

TECHNICAL MANUAL

ROTEL®

AM/FM STEREO TUNER

RT-845AX

LW/MW/FM STEREO TUNER

RT-845AXL

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THE ROTEL CO., LTD.

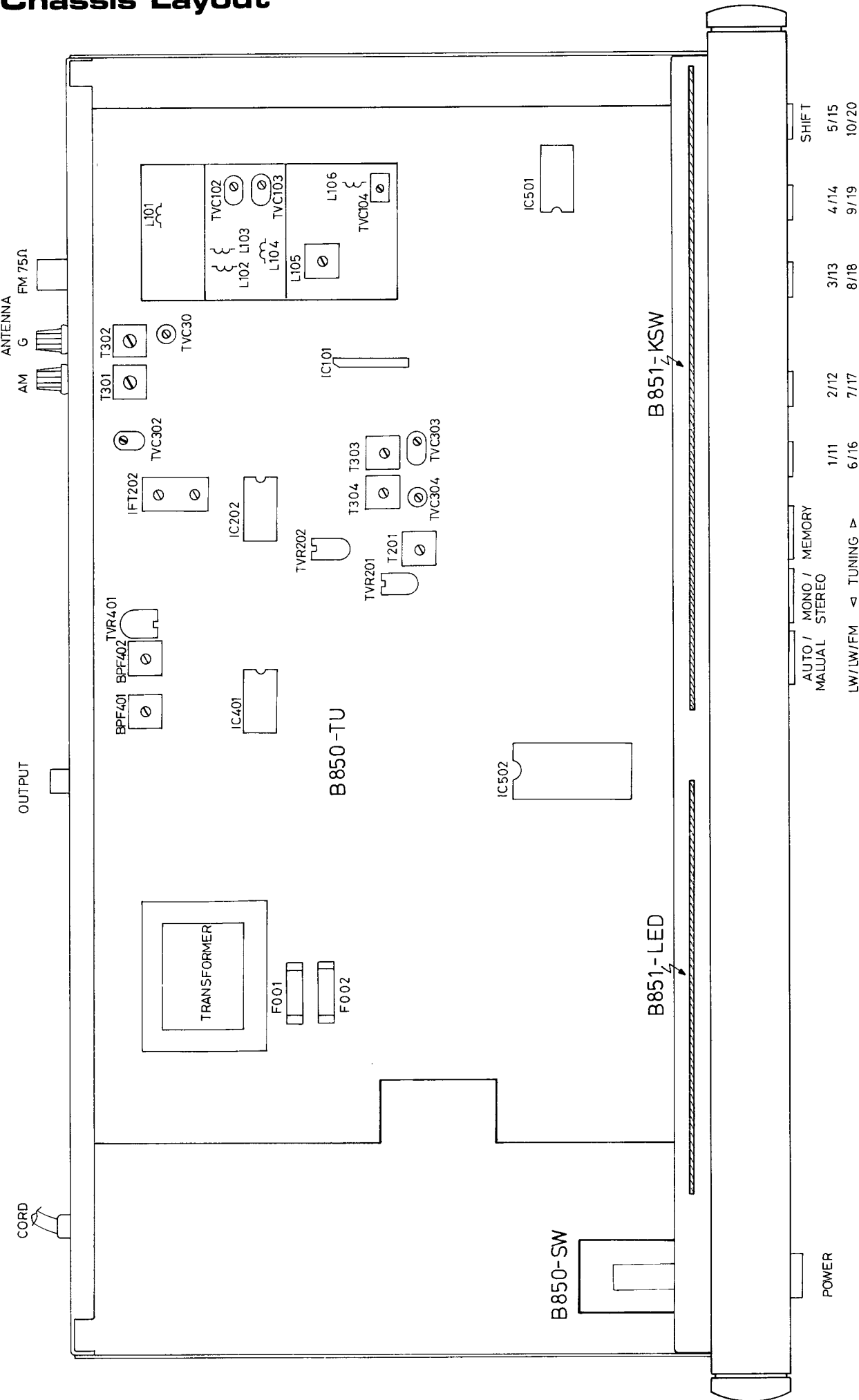
1-36-8 OHOKAYAMA, MEGURO-KU, TOKYO 152, JAPAN

ROTEL ELECTRONICS CO., LTD.

