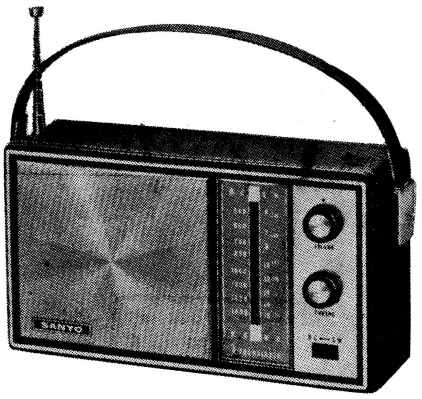
SANYO

8-transistor 2-band
"Leatherette" Portable Radio

MODEL 8S-322

SERVICE MANUAL

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



SPECIFICATIONS

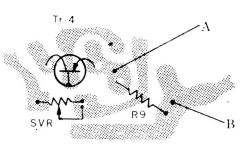
FREQUENCY RANGE		BC 530-1605 Kc SW 6-18 Mc
INTERMEDIATE FREQUENCY		455 Kc
TRANSISTORS	2SA222	Local oscillator
	2SA220	Frequency mixer
	2SA202	1st IF amplifier
	2SA203	2nd IF amplifier
	2SB185 x2	AF amplifier
	2SB187 x2	Power amplifier
DIODE	1S188	Detector & AGC
THERMISTOR	SDT-09	Temperature compensator

RADIATION SENSITIVITY	10 mW output	BC 230 μV/m SW 310 μV/m
OUTPUT POWER	Undistorted	250 mW
	Maximum	400 mW
SIGNAL TO NOISE RATIO	5 mW output at 1mV/m input	BC 25dB SW 21 dB
CURRENT DRAIN	No signal	17 mA
	Maximum	136 mA
LOUDSPEAKER	4″ permanent dynamic speaker Voice coil impedance 4 ohms	
BATTERY	Operates on 4 "C" size flashlight batteries	
DIMENSIONS	$9\frac{5}{8}$″ wide × $5\frac{1}{2}$″ high × $2\frac{7}{8}$″ deep	
WEIGHT	2.6 lbs.	

ALIGNMENT PROCEDURES

(1) Alignment of Semi-fixed resistor

Apply 6 volts to the receiver as power source and make a receiver tune in no signal(station). Connect a volt-meter (range: 1V) between two points A and B as figure. Adjust the semi-fixed resistor in order to obtain 0.35 volt deflection.



(2) IF and Broadcast RF alignment

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	Radiate signal through the loop antenna, which connected with signal generator output cable.	455 Kc	Lower end	T-3 T-2 T-1
BROADCAST RF ALIGNMENT				
2	Radiate signal through the loop antenna, which connected with signal generator output cable.	520 Kc	Lower end	L-4
3		1650 Kc	Upper end	Ct-4 BC osc trim.
4		Repeat steps 2 and 3.		
5		600 Kc	600 Kc	L-2
6		1400 Kc	1400 Kc	Ct-2 BC ant. trim.
7		Repeat steps 5 and 6.		
SHORT WAVE RF ALIGNMENT				
8	Radiate signal through the loop antenna, which connected with signal generator output cable.	6 Mc	Lower end	L-3
9		18 Mc	Upper end	Ct-3 SW osc trim.
10		Repeat steps 8 and 9		
11		4.0 Mc	4.0 Mc	L-1
12		11.0 Mc	11.0 Mc	Ct-1 SW ant. trim.
13		Repeat steps 11 and 12.		

