ORDER NO. GAD8508020C2

Service Manual

FM-LW-MW
DIGITAL CLOCK RADIO

Radio

RC-6075L

(Silver)
(White)

This is the Service Manual for the following areas.

[Z]... For all European areas except United Kingdom, F.R. Germany, Italy and Finland.

[E]... For United Kingdom.

[F]... For France.

Color Variation

Area	Color
[Z] [E]	White and Silver
[F]	Silver

■ SPECIFICATIONS

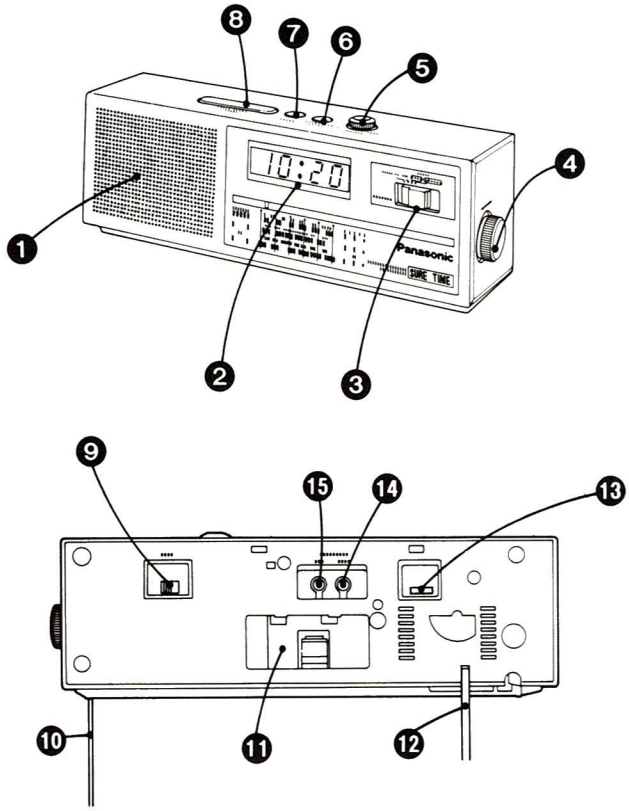
Frequency Range:	FM; 87.5~108 MHz LW; 150~255 kHz (2000~1176 m) MW; 520~1610 kHz (577~186 m)
Intermediate Frequency:	FM; 10.7 MHz [Z] [F] AM (LW/MW); 455 kHz [E] AM (LW/MW); 470 kHz
Sensitivity:	FM; 4 μV/50 mW output (−3 dB Limit sens) LW; 225 μV/m/50 mW output MW; 180 μV/m/50 mW output
Power Requirement:	[Z] [F]... AC; 220 V, 50 Hz [E]... AC; 240 V, 50 Hz Battery; 9 V (006P/6F22) for Battery Back-up
Power Output:	400 mW... RMS (max.) 440 mW... MPO
Power Consumption:	5 W
Speaker:	8 cm PM Dynamic Speaker (16Ω)
Dimensions:	292 mm (W)×100 mm (H)×75 mm (D)
Weight:	730 g without battery

Design and specifications are subject to change without notice.

Panasonic

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

LOCATION OF CONTROLS AND COMPONENTS



❶ Built-in Speaker [8 cm, 16Ω]
❷ Clock Display
❸ Mode Selector (SELECTOR)
❹ Tuning Control (TUNING)
❺ Volume Control (VOLUME)
❻ Alarm Display/Cancel Button (ALARM DISPLAY/CANCEL)
❼ Sleep Button (SLEEP)
❽ Sleep Cancel/Doze Button (SLEEP CANCEL/DOZE)
❾ Band Selector (BAND) [FM • AM]
❿ FM Antenna Cord
⓫ Back-up Battery Compartment
⓬ AC Power Cord
[Z] [F] 220 V, 50 Hz
[E] 240 V, 50 Hz
⓭ Brightness Selector (BRIGHTNESS)
⓮ Hour Set Button (HOUR)
⓯ Minute Set Button (MIN)

The Name Plate of this set is located on the bottom of the unit.

DISASSEMBLY INSTRUCTIONS

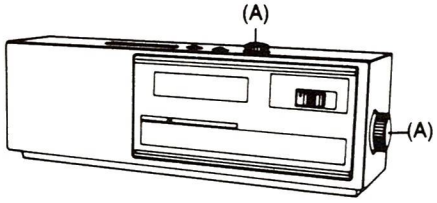


Fig. 1

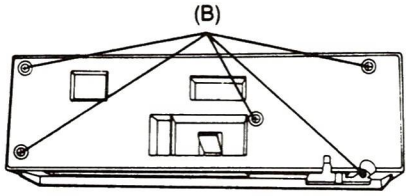


Fig. 2

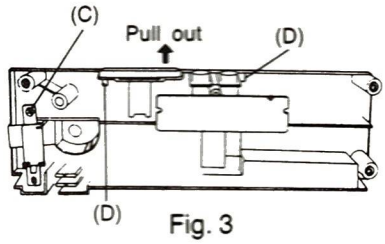


Fig. 3

Ref. No.	Shown in Fig.—.	To remove —.	Remove —.
1	1	Front Cabinet Ass'y	Knob (Volume, Tuning) ..... (A)×2
2	2		Screw (3×16) mm ..... (B)×5
3	3	P.C. Board	Screw (3×10) mm ..... (C)×1
4	3	Switch Knob	Pull the locking portions ..... (D)×2

EXPLANATION OF TMS1944BN2L (IC1)

