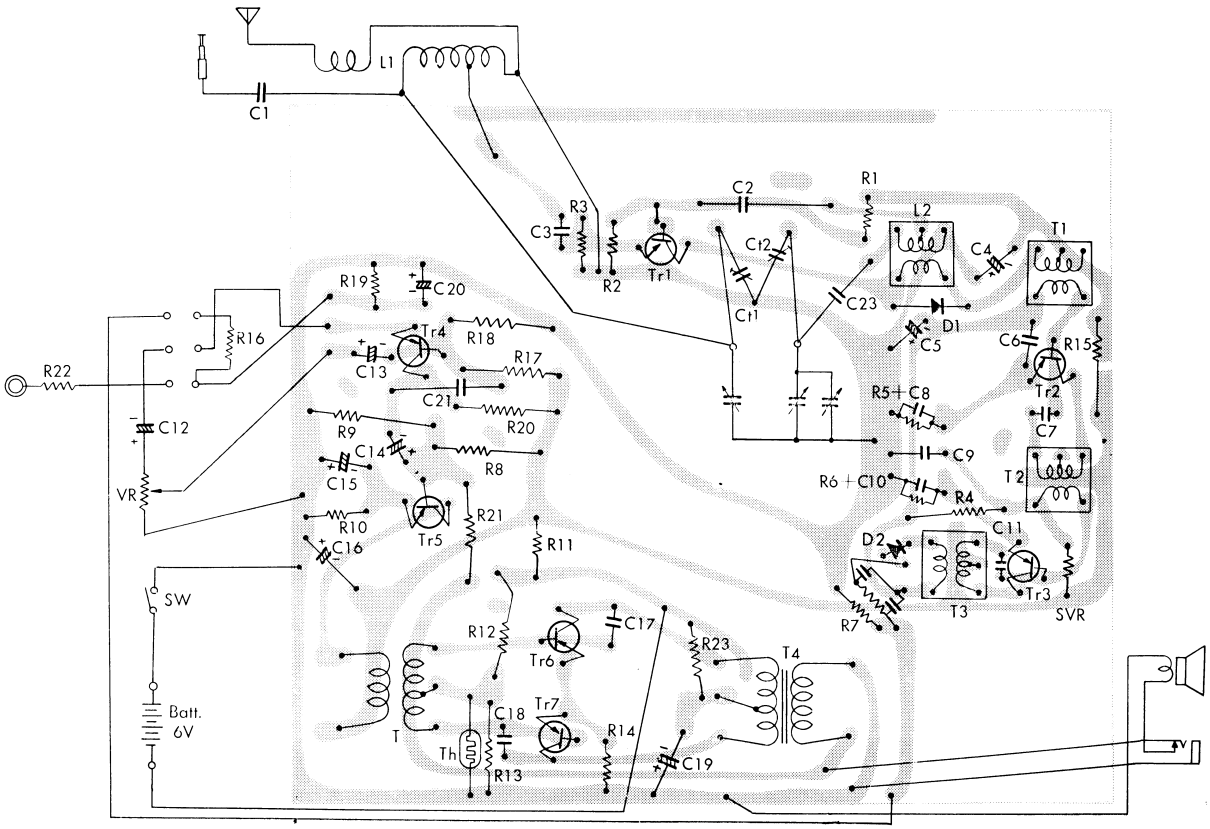


L: 7.7μH

Q: more than 150

Ferrite core Q3

Oscillator coil : L6.8uH Variable range +8%～−4%
Q more than 70 (7.95mc)

	Impedance		DC Resistance		Open Impedance
	Primary	Secondary	Primary	Secondary	
Input transformer	3 K	1 K	301	176	5.3K
Output transformer	150	4	11.6	0.36	850

INNER-PARTS CONNECTION