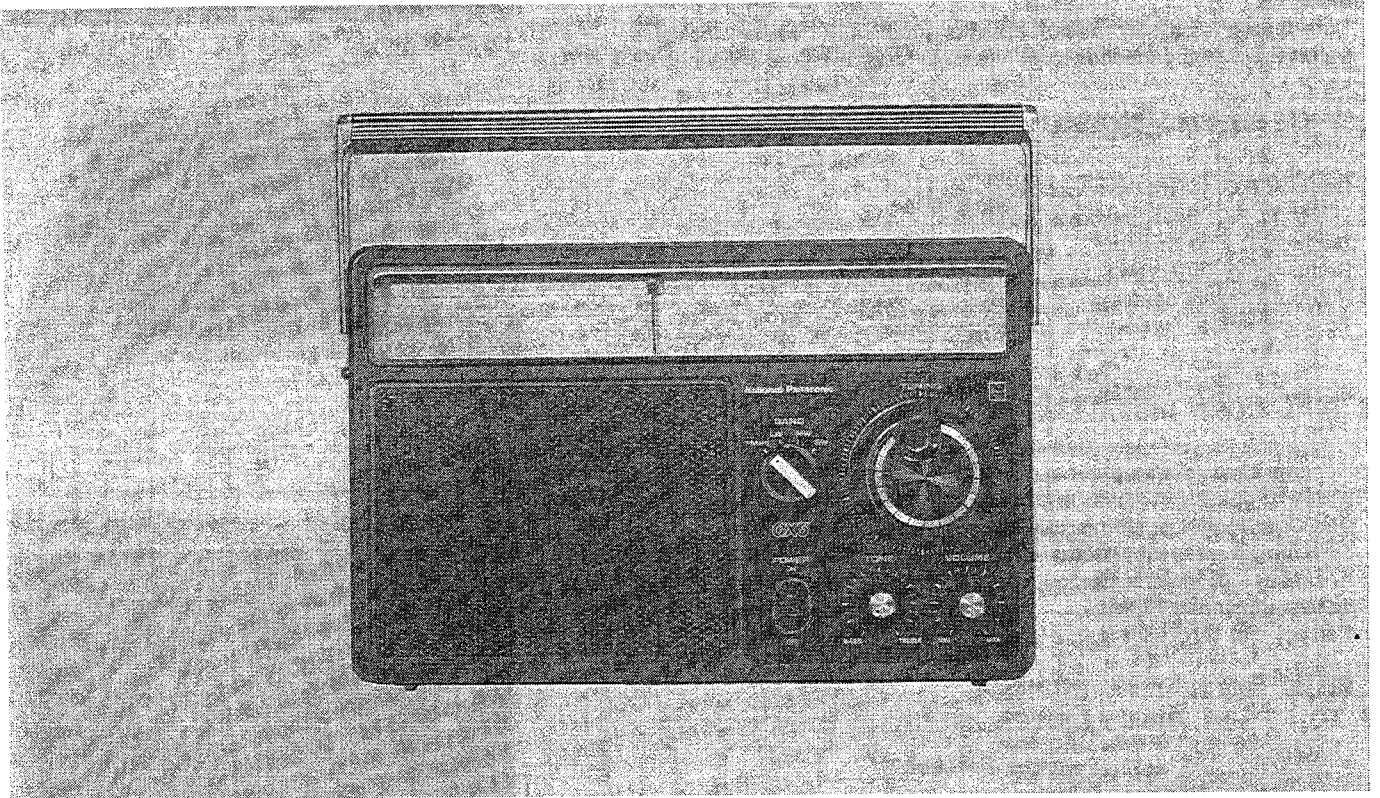


Service Manual

Radio

FM-LW-MW-SW 4-BAND
PORTABLE RADIO

RF-1105LBS



■ SPECIFICATIONS

Frequency Range:	FM 87.5~108 MHz LW 145~285 kHz (2060~1060m) MW 520~1610 kHz (577~186m) SW 5.9~18 MHz (50.8~16.7m)	Power Consumption:	7W
Intermediate Frequency:	FM 10.7 MHz AM (LW, MW & SW) 455 kHz	Speaker:	10 cm (4") PM Dynamic Speaker
Sensitivity:	FM 1.8 μ V for 50mW Output LW 100 μ V/m for 50mW Output MW 40 μ V/m for 50mW Output SW 3.5 μ V for 50mW Output	Dimensions:	237(Wide) × 151(High) × 64.5 (Deep)mm (9 $\frac{3}{8}$ " × 5 $\frac{7}{8}$ " × 2 $\frac{5}{8}$ ")
Power Output:	1.5W Maximum	Weight:	1.35 kg (2 lb. 15.6 oz.) without batteries
Power Source:	AC 110—125/220—240V 50/60 Hz or 4.5V (Three "C" Size Flashlight Batteries) (National UM-2 or equivalent)	Impedance:	Speaker8 Ω Earphone Jack8 Ω DIN Jack Recording Out82k Ω Phono100k Ω

Specifications are subject to change without notice for further improvement.

 **National Panasonic**

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka, Japan

■ TO REMOVE P.C. BOARD

1. Remove three (3) knobs, Band Selector, Tone and Volume Controls, from cabinet.
2. Remove the three (3) screws (nos. 1~3) for the cabinet cover, as shown in fig. 1.
3. Remove the cabinet cover, as shown in fig. 2.
4. To remove the cabinet cover completely, pull out the three (3) lead sockets of power supply and antenna.
5. Remove the four (4) red screws (nos. 1~4) as shown in fig. 3.
6. Remove the P.C. Board from cabinet.
7. To reassemble, read the following notes and reverse the above procedure.

Notes:

1. Turn tuning knob and tuning capacitor shaft fully counter-clockwise.
2. Insert the tuning capacitor shaft in hole of dial drum, as shown in fig. 4.

■ TO REMOVE CHASSIS

1. Remove P.C. Board from cabinet.
(Refer to P.C. Board removal instruction.)
2. Remove Tuning Knob.
3. Remove five (5) screws (nos. 1~5), as shown in fig. 5.
4. Pull out chassis as shown in fig. 6.
5. To reassemble, reverse the above procedure.

■ DIAL CORD INSTALLATION GUIDE

1. Remove chassis from cabinet.
(Refer to chassis removal instruction.)
2. Dial Cord length is 135 cm (53 $\frac{1}{2}$ "').
3. Turn dial drum to fully clockwise.
4. Arrows (1~8) indicate correct order and direction of dial cord installation as illustrated in fig. 7.
5. Cement dial cord ends.

■ TO MOUNT DIAL POINTER

1. Turn dial drum to fully clockwise.
2. Set dial pointer to start point of dial scale.
3. Attach dial cord to dial pointer.