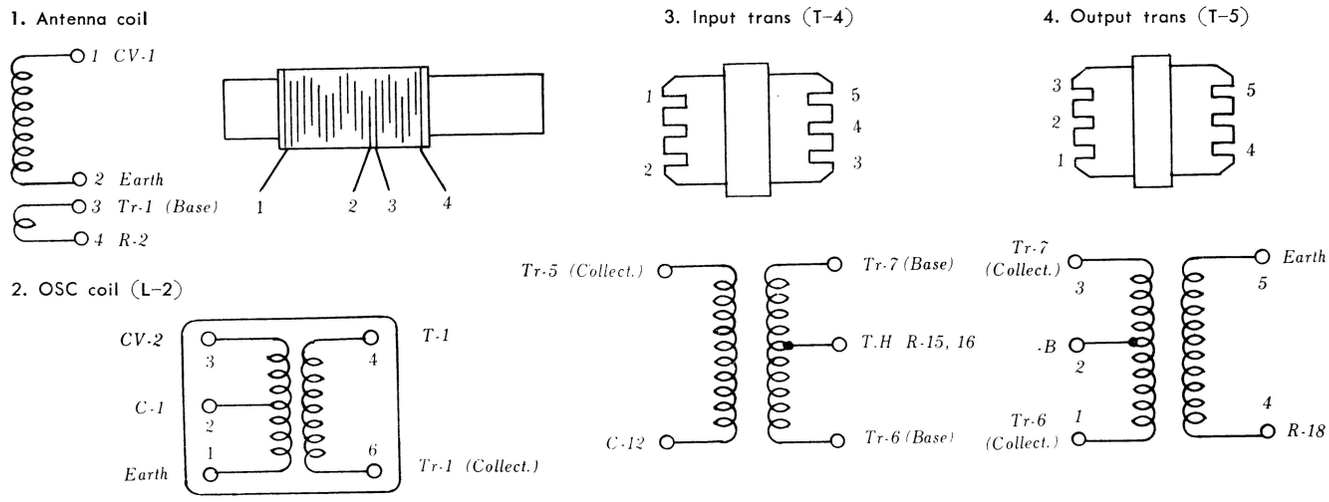
PARTS LIST

SYMBOL NO.	STOCK NO.	DESCRIPTION	Q'ty
PACKAGE			
	R-425638	Individual carton	1
	R-425564	Export carton	1/12
CHASSIS			
	R-115145a	Fixing metal of P.C. board	1
	R-265193a	Bracket of ANT coil	1
	R-265194	Back plate	1
	R-S85072	Tuning shaft	1
	R-135003	"C" washer	1
	R-S85073	Pointer	1
	R-235054	Slide of pointer	1
	R-44046	Cushion of VC	1
	R-33226	Drum	1
	R-15041	Coil spring	1
	R-365040	Slide SW cover	1
CABINET			
	R-315081a	Front panel	1
	R-325054	Dial cover(Transparent plastic)	1
	R-485050	Cabinet (Leatherette)	1
	R-265188	Speaker grille	1
	R-265189	Name plate of tuning & volume	1
	R-115146	Earphone mtg. washer	1
	R-265191	Dial plate	
	R-425540	Cushion (between the SP grille	1
		& cabinet)	1
	R-475167	Specification sheet	1
	R-475168	Battery sheet	1
	R-325055	Earphone jack mtg. plastic	1
	R-325058	Lead-in ring (Telescopic ant)	1
	R-24683b	Band retaining ear metal	2
	R-S85093	Shoulder band	1
	R-265163	Badge "SANYO"	1
	R-245115	Stud nut (Chassis mtg.)	3
	R-115143	Battery terminal (+)	1
	R-S85070	〃 (−)(Complete)	1
	R-S85071	Tuning knob	1
	R-35173	Battery holding tube	1
	R-425488	Earphone sack	1
ELECTRICAL			
L-1, 2	R-W2541	ANT coil	1
CV-1, 2	R-C1512	Variable capacitor PV-25K	1
〃	orR-C1025	〃 PVC-25	1
Ct-1, 2, 3, 4	R-C0030	Trimmer	2
L-3	R-W8015	OSC coil SW	1
L-4	R-W8523	〃 BC	1
T-1	R-W5T534	IF trans 1st	1
T-2	R-W5T535	〃 2nd	1
T-3	R-W5T536	〃 3rd	1
T-4	R-W6181	Input trans	1
T-5	R-W6182	Output trans	1
	R-S6543	Speaker	1
	R-R124504a	Variable resistor (5 Kohms)	1
SVR	R-R11011	Semi-fixed resistor(100 Kohms)	1
	R-CXC002	Packed capacitor & resistor	1
C-24, 28	R-C9086	Erectrolytic capacitor (120 μF 6V)	2
C-10	R-C9023	〃 (30 μF 6V)	1
C-13, 23	R-C9080	〃 (30 μF 3V)	2
C-20, 21.22	R-C9078	〃 (5 μF 6V)	3
	R-S6536	Earphone	1
	orR-S6326		1
	R-S1532	Rod ANT	1