ROTEL BLDG., 3F, NO. 35, FUSING N. ROAD, TAIPEI, TAIWAN, REPUBLIC OF CHINA

MN20001858

Chassis Layout



FM IF and RF Alignment

Instruments : FM Signal Generator, (400Hz, 100% Modulated) T.H.D. analyzer, Oscilloscope, AC VTVM, DC Voltmeter, Tuning Meter

Terminated : DC Voltmeter...Between W003 and Earch On B850 P.C.B
Tuning Meter...Between P5 and P6 On B850 P.C.B

Step	Generator		Tuning Dial Setting	Adjust	Adjust for
	Coupling	Frequency			
1	No use.		87.5 MHz	L106	3.8V reading on DC Voltmeter
2			108 MHz	TVC104	8V reading on DC Voltmeter
3	Repeat steps 1 and 2 unit no further improvement is noticed.				
4	Antenna terminal	90 MHz	90 MHz	L102 , L103 L104	Maximum reading on AC VTVM.
6		105 MHz	105 MHz	TVC101 , TVC102 TVC103	Maximum reading on AC VTVM.
7	Repeat steps 4 and 6 unit on further improvement is noticed (Muting OFF) (RFF ATT ON)				
8	Antenna terminal 1mV input	90 MHz	90 MHz	IFT202(A)	Adjust center on Tuning Meter
9				IFT202(B)	Minimum reading on T.H.D. Analyzer
10	Repeat steps 8 and 9 unit no further improvement is noticed (Muting OFF)				
11	Antenna terminal 15 μ V input 7 μ V input (Europe)	90 MHz	90 MHz	TVR201	Muting Level (Muting ON) Tuned Indicator

FM MPX Alignment

Instruments : FM Stereo Generator, AC VTVM, Oscilloscope, Frequency Countor and THD Analyzer

Step	Generator		Tuning Dial Setting	Adjust	Adjust for
	Coupling	Frequency			
1	Antenna terminal 1mV input	98 MHz Pilot.....10% 1 KHz.....90% Mod.	98 MHz	TVR401	Pilot Cancel 19 KHz Minimum Dist.
2	Repeat steps 1 unit no further improvement is noticed. Check the stereo indicator can be operated normally when pilot signal is reduce from 10% to 5%				

MW IF and RF Alignment

Instruments : AM signal Generator (400Hz 30% Modulated), AC VTVM, Oscilloscope, DC Voltmeter

Terminated : DC Voltmeter...Between W010 and Earth On B850 P.C.B

Step	Generator		Tuning Dial Setting	Adjust	Adjust for
	Coupling	Frequency			
1	No use.		530 KHz (531 KHz) Europe	T303	About 1.5V $\pm$ 0.1V on DC Volt meter
2			1600 KHz (1602 KHz)Europe	TVC303	About 95V $\pm$ 0.2V on DC Volt meter
3	Repeat steps 1 and 2 unit no further improvement is noticed.				
4	Test Loop Radiate signal into loop antenna	450 KHz	530KHz	T201	Maximum reading on AC VTVM.
5		600 KHz	600KHz	T301	
6		1400 KHz	1400 KHz	TVC302	
7	Repeat steps 5 and 6 unit no further improvement is noticed.				