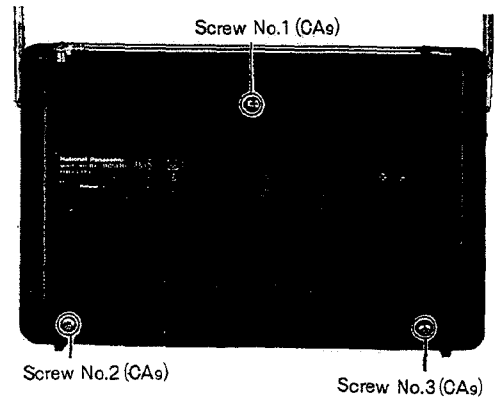


Fig. 1

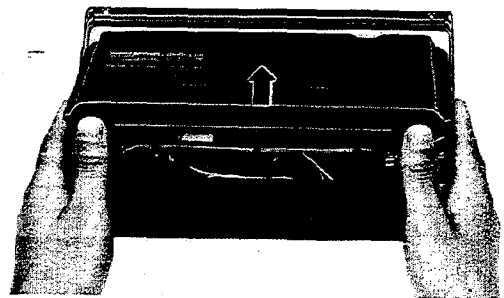


Fig. 2

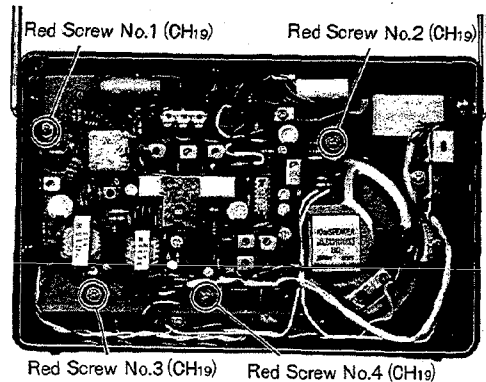


Fig. 3

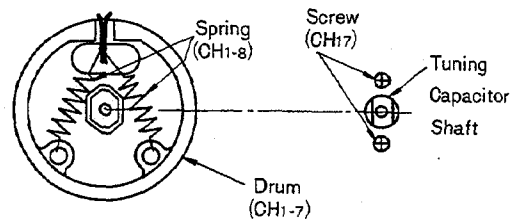


Fig. 4

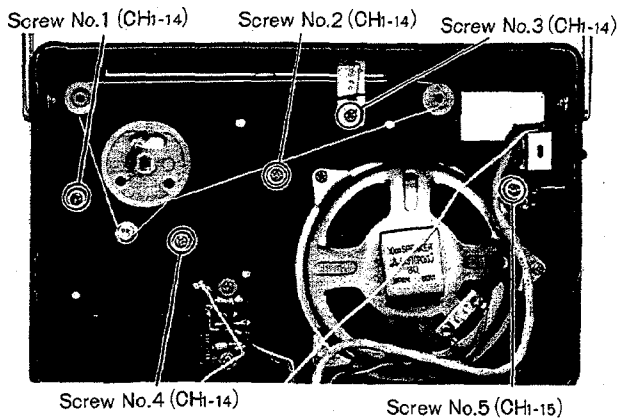


Fig. 5

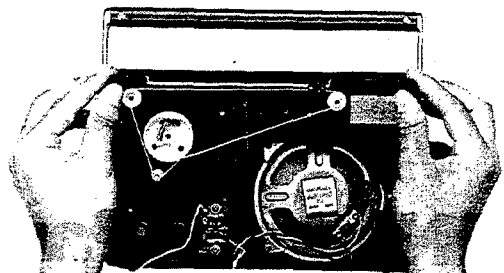


Fig. 6

PACKING MATERIALS

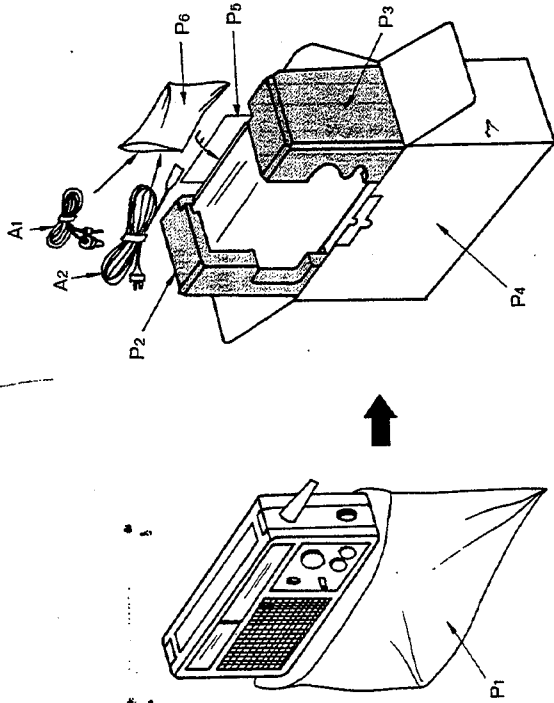


Fig. 15

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
CHASSIS				
CH1-1	RXEF1105LBS	Chassis Assembly, Dial	1	OY
CH1-2	Not Available,	Chassis Only, Dial	(1)	
CH1-3	Order	Pulley, Dial (Large)	(3)	
CH1-4	RXEF1105LBS	Pulley, Dial (Small)	(1)	
CH1-5	(RKD441Z	Nylon Washer, Pulley	(3)	
CH1-6	RXE2F1105LBS	Dial Scale	1	OX
D12	(RDP165Z	Dial Pointer Assembly	1	OX
CH1-7	(RVDFGL3LAR	Pointer, Dial	1	OY
CH1-8	RDD363Z	Diode, LED	1	X
CH1-9	RDS4060A	Drum, Dial	1	Y
CH1-10	RDT2171Z	Spring, Dial	2	Y
CH1-11	XNS8	Shaft, Tuning	1	OY
CH1-12	RDZ05A	Nut, Tuning Shaft M'tg	1	Z
CH1-13	RUL503Z	Cord, Dial, 500m(547yard)	1	Z
CH1-14	RUS298Z	Bracket, Chassis M'tg	1	Z
CH1-15	XTW3+16F	Holder, LED Lead	1	OZ
CH1-14	XTW3+10C	Screw, Chassis M'tg	4	Z
CH2	XBA2C087PRO	Fuse, 800mA†	1	X
CH3	RJJ19Z	Jack, Earphone or EXT. Speaker	1	Y
CH4	RJJ30Z-H	Socket, AC IN	1	Y
CH5	RJS111Z-H	Socket, DIN	1	Y
CH6	RJF7A	Holder, Fuse	1	Y
CH7	RJE10Z	Cover, AC IN Jack	2	Z
CH8	RUV426Z	Cover, Voltage Switch	1	Z
CH9	RUV58A	Cover, RADIO-PHONO SELECTOR	1	Z
CH10	RUV118B	Cover, Earphone or EXT. Speaker & Power Switch	2	Z
CH11	RML94Z	Base, Power Transformer M'tg	1	Z
CH12	RME70A	Holder, Lead	2	Y
CH13	RMG272Z	Shield Cover, IFT	1	Z
CH14	RMG171A	Shield Cover, IC	1	Z
CH15	RQF1021A	Sticker, Fuse, 800mA†	1	Z
CH17 (Fig. 4)	RHG5A	Rubber, Tuning Capacitor	1	Z
CH18	XSN26+5	Screw, Tuning Capacitor	2	Z
CH19	XTW3+10FR	Screw, Power Transformer, Base,	6	Z
CH20	XTN23+8C	AC IN Jack, P.C. Board M'tg	4	Z
	XTW3+8C	Screw, P.C. Board M'tg	4	Z
	XTW3+8C	Screw, Voltage Switch M'tg	2	Z
		Screw, Lead Holder M'tg	1	Z
ACCESSORIES				
A1	XEH1A1-P	Earphone	1	Y
A2	RJA20Z-K	Power Cord, AC	1	Y
PACKING MATERIALS				
P1	XZB35X30A04	Polyethylene Cover, Set	1	Z
P2	RPN9209Z	Pad, Complete	1	OZ
P3	Order	Pad, Left Side	(1)	
		Pad, Right Side	(1)	
P4	(RPN9209Z	Gift Box	1	OY
P5	RPK467Z	Instruction Book	1	OY
P6	RQX6035Z	Polyethylene Cover, Accessories	1	Z