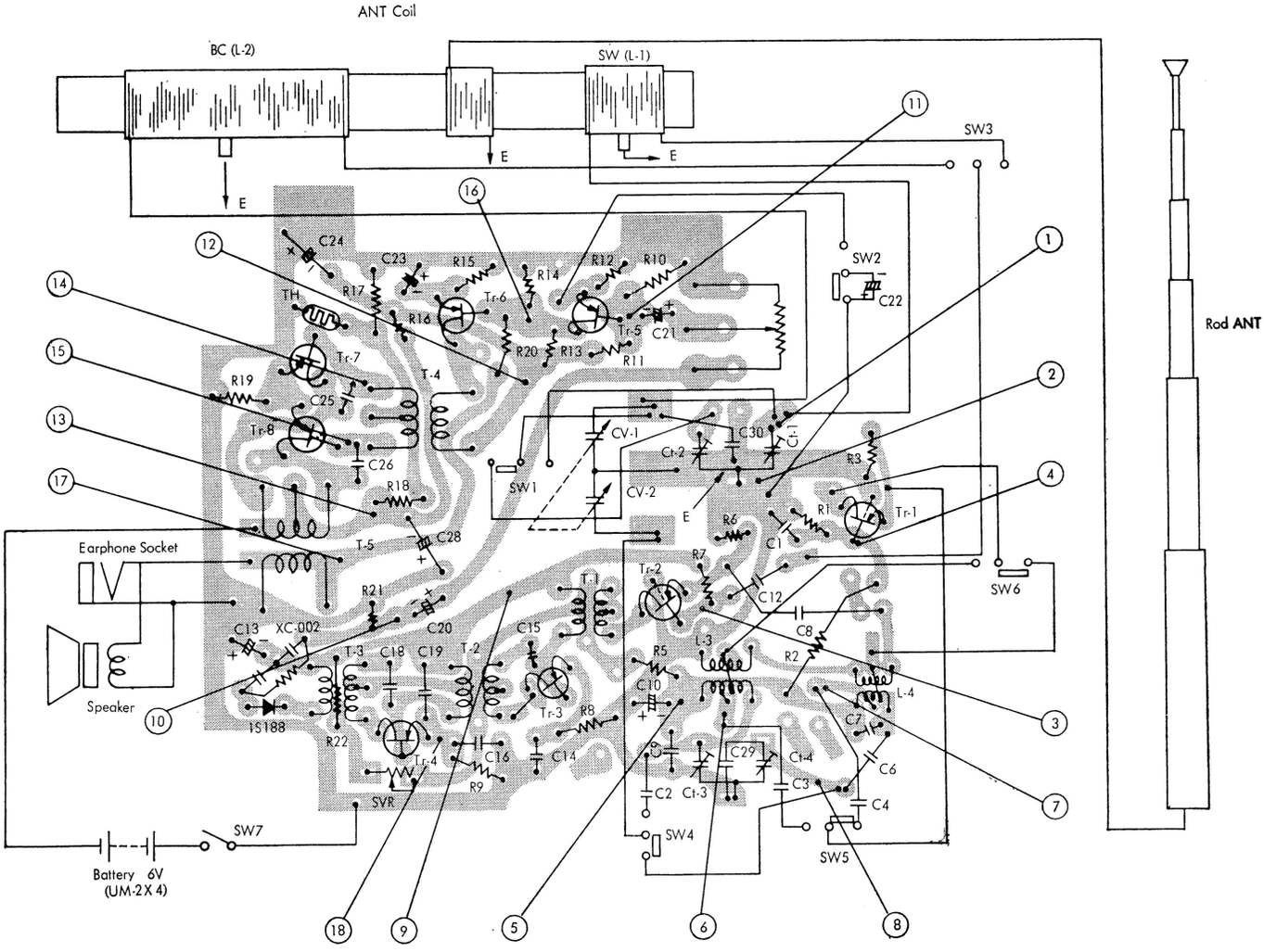
SYMBOL NO.	STOCK No.	DESCRIPTION	Q'ty
	R-S2040	Earphone socket	1
	R-235002	Lug (Rod ANT)	1
SW1-6	R-S4544	Slide switch	1
Tr-1	2SA222	Transistor	1
Tr-2	2SA221	〃	1
Tr-3	2SA202	〃	1
Tr-4	2SA203	〃	1
Tr-5,6	2SB185	〃	2
Tr-7,8	2SB187	〃	2
D-1	IS188	Diode	1
TH	SDT-09	Thermistor	1
RESISTOR & CAPACITOR			
R-20	82 Kohms	±20% ½−⅛W	
R-11	56 Kohms	±10% 〃	
R-7	39 Kohms	〃 〃	
R-2	12 Kohms	〃 〃	
R-10	6.8 Kohms	〃 〃	
R-21	5.6 Kohms	〃 〃	
R-1,14	4.7 Kohms	〃 〃	
R-13	3.9 Kohms	〃 〃	
R-6, 18	1.5 Kohms	〃 〃	
R-3, 8	1.1 Kohms	〃 〃	
R-5	560 ohms	±20% 〃	
R-9, 12, 15	560 ohms	±10% 〃	
R-16	100 ohms	±20% 〃	
R-17	82 ohms	〃 〃	
R-19	2.2 Kohms	±10% 〃	
R-22	47 Kohms	〃 〃	
C-1,9,14,16. 19	0.02 μF	+30% −20% 50V	Mylar
C-25, 26	0.0075 μF	〃 〃	〃