1) Terminal view

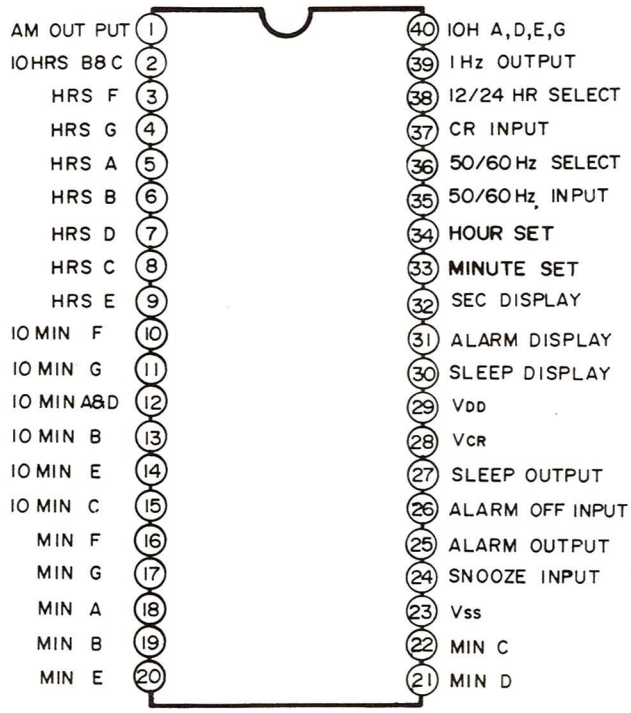


Fig. 1

2) Block diagram

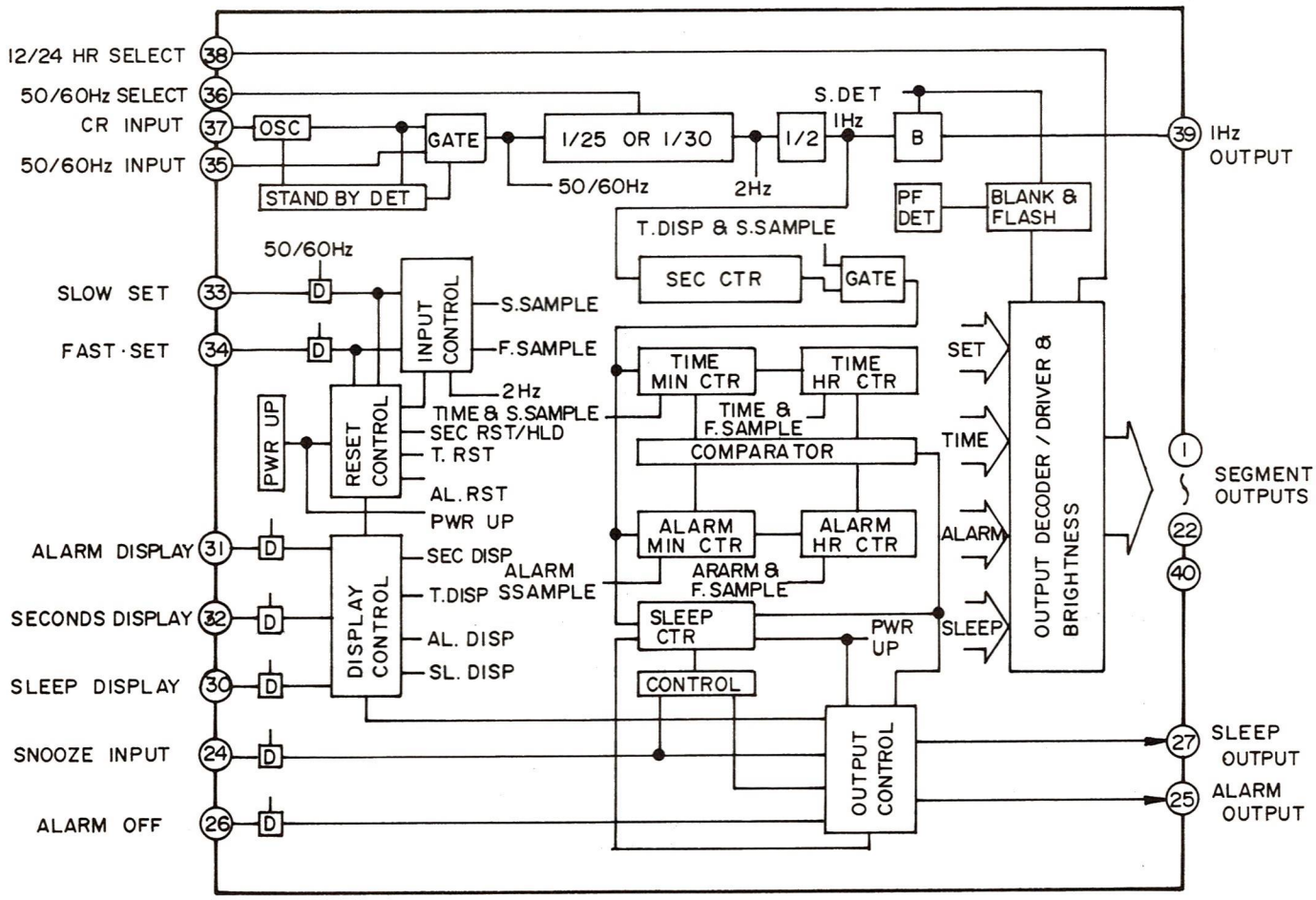
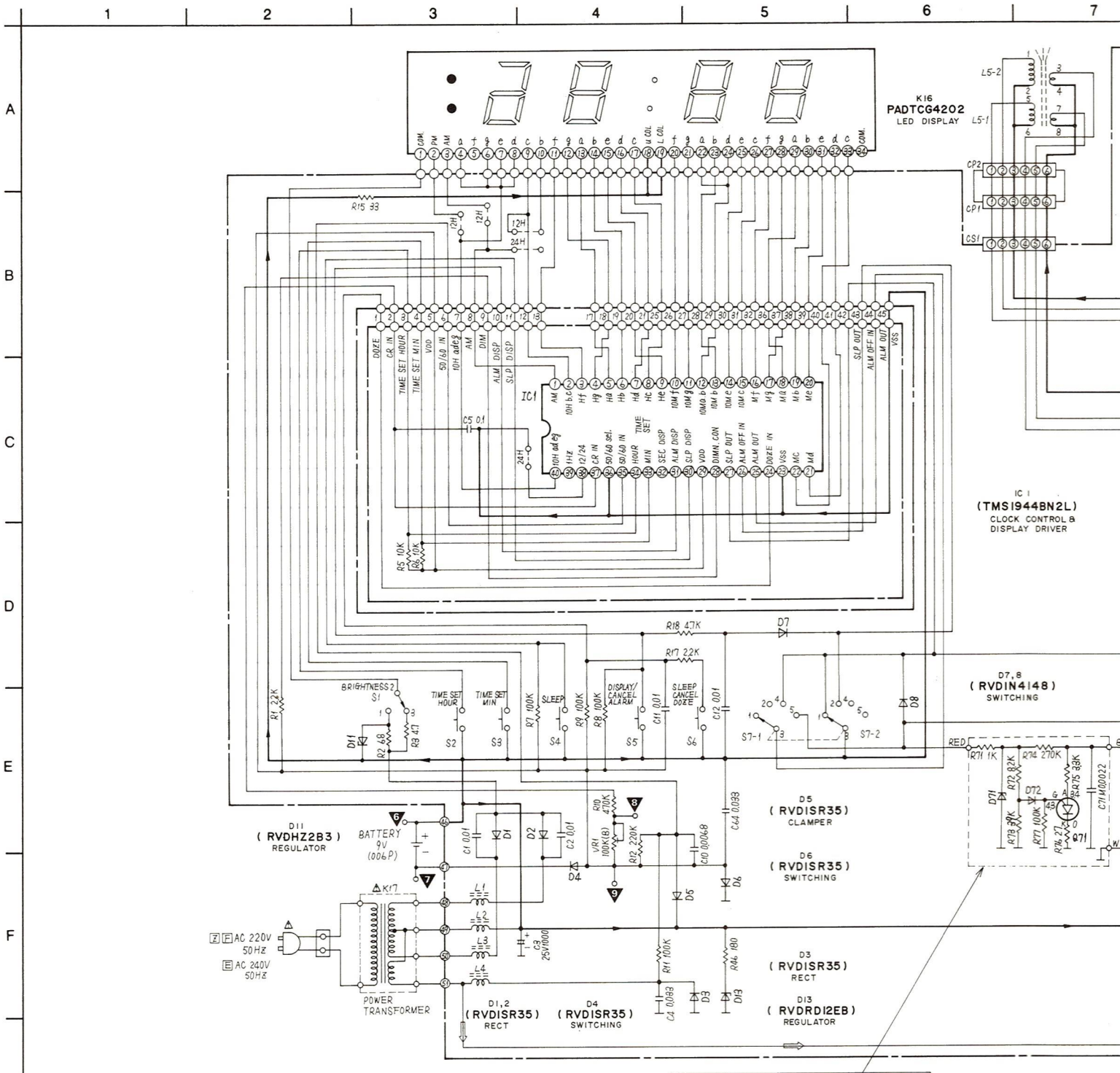