Ref. No.	Part No.	Part Name & Description	Part No.	Part Name & Description	Per Set	Remarks
C46	ECQG05683MDY	0.068μF, Polyester			1	Z
C40	ECMS05680K-H	68PF, Mica			1	Z
C79	ECMS05820K-H	82PF, Mica			1	Z
C7	ECMS05181J-H	50WV±10%, Mica			1	Z
C8	ECQS1301JZ	180PF, Mica			1	Z
C9	ECQS05332KZ	300PF, Mica			1	Z
C4758	ECQA50V1V	50WV±10%, Styrol			1	Z
C69	ECEA35V4R7V	1μF, Electrolytic			2	Y
C3768,77	ECEA16V10V	4.7μF, Electrolytic			1	Y
C33	ECEA10V100V	10μF, Electrolytic			3	Y
C53,57,59	ECEA16V47V	100μF, Electrolytic			1	Y
C60	ECEA6V470V	16WV, Electrolytic			1	Y
C49,56	ECEA10V1000V	47μF, Electrolytic			1	Y
C88	ECQM05333MZ	470μF, Electrolytic			2	Y
C30	ECQM05102MZ	1000μF, Electrolytic			1	Z
		0.033μF, Polyester			1	Z
		0.001μF, 50WV±20%, Polyester			1	Z
CABINET						
CAL-1	RYMFL105LBS	Cabinet Body Assembly			1	OX
CAL-2	Not Available, Order	Cabinet Body Only			(1)	
CAL-3	RYMFL105LBS	Panel, Transparency			(1)	
CAL-4	RGK729Z	Ornament, Upper Side			1	OZ
CAL-5	RGK730Z	Ornament, Right Side			1	OZ
CAL-6	RGK731Z	Ornament, Left Side			1	OZ
CAL-7	RGK788Z	Indicating Plate, National Panasonic Mark			1	OY
CAL-8	RGML25Z	Metal Grille, Speaker			1	OY
CAL-9	RGS72Z	Net, Speaker			1	OZ
CAL-10	RKX114Y	Handle, Cabinet			1	OY
CAL-11	XSC3+8BNS	Screw, Handle M'tg			2	Z
CAL-12	RKT104Z	Arm, Handle M'tg			2	Z
CAL-13	RNW823	Bracket, Arm M'tg			2	Z
CAL-14	XWG3X10	Nylon Washer, Arm M'tg			4	Z
CAL-15	XSN3+8S	Washer, Arm M'tg			2	Z
CA2-1	RYFFL105LBS	Cabinet Cover Assembly			1	OX
CA2-2	Not Available, Order	Cabinet Cover Only			(1)	
CA2-3	RYFFL105LBS	Baffle			(1)	
CA2-4	RMA5073Z	Bracket, Telescopic Antenna			1	OY
CA2-5	RJT543Z	Name Plate			1	OZ
CA2-6	RJT205B	Terminal, Battery ⊕ Side			1	Y
CA2-7	RJC603Z	Terminal, Battery ⊖ Side			1	Y
CA2-8	KEARR170FESY	Telescopic Antenna			1	X
CA2-9	XNTR3	Terminal, Telescopic Antenna			1	Y
CA2-10	XYN3+C6S	Washer, Telescopic Antenna M'tg			1	Z
CA2-11	RHS926Z	Screw, Telescopic Antenna			1	Z
CA3	RKK81Z	Tape, Battery			1	OZ
CA4	RBN370Z	Battery Cover			1	OX
CA5	RBN371Z	Knob, Tuning			1	X
CA6	RBS102ZK	Knob, Tone, Volume			2	X
CA7	RMS30	Knob, Band Selector			1	X
CA8	XTN3+10C	Bracket, Speaker M'tg			3	Z
CA9	XTB3+40CFN	Screw, Speaker M'tg			3	Z
		Screw, Cabinet Cover M'tg			3	Z

Ref. No.	Part No.	Part Name & Description	Part No.	Part Name & Description	Per Set	Remarks
R22	ERD25TJ222	2.2KΩ, ½Watt, ±5%, Carbon			1	Z
R24	ERD25TJ823	82KΩ, ½Watt, ±5%, Carbon			1	Z
R32,34	ERD25TJ561	560Ω, ½Watt, ±5%, Carbon			2	Z
R3	ERD25TJ821	820Ω, ½Watt, ±5%, Carbon			1	Z
R18,37,38	ERD25TJ102	1KΩ, ½Watt, ±5%, Carbon			3	Z
R29	ERD25TJ332	3.3KΩ, ½Watt, ±5%, Carbon			1	Z
R21,13	ERD25TJ682	6.8KΩ, ½Watt, ±5%, Carbon			2	Z
R2	ERD25TJ822	8.2KΩ, ½Watt, ±5%, Carbon			2	Z
R12,14	ERD25TJ103	10KΩ, ½Watt, ±5%, Carbon			1	Z
R50	ERD25TJ223	22KΩ, ½Watt, ±5%, Carbon			1	Z
R1,5,46,53,54	ERD25TJ473	47KΩ, ½Watt, ±5%, Carbon			5	Z
R15,30,35	ERD25TJ104	100KΩ, ½Watt, ±5%, Carbon			3	Z
R4	ERD25TJ105	1MΩ, ½Watt, ±5%, Carbon			1	Z
R48	ERD25TJ151	150Ω, ½Watt, ±5%, Carbon			1	Z
R47,52	ERD25TJ103	10KΩ, ½Watt, ±5%, Carbon			2	Z
R51	ERD25TJ820	82Ω, ½Watt, ±5%, Carbon			1	Z
R31	ERD25TJ684	680KΩ, ½Watt, ±5%, Carbon			1	Z
R44	ERD25TJ680	68Ω, ½Watt, ±5%, Carbon			1	Z
R7	ERD25TJ271	270Ω, ½Watt, ±5%, Carbon			1	Z
R16,17,45,49	ERD25TJ102	1KΩ, ½Watt, ±5%, Carbon			4	Z
R19,20	ERD25TJ472	4.7KΩ, ½Watt, ±5%, Carbon			2	Z
R9,39,41	ERD25TJ563	56KΩ, ½Watt, ±5%, Carbon			3	Z
R25	ERD25TJ104	100KΩ, ½Watt, ±5%, Carbon			1	Z
R36	ERX1ANJR47	0.47Ω, 1Watt, ±5%, Metal Oxide			1	Z
R28	ERD25TJ471	470Ω, ½Watt, ±5%, Carbon			1	Z
R55	ERD25TJ470	47Ω, ½Watt, ±5%, Carbon			1	Z
CAPACITORS						
C1	ECDD1H040C	4PF, 50WV±0.25PF, Ceramic			1	Z
C72	ECDD1H050C	5PF, 50WV±0.25PF, Ceramic			1	Z
C23,28,71	ECDD1H070C	7PF, 50WV±0.5PF, Ceramic			3	Z
C3,17,29,39	ECDD1H120K	12PF, 50WV±10%, Ceramic			4	Z
C2	ECDD1H180K	18PF, 50WV±10%, Ceramic			1	Z
C14	ECDD1H270K	27PF, 50WV±10%, Ceramic			1	Z
C10,73	ECDD1H330K	33PF, 50WV±10%, Ceramic			2	Z
C90	ECDD1H390K	39PF, 50WV±10%, Ceramic			1	Z
C24	ECDD1H470K	47PF, 50WV±10%, Ceramic			1	Z
C11	ECMS05101K-H	100PF, 50WV±10%, Ceramic			1	Z
C25	ECDD1H100K	10PF, 50WV±10%, Ceramic			1	Z
C75	ECKE1H311KB	330PF, 50WV±10%, Ceramic			1	Z
C21,27,78,87	ECKE1H102PF	0.001μF, 50WV±10%, Ceramic			4	Z
C26,48,70,82	ECKE1H102MD	0.001μF, 50WV±20%, Ceramic			4	Z
C52	ECKE1H472MD	0.0047μF, 50WV±20%, Ceramic			1	Z
C38,41,81,83,32	ECKE1H105MD	0.01μF, 50WV±20%, Ceramic			5	Z
C15,16,22,31,35,36,63,76,80	ECKE1H223PF	0.022μF, 50WV±10%, Ceramic			9	Z
C74	ECKE1H103PF	0.01μF, 50WV±10%, Ceramic			1	Z
C54,55	ECQG05223MDY	0.022μF, 50WV±20%, Polyester			2	Z
C20,43,45	ECQG05473MDY	0.047μF, 50WV±20%, Polyester			3	Z
C42,44	ECQG05333MDY	0.033μF, 50WV±20%, Polyester			2	Z
C84,91	ECDD1H150KC	15PF, 50WV±10%, Ceramic			1	Z
C89	ECQM05223MZ	0.022μF, 50WV±20%, Polyester			1	Z

**REPLACEMENT PARTS LIST.....Model RF-1105LBE
(RD7609-1384)**

NOTES: 1. Part numbers are indicated on most mechanical parts.
Please use this part number for parts orders.
2. X-Z rank: X rank parts will cover 80% of repair needs.
X+Y rank parts will cover 95% of repair needs.
Z rank parts are less necessary.
3. Components identified by shaded area have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
4. Part numbers shown in bold letters are service standard parts and may differ from production parts.
5. The O mark is used by the manufacturing plant only.