C-4, 8	0.005 μF	〃 〃	〃
C-12	0.002 μF	〃 〃	〃
C-3	0.001 μF	〃 〃	〃
C-6	310 pF	±10% 〃	Polystyrol capacitor
C-2	3100 pF	〃 〃	
C-7,5	8 pF	〃 25V	Ceramic
C-18	10 pF	〃 〃	〃
C-15	13 pF	〃 〃	〃
	or 15 pF	〃 〃	〃
C-29	3 pF	±0.5 pF 〃	〃
C-30	6 pF	±10 pF 〃	〃
SCREW, WASHER & NUT			
	Hexagon bolt(3×14)	SP	4
	Washer (3.2×10×0.5t)	〃	4
	Hexagon nut (M3)	〃	4
	Hexagon bolt (3×12)	Stud nut	3
	Washer (3.2×10×0.5t)	〃	3
	Hexagon nut (M4)	Handle	2
	Washer (4.5×16×0.5t)	〃	2
	Screw (4×15)	〃	2
	〃 (3×10)	Rod ANT	1
	Washer (3.2×10×0.5t)	〃	1
	Screw (3×6)	P.C. board	3
	Screw (3×10) Washer (3.2×10×1t)	Batt. terminal	4
	Screw (2.6×3)	Slide SW	2
	〃 (3×6)	ANT coil	1
	〃 (3×6)	P.C. board	1
	〃 (3×4)	Back plate	2
	〃 (2.6×4)	V.C.	2
	〃 (3×6)	Drum	1
	Tapping screw (3×6)		1
	Hexagon nut (M8)	Shaft	1