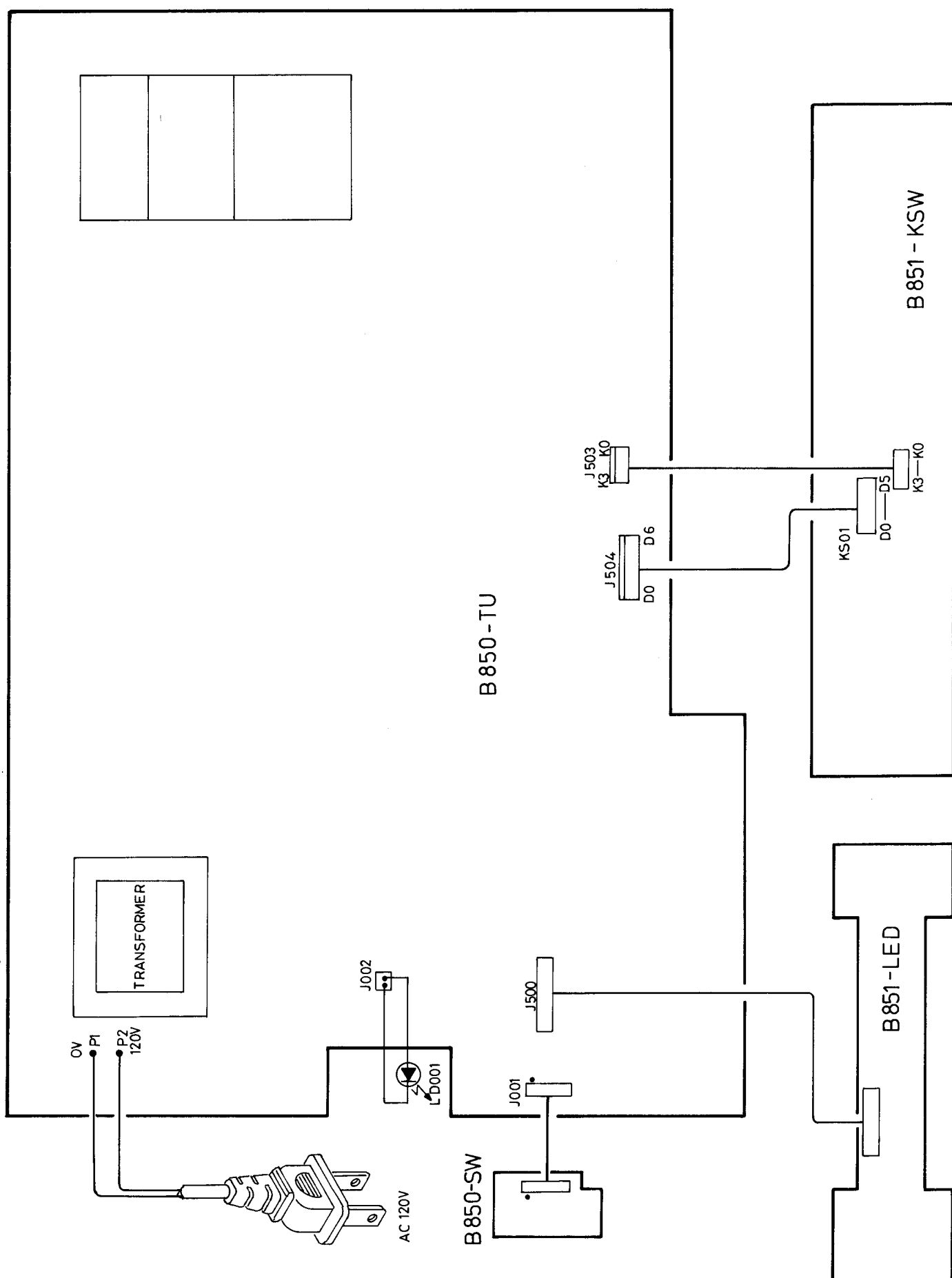
LW RF Alignment

Instruments : AM signal Generator (400Hz 30% Modulated), AC VTVM, Oscilloscope, DC Voltmeter