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
INTEGRATED CIRCUIT, TRANSISTORS AND DIODES				
IC1	RVI#PC1018	IC(Si), AM Oscillator, Mixer & FM AM IF Amplifier	1	X
TR1	2SA838	Transistor(Si), FM RF Amplifier	1	X
TR2	2SC1359	Transistor(Si), FM Converter	1	X
TR3,8	2SC945	Transistor(Si), 1st AF Amplifier, DC Amplifier	2	X
TR4	2SA564	Transistor(Si), 2nd AF Amplifier	1	X
TR5,6	2SC1518	Transistor(Si), Power Amplifier	2	X
TR7	2SC828	Transistor(Si), DC Amplifier	1	X
D1,5,13,14,15,16	OA90	Diode(Ge), FM D.AGC, AM Detector, AM Rectifier & FM Rectifier	6	X
D2	RVDKB167	Diode(Si), FM AFC	1	X
D3,4	2-OA90	Diode(Si), FM Detector	2	X
D6,17	RVDVD1150	Diode(Si), AOC	2	X
D11	RVDVD1252	Diode(Si), AOC	1	X
THERMISTOR AND RECTIFIERS				
TH1	RRT401	Thermistor	1	X
D7,8,9,10	RVDKB16205	Rectifier	4	X
CERAMIC FILTER, COILS AND TRANSFORMERS				
CF1	RVFSE107MS	Ceramic Filter	1	X
L1,11,12,15	RLQY75S5-O	Coil, Choke	4	X
L2	RLD4Y54-O	Coil, FM Tuning	1	X
L3	RLQY30S1-O	Coil, Choke	1	X
L4	RLQY43-O	Coil, FM Oscillator	1	X
L5	RLO1M5-M	Coil, FM Oscillator	1	X
L6	RLO2M15-M	Coil, MW Oscillator	1	X
L7	RLO3M36-M	Coil, SW Oscillator	1	X
L8,18	RLF6E151-O	Coil, LW & MW Antenna	1	X
L9	RLA3M4-M	Coil, SW Antenna	1	X
L10,13,19,20	RLQY15G5-O	Coil, Choke	4	Y
L14	RLQY50S5-O	Coil, Choke	1	Y
L16	RLQY15S5-O	Coil, Choke	1	Y

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
L17	RLQY25S5-O	Coil, Choke	1	Y
TT1	RLI4M101-M	I.F.T., FM 1st	1	X
TT2	RLI4M503-M	I.F.T., FM 2nd(Primary)	1	X
TT3	RLI4M502-M	I.F.T., FM 2nd(Secondary)	1	X
TT4	RLI2M402-M	I.F.T., AM 2nd	1	X
TT5	RLI7W109P-M	I.F.T., AM 1st	1	O X
TT6	RLT3F33-W	Input Transformer, P=1.4KΩ;S=1.4KΩ	1	X
TT7	RLT2G15-W	Output Transformer, P=24Ω;S=8Ω	1	X
TT8	RLT5J197-W	Power Transformer	1	O X
VARIABLE RESISTORS				
R26	EVHOXAF15A14	Variable Resistor, 10KΩ(A), Tone Control	1	X
R27	EVHOXAF15A54	Variable Resistor, 50KΩ(A), Volume Control	1	X
VARIABLE CAPACITORS				
C18,64,65,66	PVC22J20T2L	Tuning Capacitor, W/Trimmer Capacitor(C5,13,19,57)	1	X
C4,6,12	RCV3T16M	Trimmer Capacitor	1	X
COMPONENT COMBINATIONS				
Z1,2	RXAF103P22HD	Component Combination, 0.01μF×2	2	Y
SPEAKER				
SP	EAS10F05SJ	Speaker, Imp.8Ω, 10cm(4"), PM Dynamic	1	X
SWITCHES				
S1,1-S1-6	RSR4F01YK-H	Switch, Band Selector	1	X
S2,1-S2-2	RSS142Z-H	Switch, Radio-Phono Selector	1	X
S3	RST2B06Z-H	Switch, Power	1	X
CABINET				
CAL-1	RYMFL105LBE	Cabinet Body Assembly	1	O X
CAL-2	(Not Available, Order)	Cabinet Body Only	(1)	(1)
CAL-3	RGK729X	Panel, Transparency	1	O Z
CAL-4	RGK730Z	Ornament, Upper Side	1	Z
CAL-5	RGK731Z	Ornament, Right Side	1	Z
CAL-6	RGY788Z	Ornament, Left Side Indicating Plate, National Panasonic Mark	1	Y

Ref. No.	Part No.	Part Name & Description	Part No.	Part Name & Description	Per Set	Remarks
CH3	RJJ19Z	Jack, Earphone or EXT. Speaker			1	Y
CH4	RJJ30Z-H	Socket, AC IN			1	Y
CH5	RJSL1LZ-H	Socket, DIN			1	Y
CH6	RJW7A	Holder, Fuse Radio-PHONO			2	Z
CH7	RJH10Z	SHIELD MOTOR Cover, AC IN Jack Earphone or EXT. Speaker			1	Z
CH9	RUV58A	Cover			2	Z
CH10	RUV118B	Cover			1	Z
CH11	RML94Z	& Power Switch			1	Z
CH12	RME70A	Base, Power Transformer M'tg			2	Y
CH13	RM272Z	Holder, Lead			1	Z
CH14	RMCL71A	Shield Cover, IFT			1	Z
CH17 (Fig. 4)	RHG5A	Shield Cover, IC			1	Z
CH18	XSN26+5	Rubber, Tuning Capacitor			2	Z
	XTW3+10F	Screw, Tuning Capacitor			6	Z
CH19	XTW3+10FR	Screw, Power Transformer, Base,			4	Z
	XTN3+8C	AC IN Jack & P.C. Board M'tg			1	Z
	QQC1023	Screw, Lead Holder M'tg			1	Y
		Label, Safety-Note			1	Y
ACCESSORIES						
A1	XEH1A1-P	Earphone			1	Y
A2	RJA43Z-K	Power Cord, AC			1	Y
PACKING MATERIALS						
P1	XZB35X30A04	Polyethylene Cover, Set			1	Z
P2	REFN9209Z	Pad, Complete			1	Z
P3	(Not Available, Order	Pad, Left Side			(1)	
		Pad, Right Side			(1)	
P4	RPFN9209Z	Gift Box			1	OY
P5	RPGL1656Z	Instruction Book, English			1	OY
P6	RQX6036Z	Polyethylene Cover, Accessories			1	Z
	XZB10X25A04					

Ref. No.	Part No.	Part Name & Description	Part No.	Part Name & Description	Per Set	Remarks
CA1-7	RGML25Z	Metal Grille, Speaker			1	Y
CA1-8	RGSR72Z	Net, Speaker			1	Z
CA1-9	RKX114Y	Handle, Cabinet			1	Y
CA1-10	XSC3+8BNS	Screw, Handle M'tg			2	Z
CA1-11	RKX113ZS	Arm, Handle M'tg			2	Y
CA1-12	RKT104Z	Bracket, Arm M'tg			2	Z
CA1-13	RNW823	Nylon Washer, Arm M'tg			4	Z
CA1-14	XWG3X10	Washer, Arm M'tg			2	Z
CA1-15	XSN3+8S	Screw, Arm M'tg			2	Z
CA2-1	RYEFF1105LBE	Cabinet Cover Assembly			1	O
CA2-2	(Not Available, Order	Cabinet Cover Only			(1)	
	RYFFL105LBE	Baffle			(1)	
CA2-3	RMA5073Z	Bracket, Telescopic Antenna			1	Y
CA2-4	RGY543Y	Name Plate			1	Z
CA2-5	RJC208B	Terminal, Battery ⊕ Side			1	Y
CA2-6	RJC603Z	Terminal, Battery ⊖ Side			1	Y
	RGK739Y	Ornament, AC IN			1	O
CA2-7	XEARR170FESY	Telescopic Antenna			1	X
CA2-8	RJT202B	Terminal, Telescopic Antenna			1	Y
CA2-9	XNTR3	Washer, Telescopic Antenna M'tg			1	Y
CA2-10	XYN3+C6S	Screw, Telescopic Antenna			1	Z
CA2-11	RHS926Z	Tape, Battery			1	Z
CA3	RKK81Z	Battery Cover			1	Z
CA4	RBN370Z	Knob, Tuning			1	X
CA5	RBN371Z	Knob, Tone & Volume			1	X
CA6	RBS102ZK	Knob, Band			2	X
CA7	RMS30	Bracket, Speaker M'tg			1	X
CA8	XTN3+10C	Screw, Speaker M'tg			3	Z
CA9	XTB3+40CFN	Screw, Cabinet Cover M'tg			3	Z
CHASSIS						
CH1-1	RXELF1105LBE	Chassis Assembly, Dial			1	O
CH1-2	(Not Available, Order	Chassis Only, Dial			(1)	
CH1-3	RXELF1105LBE	Pulley, Dial (Large)			(3)	
CH1-4		Pulley, Dial (Small)			(1)	
CH1-5	RKD441X	Nylon Washer, Pulley			(3)	
	RXE2F1105LBS	Dial Scale			1	
CH1-6	(RDP165Z	Dial Pointer Assembly			1	
D12	(RVDGL31AR	Pointer, Dial			1	
CH1-7	RDD363Z	Diode, LED			1	X
CH1-8	RDS4060A	Drum, Dial			1	Y
CH1-9	RDT2171Z	Spring, Dial			1	Y
CH1-10	XNS8	Shaft, Tuning			1	Y
CH1-11	RDZ05A	Nut, Tuning Shaft M'tg			1	Z
CH1-12	RUL503Z	Cord, Dial 500m			1Roll	Z
CH1-13	RUS298Z	Bracket, Chassis M'tg			1	Z
CH1-14	XTN3+10C	Holder, LED Lead			1	Z
CH1-15	XTW3+16F	Screw, Chassis M'tg			4	Z
CH2	XBA2C08TRO	Fuse, 800mA			1	Z
	RQT1021A	Label, 800mA			1	Y