Fig. 2

3) Explanation of each terminal

Pin No.	Terminal	Description
1~22, 40	LED segment signal	Output terminals for LED segment drive signals.
23	VSS (power input)	Power supply terminal.
24	SNOOZE INPUT	When this terminal is set to Hi level, the alarm signal will stop.
25	ALARM OUTPUT	When alarm timer operates, alarm signal (Hi level) is outputted.
26	ALARM OFF	When this terminal is at Hi level, alarm signal is not outputted.
27	SLEEP OUTPUT	When sleep timer operates, sleep signal (Hi level) is outputted.
28, 29	VDD (Ground)	Ground terminal.
30	SLEEP DISPLAY	The sleep timer is set when this terminal is at Hi level, and at the same time, Hi level signal is outputted from SLEEP OUT terminal.
31	ALARM DISPLAY	The alarm timer is set when this terminal is at Hi level, and at the same time, Hi level signal is outputted from ALARM OUTPUT terminal.
33	MINUTE SET	Minute time is counted as long as this terminal is at Hi level.
34	HOUR SET	Hour time is counted as long as this terminal is at Hi level.
35	50/60 Hz INPUT	Terminal to input a power supply frequency (50/60 Hz).
36	50/60 Hz SELECT INPUT	Terminal to select power supply frequency (50/60 Hz). connected with Vss: 50 Hz connected with Vdd: 60 Hz
37	CR INPUT	Normally, a built-in back-up oscillator controls the time counter instead of 50/60 Hz input signal when time base input signal is stopped in the event of power failure (back-up function). Since the RC-6075 does not have back-up function, this terminal is used to produce alarm output signal. Oscillation frequency is varied by the externally-connected CR.
38	12/24HR SELECTOR	Terminal to input 12/24-hour display selection. connected with Vdd: 12-hour connected with Vss: 24-hour

