SANYO

8-Transistor *Transceiver*

MODEL TA-10

SERVICE MANUAL

SANYO ELECTRIC CO., LTD.

INTERNATIONAL DIVISION : SANYO ELECTRIC TRADING CO, LTD.
OSAKA, JAPAN.

SPECIFICATIONS

TRANSMITTING SECTION

Transmit frequency ··· One of 27 MC citizen's band (27.085MC)
Communication system ····· Press to talk
Type of emission ····· A3
Transmitting system ····· Crystal controlled
Modulation system ····· Amplitude modulation
Power input to the final radio stage ····· Under 100 mW
Frequency tolerance ····· Within ± 0.005 %

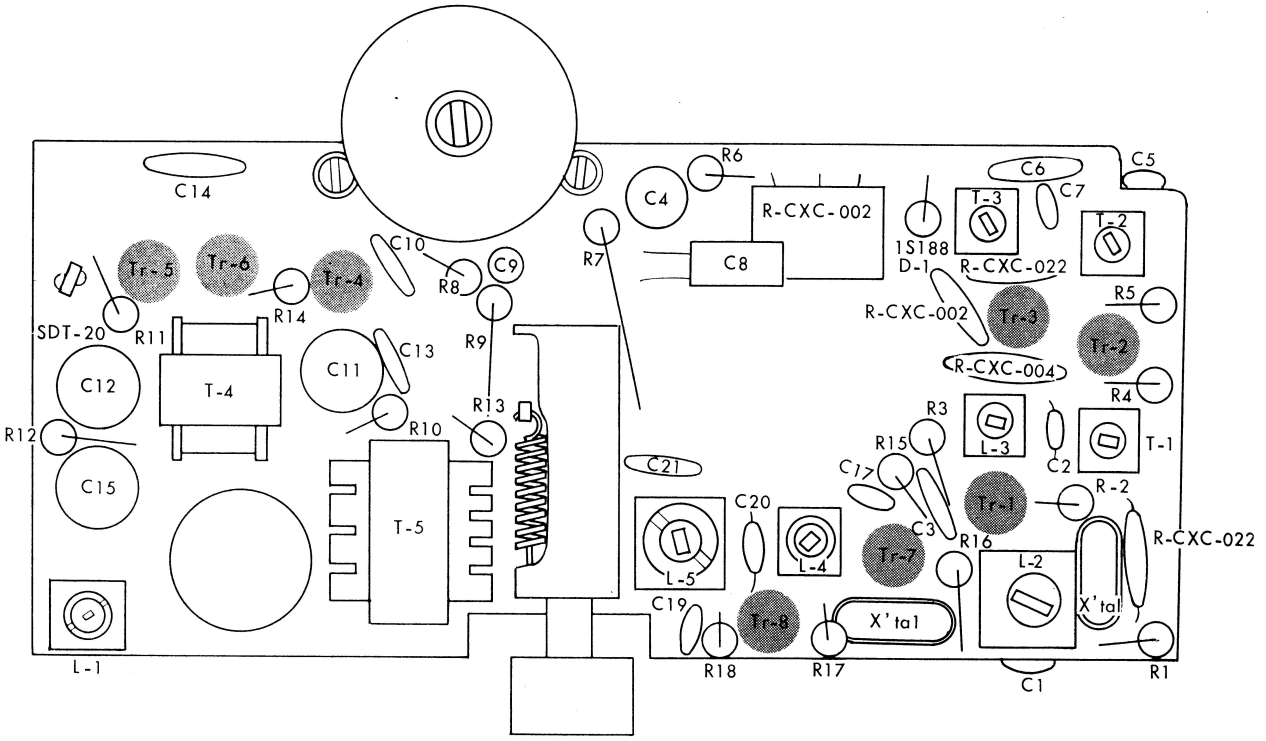
RECEIVING SECTION

Local oscillation frequency (Transmitting freq.) ····· 455 KC
Receiving system ····· Crystal controlled superheterodyne
Intermediate frequency ····· 455 KC
Maximum sensitivity ····· 6.3 μV average (1000 c/s, 30 % mod 10 mW)
Selectivity ····· (10 KC detuning) 20 dB
Output power ····· Maximum 180 mW

OTHER SPECIFICATIONS

Power supply ····· 9 Volts single radio battery
Transistors ····· 1 × 2SA222 Frequency converter
1 × 2SA202 1st IF amplifier
1 × 2SA203 2nd IF amplifier
1 × 2SB186 AF amplifier
2 × 2SB187 Power amplifier
1 × 2SA331 or 2SA74 RF amplifier
1 × 2SA221 Oscillator
Diode ····· 1 × 1S188 Detector & AGC
Antenna ····· 9 sections, (40″) whip antenna
Speaker ····· 2″ permanent dynamic speaker
Voice coil impedance 8 ohms
Dimensions ····· 4″ high × 2 7/16″ wide × 1 1/8″ deep
Weight ····· 12 ozs.