* Resistors and capacitors, refer to replacement parts list of model RF-1105LBS

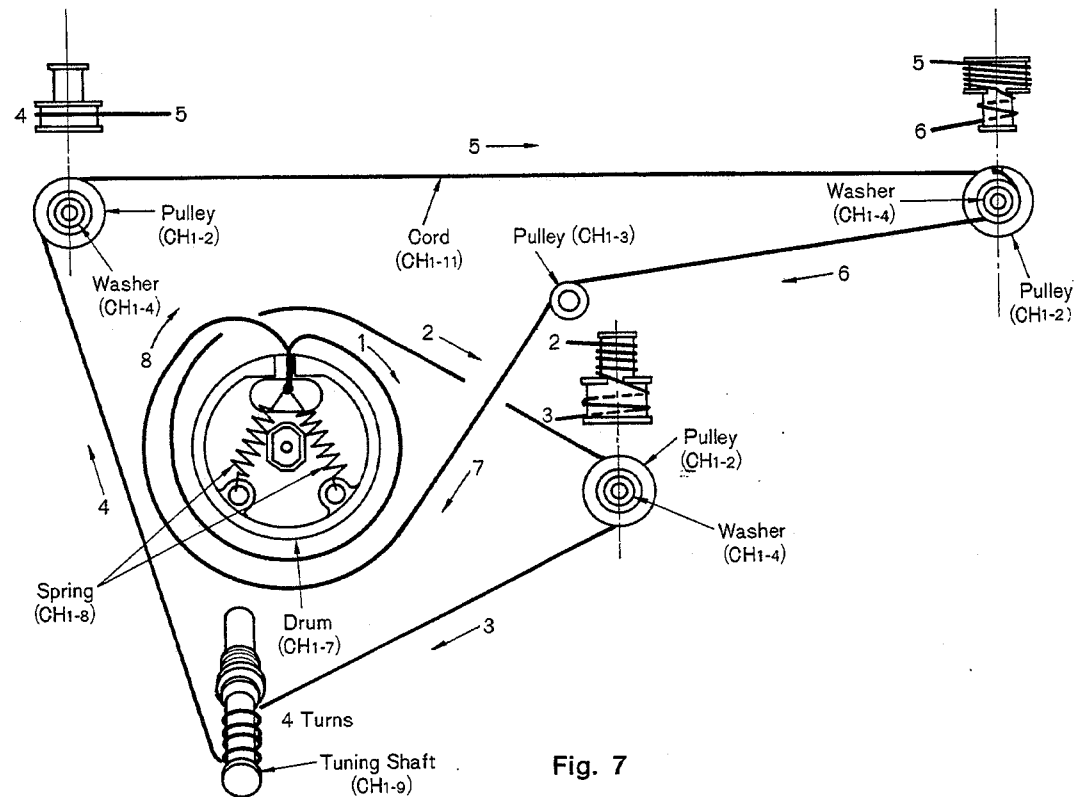


Fig. 7

■ ALIGNMENT POINTS

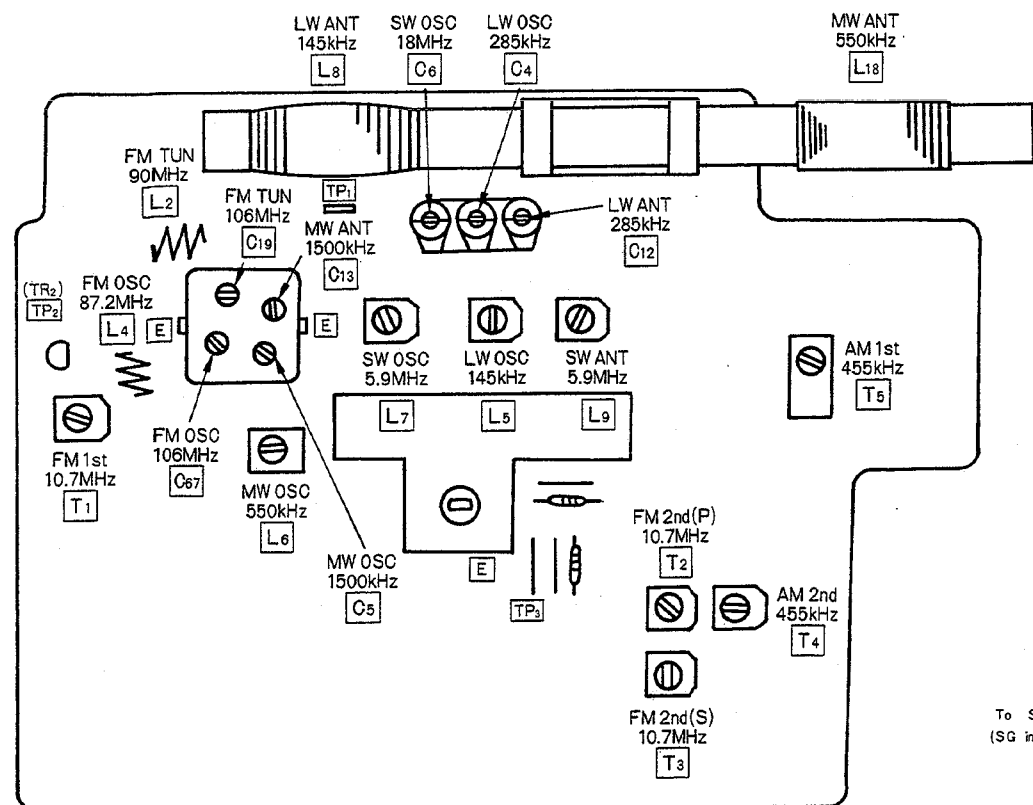


Fig. 8

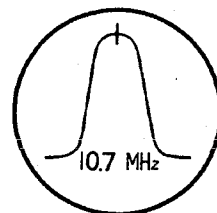


Fig. 9

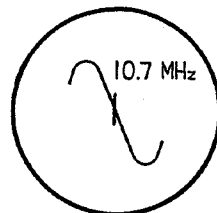


Fig. 10

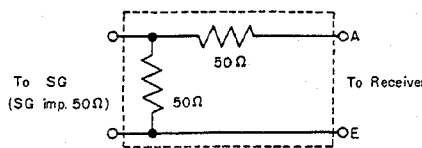


Fig. 11 FM Dummy Antenna

■ ALIGNMENT INSTRUCTIONS

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT					
Notes:					
1. Set volume control to maximum.		5. Set power source voltage to 117V or 230V AC.		6. Output of signal generator should be no higher than necessary to obtain an output reading.	
2. Set power switch to ON.		3. Set band selector to LW, MW, SW or FM.		7. Set tone control to maximum.	
3. Set band selector to LW, MW, SW or FM.		4. Set radio/phono selector to RADIO.			
SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUSTMENT	REMARKS
CONNECTIONS	FREQUENCY				
AM ALIGNMENT					
(1)	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kHz 30% Mod. with 400 Hz.	Point of non-interference. (on/about 600 kHz).	Output meter across voice coil.	T ₅ (1st IFT) T ₄ (2nd IFT) Adjust for maximum output.
LW ALIGNMENT					
(2)	"	145 kHz	145 kHz [10mm($\frac{3}{8}$ ")]	Output meter across voice coil.	L ₅ (OSC Coil) (*1)L ₈ (ANT Coil) Adjust for maximum output. Adjust L ₈ by moving coil bobbin along ferrite core.
(3)	"	285 kHz	285 kHz [103mm($4\frac{1}{8}$ ")]	"	C ₄ (OSC Trimmer) C ₁₂ (ANT Trimmer) Adjust for maximum output. Repeat steps (2) and (3).
MW ALIGNMENT					
(4)	"	550 kHz	550 kHz [12mm($\frac{1}{8}$ ")]	"	L ₅ (OSC Coil) (*1)L ₁₈ (ANT Coil) Adjust for maximum output. Adjust L ₁₈ by moving coil bobbin along ferrite core.
(5)	"	1500 kHz	1500 kHz [102.6mm($4\frac{1}{8}$ ")]	"	C ₅ (OSC Trimmer) C ₁₃ (ANT Trimmer) Adjust for maximum output. Repeat steps (4) and (5).
(*1) Cement antenna bobbin with wax after completing alignment.					
SW ALIGNMENT					