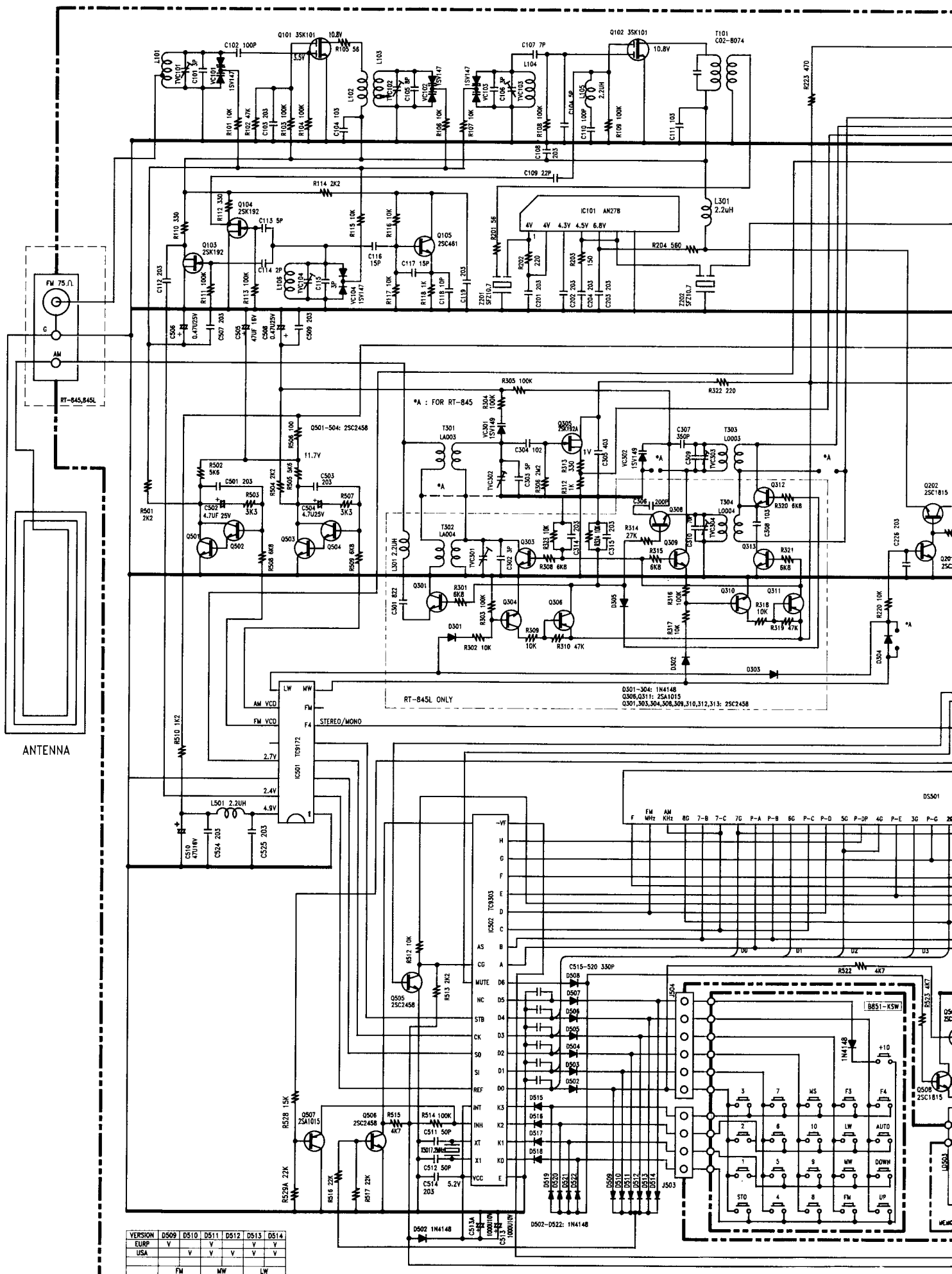
Terminated : DC Voltmeter...Between W010 and Earth On B850 P.C.B

Step	Generator		Tuning Dial Setting	Adjust	Adjust for
	Coupling	Frequency			
1	No use.		153KHz	T304	About 1.6V $\pm$ 0.1V on DC Volt meter
2			281KHz	TVC304	About 9V $\pm$ 0.2V on DC Volt meter
3	Repeat steps 1 and 2 unit no further improvement is noticed.				
4	Test Loop Radiate signal into loop antenna	160KHz	160KHz	T302	Maximum reading on AC VTVM.
5		250KHz	250KHz	TVC301	
6	Repeat steps 4 and 5 unit no further improvement is noticed.				

Wiring Diagram



Schematic Diagram



ATTENTION:
REPLACER SEULEMENT PAR LES
FUSIBLES DU MEME TYPE.
CAUTION:

FOR CONTINUED PROTECTION AGAINST
RISK OF FIRE REPLACE ONLY WITH
SAME TYPE FUSE.