TOP VIEW OF CHASSIS



PARTS LIST

SANYO STOCK NO.	DESCRIPTIONS
Cabinet & Chassis	
R-285016	Cabinet, front
R-285017	Ring for speaker grille
R-315101	Back cover
R-315102	Battery cover
R-265275	Speaker grill
R-265409	Badge "SANYO"
R-265276	Name plate
R-245050a	Back cover retaining screw
R-13061	C washer
R-S85122	Carrying strap
R-	Battery cushion
R-325132	Stopper (for back cover)
R-325133	Stopper (for battery case)
R-325134	Stopper (for telescoping antenna)
R-355064	Washer (for telescoping antenna)
R-S3063	Lug
R-445045	Cushion
R-245177	Pipe, Volume Control mtg.
R-325096	Button, Push to Talk
R-245178	Stud nut
R-325073	Knob, Volume Control
R-12011	Lug
R-475247	Battery sheet

SCHEMATIC LOCATION	SANYO STOCK NO.	DESCRIPTION
Coils & Transformers		
L-1	R-W2570	Loading coil
L-2	R-W2528	Antenna coil
L-3	R-W8533	Local osc coil
L-4	R-W8534	Osc coil
L-5	R-W9508	RF power coil, Tank
T-1	R-W5T550	1st IF trans.
T-2	R-W5T551	2nd IF trans.
T-3	R-W5T552	3rd IF trans.
T-4	R-W6555	Input trans.
T-5	R-W6556	Output trans.
Miscellaneous Chassis Parts		
	R-S6566	Speaker
	R-R116525	Variable resistor
	R-S4546	Selector switch
	R-S1540	Telescoping antenna
	R-S5568	Indicator
	R-S1027a	Snap terminal
	R-S2529	X'tal holder
	R-S2519	Earphone socket
	R-CXC002	Packed capacitors & resistors
	R-CXC004	〃
	R-CXC022	〃
C4	R-C9023a	Electrolytic 30 μF 6V
C11	R-C9080	〃 30 μF 3V
C12. C15	R-C9530	〃 50 μF 10V
C8 C9	R-C9527	〃 8 μF 6V
Transistors & Diodes		
Tr-1	2SA222	Transistor, Converter
Tr-2	2SA202	〃 1st IF amplifier
Tr-3	2SA203	〃 2nd IF amplifier

SCHEMATIC LOCATION	SANYO STOCK NO.	DESCRIPTION
Tr-4	2SB186	Transistor Audio amplifier
Tr-5, Tr-6	2SB187	〃 Power amplifier
Tr-7	2SA221	〃 Oscillator
Tr-8	2SA331	〃 RF amplifier
D-1	1S188	Diode Detector
Th1	SDT-20	Thermistor Compensator
	R-S3063	Lug PC board earth

SCHEMATIC LOCATION	DESCRIPTION		
Capacitors & Resistors			
R1	27 Kohms	±10%	¼W
R2	33 ohms	〃	〃
R3	1. 5 Kohms	〃	〃
R4	100 Kohms	〃	〃
R5	47 kohms	〃	〃
R6	4. 7 Kohms	〃	〃
R7 R13	220 ohms	〃	〃
R8 R16	5. 6 Kohms	〃	〃
R9	39 Kohms	〃	〃
R10	1 Kohms	〃	〃
R11	180 ohms	〃	〃
R12	5. 6 Kohms	〃	〃
R14	10 ohms	〃	〃
R15	15 Kohms	〃	〃
R17	470 ohms	〃	〃
R18	4. 7 ohms	〃	〃
Ceramic Capacitors			
C1	20 pF	±10%	25VW
C2	40 pF	〃	〃
C5	8 pF	〃	〃
C7	6 pF	〃	〃
C17	30 pF	〃	〃
C6, C14	0.04 μF	+80% −20%	〃
C20	40 pF	±10%	〃
C3, C21, C18	0.01 μF	±20%	〃
C10 C13 C19 C16	0.005 μF	±20%	〃

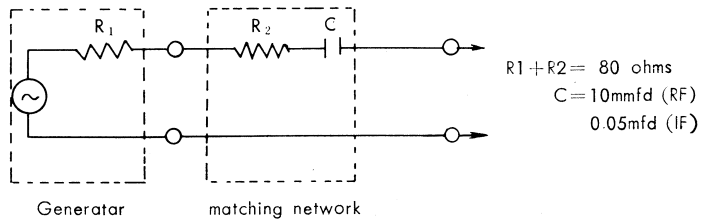
6-20C64 Printed in Japan

ALIGNMENT PROCEDURE

1. PRELIMINARIES

Note; When servicing this tranceiver, use battery DRY BATTERY 006P or Equivalent only. Otherwise damage to the transistors may result.