6-20029 Printed in Japan

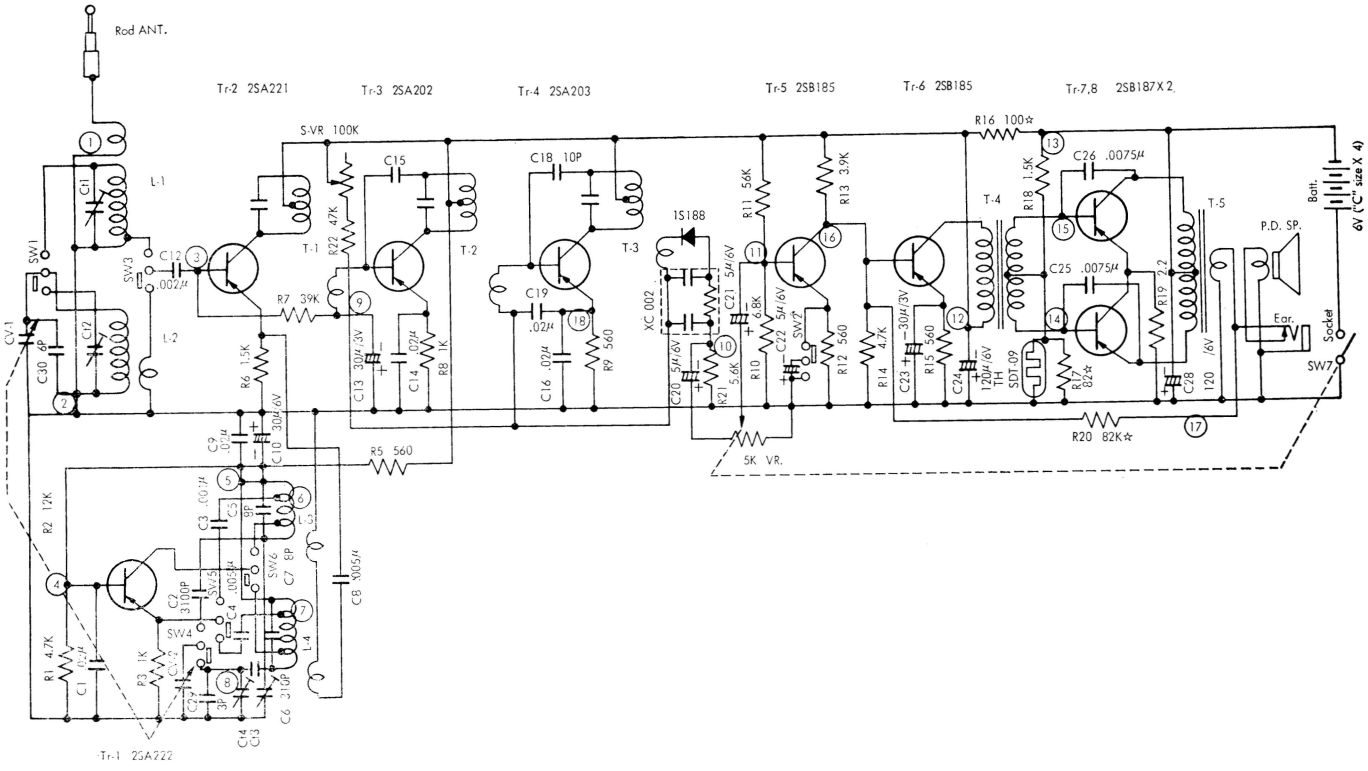
ANTENNA COIL TERMINAL IDENTIFICATION



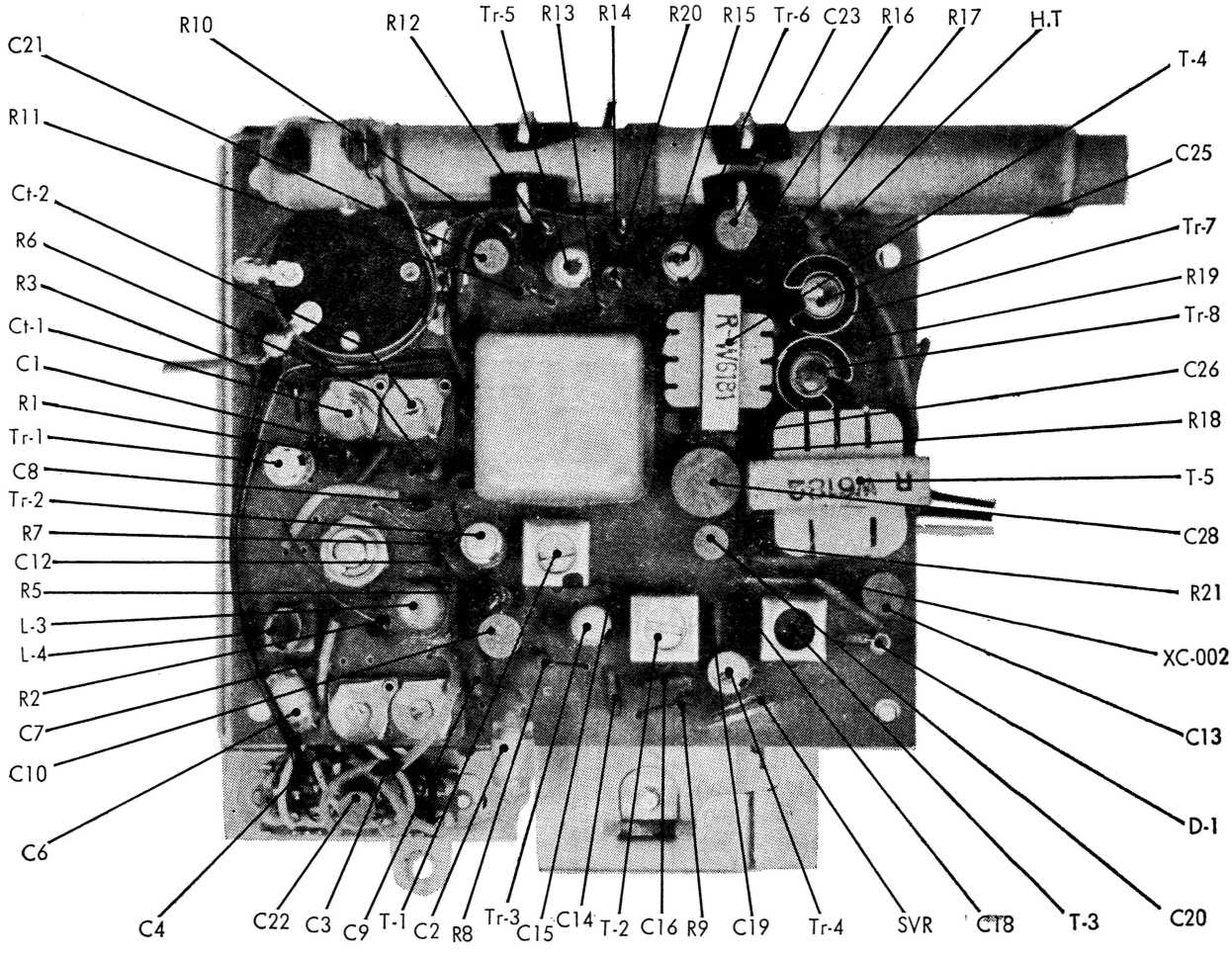
NTER-PARTS WIRING ILLUSTRATION



CIRCUIT DIAGRAM



MAIN PARTS LOCATIONS



S A N Y O

Transistor Radio

Parts List

MODEL 8S-322

Sanyo Electric Trading Co., Ltd.