SCHEMATIC DIAG



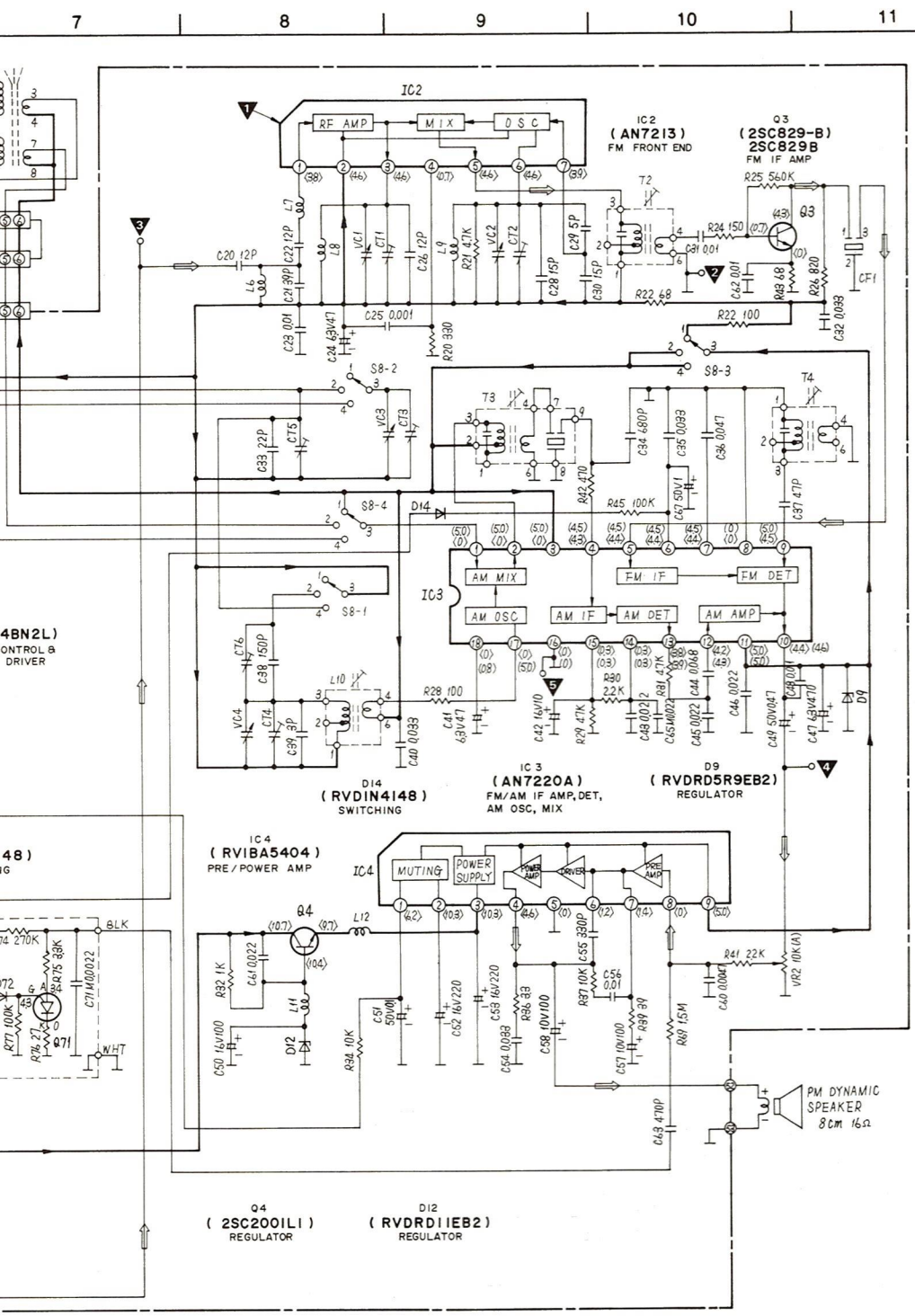
RC-6075L E (for United Kingdom) has two type unit depending on whether it is a high or low-pitched alarm.
(A set which has no schematic diagram inside the dotted line in the figure has a low-pitched alarm.)

Note

1. S
2. S
3. S
4. S
5. S
6. S
7. S
8. S

+ Ⓑ Voltage Line.
Radio (FM) Signal line.
( )... Supply parts number

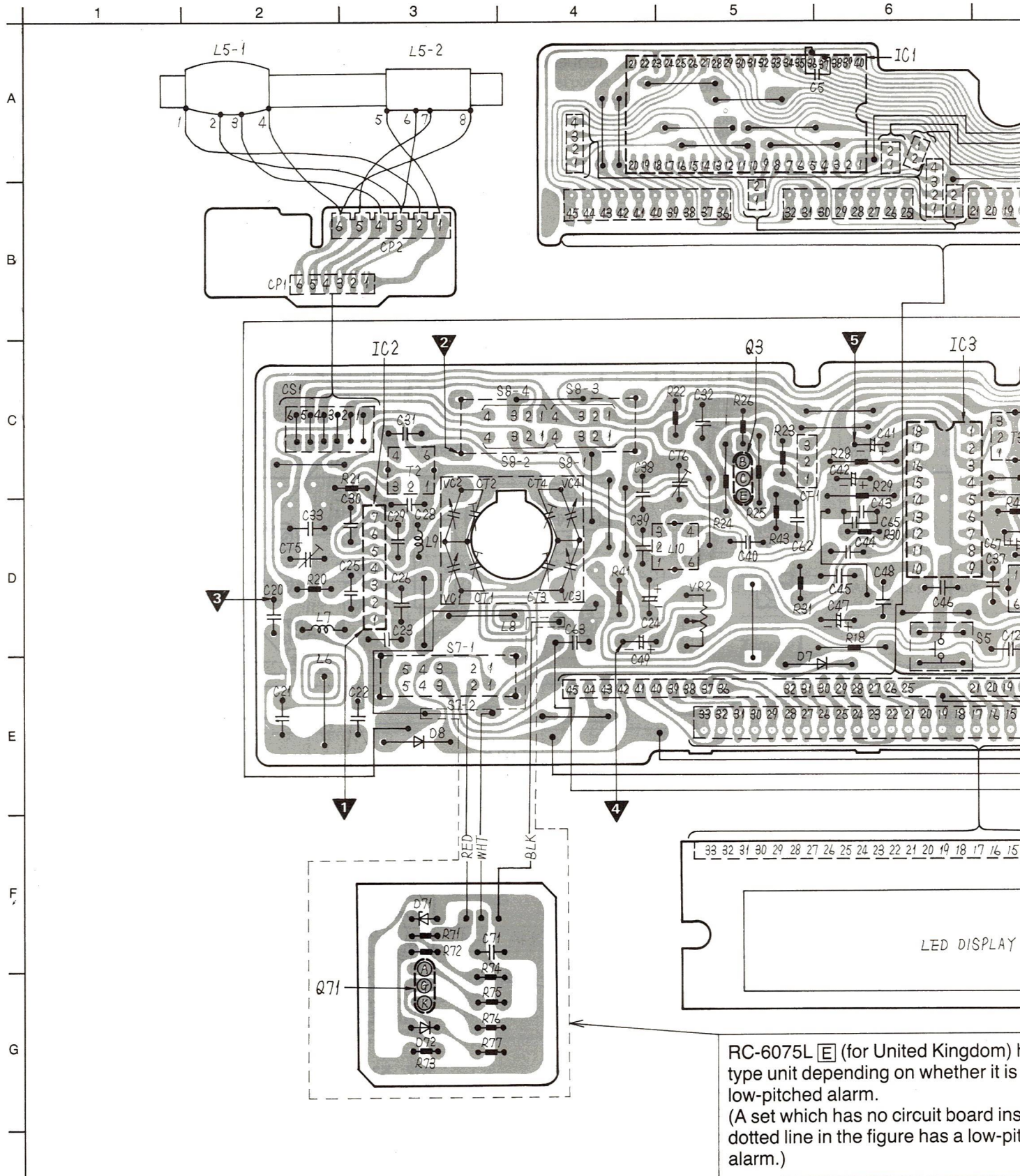
C DIAGRAM



Notes:

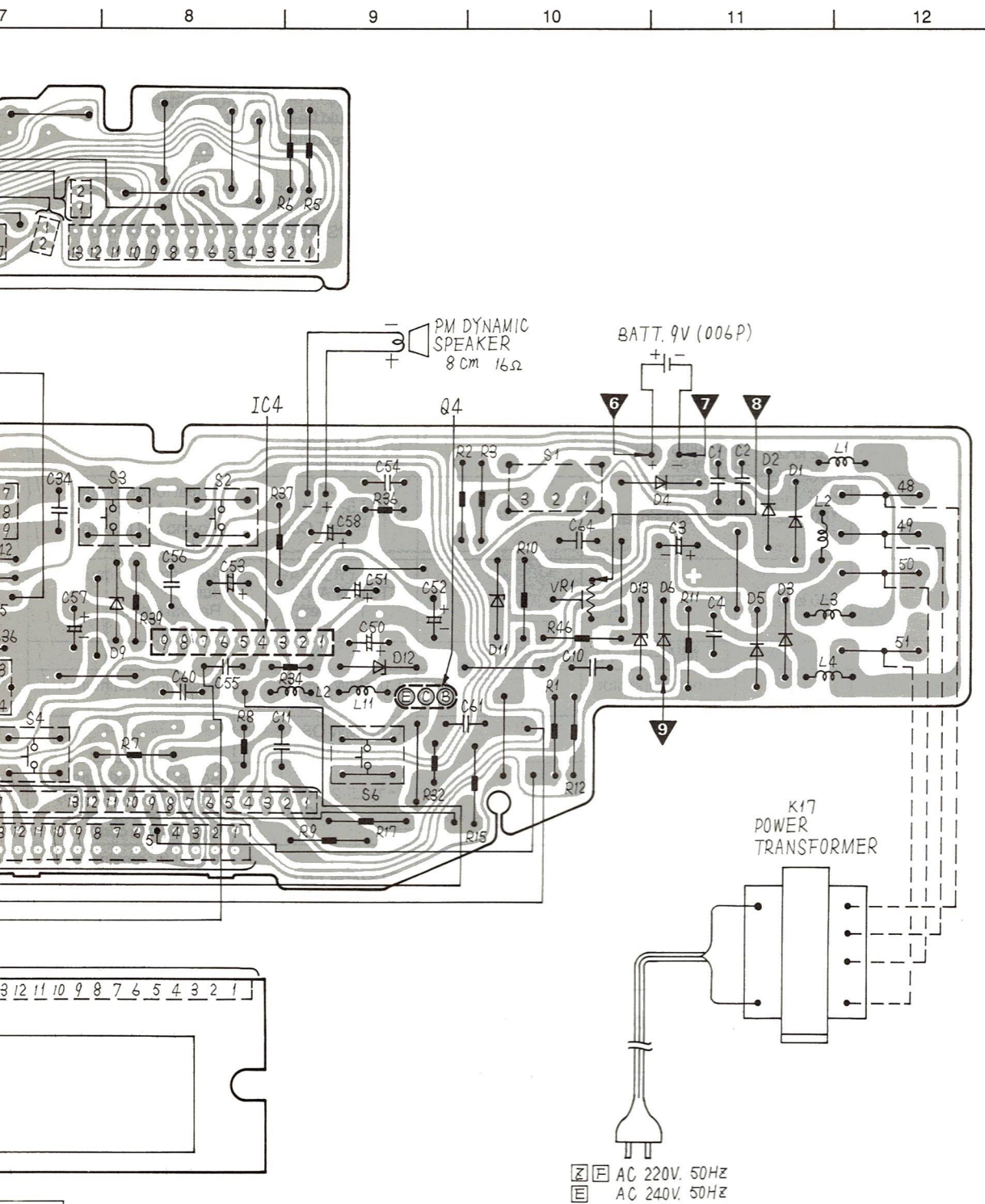
1. S1: Brightness switch in "HIGH" position. (1... LOW, 3... HIGH)
2. S2: Hour switch.
3. S3: Minute switch.
4. S4: Sleep switch.
5. S5: Alarm display/cancel switch.
6. S6: Sleep cancel/doze switch.
7. S7-1, S7-2: Mode select switch in "ON" position. (1... ON, 2... OFF, 4... RADIO, 5... BUZZER)
8. S8-1, S8-2, S8-3, S8-4: Band select switch in "FM" position (1... FM, 2... LW, 4... MW)
9. VR1: Back-up frequency adjustment VR.
10. VR2: Volume control VR.
11. The mark (▼) shows test point. e.g. ▼1=test point 1.
12. DC voltage measurement are taken with electronics voltmeter from negative line.
    < >... FM position, ( )... AM position.
13. Important safety notice
    Components identified by ⚠ mark have special characteristics important for safety.
    When replacing any of these components, use only manufacturer's specified parts.

CIRCUIT BOARD AND WIRIN



RC-6075L [E] (for United Kingdom) h
type unit depending on whether it is
low-pitched alarm.
(A set which has no circuit board ins
dotted line in the figure has a low-pit
alarm.)