(6)	Connect to point TP ₂ through 10PF capacitor, Common to point E.	5.9 MHz	5.9 MHz [5mm($\frac{3}{16}$ ")]	"	L ₇ (OSC Coil) L ₉ (ANT Coil) Adjust for maximum output.
(7)	"	18.0 MHz	18.0 MHz [109mm($4\frac{3}{8}$ ")]	"	C ₆ (OSC Trimmer) Adjust for maximum output. Repeat steps (6) and (7).
FM-IF ALIGNMENT					
(8)	High side thru. 0.001µF to point TP ₂ . Negative side to point E.	10.7 MHz (400 kHz SWP.)	Point of non-interference. (on/about 90 MHz).	Connect vert. amp. of scope to point TP ₃ . Negative side to point E.	T ₁ (FM 1st IFT) T ₂ (FM 2nd IFT) (Primary) Adjust for maximum amplitude and proper linearity between ±100 kHz marker. (Refer to fig. 9.)
(9)	"	"	"	"	T ₃ (FM 2nd IFT) (Secondary) Adjust T ₃ so 10.7 MHz marker appears at the center. (Refer to fig. 10.)
FM-RF ALIGNMENT					
(10)	Connect to point TP ₁ through FM dummy antenna. Negative side point to E. (Refer to fig. 11.)	87.2 MHz	87.2 MHz [0mm]	Output meter across voice coil.	L ₄ (FM OSC Coil) (*2) Adjust for maximum output.
(11)	"	90 MHz	90 MHz [15.5mm($\frac{5}{8}$ ")]	"	L ₂ (FM Tuning Coil) (*2) Adjust for maximum output.
(12)	"	106 MHz	106 MHz [96.2mm($3\frac{7}{8}$ ")]	"	C ₆₇ (FM OSC Trimmer) C ₁₉ (FM Tuning Trimmer) (*2) Adjust for maximum output. Repeat steps (10)~(12).
(*2) Three output responses will be present; proper tuning is the center frequency.					

Circuit Board Wiring View - Model RF-1105LBS

TR1	
	FM
C	0.06V
B	0V
E	0.7V
Ic	0.41mA

TR2	
	FM
C	3.7V
B	0.9V
E	0.5V
Ic	0.6mA

TR3		
	FM	AM
C	1.8V	1.8V
B	0.6V	0.59V
E	0.4V	0.38V
Ic	0.62mA	0.68mA

TR4		
	FM	AM
C	0.3V	0.27V
B	1.8V	1.8V
E	2.5V	2.5V
Ic	2.4mA	2.7mA

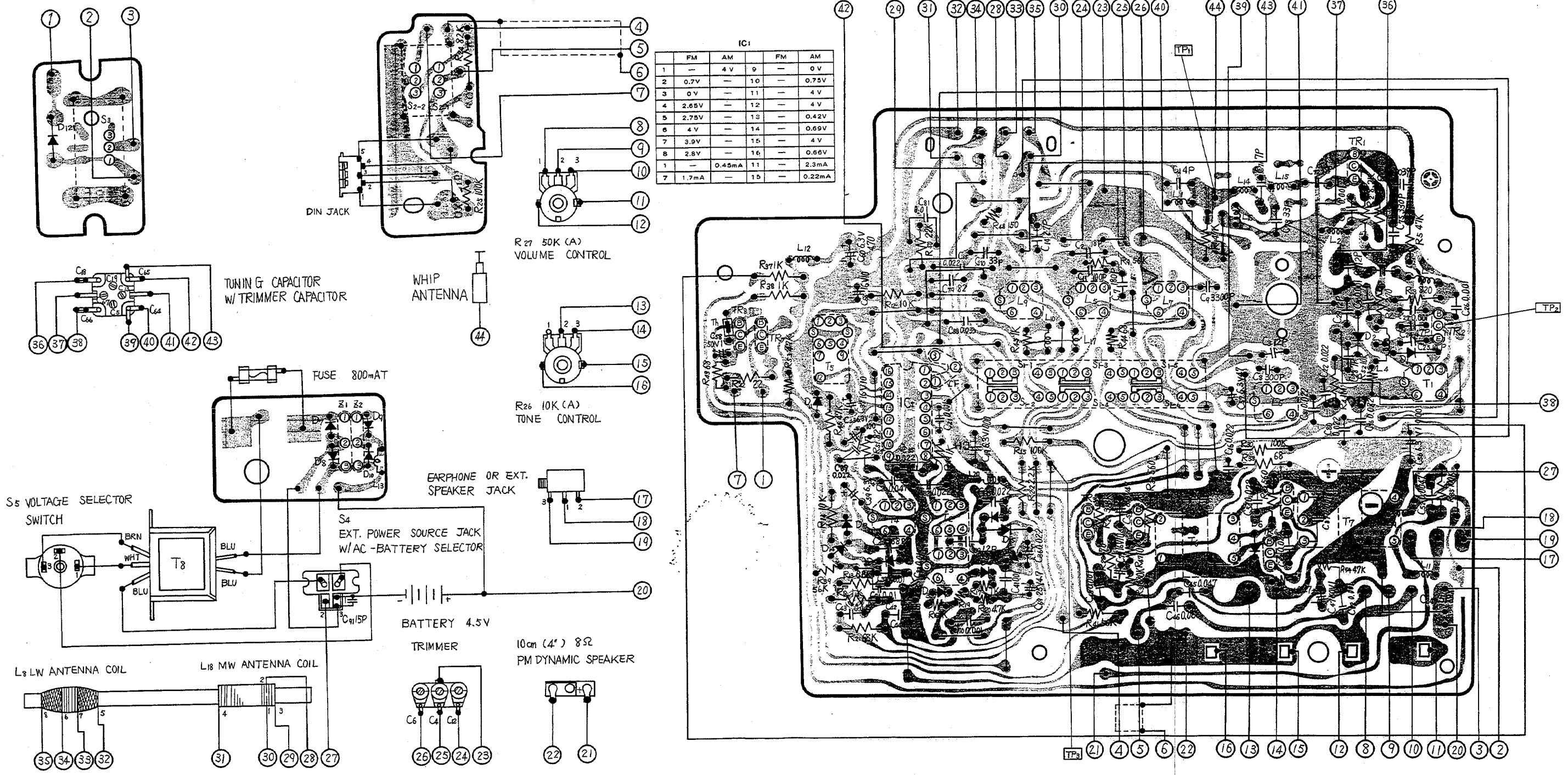
TR5		
	FM	AM
C	4.8V	4.5V
B	0.65V	0.65V
E	0V	0V
Ic	7-285mA	

TR6		
	FM	AM
C	4.6V	4.6V
B	0.65V	0.65V
E	0V	0V
Ic	7-285mA	

TR7		
	ON	OFF
C	3V	3.4V
B	1.08V	0.22V
E	0.37V	0.01V
Ic	18mA	0mA

TR8		
	ON	OFF
C	0.22V	1.08V
B	0.65V	0.55V
E	0.07V	0.02V
Ic	0.78mA	0.1mA

IC1				
	FM	AM	FM	AM
1	-	4V	9	0V
2	0.7V	-	10	0.75V
3	0V	-	11	4V
4	2.65V	-	12	4V
5	2.75V	-	13	0.42V
6	4V	-	14	0.69V
7	3.9V	-	15	4V
8	2.8V	-	16	0.66V
9	-	0.45mA	11	2.3mA
7	1.7mA	-	15	0.22mA