Stock No.	Description	Q'ty	Unite Price US $	Amount US $
R-425558	Display Carton Box	1	0.250	0.250
R-425559	Corner Cushion	1	-	-
R-425560	Cushion	1	-	-
R-42313b	Inspection Sheet	1	0.00105	0.00105
	Polyethylene Cover	1	0.0161	0.0161
R-425561	Tarpaulin Envelop	1	0.0861	0.0861
R-425562	Corner Cushion	-	0.0297	
R-425563	Bottom Cushion	-	0.0609	
R-425564	Shipping Case	-	0.6457	
R-315081	Panel	1	0.3535	0.3535
R-325054	Cover	1	0.084	0.084
R-485050	Cabinet	1	1.2775	1.2775
R-265188	Panel	1	0.2593	0.2593
R-265189	Decoration Metal	1	0.0945	0.0945
R-115146	Fixing Metal	1	0.0056	0.0056
R-265191	Dial	1	0.1148	0.1148
R-425540	Cushion	1	0.0213	0.0213
R-475167	Specification	1	0.0035	0.0035
R-475168	Battry Insert Notice	1	0.0035	0.0035
R-325055a	Fixing Metal	1	0.0045	0.0045
R-325058	Ring	1	0.0346	0.0346
R-24683b	Band Fixing Metal	2	0.0259	0.0518
R-S85093	Band Complete	1	0.378	0.378
R-265163	Badge	1	0.0154	0.0154
R-245115	Stud Nut	3	0.0157	0.0471
R-115143	Battery Terminal	1	0.035	0.035
R-S85070	Battery Terminal Complete	1	0.0577	0.0577
R-41027	Moldplain	3	0.0035	0.0105
R-325056	Knob	2	0.0437	0.0874
R-265192	Decoration Knob	2	0.0070	0.0140
R-35173	Battery Cover	1	0.0315	0.0315
R-425488	Suck	1	0.0385	0.0385
	Cushion	1	0.00735	0.00735
R-415082	Printed Wiring Board	1	0.1456	0.1456
R-115145	Fixing Metal	1	0.1025	0.1025
R-265193	Coil Fixing Metal	1	0.0213	0.0213
R-265194	Back Plate	1	0.0276	0.0276
R-S85072	Shaft Complete	1	0.626	0.0626
	- to be continued -			

Stock No.	Description	Q'ty	Unite Praice US $	Amount US $
R-235058	Dial Pointer	1	0.0108	0.0108
R-235054	Slide	1	0.0084	0.0084
R-44046	Cushion	1	0.0070	0.0070
R-33226	Drum	1	0.0385	0.0385
R-15041	Coil Spring	1	0.0024	0.0024
R-245134	Pulley	2	0.0101	0.0202
R-245119	Pulley Shaft	2	0.0080	0.0160
	Cushion	2	0.0070	0.0140
R-W2540	Antenna Coil	1	0.3045	0.3045
R-C1512 1025	Variable Condenser	1	0.567	0.567
R-C0030	Trimmer	2	0.0724	0.1448
R-W8015	Oscillator Coil	1	0.126	0.126
R-W8523	"	1	0.105	0.105
R-W5T518	Inter Frequency Transformer	1	0.1365	0.1365
R-W5T519	"	1	0.1365	0.1365
R-W5T520	"	1	0.1365	0.1365
R-W6181	Input Transformer	1	0.1400	0.1400
R-W6182	Output Transformer	1	0.1645	0.1645
R-S6543	Speaker	1	0.5705	0.5705
R-R11011	Semi-Fixed Resistor	1	0.0364	0.0364
R-CXC002	Packed Capacitor & Resistor	1	0.042	0.042
R-C9086	Electrolytic Condenser	2	-	-
R-C9080	"	2	-	-
R-C9078	"	2	-	-
R-S6250	Earphone Complete	1	0.14	0.14
R-R124504	Variable Resistor	1	0.2222	0.2222
R-235002	Lug	1	0.0007	0.0007
R-S4109	Slide Switch	1	0.2905	0.2905
R-S1532	Lod Antenna	1	0.5775	0.5775
R-S2040	Socket	1	0.049	0.049
	Transistor 2SA222	1	-	-
	" 2SA221	1	-	-
	" 2SA202	1	-	-
	" 2SA203	1	-	-
	" 2SB185	2	-	-
	" 2SB187F	2	-	-
	Diode 1S188	1	-	-
	Termistor SDT-09	1	-	-
	Cabinet Complete	1	2.604	2.604