G CONNECTION DIAGRAM



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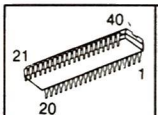
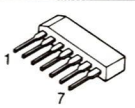
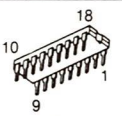
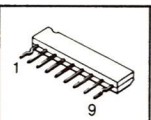
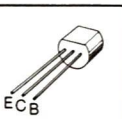
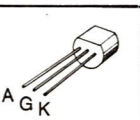
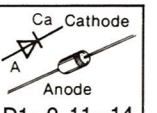
ed

IC1	IC2	IC3	IC4	Q3, 4	Q71	D1~9, 11~14, 71, 72
						

MEASUREMENTS AND ADJUSTMENTS

■ ALIGNMENT INSTRUCTION

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

1. Set volume control to maximum.
2. Set band switch to LW, MW or FM.
3. Set mode selector to radio.
4. Set power source voltage to 220 V AC. (Z F)
5. Set power source voltage to 240 V AC. (E)
6. Output of signal generator should be no higher than necessary to obtain an output reading.

■ LW, MW ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR CONNECTIONS	SIGNAL GENERATOR or SWEEP GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
		AM-IF ALIGNMENT					
(1)	MW	Fashion loop of several turns of wire and radiate signal into loop of receiver.	Z F 455 kHz E 470 kHz 30% Mod. at 400 Hz	Point of non-interference. (on/ about 600 kHz)	Output meter across voice coil.	T3 (AM IFT)	Adjust for maximum output.
		LW-RF ALIGNMENT					
(2)	LW	〃	262 kHz	Tuning capacitor fully open.	〃	CT6 (LW OSC Trimmer)	〃
(3)	LW	〃	150 kHz	Tune to signal.	〃	(*1) L5-1 (LW ANT Coil)	Adjust for maximum output. Adjust L5-1 by moving coil bobbin along ferrite core.
(4)	LW	〃	250 kHz	〃	〃	CT5 (LW ANT Trimmer)	Adjust for maximum output. Repeat steps (2)~(4).
		MW-RF ALIGNMENT					
(5)	MW	〃	511 kHz	Tuning capacitor fully closed.	〃	L10 (MW OSC Coil)	Adjust for maximum output.
(6)	MW	〃	1650 kHz	Tuning capacitor fully open.	〃	CT4 (MW OSC Trimmer)	〃
(7)	MW	〃	550 kHz	Tune to signal.	〃	(*1) L5-2 MW ANT Coil)	Adjust for maximum output. Adjust L5-2 by moving coil bobbin along ferrite core.
(8)	MW	〃	1500 kHz	〃	〃	CT3 (MW ANT Trimmer)	Adjust for maximum output. Repeat steps (5)~(8).

(*1) Cement antenna bobbin with wax after completing alignment.

■ FM ALIGNMENT

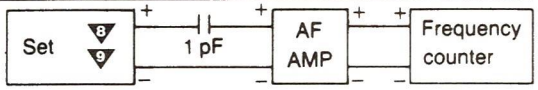
	BAND	SIGNAL GENERATOR or SWEEP GENERATOR CONNECTIONS	SIGNAL GENERATOR or SWEEP GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
		FM-IF ALIGNMENT					
(1)	FM	High side thru. 0.001 μF to test point ①, Negative side to test point ②.	10.7 MHz (400 Hz SWP.)	Point of non-interference. (on/ about 90 MHz)	Connect vert. amp. of scope to test point ④. Negative side to test point ⑤.	T2 (FM 1st IFT)	Adjust for maximum amplitude. (Refer to fig. 1).
(2)	FM	〃	〃	〃	〃	T4 (FM 2nd IFT)	Adjust for maximum amplitude. (Refer to fig. 2).
		FM-RF ALIGNMENT					
(3)	FM	Connect to test point ③ through FM dummy antenna. Negative side to test point ②.	86.2 MHz	Variable capacitor fully closed.	Output meter across voice coil.	L9 (FM OSC Coil)	(*2) Adjust for maximum output.
(4)	FM		109.2 MHz	Variable capacitor fully open.	〃	CT2 (FM OSC Trimmer)	〃
(5)	FM		106 MHz	Tune to signal	〃	CT1 (FM ANT Trimmer)	(*2) Adjust for maximum output. Repeat steps (3)~(5).

(*2) Three output responses will be present; proper tuning is the center frequency.

■ BATTERY BACK-UP CIRCUIT ALIGNMENT (Note: Disconnect AC power cord)

DC POWER SUPPLY		FREQUENCY COUNTER	ADJUSTMENT	REMARKS
CONNECTIONS	VOLTAGE			
(+) Side... ⑥ (−) Side... ⑦	9 volts	(+) Side ..... ⑧ (−) Side ..... ⑨	VR1 (Semi-fixed)	• Adjust VR1 for 50.0±1.0 Hz on frequency counter reading. (*3,4,5)

*3. Connect 1 pF capacitor to the test point ⑧.
*4. Amplify its output signal by using the AF Amp.
*5. Measure the frequency.



■ ALIGNMENT POINTS

(Please refer to Circuit Board and Wiring Connection Diagram which is located test points)

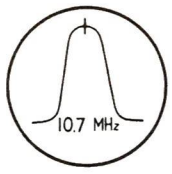


Fig. 1

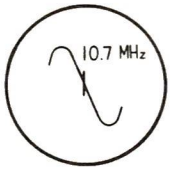
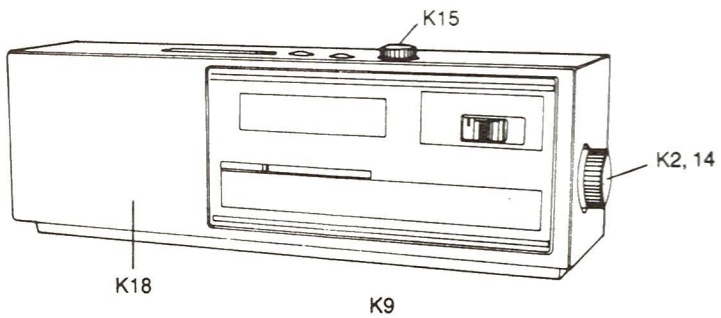
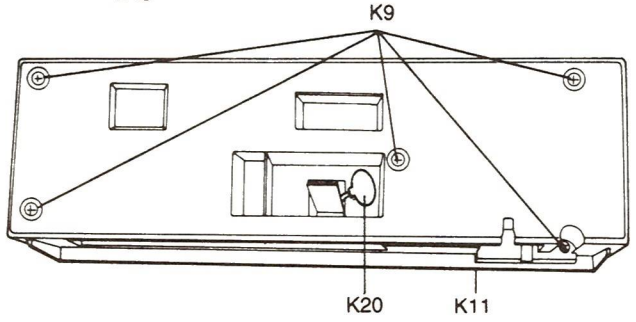