IC, TR2, D	D7, D8, D9, D10	TR3, TR7, D11, D14, D13, D5	IC, D3	D4, D6, D15	TR5, TR4	D6, TR6, TR5	TR1, D2, D1	TR2
T & L	L8	T8	L18	L12, T5	T4	T2, T3, L20	L9, L10	L17, L5
							L7	L1, L6
								L16, L4, L6, L15
								L2
								L4, L19, L3, T1, L11

■ CABINET PARTS LOCATIONS

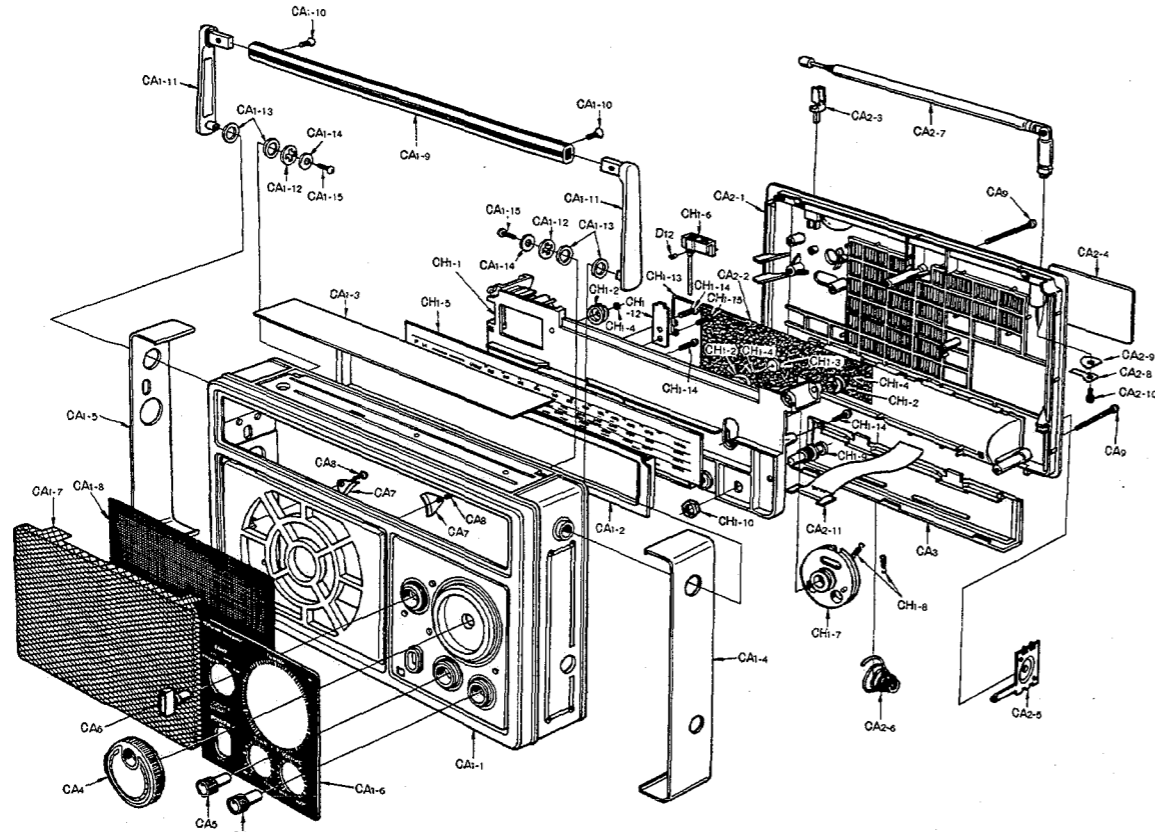


Fig. 12

■ CHASSIS PARTS LOCATIONS

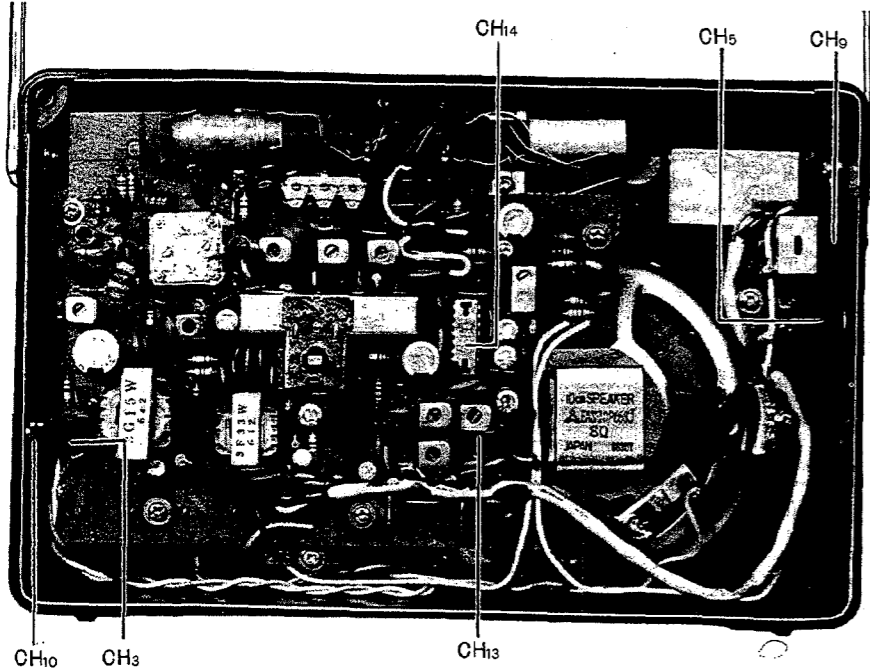


Fig. 13

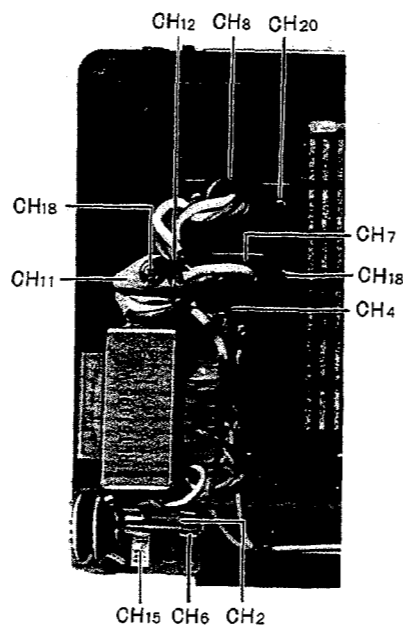


Fig. 14

■ REPLACEMENT PARTS LIST.....Model RF-1105LBS (RD7603-1350)

NOTES: 1. Part numbers are indicated on most mechanical parts.
 Please use this part number for parts orders.
 2. X-Z rank: X rank parts will cover 80% of repair needs.
 X+Y rank parts will cover 95% of repair needs.
 Z rank parts are less necessary.
 3. Components identified by shaded area have special characteristics important for safety.
 When replacing any of these components use only manufacturer's specified parts.
 4. Part numbers shown in bold letters are service standard parts and may differ from production parts.
 5. The O mark is used by the manufacturing plant only.