R001 3M3 1/2W

0V P1
110-120V P2
220-240V P3

TRANSFORMER

MUTING

POWER

DISPLAY

MEMORY

AUTO TUNED

STEREO

J500

J501

J502

J503

J504

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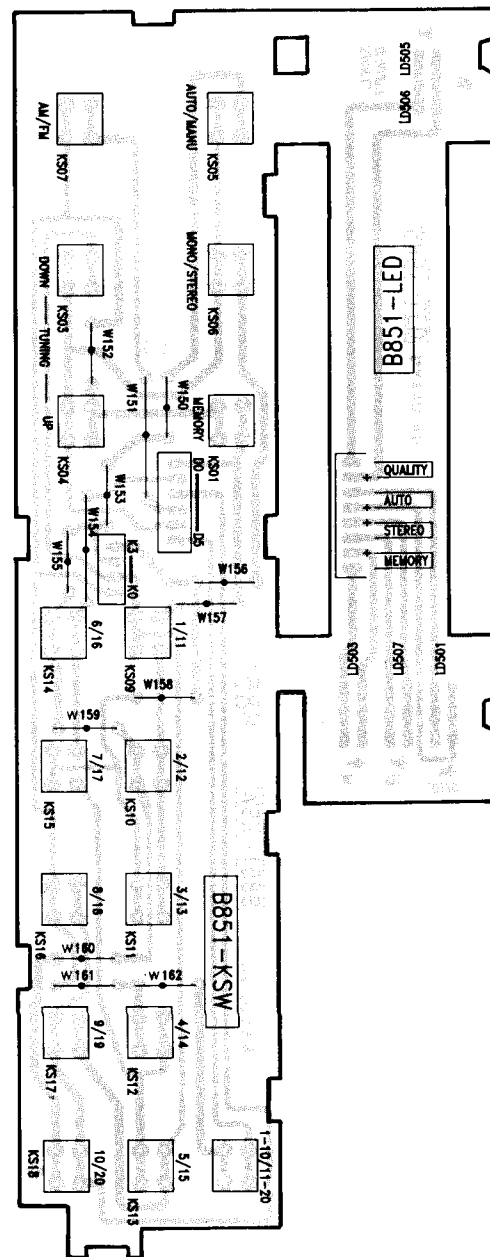
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Parts List

NOTE: THE COMPONENTS IDENTIFIED BY Δ MARK ARE FOR SAFETY. REPLACE ONLY WITH ORIGINAL PARTS. DO NOT SUBSTITUTE.