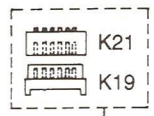
Fig. 2

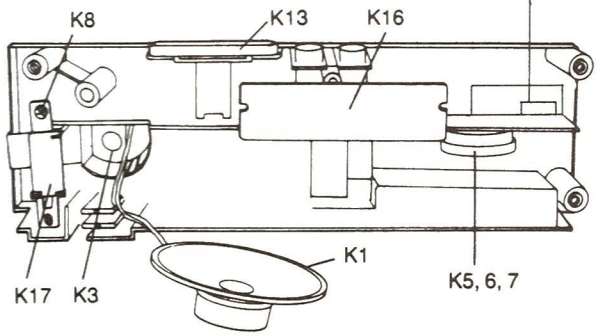
Fig. 3

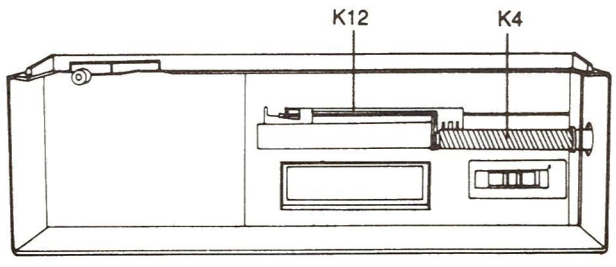
CABINET PARTS LOCATION











REPLACEMENT PARTS LIST

Important safety notice
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

[ZS]... For all European areas except United Kingdom, Italy and Finland (Silver)

[ZW]... For all European areas except United Kingdom, Italy and Finland (White)

[ES]... For United Kingdom (Silver)

[EW]... For United Kingdom (White)

[FS]... For France (Silver)

Ⓜ mark stands for that the parts are supplied in MESA.

Ref. No.	Part. No.	Part Name & Description
	CABINET PARTS	
ⓂK1	**RAS8P23Z**	Speaker
ⓂK2	**RDS5030Y**	Spring, Tuning Knob
ⓂK3	**RUS593Z**	Spring, Speaker
ⓂK4	**RDG5691Z**	Gear, Worm Shaft
ⓂK5	**RDG5710Z**	Gear, Dial Drum
K6	**XSN26+8**	Screw, Dial Drum M'tg
K7	**XWA26B**	Washer, Dial Drum M'tg
K8	**XTV3+10G**	Screw, Power Transformer Ass'y
K9	**XTV3+16G**	Screw, Rear Cabinet M'tg
ⓂK11 [ZW]	**RKF734T8**	Rear Cabinet
ⓂK11 [ZS][FS]	**RKF734T**	Rear Cabinet
ⓂK11 [EW]	**RYFC6075LEK8**	Rear Cabinet Ass'y ⚠
ⓂK11 [ES]	**RYFC6075LEKS**	Rear Cabinet Ass'y ⚠
ⓂK12	**RDP275Z**	Pointer, Dial
ⓂK13 [ZW][EW]	**RBC659Z1**	Button, Alarm Display/Cancel, Sleep, Sleep Cancel/Doze
ⓂK13 [ZS][ES][FS]	**RBC659Z2**	Button, Alarm Display/Cancel, Sleep, Sleep Cancel/Doze
ⓂK14 [ZW][EW]	**RBN688Y1**	Knob, Tuning
ⓂK14 [ZS][ES][FS]	**RBN688Y2**	Knob, Tuning
ⓂK15 [ZW][EW]	**RBN708Z1**	Knob, Volume
ⓂK15 [ZS][ES][FS]	**RBN708Z2**	Knob, Volume
ⓂK16	**RADTLG4202**	LED Display
ⓂK17 [ZS][ZW][FS]	**RWAC6075ZKSN**	Power Transformer Ass'y ⚠
ⓂK17 [ES][EW]	**RWAC6075LZEK**	Power Transformer Ass'y ⚠
ⓂK18 [ZW]	**RYMC6075ZKWT**	Front Cabinet Ass'y
ⓂK18 [ZS][FS]	**RYMC6075ZKSL**	Front Cabinet Ass'y
ⓂK18 [EW]	**RYMC6075LEK8**	Front Cabinet Ass'y ⚠
ⓂK18 [ES]	**RYMC6075LEKS**	Front Cabinet Ass'y ⚠
K19	**RJS6M3Z**	Socket (6P)
ⓂK20	**RJB5009Z**	Snap, Back-up Battery
K21	**RJP6G11Z**	Plug (6P)
	PACKINGS	
ⓂP1	**RQX4698Z**	Operating Instruction
ⓂP2	**RPN9492Z**	Pad Complete
ⓂP3	**RPK2150Z**	Gift Box
ⓂP4	**RPP680Z**	Polyethylene Cover
P5 [ZW][EW]	**RQA7801Z**	Label, Color

ELECTRICAL PARTS LIST

Numbering System of Resistor

Example

ERD	25	F	J	101
Type	Wattage	Shape	Tolerance	Value (100Ω)

ERX	2	AN	J	2R2
Type	Wattage	Shape	Tolerance	Value (2.2Ω)

Resistor Type	Wattage Tolerance
ERD: Carbon	10 : 1/8 W J : ±5%
ERD: Metal Film	12 : 1/2 W
ERX: Metal Film	25 : 1/4 W
ERQ: Fuse Type Metal	1 : 1 W
RRD: Carbon (Chip Type)	18 : 1/8 W

Numbering System of Capacitor

Example

ECKD	1H	102	Z	F
Type	Voltage	Value (1000 pF)	Tolerance	Peculiarity

ECEA	50	M	R47
Type	Voltage	Peculiarity	Value (0.47 μF)

Capacitor Type	Voltage: ECEA Type	Voltage: Other	Tolerance
ECEA: Electrolytic	OJ : 6.3 V	2H : 500 V DC	C : ±0.25 pF
ECCD: Ceramic	1A : 10 V	1 : 100 V	J : ±5%
ECKD: Ceramic	1C : 16 V	DKC : 400 V AC	K : ±10%
ECQM: Polyyester	1E : 25 V		Z : +80%, −20%
	1H : 50 V		
ECQP: Polyproylene	1V : 35 V		P : +100%, −0%
	50 : 50 V		
ECET: Electrolytic			
ECEA□□□N: Non Polar Electrolytic	25 : 25 V		
	16 : 16 V		
QCU □: Ceramic (Chip Type)			
ECUX: Ceramic (Chip Type)			

[Z]... For all European areas except United Kingdom, Italy and Finland

[E]... For United Kingdom

[F]... For France

Ⓜ mark stands for that the parts are supplied in MESA.