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
L10,13,19,20	RLQY15G5-O	Coil, Choke	4	Y
L14	RLQY50S5-O	Coil, Choke	1	Y
L16	RLQY15S5-O	Coil, Choke	1	Y
L17	RLQY25S5-O	Coil, Choke	1	Y
T1	RLI4M101-M	IFT, FM 1st	1	X
T2	RLI4M503-M	IFT, FM 2nd(Primary)	1	OX
T3	RLI4M502-M	IFT, FM 2nd(Secondary)	1	OX
T4	RLI2M402-M	IFT, AM 2nd	1	X
T5	RLI7W105Q-M	IFT, AM 1st	1	X
T6	RLT3F33-W	Input Transformer, P=1.4KΩ;S=1.4KΩ	1	X
T7	RLT2G15-W	Output Transformer, P=24Ω;S=8Ω	1	X
T8	RLT5J195-W	Power Transformer	1	OX
VARIABLE RESISTORS				
R26	EVH0XAF15A14	Variable Resistor, 10KΩ(A), Tone Control	1	X
R27	EVH0XAF15A54	Variable Resistor, 50KΩ(A), Volume Control	1	X
VARIABLE CAPACITORS				
C18,64,65,66	PVC22J20T2L	Tuning Capacitor, W/Trimmer Capacitor(C5,13,19,67)	1	X
C4,6,12	RCV3T16M	Trimmer Capacitor	1	X
COMPONENT COMBINATIONS				
Z1,2	RXAF103F22HD	Component Combination, 0.01μF×2	2	Y
SPEAKER				
SP	EAS10P05SJ	Speaker, Imp.8Ω, 10cm(4"), PM Dynamic	1	X
SWITCHES				
S1-1~S1-6	RSR4F01YK-H	Switch, Band Selector	1	OX
S2-1~S2-2	RSS142Z-H	Switch, Radio-Phono Selector	1	X
S3	RST2B06Z-H	Switch, Power	1	OX
S5	RSR2A01Z-H	Switch, Voltage Selector	1	OX
RESISTORS				
R33,43	ERD25TJ680	68Ω, ¼Watt, ±5%, Carbon	2	Z
R42	ERD25TJ220	22Ω, ¼Watt, ±5%, Carbon	1	Z
R10	ERD25TJ151	150Ω, ¼Watt, ±5%, Carbon	1	Z

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
INTEGRATED CIRCUIT, TRANSISTORS AND DIODES				
IC1	RVI4PC1018C	IC(Si), AM Oscillator, Mixer & FM AM IF Amp.	1	X
TR1	2SA938	Transistor(Si), FM RF Amp.	1	X
TR2	2SC1359	Transistor(Si), FM Converter	1	X
TR3,8	2SC0945	Transistor(Si), 1st AF Amp., DC Amp.	2	X
TR4	2SA564	Transistor(Si), 2nd AF Amp.	1	X
TR5,6	2SC1518	Transistor(Si), Power Amp.	2	X
TR7	2SC828	Transistor(Si), DC Amp.	1	X
DL5,13,14,15	0A90	Diode(Ge), FM D.AGC, AM Detector, AM Rectifier & FM Rectifier	6	X
D2	RVDKB167	Diode(Si), FM AFC	1	X
D3,4	2-OA90	Diode(Si), FM Detector	2	X
D6,17	RVDVD1150	Diode(Si), AOC	2	X
D11	RVDVD1252	Diode(Si), AOC	1	X
THERMISTOR AND RECTIFIERS				
TH1	RRTK401	Thermistor	1	X
D7,8,9,10	RVDKB162C5	Rectifier	4	X
CERAMIC FILTER, COILS AND TRANSFORMERS				
CF	RVPSP107MS	Ceramic Filter	1	X
L1,11,12,15	RLQY75S5-O	Coil, Choke	4	Y
L2	RLD4Y54-O	Coil, FM Tuning	1	X
L3	RLQY30S1-O	Coil, Choke	1	X
L4	RLQ4Y43-O	Coil, FM Oscillator	1	X
L5	RLQ1M5-M	Coil, LW Oscillator	1	OX
L6	RLQ2M15-M	Coil, MW Oscillator	1	X
L7	RLQ3M36-O	Coil, SW Oscillator	1	X
L8,18	RLFGB151-O	Coil, LW & MW Antenna	1	OX
L9	RLA3M4-M	Coil, SW Antenna	1	OX

Service Manual

FM/LW/MW/SW 4-BAND
PORTABLE RADIO

Radio
RF-1105LBE

Arbeitsstück / ET-Verkauf / Sp 30.10.7

- * This service manual includes only the changes of the RF-1105LBS service manual (ORDER NO. RD7608-1350) except for replacement parts list.
- * This manual should be filed with the service manual for model RF-1105LBS (ORDER NO. RD7608-1350).
- * When servicing model RF-1105LBE, this service manual and the RF-1105LBS service manual should be used together.

8

CHANGES

■ SPECIFICATIONS

Intermediate Frequency: FM 10.7 MHz
AM (LW, MW & SW) 455 kHz
Power Source: AC 110V—125V/220V—240V
50/60 Hz or
4.5V (Three "C" Size Flashlight Batteries)
National UM-2 or equivalent

FM 10.7 MHz
AM (LW, MW & SW) 470kHz
AC 240V, 50Hz
4.5V (Three "C" Size Flashlight Batteries)
National UM-2 or equivalent
Trade descriptions act 1968.
National Panasonic U.K. LTD.
Reserves the right to change the design and specification of goods without notice. Descriptions in this service manual are correct at the time of going to press but are subject to alteration. Details of any changes will be available on request.
(Model RF-1105LBE)

Specifications are subject to change without notice for further improvement.
(Model RF-1105LBS)

■ ALIGNMENT INSTRUCTIONS

Notes: 5. Set power source voltage to 117V or 230V AC.

4. Set power source voltage to 240V AC.

(1)

455 kHz 30% Mod. with 400 Hz.

(Model RF-1105 LBS)

470 kHz 30% Mod. with 400 Hz.

(Model RF-1105LBE)

■ ALIGNMENT POINTS

T ₆	AM 1st 455 kHz
T ₄	AM 2nd 455 kHz

(Model RF-1105LBS)

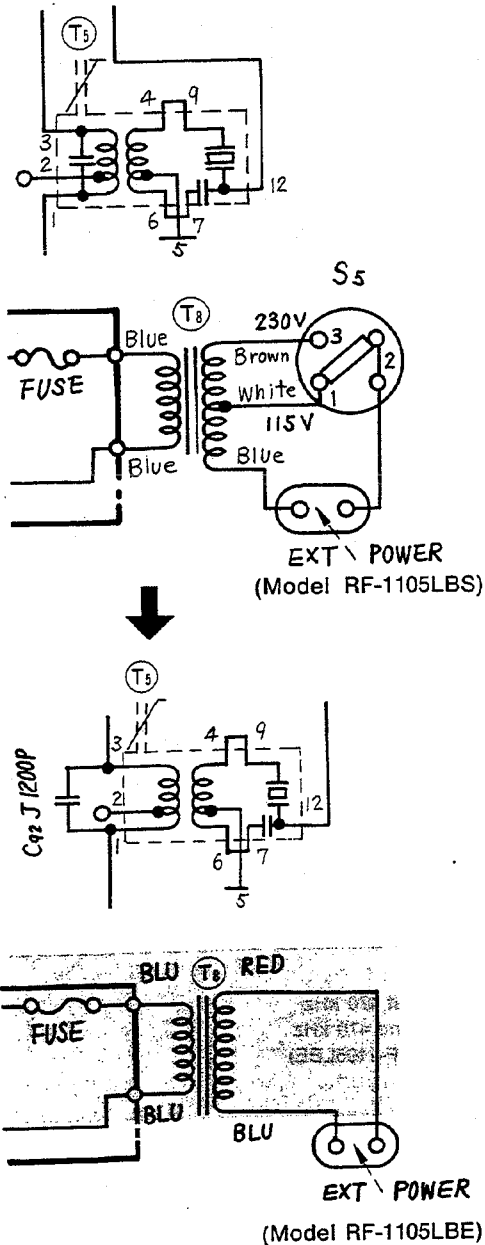
T ₆	AM 1st 470 kHz
T ₄	AM 2nd 470 kHz

(Model RF-1105LBE)

REPLACEMENT PARTS LIST

Ref. No.	Change of Part No.		Part Name & Description	Per Set	Remarks	Price
	RF-1105LBS	RF-1105LBE				
C ₉₂	—	ECQS05122JZ	1200pF, 50WV, ±5%, Styrol	1	Z	
C ₈	ECQS1301JZ	ECQS1271JZ	270pF, 125WV, ±5%, Styrol	1	Z	
C ₆₈	ECEA16V10V	ECEA6V47	47μF, 6.3WV, Electrolytic	1	Y	
R ₁₂	ERD25TJ103	ERD25TJ332	3.3KΩ, 1/5 Watt, ±5%, Carbon	1	Z	
R ₁₃	ERD25TJ682	ERD25TJ103	10KΩ, 1/5 Watt, ±5%, Carbon	1	Z	

SCHEMATIC DIAGRAM



CIRCUIT BOARD WIRING VIEW