SYMBOL	PARTS NO.	DESCRIPTION
B850-TU PCB ASSEMBLY		
R001	WG60000389	R,CARBON 3.3M J 1/2W
R201	WG60000018	R,CARBON 56 J 1/4W
R401,402	WG60000018	R,CARBON 56 J 1/4W
R207,216	WG60000020	R,CARBON 100 J 1/4W
R506	WG60000020	R,CARBON 100 J 1/4W
W049A	WG60000020	R,CARBON 100 J 1/4W
R011,005	WG60000031	R,CARBON 150 J 1/4W
R203	WG60000031	R,CARBON 150 J 1/4W
R520,521	WG60000031	R,CARBON 150 J 1/4W
R202,322	WG60000043	R,CARBON 220 J 1/4W
R217	WG60000055	R,CARBON 470 J 1/4W
R524	WG60000055	R,CARBON 470 J 1/4W
BESIDE		
R409	WG60000055	R,CARBON 470 J 1/4W
Q306	WG60000055	R,CARBON 470 J 1/4W
R204	WG60000067	R,CARBON 560 J 1/4W
R003,006	WG60000079	R,CARBON 1K J 1/4W
R211,409	WG60000079	R,CARBON 1K J 1/4W
W045	WG60000079	R,CARBON 1K J 1/4W
R118	WG60000079	R,CARBON 1K J 1/4W
R510	WG60000080	R,CARBON 1.2K J 1/4W
R002,222	WG60000092	R,CARBON 2.2K J 1/4W
R501,504	WG60000092	R,CARBON 2.2K J 1/4W
R513	WG60000092	R,CARBON 2.2K J 1/4W
R511	WG60000109	R,CARBON 3.3K J 1/4W
R004	WG60000110	R,CARBON 3.9K J 1/4W
R009,515	WG60000122	R,CARBON 4.7K J 1/4W
R518,519	WG60000122	R,CARBON 4.7K J 1/4W
R522,523	WG60000122	R,CARBON 4.7K J 1/4W
R010	WG60000134	R,CARBON 5.6K J 1/4W
R007	WG60000146	R,CARBON 6.8K J 1/4W
R301,308	WG60000146	R,CARBON 6.8K J 1/4W
R315,321	WG60000146	R,CARBON 6.8K J 1/4W
R101	WG60000158	R,CARBON 10K J 1/4W
R106,107	WG60000158	R,CARBON 10K J 1/4W
W128,R206	WG60000158	R,CARBON 10K J 1/4W
R210,213	WG60000158	R,CARBON 10K J 1/4W
R408,413	WG60000158	R,CARBON 10K J 1/4W
R512	WG60000158	R,CARBON 10K J 1/4W
R528	WG60000160	R,CARBON 15K J 1/4W
R008,516	WG60000171	R,CARBON 22K J 1/4W
R218,314	WG60000183	R,CARBON 27K J 1/4W
R407	WG60000195	R,CARBON 56K J 1/4W
R304	WG60000201	R,CARBON 100K J 1/4W
BESIDE		
TVC101	WG60000201	R,CARBON 100K J 1/4W
R310,323	WG60000201	R,CARBON 100K J 1/4W
R324,514	WG60000201	R,CARBON 100K J 1/4W
R105	WG60000225	R,CARBON 56 J 1/6W
R312	WG60000237	R,CARBON 220 J 1/6W
R110,112	WG60000249	R,CARBON 330 J 1/6W
R508,509	WG60000250	R,CARBON 820 J 1/6W
R118	WG60000262	R,CARBON 1K J 1/6W
R114,211	WG60000274	R,CARBON 2.2K J 1/6W
R215,413	WG60000286	R,CARBON 3.3K J 1/6W
R415	WG60000286	R,CARBON 3.3K J 1/6W
R503,507	WG60000286	R,CARBON 3.3K J 1/6W
R209,220	WG60000298	R,CARBON 4.7K J 1/6W
R529	WG60000298	R,CARBON 4.7K J 1/6W
R402	WG60000304	R,CARBON 5.6K J 1/6W
R502,505	WG60000304	R,CARBON 5.6K J 1/6W
R420	WG60000316	R,CARBON 8.2K J 1/6W
R115-117	WG60000328	R,CARBON 10K J 1/6W
R212,214	WG60000328	R,CARBON 10K J 1/6W
R411	WG60000328	R,CARBON 10K J 1/6W
R418,419	WG60000328	R,CARBON 10K J 1/6W
R416,417	WG60000330	R,CARBON 15K J 1/6W
R410,517	WG60000341	R,CARBON 22K J 1/6W