Output meter reading to indicate
0.01 watt across voice coil ..... 0.283 volt
Generator ground lead connection ..... common ground
Generator modulation ..... 30%, 1000 cps
Position of volume control ..... Fully on (Maximum)
Matching network .....

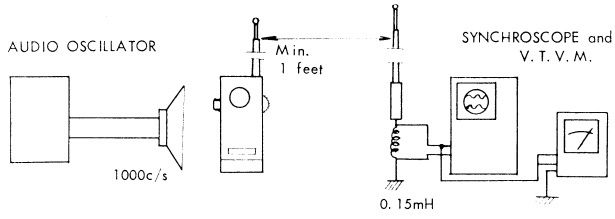


2. ALIGNMENT PROCEDURES

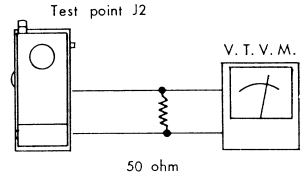
1) The alignment must be performed as outlined below.
2) While making the adjustments below, keep the volume control for maximum output and the signal generator output should be attenuated to avoid AVC action.

STEP	FUNCTION	GENERATOR CONNECTION	GENERATOR FREQUENCY	ADJUSTMENT	REMARKS
1	3rd I. F. 2nd I. F. 1st I. F.	Test point JI	455 KC	T3, T2, T1	Adjust for maximum output
2	Receiver	Test point JI	27 MC	L3, L2	Adjust L3 by turning into the bobbin 1 turn farther from the point where oscillation starts. Adjust L2 to maximum output
3	Repeat steps 1 and 2 until no further changes occur.				
4	Transmitter	Test point J2		L4 L5	Adjust for maximum undistorted output. See figure below

TRANSMITTER ALIGNMENT
SET UP. ANT. length 3—5 feet



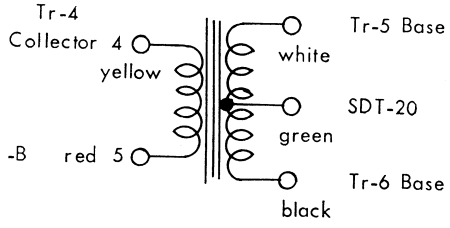
ALTERNATIVE METHOD



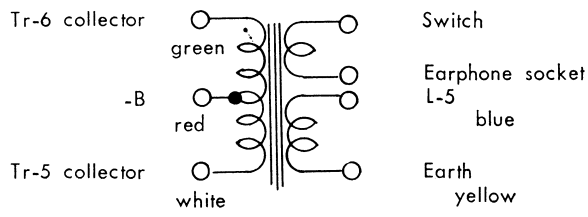
✳ Transmitters antenna fully extended on measurement.