Ref. No.	Part. No.	Part Name & Description
	INTEGRATED CIRCUITS	
ⓂIC1	**TMS1944BN2L**	IC
IC2	**AN7213**	IC
IC3	**AN7220A**	IC
IC4	**RViBA5404**	IC
	TRANSISTORS	
Q3	**2SC829-B**	Transistor (Si)
Q4	**2SC2001L1**	Transistor (Si)
Q71	**RVTN13T1C**	Transistor (Si)
	DIODES & RECTIFIERS	
D1~6	**RVD1SR35**	Diode (Si)
D7,8,14	**RVD1N4148**	Diode (Si)
D9	**RVDRD5R1EB2**	Diode (Si)
D11	**RVDHZ2B3**	Diode (Si)
D12	**RVDRD11EB2**	Diode (Si)
D13	**RVDRD10EB**	Diode (Si)
D71	**RVDRD6R8EB**	Diode (Si)
D72	**MA161**	Diode (Si)
	COILS	
L1~4	**RLQY15G5**	Coil, Choke
ⓂL5	**RLF6Y2**	Coil, AM Antenna
L7	**RLQY30S1**	Coil, Choke
L9	**RLQY09S1**	Coil, Choke
L10	**RL02B105**	Coil, LW OSC
L11,12	**RLQZL101K**	Coil, Choke

Ref. No.	Part. No.	Part Name & Description
	TRANSFORMERS	
T2,4	**RLi4B153**	I.F.T. FM 1st, 2nd
ⓂT3 [Z][F]	**RLi7W114**	I.F.T. AM (455 kHz)
ⓂT3 [E]	**RLi7W115**	I.F.T. AM (470 kHz)
	VARIABLE CAPACITORS	
VC1~4	**RCV4LC2V1K**	Variable Capacitor/with Trimmer Capacitor (CT1~4)
	TRIMMER CONDENSERS	
CT5	**RCVTZ20F**	Trimmer Capacitor
CT6	**RCVTZ30F**	Trimmer Capacitor
	VARIABLE RESISTORS	
VR1	**EVND4AA00B15**	Variable Resistor
VR2	**EVJF8AF20A14**	Variable Resistor
	CERAMIC FILTER	
CF1	**RVFSFE107MSR**	Ceramic Filter
	SWITCHES	
ⓂS1	**RSS2A45Z**	Slide Switch, Brightness
ⓂS2~6	**RSH1A45Y**	Push Switch, Hour, Minute, Sleep, Alarm display/cancel, Sleep cancel/doze
ⓂS7	**RSS4B01Z**	Slide Switch, Mode
ⓂS8	**RSS3D19X**	Slide Switch, Band

Ref. No.	Part. No.
	RESISTORS
R1,17,30,41	**ERD25FJ222**
R2	**ERD25FJ680**
R3	**ERD25FJ4R7**
R5,6,34,37	**ERD25FJ103**
R7,8,9,11,45,77	**ERD25TJ104**
R10	**ERD25TJ474**
R12	**ERD25TJ224**
R15	**ERD25FJ330**
R18,21,31	**ERD25FJ472**
R20	**ERD25FJ331**
R22	**ERD25FJ101**
R23,43	**ERD25FJ680**
R24	**ERD25FJ151**
R25	**ERD25TJ564**
R26	**ERD25FJ821**
R28	**ERD25FJ101**
R29	**ERD25TJ473**
R32,71	**ERD25FJ102**
R36	**ERD25FJ3R3**
R39	**ERD25FJ390**
R42	**ERD25FJ471**
R46	**ERD25FJ181**
R69	**ERD25TJ155**
R72	**ERD25FJ822**
R73	**ERD25FJ393**
R74	**ERD25TJ274**
R75	**ERD25FJ332**
R76	**ERD25FJ270**
	CAPACITORS
C1,2,11,12,31,62	**ECKD1H103ZF**
C3	**ECEA1EU102**
C4	**ECKD1H333ZF**
C5	**ECQV1H104TZ**
C10	**ECKD1H682MD**
C20,22,26	**ECCD1H120K**
C21	**ECCD1H390K**
C23	**ECKD1H103MD**
C24,41	**ECEA0JU470**
C25	**ECKD1H102MD**
C28	**ECCD1H150KC**
C29	**ECCD1H050CC**
C30	**ECCD1H150KC**
C32,35,40,54,64	**ECFT1E333MD**
C33	**ECCD1H220K**
C34	**ECKD1H681KB**
C36	**ECFT1E473MD**
C37	**ECCD1H470K**
C38	**ECQP2A151JZ**
C39	**ECCD1H030C**
C42	**ECEA1CU100**
C43,45,46,61	**ECFT1E223MD**
C44	**ECFT1C683MD**
C47	**ECEA0JU471**
C48,56	**ECKD1H103MD**
C49	**ECEA1HUR47**
C50	**ECEA1CU101**
C51	**ECEA1HU0R1**
C52,53	**ECEA1CU221**
C55	**ECCD1H331K**
C57,58	**ECEA1AU101**
C60	**ECKD1H472MD**
C63	**ECKD1H471KB**
C65	**ECFD1E223MD**
C67	**ECEA1HV010**
C71	**ECKD1H222MD**

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