SYMBOL	PARTS NO.	DESCRIPTION
R529A	WG60000341	R,CARBON 22K J 1/6W
R102	WG60000353	R,CARBON 47K J 1/4W
R103,108	WG60000365	R,CARBON 100K J 1/6W
R109,111	WG60000365	R,CARBON 100K J 1/6W
R113	WG60000365	R,CARBON 100K J 1/6W
R305	WG60000365	R,CARBON 100K J 1/6W
R403,404	WG60000365	R,CARBON 100K J 1/6W
R405,406	WG60000377	R,CARBON 120K J 1/6W
C114	WG50000198	CAP,CERAMIC 20P 50V CH
C101,105	WG50000204	CAP,CERAMIC 3P 50V CH
C104,107	WG50000216	CAP,CERAMIC 5P 50V CH
C113,309	WG50000216	CAP,CERAMIC 5P 50V CH
C118	WG50000228	CAP,CERAMIC 10P 50V CH
C116,117	WG50000230	CAP,CERAMIC 15P 50V CH
C109	WG50000241	CAP,CERAMIC 22P 50V CH
C102,110	WG50000265	CAP,CERAMIC 100P 50V CH
C210,511	WG50000253	CAP,CERAMIC 50P 50V
UNDER		
C512	WG50000253	CAP,CERAMIC 50P 50V
C403,414	WG50000265	CAP,CERAMIC 100P 50V
C415	WG50000265	CAP,CERAMIC 100P 50V
C416	WG50000289	CAP,CERAMIC 300P 50V
BESIDE		
W134x3	WG50000289	CAP,CERAMIC 300P 50V
UPPER		
W134x2	WG50000289	CAP,CERAMIC 300P 50V
BESIDE		
SFE450B	WG50000290	CAP,CERAMIC 500P 50V
C304	WG50000307	CAP,CERAMIC 0.001uF 50V
C001,002	WG50000319	CAP,CERAMIC 0.02uF 50V
C103,104	WG50000319	CAP,CERAMIC 0.02uF 50V
C112	WG50000319	CAP,CERAMIC 0.02uF 50V
C201-205	WG50000319	CAP,CERAMIC 0.02uF 50V
C208,211	WG50000319	CAP,CERAMIC 0.02uF 50V
C224,224A	WG50000319	CAP,CERAMIC 0.02uF 50V
C226	WG50000319	CAP,CERAMIC 0.02uF 50V
C305,311	WG50000319	CAP,CERAMIC 0.02uF 50V
C313,316	WG50000319	CAP,CERAMIC 0.02uF 50V
C323	WG50000319	CAP,CERAMIC 0.02uF 50V
C501,507	WG50000319	CAP,CERAMIC 0.02uF 50V
C512,514	WG50000319	CAP,CERAMIC 0.02uF 50V
C521,521A	WG50000319	CAP,CERAMIC 0.02uF 50V
C523,526	WG50000319	CAP,CERAMIC 0.02uF 50V
BESIDE		
W049	WG50000319	CAP,CERAMIC 0.02uF 50V
C111,119	WG50000319	CAP,CERAMIC 0.02uF 50V
C121	WG50000319	CAP,CERAMIC 0.02uF 50V
C003,207	WG50000320	CAP,CERAMIC 0.04uF 50V
C312,525	WG50000320	CAP,CERAMIC 0.04uF 50V
RIGHT		
UPPER W062	WG50000320	CAP,CERAMIC 0.04uF 50V
C409,412	CS35611319	CAP,POLYSTYRENE 560P 160V (EURP)
C409,412	WG50000174	CAP,STYROL 820P 50V (USA)
C306	WG50000186	CAP,STYROL 200P 50V
C220	WG50000150	CAP,MYLAR 153J 50V
C402	WG50000162	CAP,MYLAR 473J 50V
C410,411	WG50000034	CAP,ELEC. 0.47uF 50V
C506,508	WG50000034	CAP,ELEC. 0.47uF 50V
C212,219	WG50000046	CAP,ELEC. 4.7uF 50V
C221,407	WG50000046	CAP,ELEC. 4.7uF 25V
C502,507	WG50000046	CAP,ELEC. 4.7uF 25V
TVC101-		
TVC103	WG50000010	CAP,TRIMMER ITP-8P
TVC104	WG50000022	CAP,TRIMMER CTY 112B
IC203	WG30000016	IC LA3401
IC202	WG30000028	IC LA1265
IC502	WG30000030	IC TC9303AN
IC101	WG30000041	IC AN278
IC501	WG30000053	IC TC9172AP