MAIN PARTS TERMINAL IDENTIFICATION

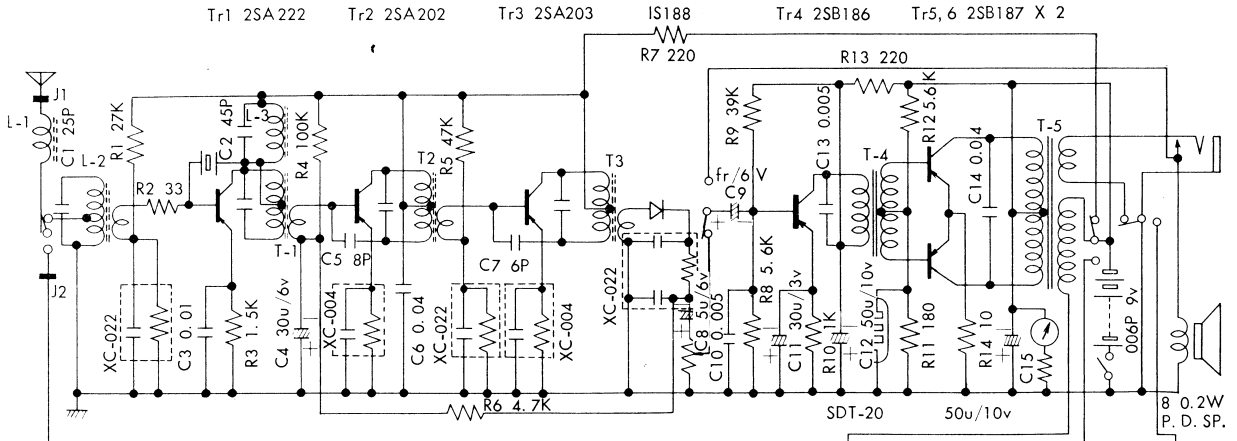
Input transformer

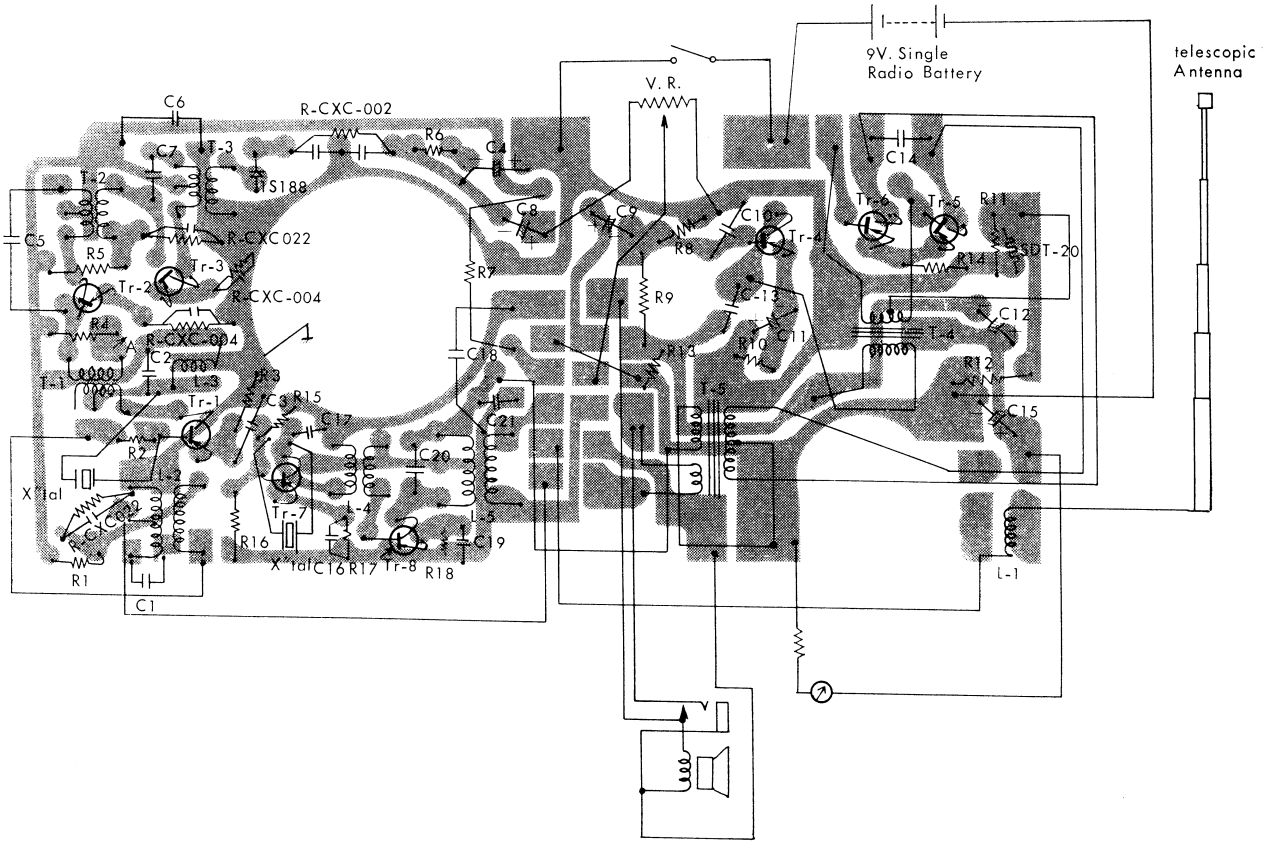


Output transformer



CIRCUIT DIAGRAM



Tr1	Vc 8.5v	Tr2	Vc 8.5v	Tr3	Vc 8.5v
	Vb 1.4v		Vb 0.5v		Vb 0.85v
	Ve 1.3v		Ve 0.4v		Ve 0.75v
	Lc 850uA		Ic 400vA		Ic 750uA
Tr4	Vc 8.5v	Tr5.6	Vc 9v	Tr7	Vc 9v
	Vb 1.1v		Vb 0.15v		Vb 2.4v
	Ve 0.95		Ve 0.03v		Ve 2.3v
	Ic 950uA		Ico 3.5mA		Ic 5mA
Tr8	Vc 9v				
	Vb 0				
	Vc 0.17				
	Ic 15mA				

CIRCUIT BOARD DIAGRAM