SYMBOL	PARTS NO.	DESCRIPTION
Q101,102	WG30000065	TRANSISTOR 3SK114
Q302,103	WG30000077	TRANSISTOR 2SK192A
Q105	WG30000089	TRANSISTOR 2SC1923
Q203,402	WG30000090	TRANSISTOR 2SC1015
Q507	WG30000090	TRANSISTOR 2SC1015
Q001,004	WG30000107	TRANSISTOR 2SC1815
Q202	WG30000107	TRANSISTOR 2SC1815
Q508-512	WG30000107	TRANSISTOR 2SC1815
Q201,401	WG30000119	TRANSISTOR 2SC2458
Q403,404	WG30000119	TRANSISTOR 2SC2458
Q501-506	WG30000119	TRANSISTOR 2SC2458
Q003	WG30000120	TRANSISTOR 2SA935
Q002	WG30000132	TRANSISTOR 2SC1826
D001-		
D005	WG30000170	DIODE 1N4002
Z201,202	WG40000104	FILTER SFE 10.7MS2
Z204	WG40000116	FILTER BFU 450C4N
Z203	WG40000128	FILTER SFZ 450B
Z401	WG40000130	FILTER CSB 456F 11
TVR201	WG60000390	SEMI-FIXED RES. 8F 5KB 3 PIN
TVR401	WG60000407	SEMI-FIXED RES. 8F 100KB 3 PIN
L105	WG40000098	CHOKE 2.2uH
L301,501	WG40000098	CHOKE 2.2uH
L102,106	WG40000141	COIL 0.6x5Fx3 1/2T
L101,104	WG40000153	COIL 0.6x5Fx4 1/2T
L103	WG40000165	COIL 0.6x6Fx4 1/2T
BPF402	WG40000037	IFT 10DF01
T202	WG40000049	IFT 8072 A-8B
T101	WG40000062	IFT 8074 FM-7A
T303	WG40000074	IFT LO-003 (W166)
T301	WG40000086	IFT LA-003
VC101-104	WG30000144	VARICAP 1SV47
VC301,302	WG30000156	VARICAP 1SV149
X501	WG30000168	CRTSTAL OSCILLATOR 7.2MHZ
	B851-KSW PCB ASSEMBLY	
	WG30000181	DIODE 1N4148
KSW001- KSW017	WG70000258	TACT SW ECQ-QS307K
	B851-LED PCB ASSEMBLY	
	WG30000223	LED 3F GREEN
	WG30000223	LED 3F ORANGE
	WG30000193	FL TUBE FIP7P8C
	WG70000120	FL TUBE HOLDER A-277
	B850-SW PCB ASSEMBLY	
	WG70000246	POWER SWITCH SPUF12AA05△
	OTHERS	
	WG10000060	BOTTOM BOARD C-1494
	WG10000059	SIDE CHASSIS (R) C-1492
	WG10000023	FRONT CHASSIS C-1409
	WG10000035	PRINTED REAR CHASSIS C-1491
	WG10000047	SIDE CHASSIS (L) C-1493
	WG30000200	LED 1x5 RED
	WG70000118	ANTENNA HOLDER A-271
	WG70000167	PLASTIC FOOT 4TR-2274 40F
	NP00001792	NAME PLATE ROTEL-120V 4TR-2740#1 TNP-328A
	WG70000088	AC POWER CORD SPT-2 USA △
	WG70000090	CORD STOPPER B-7 △
	WG70000106	AC CORD CLAMP UC-0.5
	WG10000084	HEAT SINKING BOARD H-042
	WG70000374	RUBBER SPACER E-202

SYMBOL	PARTS NO.	DESCRIPTION
	WG70000386	RUBBER SPACER E-203
	WG70000260	FUSE 250V 1A UL/CSA △
	WG70000015	ANTENNA TERMINAL YKD31-0133
	WG70000155	SHIELD COVER N-023
	WG10000126	POWER BUTTON RING A-364
	WG10000138	ORNAMENTAL SIDE PLATE A-360
	WG10000138	TACK BUTTON FRAME A-283 17P
	WG10000102	FILTER BOARD A-369
	WG10000140	POWER BUTTON KB-261
	WG10000096	ACRYLIC WINDOW A-355
	WG10000011	FRONT PANEL L-336
	WG70000179	POWER BUTTON SPRING S-072
	WG70000039	ORNAMENTAL PLATE SPACER A-359
	WG70000040	PUSH BUTTON CONNECTOR A-365
	WG10000151	TACT BUTTON KB-184B
	WG10000163	UPPER COVER C-190
	WG10000072	UPPER COVER C-1495
	WG40000025	LOOP ANTENNA LA-50B
	WG70000027	UPPER COVER SPACER A-358
	WG70000052	T TYPE ANTENNA 5 FEET
	WG70000064	PIN JACK SHIELD CORD 3 FEET
	WG70000076	ANTENNA CONVERTER 75:300 OHM